

2020

Evidence-Based Practice Guideline: Breastfeeding Support of the Active Duty Servicewoman

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Walden University

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2020

Abstract

Evidence-Based Practice Guideline: Breastfeeding Support
of the Active Duty Servicewoman

by

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MSN, Frontier Nursing University, 2012

ADN, University of Alaska Anchorage, 2007

BFA, Kutztown University, 1993

Project Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

Walden University

February 2020

Abstract

There is no policy on breastfeeding support of the active duty military servicewoman at the targeted military treatment facility, and no global policy serving active duty personnel applicable at the Department of Defense and Defense Health Agency (DoD/DHA) level to span across branches of the U.S. military. Nurses, as members of the most trusted profession, are often expected to know how to assist a mother in meeting her feeding goals. Creation of an evidence-based practice guideline (EBPG) for support of the active duty servicewoman in the military health system was the purpose of this project. The project was conceptualized within the framework of Pender's health promotion model and supported by Rogers's theory on the diffusion of innovations. Sources of evidence included consensus statements by professional organizations, peer-reviewed literature applicable to lactation support in general and within the military health system, and feedback from expert panelists in the fields of lactation and education with experience in the military health system. The need for the EBPG was supported through review of the literature and expert feedback. Simple descriptive statistics and analysis of qualitative feedback were reviewed supporting the applicability of the EBPG. The guideline should better prepare health care providers, including nurses on the front lines of care, to support active duty servicewomen in their feeding goals. Adoption of the EBPG by the DoD/DHA would allow the organization to lead the charge in positive social change by providing a policy that treats all branches of the U.S. military equally and incentivizes family health and retention of valuable federal employees who lay their lives on the line in defense of the nation.

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Dedication

This capstone project is dedicated to everyone who believed in me, but most especially to my husband, Walter, and my daughter, Emma. They sacrificed countless hours of family time to support my aspirations.

Acknowledgments

To my expert panelists: I could not have done this without you. Thank you to Ginger Osborn, Robyn Roche-Paull, Terriann Shell, Ada Scott, and Linda J. Smith. I especially wish to acknowledge Terriann, who has been my inspiration for so many years in helping families succeed in their breastfeeding goals and kept me moving forward when the dementors crowded me.

I also wish to acknowledge my primary preceptor, Major Charles Q. Pace (USAF), MD, for his support and guidance through my doctoral journey, especially his dedication to evidence-based practice and his sharing of nonclassified information that helped improve my understanding of the cultural context of the military health system.

Dr. Joanne Minnick, my doctoral committee chair, deserves special acknowledgement for providing tireless encouragement, clarification, and motivation when lassitude struck. Not to mention her patience with my endless delays and writer's block (and, at times, procrastination).

Heartfelt thanks to my additional committee members for their feedback and support: Dr. Amelia Nichols, committee member, and Dr. Lilo Fink, university research reviewer (URR).

Table of Contents

List of Tables	v
Section 1: Nature of the Project	1
Problem Statement	2
Nursing Practice Problem	2
Local Relevance of the Practice Problem	3
Significance to the Field of Nursing Practice	4
Purpose.....	5
Meaningful Gap in Practice	5
Guiding Practice-Focused Question	6
Addressing the Gap in Practice	7
Nature of the Doctoral Project	7
Sources of Evidence.....	7
Approach.....	9
Concise Statement.....	9
Significance.....	10
Stakeholders	10
Contributions to Nursing Practice.....	11
Transferability to Other Practice Areas	12
Implications for Positive Social Change.....	12
Summary	13
Section 2: Background and Context	14

Concepts, Models, and Theories	14
Rationale for Concepts, Models, and Theories	16
Synthesis of Concepts, Models, and Theories	17
Clarification of Terms	18
Relevance to Nursing Practice	19
Brief History of the Broader Problem in Nursing Practice	19
Current State of Nursing Practice	21
Standard Practices and Strategies	23
Local Background and Context	24
Summary of Local Evidence: Institutional and State Context	24
Federal Context	27
Role of the DNP Student	28
Professional Context	28
Role in the Doctoral Project	29
Motivations	29
Potential Biases	29
Role of the Project Team	30
Use of Project Team	30
Project Team Processes, Insights, and Responsibilities	30
Summary	31
Section 3: Collection and Analysis of Evidence	33
Practice-Focused Question	33

Clarification of Purpose	33
Operational Definitions.....	34
Sources of Evidence.....	35
Relationship of Evidence to Purpose	35
Evidence Collection and Analysis to Address Purpose	36
Analysis and Synthesis	37
Systems for Evidence Analysis.....	37
Procedural Integrity	37
Analysis Procedures.....	37
Summary	38
Section 4: Findings and Recommendations	39
Introduction.....	39
Findings and Implications.....	40
Positive Social Change	43
Recommendations.....	43
Contribution of the Doctoral Project Team	44
Strengths and Limitations of the Project.....	44
Section 5: Dissemination Plan	46
Dissemination Plan	46
Analysis of Self.....	47
Summary	48
References.....	49

Appendix A: Anonymous Questionnaire to Subject Matter Expert Panelists	61
Appendix B: Evidence-Based Practice Guideline for Breastfeeding Support of the Active Duty Servicewoman	62
Appendix C: Walden IRB Approval Number.....	141

List of Tables

Table 1. In Response to Question 1: How Likely Is It That the EBPG Will Have Applicability in Women’s Health, Family Health, Pediatric, and Inpatient Perinatal/Postpartum Units?.....41

Table 2. In Response to Question 2: How Likely Is It That the EBPG Will Have Applicability Across Branches of the U.S. Military?41

Table 3. In Response to Question 3: How Likely Is It That the EBPG Will Promote a Philosophy of Advocacy for Breastfeeding Support Among Health Care Providers of Military Servicewomen and Their Infants?41

Table 4. In Response to Question 4: How Likely Is It That the EBPG Has Potential Applicability at the Department of Defense Level for Dissemination Throughout All Military Treatment Facilities?41

Table 5. Respondents’ Comments on the EBPG From the Anonymous Survey43

Section 1: Nature of the Project

Despite the widely publicized and acknowledged importance of breastfeeding for both the emotional and physical health of mother and baby, there is no evidence-based practice guideline (EBPG) in use supporting either civilian or active duty (AD) families at the targeted military treatment facility (MTF), let alone recognized across the DoD. My project was the creation of an EBPG on conducting support of AD servicewomen and breastfeeding families in the women's health, family health, and pediatric outpatient clinics, and the inpatient perinatal unit, located within the MTF. The MTF is part of the larger military health system (MHS) that the DoD now intends to operate under the auspices of the DHA (2013). The MHS is striving toward a patient-centered medical home (PCMH) design (Hudak et al., 2013). Per Hudak et al. (2013), the premise of the PCMH model is a primary care foundation that relies on strong collaborative relationships utilizing evidence-based practices and sound technical support. The theoretical underpinnings of the project were supported using the health promotion model per Pender, Murdaugh, and Parsons (2015) and further propagated via the diffusion of innovations theory (Rogers, 2003). Breastfeeding support might be seen as a conceptualization of patient-centered care.

The MTF currently provides fractured care related to lactation support, with providers located in women's health, family health, pediatrics, and perinatal clinics (also known as flights, which may operate under separate command) having little contact with one another unless significant effort is expended. A strong primary care foundation as endorsed by the PCMH concept has the potential to reconstruct lactation management

procedures at the facility, maximizing patient care, minimizing costs, and integrating the care experience, all of which are vital in supporting the success of the breastfeeding dyad (Hudak et al., 2013). Reinforcing a woman in her breastfeeding goals fortifies the family unit and augments resiliency self-efficacy (Walker, 2017). In the military, efforts to support and strengthen families influence and strengthen the military mission, which in turn invigorates the country (Roche-Paull, 2010). Per Hudak et al. (2013), the appropriate execution of coordinated care, such as that represented by the PCMH, is a plausible solution to the need to increase military readiness while balancing competing needs related to cost, patient satisfaction, and health outcomes (Buckler, 2011). Guidelines on coordinating care of the breastfeeding dyad across service units are encompassed perfectly within the PCMH concept and could be widely disseminated throughout DoD/DHA policies and operating procedures, serving as a pilot for use beyond the single MTF.

Problem Statement

Nursing Practice Problem

The provision of superior and comprehensive lactation support services is considered a public health imperative (Siska, 2011). Despite well-published health and financial benefits associated with breastfeeding, the DoD/DHA has no encompassing, consistent policies or guidelines for supporting military women who breastfeed (Drake, Cadwell, & Dodgson, 2017). Both U.S. Air Force (USAF) and U.S. Army (Army) servicewomen receive medical treatment at the MTF, with other branches less frequently represented. The USAF has limited recommendations in place for provisions to pump

milk in the form of Air Force Instruction (AFI) 44-102, which contains three paragraphs of guidance for supervisors of breastfeeding servicewomen and is subject to interpretation by commanders as explicitly stated in the document (Secretary of the Air Force, 2017).

In June 2015, the Headquarters of the 1st Armored Division of the Army at Fort Bliss, Texas released an extensive breastfeeding support policy that might have served as a model policy, but that was later overshadowed by a much less robust Army directive created in November 2015 (Secretary of the Army, 2015). Army Directive 2015-43 provides eight numerical points updating policy on lactation support, only five of which give information that is practical and applicable to the daily work of the soldier, several of which may be easily misinterpreted by personnel with lack of expertise in lactation (see Secretary of the Army, 2015). A comprehensive policy guiding lactation support across the branches of military service would benefit not only the MTF locally, but also the DoD/DHA and all the entities encompassed under its umbrella.

Local Relevance of the Practice Problem

The MHS is a global organization, and while local policies may be more robust than policies created by higher level organizational groups, they may not countermand specific policy statements. A global DoD/DHA policy on lactation support will be beneficial not only to nursing staff at the MTF, who are most often called upon to assist new mothers with feeding and other newborn care concerns, but also across all branches of service. Per Drake et al. (2017), although all of the armed services now have some type of policy regarding breastfeeding support, there are variations leading to supervisor

confusion, fostered by generic instructions, resulting in discrepancies in how policies are applied. Without the guidance of structured policies and programs, inexplicit provisos are open to interpretation, leading to misunderstanding and erroneous application (Beake, Pellowe, Dykes, Schmied, & Bick, 2011). This practice is questionable, as it is dependent on each commander's interpretation of policy, calling on personal knowledge, experience, and desire (or lack thereof) to support the health of the AD woman and her infant. Establishing a clear but flexible policy should be expected to improve lactation support within the MTF.

Significance to the Field of Nursing Practice

Nursing staff, including advanced practice nurses, may be assigned to assist mothers and babies across the units of service in the MTF. Nurses are often presumed to be experts in the care of infants and children and are therefore expected to have the knowledge base to support the dyad in breastfeeding efforts, whether or not they have received the necessary training (Bass, Rodgers, & Baker, 2014). Unfortunately, according to the U.S. Surgeon General's office, neither nurses nor physicians have the opportunity to receive adequate education or occasion for continuing training in lactation management and support (U.S. Department of Health and Human Services [USDHHS], 2011). Ongoing work is needed to deliver education and training to health care providers in order to increase their efficacy in care provision to breastfeeding couples (Radzynski & Callister, 2015). Baby-Friendly USA (2012) developed a detailed plan, that included staff training and development stipulations, to help hospitals and provider offices in establishing appropriate breastfeeding foundations. The plan and guidelines

were recently updated (Baby-Friendly USA, 2016). The World Health Organization (WHO) even more recently provided two updated documents for international reference: *Guideline: Protecting, Promoting and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services* (WHO, 2017) in addition to *Implementation Guidance: Protecting, Promoting and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services—The Revised Baby-Friendly Hospital Initiative* (WHO, 2018). The gold standard of lactation care is board certification through the International Board of Lactation Consultant Examiners (IBLCE), and nurses are recognized as health professionals whose education prepares them on the basics of breastfeeding support; therefore, with some additional preparation, nurses can qualify to sit for the board exam (2017). The facility should strive to give nurses, and other health care providers, the tools to succeed in helping the breastfeeding population served by the MTF.

Purpose

Meaningful Gap in Practice

Advanced practice nursing skills performed at the doctoral level can facilitate bridging the gap between the military and civilian health care environments, which can differ in access and care requirements. Radzyninski and Callister (2015) pointed out inconsistencies in training, as well as information in medical and nursing texts, as contributing to the problems associated with breastfeeding knowledge gaps and rigid attitudes of providers. Sigman-Grant and Kim (2015) reported that over a 10-year period in Nevada, and despite multiple initiatives and educational opportunities for providers to

become more conversant in breastfeeding support strategies, little changed in the abilities and attitudes expressed by them.

If providers have difficulty moving from a baseline of personal and cultural influences to an evidence-based position related to breastfeeding support, it is not surprising that military women face challenges in obtaining the education and abetment they need to feel successful in meeting their infant feeding goals (Martin, Drake, Yoder, Gibson, & Litke, 2015). Appropriate EBP strategies to support breastfeeding in the MHS may include helping families decide on best feeding practices for their infant, including the possibility of mixed or combination feeding (Roche-Paull, 2010; Walker, 2017). Teaching nurses and other health care providers practical skills associated with the EBPG will empower clinicians in closing the practice gap.

Guiding Practice-Focused Question

The purpose of the project was to address the gap in EBP, a lack of coordination of lactation support strategies, through the creation of an EBPG for breastfeeding support of the AD servicewoman in the MHS. The approach for this project proceeded from the idiomatic perspective of a nonmilitary advanced practice registered nurse (APRN) and international board-certified lactation consultant (IBCLC) working within the MHS. The frame of reference was the breastfeeding dyad seeking care in the MHS, which necessitates integrating the unique emphasis on troop readiness with the mirrored objectives from the Institute for Healthcare Improvement's Triple Aim: Improving population health, enhancing patient experience, and responsibly managing costs

(Buckler, 2011). The overarching goal was to provide guidance to improve the success rate of AD mothers in breastfeeding, however they interpret that success.

Addressing the Gap in Practice

Support strategies based on the expressed needs of military and beneficiary mothers must be considered as the first line in filling the practice gap found in the MHS. Given the frequency of interruption of feeding at the breast, and the disruption of or reduction in opportunities for pumping human milk related to field exercises and other temporary duty assignments, optimizing milk expression in the early days after birth and helping mothers learn techniques such as hand expression and methods to boost supply must be considered in this practice setting (Walker, 2017). For some, mixed feeding (even just one feeding a day) may allow for ongoing reconnection with the infant from whom they must be separated (Roche-Paull, 2010; Walker, 2017). Per Sigman-Grant and Kim (2015), a gap exists within health care related to the use of evidence to guide breastfeeding support practices rather than the use of personal experiences of providers influenced by cultural traditions and habits. The EBPG was written to address the practice gap in the specified setting.

Nature of the Doctoral Project

Sources of Evidence

Five professionals in breastfeeding, education, and pediatrics, the majority of whom had some military experience as either an AD service member or the spouse of an AD service member, agreed to participate on the EBPG capstone panel as subject matter experts in order to judge the EBPG's validity. A short biography outlining the

professional qualifications for each of the following may be found at the end of the EBPG itself (see Appendix B): Ginger Osborn, Robyn Roche-Paull, Ada Scott, Terriann Shell, and Linda J. Smith.

Professional organizations, nationally and internationally, advocate for support of the breastfeeding dyad, providing strong evidence of the importance of providers at all levels doing the same. The WHO (2016a, 2016b, 2018) advocates for exclusive breastfeeding to 6 months of age and stresses the normalcy of breastfeeding, indicating that not breastfeeding is a cause of undernutrition in the first year of life. The *Surgeon General's Call to Action to Support Breastfeeding* is an extensive document carefully detailing the steps needed to support mothers in deciding how to feed their babies and indicating how to support their breastfeeding decisions once made (USDHHS, 2011). The American Academy of Pediatrics (AAP, 2012; Eidelman, 2012), the American College of Obstetricians and Gynecologists (ACOG, 2016), and the Academy of Breastfeeding Medicine (ABM; Chantry, Eglash, & Lobbok, 2015; Hernández-Aguilar et al., 2018), among other organizations, support breastfeeding as the norm for infant feeding and provide tools for provider advocacy.

Baby-Friendly USA (2012, 2016) has outlined clear steps for the creation of a baby-friendly breastfeeding supportive environment for both inpatient and outpatient dyads; updated and revised by the WHO in 2017. The U.S. Breastfeeding Committee (USBC, 2010) has clearly stated competencies for those working directly with breastfeeding couplets, as well as for those working in less direct capacities with this

population. With resources available from many respected organizations, the collection of evidence-based research proceeded smoothly.

Approach

Acknowledging the importance of supporting mothers in making informed infant feeding decisions, which may not include exclusive breastfeeding, is particularly important in the military population. The inclusion of breastfeeding promotion under the umbrella of support by the U.S. Preventive Services Task Force (USPSTF) and the USPSTF's emphasis on the need to respect the autonomy of the mother who makes the informed decision not to breastfeed are important points to consider when developing a guideline for this diverse population (Bibbins-Domingo et al., 2016). Ensuring that women have the opportunity to make informed decisions, rather than treating breastfeeding versus formula feeding as a lifestyle choice or a decision based strictly on the preferences of the unit in which a servicewoman works, was of primary importance in this project.

Concise Statement

Breastfeeding mothers in the military setting face many of the same challenges that other working mothers do. They also face unique issues, including long, inflexible, or unanticipated work hours, as well as duty assignments that are more likely to lengthen their separation from their nursing infants, which may minimize or negate the opportunity to express milk (Martin et al., 2015). Per Sriraman and Kellams (2016), sociocultural, institutional, and provider-patient level changes need to occur in order to support women and remove barriers to breastfeeding. The EBPG is a step toward removing those barriers

at the institutional and provider levels at the targeted MTF. The project may have broader applicability for the DoD/DHA, and eventually for all mothers working outside the home.

Significance

Supporting mothers and infants in reaching their desired feeding and health goals has significant social implications. This project supports Walden University's (2017) mission to promote positive social change. Per a key document from the Institute of Medicine (IOM, 2011) key document entitled *Future of Nursing: Leading Change, Advancing Health*, nurses must lead the charge in acting as social change agents within their communities.

Stakeholders

Stakeholders for the EBPG include health care providers at all levels, including APRNs and physicians, who work with inpatient and outpatient populations and come into contact with breastfeeding dyads (Davis, Stichler, & Poeltler, 2012). Stakeholders also include AD and beneficiary mothers and babies. AD military mothers are the group most likely to fall short of breastfeeding goals set forth by the WHO (2016a, 2016b) and Healthy People 2020 (2016), according to Bales, Washburn, and Bales (2012), in that they face significant barriers to success within military employment and military health systems structures. Drake et al. (2017) published a call for improved military policy to support breastfeeding among the U.S. armed forces, having found that AD women's perceptions and experiences of breastfeeding support were significantly lower than average, especially among lower income Hispanic service members and those with lower educational achievement levels.

On a broader level, the military complex might be considered a stakeholder group. When the health of the breastfeeding population is supported, mission readiness is upheld (Buckler, 2011; Roche-Paull, 2010). TRICARE, the military entitlement or benefits program (what many outside the MHS would think of as health insurance), is also a major stakeholder in lactation management according to an expert in the TRICARE benefits office at the MTF. Per Drake et al. (2017), not only is there a monetary benefit in supporting breastfeeding for TRICARE as a program; the military institution also benefits from retention of employees who remain loyal and are less likely to leave their branch of service for the private sector.

Contributions to Nursing Practice

Nurses are frequently mentioned as members of the profession most likely to be called upon to help mothers with their breastfeeding questions and concerns. Per Demirtas (2012), breastfeeding support is generally considered a key aspect of care provided by nurses and may help in closing the health inequity gap between lower and higher income women. In further research, Demirtas (2015) noted a significant impact by nurses who gave patients a sense of security through their teaching and understanding care as they ushered women through breastfeeding difficulties. The nursing model of care, which tends toward a more holistic wellness approach, is in stark contrast to the obstetric model of care, which anticipates difficulties and the need for interventions (IOM, 2011). Per the American Nurses Association in an issue brief on topics affecting the profession, provision of health education (including lactation education) is an essential role of the professional nurse (Siska, 2011). An EBPG for breastfeeding support

in the AD military population places nurses squarely at the forefront of a holistic approach to care in the transition from one patient (the pregnant, laboring woman) to two (the breastfeeding dyad).

Transferability to Other Practice Areas

Professional organizations closely associated with maternal-child health, including the AAP (2012), ACOG (2016), and ABM (2015), among others, have published directives designed to encourage and advance lactation facilitation interventions. According to Bibbins-Domingo et al. (2016), the USPSTF found that breastfeeding education and supportive services in primary care could result in a moderate to substantial net benefit in health outcomes, including professional, peer, and formal educational opportunities for women. Costs of breastfeeding support interventions are relatively low, with potential return on investment estimated in the range of \$3.6 billion annually in the United States per Drake et al. (2017). Delivering evidence-based care in military communities has been shown to increase resiliency and reinforce military mission readiness (Murphy & Fairbank, 2013).

Implications for Positive Social Change

Stakeholders, including individual mothers and babies, mother-infant dyads, military families, as well as military and nonmilitary providers who serve them, will all experience the benefit of guiding principles for health and wellness starting at birth (USDHHS, 2011). Stakeholder entities such as the MTF itself and the TRICARE benefits program, up to and including the DoD/DHA and the United States, will be positively impacted by the utilization of the EBPG targeted toward improving and guiding lactation

assistance for AD service members (Buckler, 2011; Drake et al., 2017). The effort to move forward with a more concrete course of action to achieve national health priorities for breastfeeding support promises to be expansive and far reaching.

Those who have elected to serve the United States in the most dedicated fashion deserve outstanding breastfeeding support for both themselves and their families. Challenges for military servicewomen are consistent with what other working women face in some respects, yet they also include unique elements present only in the military setting. Use of the EBPG at the MTF will support not only population health, but also military mission readiness. The EBPG bridges a gap in advanced nursing and provider practice by translating research into praxis in an accessible manner, and it remains open to revision as new evidence becomes available.

Summary

Professional health care organizations, locally and globally, support and advocate for the rights of women to make informed decisions on the best feeding practices for their infants; the U.S. military health system should be prepared to do no less. Utilization of a nursing model of care, underpinned by sociological study, is outlined in the next section. The model and theory, and their utility in establishing the relevance of this project to nursing practice, are discussed. My role in this project as a doctoral nursing student is delineated.

Section 2: Background and Context

There is no consistent policy for lactation support across the DoD/DHA or within the military hospital health setting. The EBPG as written is intended to buttress the perception of care and in turn increase the initiation and duration rates of AD servicewomen who are breastfeeding. The purpose of the EBPG is to provide education and information to MTF providers, allowing them to deliver optimal lactation care to the patient population.

The EBPG project was created using the framework of Pender's health promotion model, underscored and supported by Rogers's diffusion of innovations theory (Pender et al., 2015; Rogers, 2003). The EBPG project is intended to promote breastfeeding facilitation as a public health imperative (see Sinek, 2011; Siska, 2011). Use of concepts, models, and theories is supported with appropriate rationales and clarified within the context of the EBPG for breastfeeding support of AD military servicewomen stationed at the MTF. The possibility of eventual expansion of the policy to support those in service throughout the DoD/DHA is explored.

Concepts, Models, and Theories

Breastfeeding is a complex issue that is often perceived as a lifestyle choice rather than as an important health care decision. The health promotion model was designed by Pender to take into account the complexities of individual and community experiences, interpersonal and situational influences, competing preferences and demands, and the influences these have on health-promoting behaviors (Pender et al., 2015). Diffusion of innovations theory was developed by Rogers in the 1950s and 1960s after his graduation

from an agricultural program and service in the Air Force during the Korean War (Rogers, 2003). Rogers became intrigued as to why innovations that would have been profitable in agriculture were not adopted for several years after their release; he later translated his work into a sociological study of dissemination of health behaviors (Pender et al., 2015; Rogers, 2003). Diffusion of innovations theory, which is heavily used in the health promotion model, is helpful in understanding how the dissemination of health information and techniques moves through existing communication and social channels in a specific community (Pender et al., 2015; Rogers, 2003). Per Pender et al. (2015), the health promotion model has been used extensively in understanding the significant determinants of health behaviors.

The health promotion model has been used successfully in program design in a variety of settings, including promotion of physical activity. Bajamal et al. (2017) used the health promotion model to analyze predictors of physical activity versus self-reported physical activity behaviors. The health promotion model and diffusion of innovations theory have been applied successfully in the pharmaceutical industry to analyze the transition of medications to over-the-counter status and pharmacists' attitudes toward this reclassification (Paudyal, Hansford, Cunningham, & Stewart, 2013). In addition, the pharmaceutical industry has appropriated diffusion of innovations theory to harness the commercial pressures that physicians in positions of influence over others bring to bear (Pombo-Romero, Varela, & Ricoy, 2012). The power of marketing, in the context of the diffusion of innovations theory and the health promotion model, may be mobilized to enhance breastfeeding support.

Rationale for Concepts, Models, and Theories

Breastfeeding is considered one of the most natural processes in the mammalian behavioral repertoire, but women often become frustrated and frightened as they experience pain and an assault to their personal bodily integrity (Walker, 2017). Without appropriate teaching and support in the vulnerable postpartum period, women may fear that their newborn is not receiving sufficient milk or may experience despair that the pain of breastfeeding will never end (USDHHS, 2011). Breastfeeding management is multifaceted, and it requires a framework (the health promotion model underpinned by the diffusion of innovations theory) that can accommodate all of the variables associated with a woman's decision to breastfeed in the face of complications and competing demands and preferences (Bevan & Brown, 2014).

Hutchinson, Wilkinson, Kent, and Harrison (2012) stressed the importance of context in implementation of evidence-based practice (EBP) through the use of a framework that incorporates not only research and clinical experiences, but also patient perspectives and local context, or what might also be termed *culture*. The health promotion model incorporates the complicated interplay among individual characteristics and experiences, behavior-specific cognition, and desired behavioral outcomes, including the commitment to a plan of action resulting in a health-promoting behavior (Pender et al., 2015). The diffusion of innovations theory, pioneered by Rogers (2003) and based on the meaning of social constructs in adoption of concepts to improve health, supports the health promotion model and its multidimensional nature. For this reason, the health

promotion model, buttressed by the diffusion of innovations theory, functioned as an ideal framework for the EBPG project.

Synthesis of Concepts, Models, and Theories

The health promotion model was designed by Pender as a nursing model, integrating expectancy-value theory and social cognitive theory within a holistic nursing perspective (Pender et al., 2015). Rogers's diffusion of innovations theory enhances the health promotion model by explaining the dissemination of innovations through social networks (Rogers, 2003). Sinek (2011), acknowledging Rogers's theory on the diffusion of innovations, stated that knowing why an organization is pursuing a certain path is important for planning and maintaining the vision and mission of that community. Pender et al. (2015), in the health promotion model, recognized the importance of cultural and community context in implementation of instruction and EBP. Rogers's (2003) theory on the diffusion of innovations enlightened researchers concerning the power of cultural and community context. According to Bevan and Brown (2014), understanding how culture influences the establishment and maintenance of breastfeeding is of paramount consideration regarding attributes of a breastfeeding assistance protocol.

The success or failure of a project or policy is based not solely on its validity or accuracy, but also on an understanding of the motivations and desires of those whom the project may influence (Pender et al., 2015; Rogers, 2003; Sinek, 2011). Sáenz-Royo, Gracia-Lázaro, and Moreno (2015) emphasized the role of organizational structure in the diffusion of innovations, with more homogenous organizations showing greater rates of diffusion. At the same time, social pressures may block diffusion of new ideas, no matter

the level of homogeneity shown by the organization (Sáenz-Royo et al., 2015). The work of Yimyam and Hanpa (2014), who touted the potential for social change reinforcement of the organizational culture in creating workplace programs for supporting working mothers in Thailand, showed applicability in changing the culture of the military health organization.

Providers who are given resources and tools to influence and support their breastfeeding patients within the military culture will be in a unique position to support overall military readiness through a clear understanding of the significant interrelationships between culture and theory, knowledge, research, and EBP (Drake et al., 2017). Roche-Paull's (2010) work on the lives of AD servicewomen who wished to breastfeed can assist in informing providers about the military culture.

Understanding health-promotion concepts and the influence of social networks on the diffusion of innovations can help providers appreciate the broader viewpoint of the military community.

Clarification of Terms

Exclusive breastfeeding is defined as the infant receiving only breastmilk directly from the breast. *Exclusive breastmilk feeding* is defined as receiving only breastmilk per bottle/other delivery device (i.e., gavage or finger feeding). *Partial breastfeeding* is defined as receiving both breastmilk (per breast or bottle/other delivery device) and infant formula, with breastmilk quantity greater than that of formula or with at least an equal measure of breastmilk and formula. *Partial formula feeding* is defined as receiving primarily infant formula with occasional (up to one time daily) feeding of human milk by

breast or bottle/other delivery device. *Exclusive formula feeding* is defined as receiving only infant formula for all feedings, per bottle/other delivery device.

Relevance to Nursing Practice

Brief History of the Broader Problem in Nursing Practice

The importance of breastfeeding as a health-promotion activity is well understood. The WHO (2016b) pointed to the preventable deaths of over 800,000 children annually under 5 years of age partially from malnutrition, which may be partially addressed by breastfeeding as a health-promotion activity. According to the WHO (2016b), breastfeeding support has direct implications for nursing practice and may be promoted via the strategic use of the nurse educator role. The advanced practice nurse with the specialty credential of International Board-Certified Lactation Consultant (IBCLC) is in a unique position to provide targeted clinical support for peer counselors and to coordinate care in an integrated peer-support structure, inpatient IBCLC care, and pediatric, family health, and women's health clinical settings.

Historically, there has been little consistency or standardization of training in clinical lactation skills for nurses and other allied health professionals. According to Deloian, Lewin, and O'Connor (2015), lactation education is rarely readily available, cost-effective, or high quality; it must have all of these qualities for nurses to benefit from it. Attitudes influenced by culture and personal experience were most predictive of the bedside nurse's ability and interest in supporting the breastfeeding couplet (Deloian et al., 2015). The requirement to take a course, according to Deloian et al., resulted in lower

knowledge acquisition, indicating a continued need for strategies to address cultural barriers to breastfeeding.

Although peer support on a mother-to-mother level has been shown to have some positive impact on breastfeeding rates, Bevan and Brown (2014) found that some health care professionals felt challenged or threatened by care provision from nonprofessional sources. Bevan and Brown also reported that, for some women, the expert backing by a nurse or a lactation consultant or a peer support paraprofessional was reassuring when seeking breastfeeding counseling. However, nurses—and, by extension, the policies created by the facilities that employ them—continue to undermine breastfeeding by encouraging supplementation of the healthy full-term infant with formula and giving free commercial formula gift packs to mothers (USDHHS, 2011).

Dunn, Kalich, Henning, and Fedrizzi (2014) reported a history of misinformation given to mothers during their breastfeeding experience, and also pointed to the issuance of sample formula gift packs and erroneous belief in the need for supplementation of the healthy, term infant by the majority of nursing staff. Additionally, Dunn et al. found a lack of knowledge of legislation and women's civil rights related to breastfeeding as a contributor to early cessation of breastfeeding. Edwards et al. (2015) found a lack of evidence-based training opportunities in nursing degree programs and postgraduate instruction.

Most continuing education courses are between 1 and 3 hours long (DeIoian et al., 2015; Dunn et al., 2014; Edwards et al., 2015). Those who complete short courses in lactation are sometimes offered a certificate, which is deceptively similar to a credential

but without the validation of an independent board certification exam (USLCA, 2017). The highest level and only independent board certification offered is through the IBLCE (2017) with a requirement of 1,000 hours of face-to-face work with breastfeeding dyads, 90 hours of lactation-specific education, and 14 credits in allied health science courses in the 5 years prior to sitting for the board certification exam in lactation practice. Board-certified individuals must recertify every 5 years through continuing education, and every 10 years through repeat examination (IBLCE, 2017). The USBC (2010) endorses a detailed list of core competencies considered to be of key importance for all health care professionals. The USBC emphasized more extensive proficiencies for maternal-child health providers and recommended adding these competencies to undergraduate, graduate, and postgraduate curricula.

Over the last decade, there has been a proliferation of lactation education courses offering certifications (U.S. Lactation Consultant Association [USLCA], 2017). These courses range from a few days to a week in duration (about 40 hours, sometimes with outside work assigned to equal the required 90 hours by IBLCE for those who wish to sit for the board certification exam); some provide a test at the end of the course and a paper certificate (USLCA, 2017). These short courses provide nurses or paraprofessionals with certificates that are confusing to other professionals, the organizations for which they work, and the breastfeeding families they are meant to serve (Hughes, 2017).

Current State of Nursing Practice

Nurses, as well as other health care professionals, continue to face an inadequate number of high-quality lactation training options, given the recommendations by various

professional bodies, including but not limited to the AAP (2012), the ACOG (2016), and the ABM (2015). Beginning in 2014, the Joint Commission (TJC), the nonprofit professional organization that accredits the majority of U.S. hospitals, required facilities that record 1,100 or more births per year to meet specific breastfeeding criteria (Feldman-Winter, Douglass-Bright, Bartick, & Matranga, 2013). Per Feldman-Winter et al. (2013), the core measure set includes exclusive breastmilk feeding of the healthy full-term singleton infant, barring medical contraindications; mother's preference not to breastfeed is not considered a contraindication. In the future, smaller delivery hospitals are anticipated to be included in TJC core measure set for exclusive breastfeeding (Feldman-Winter et al., 2013).

In 2017, Baby-Friendly USA (2016) announced that over 450 facilities in the United States and U.S. territories had received the baby-friendly designation, with more designations pending. The nurses in those facilities can expect 20 hours of initial training to prepare for implementation of the *Ten Steps to Successful Breastfeeding*; annual training and training at the time of hospital renewal of designation are required (USLCA, 2017). Although speaking of physicians specifically, Bass (2015) found that providers with insufficient training or skill sets were less likely to promote and support breastfeeding. Bass also stated that hospital and office policies, and implementation of each of the 10 steps, had a commensurate dose-related response as evidenced by an increase in breastfeeding exclusivity and duration (Bass, 2015). Unfortunately, it is difficult for providers to acquire the appropriate lactation education and skill-based training sets because these are not routinely offered in nursing or medical education

programs (Deloian et al., 2015). The current state of practice, for both nurses and other allied health professionals, continues to involve a verbal call to support breastfeeding without the correlative provision of education to do so creditably.

Standard Practices and Strategies

There is no federal legislative policy or procedure requiring that medical facilities address or support breastfeeding. A written policy that is communicated and reiterated routinely to all nursing and other clinical staff, along with required annual breastfeeding training and educational updates, is denoted as one of the important practices recommended by the Baby-Friendly Hospital Initiative (BFHI), per Feldman-Winter, Procaccini, and Merewood (2012). Cleminson, Oddie, Renfrew, and McGuire (2014) reported that mothers were more likely to experience early cessation of breastfeeding related to latch difficulties when skilled lactation care was not available. Sigman-Grant and Kim (2015) reported that providers' knowledge base did not change over a 10-year period despite the call for lactation education from their own professional organizations.

Terry, Barnes, Beal, Enciso, and Love-Zaranka (2016) stated that obtaining the 20 hours required by the BFHI *Ten Steps* program took up to 6 months, partially related to concern over paying nurses overtime. Both the military and civilian hospital in the study struggled with hiring more than one IBCLC, and the military hospital also struggled with regular turnover related to the transition of AD staff during pursuit of Baby-Friendly status (Terry et al., 2016). Per Terry et al. (2016), it took the military hospital four and one-half years to achieve Baby-Friendly designation as opposed to the two and one-half years needed by the civilian medical facility. For those organizations that are not

concentrating efforts on achievement of the BFHI, there is no incentive to hire IBCLCs or train staff in breastfeeding support. Nurses must be interested in and passionate about lactation and willing to pursue the additional accreditation without direct support from their institutions. If competing demands and staffing issues do not allow for designated time for lactation assistance, the supplemental training pursued by the nurse may not be used appropriately, or at all.

Local Background and Context

The identified contextual environment for the doctoral project was the outpatient women's health, family health, and pediatric clinics at the targeted MTF. Ideally the guideline will support the inpatient perinatal unit as well, given the obvious continuum of care along which the pregnant woman, then the newly delivered neonate, and the breastfeeding family, travels. Lastly, dissemination of the EBPG for support of breastfeeding in the military population should occur globally across the entirety of the MHS by the DoD/DHA. Again, there is no current breastfeeding policy or guideline in place at the targeted MTF.

Summary of Local Evidence: Institutional and State Context

The Centers for Disease Control and Prevention (CDC, 2016a, 2016b) reported that 90.8% of infants were ever breastfed in the state of Alaska in 2013, with the numbers falling as time progressed; 55.3% and 27.8% exclusively breastfeeding at three and six months respectively. Those doing any breastfeeding were at 62.1% at six months, with a drop to 38.4% at 12 months of age (CDC, 2016b). The CDC (2018) reported

improvement over the next several years in Alaska—citing 2015 data; 93.1% of infants ever breastfed, dropping to 42.1% exclusive breastfeeding at 6 months.

There were no data readily available at the targeted MTF on the proportion of either AD mothers or military beneficiaries who initiated breastfeeding, nor were there data on duration rates. The perinatal unit of the MTF was not one of the responding 72% of hospitals in Alaska in the 2015 survey, which focused on hospital policies and practices which impact infant nutrition and care practices (CDC, 2016a). Per expert personnel in the patient safety and quality department, discrepancies in how breastfeeding and bottle-feeding versus formula-feeding questions have been documented in the electronic health records of patients were noted; disentangling this data at the local level would require individual chart audits.

According to the Air Force Medical Operations Agency (AFMOA, n.d.), the focus of the USAF MHS (the targeted MTF was a USAF managed facility) was to optimize population health. The agency’s mission was listed as “leading change for better care and mission support through policy execution” with a vision of partnership with patients in a relationship of trust (AFMOA, n.d.). Working toward a PCMH, the goal of which promises to transform the military health system (Hudak et al., 2013), supports the AFMOA mission and vision, and is in alignment with provision of breastfeeding support services expansion at the MTF.

There were new complexities associated with lactation support at the targeted MTF that developed during the course of the EBPG creation. Beginning in January 2018 AD mothers no longer had the option of selecting the hospital at which they preferred to

deliver but were required by TRICARE (barring the need for a higher level of care than that offered by the targeted MTF) to give birth at the military hospital, according to staff in the benefits department. Professional lactation personnel were contracted by a medical staffing agency and placed in the MTF rather than serving in stable government service positions as federal employees. Only one of the contracted workers was specifically chartered to perform lactation support and counseling; the other (myself) was in the role of provider seeing many problem-oriented or well-visits daily. The potential exists on an annual or more frequent basis for these positions to be cut via failure to renew the contracts with the medical staffing companies.

Although most TRICARE beneficiaries are required to provide a waiver in writing confirming their understanding of the need to travel greater than usual distances for access to primary or urgent care within the contiguous U.S., Alaska residents are not similarly restricted related to access and health care delivery challenges found in the state (Assistant Secretary of Defense, 2011). This translates, per the Assistant Secretary of Defense, to approval of referrals to community resources for those who live great distances from any of the military bases found in Alaska.

There were approximately 600 deliveries during 2017 at the MTF (C. Pace, personal communication, January 5, 2018). The number of births taking place in the MTF was expected to increase with the TRICARE requirement for all AD personnel and military beneficiaries without secondary health insurance to deliver at the on-base facility (C. Pace, personal communication, January 8, 2018). This was expected to translate into the need for an increased number of lactation focused personnel as the number of births

increased, although this statistical data and expansion of services have not been calculated or addressed.

Broad support for changes in policy and targeted public health programs is indicated. The AAP (Eidelman, 2012), in its breastfeeding policy statement, noted that substantiating breastfeeding as the normative standard of infant feeding required not just individual management of the mother-baby couplet, but imaginative support programs backed by legislative and administrative policies. Perceptions of support for their breastfeeding goals varied among women across branches of service, as well as between enlisted personnel and officers, indicating inequity in the military health system (Martin et al., 2015). Per Drake et al. (2017), breastfeeding change efforts within facilities are negatively impacted by the lack of a coordinated policy across branches of services, all falling under the DoD/DHA umbrella. Per Uriell, Perry, Kee, and Burrell (2009), the majority of enlisted women responding to the authors' survey discontinued breastfeeding due to a reported lack of support in the workplace. Robust public health policies focusing on evidence-based practices within military communities have been shown to reinforce resilience and expand mission readiness capabilities (Murphy & Fairbank, 2013). There is every reason to believe that use of the EBPG as written in serving AD mothers in their breastfeeding goals would be likely to have the same result.

Federal Context

Per Holla-Bhar, Iellamo, Gupta, Smith, and Dadhich (2015) optimal breastfeeding rates could save more than 800,000 children under 5 annually on a global level, yet in 2013, \$58 billion U.S. was spent on commercial baby foods including infant formula.

Another \$3.6 billion dollars was spent annually in the United States, between public and government insurance agencies, to treat breastfeeding preventable illnesses (Spatz & Lessen, 2011). Eilerman et al. (2014) reported that 27% of young adults were excluded from military service because they did not meet the weight requirements of the armed or uniformed services. The economic burden of obesity in children is significant, with an estimated \$237 million spent annually on the management of the disorder, and the associated hospitalizations from comorbidities (Eilerman et al., 2014).

The diagnosis of obesity barring individuals from service has an incalculable indirect cost on the military readiness of the U.S. armed and uniformed forces, per Eilerman et al. (2014). Reynolds, Hennessy, and Polek (2013) concluded that breastfeeding in infancy may protect against both poor mental health outcomes and obesity at nine years of age. Breastfeeding was considered protective of mental well-being, independent of obesity prevention; a reduction of 36% obesity risk from 11 to 25 weeks breastfeeding was noted, and a 48% risk reduction was associated with breastfeeding for 26 weeks or longer (Reynolds et al., 2013). The implications for population health are clear.

Role of the DNP Student

Professional Context

I am an advanced practice registered nurse (APRN) trained and board-certified in both family practice and lactation. My early contributions to breastfeeding support were as a peer counselor offering mother-to-mother support via telephone and at monthly meetings. I expanded this to become a nutrition counselor through the Alaska Women,

Infants, and Children (WIC) supplemental nutrition program, where I completed the required hours and training to become board-certified in lactation. I realized that I had more to offer and elected to go on to nursing school, continuing through the Master of Science in nursing level, and now approaching the finalization of my doctoral capstone project. I have combined my passion for the holistic outlook and philosophy of nursing with my passion for lactation in the EBPG.

Role in the Doctoral Project

My role as a contracted employee placed within, and serving the needs of, a military health care facility fostered my ability to complete this project. Through practicum experiences I was able to increase collaboration across flights (known as departments in the outside health care system). The practicum experiences allowed me to gauge enthusiasm for the topic of lactation support at the MTF.

Motivations

My primary motivation for the EBPG project was my passionate belief in the power of nurturing one's child through breastfeeding. Not every woman wishes to breastfeed, but the decision and the experience should not be taken from her without the opportunity for her to consider of all the potential implications. I believe this is especially true for the AD servicewoman who could be called upon with little notice to lay her life on the line in service to the United States.

Potential Biases

My biggest potential bias was my wholehearted belief in the sanctity of breastfeeding on a deeply personal level. I almost lost the opportunity to breastfeed my

only child and grieve at the mere thought of it. I grieve for mothers who do not have the opportunity to breastfeed or do not have the opportunity to make the informed decision on whether or not to do so. I worry that my personal biases could become a paternalistic attitude in approaching the individual mother-infant dyad.

Role of the Project Team

Use of Project Team

I anticipated a project team which would necessarily include AD military staff from the women's health, pediatric, and inpatient perinatal departments. The team members were to act as advisors on both possible barriers and resources in creation of the EBPG for breastfeeding support of the AD servicewoman. Related to the inherent need for input from AD staff and servicewomen affected by an EBPG, is the problem of frequent changes occurring in a complex employment setting of temporary duty assignments, manning assist assignments, and permanent changes of station. The project team members were expected to switch frequently given the nature of work assignments in this setting, which can transform quickly. Unfortunately, related to difficulties in receiving approval for official feedback from AD staff, they were unable to serve as expert panelists or consistent team members for the EBPG.

Project Team Processes, Insights, and Responsibilities

The project team was to work through the formation of a lactation working group in the MTF. I was to lead the project team, holding regular meetings to which any interested parties were invited. The intention was to create sub-committees in order to utilize all of the expertise and passion that various volunteer members brought to the

group. I, along with any members of the project team who wished to contribute, were to have the opportunity to present evidence from the current literature which might have impacted the EPBG, along with other health care topics and issues impacted by or which might impact, breastfeeding support. The local lactation working group at the targeted MTF was poorly attended, given lack of support by leadership in requiring participation.

The broader project team included the experts selected to provide feedback on development of the EBPG of breastfeeding support in the military setting among AD servicewomen. Five experts were invited within the context of lactation expertise, military policy experience (having previously served in the military), and the translation of evidence into practice. One panelist was replaced with committee chair permission when contact was lost with the initial healthcare expert invited. The goal, presentation of a fully articulated EBPG supporting breastfeeding in an AD population, was realized in the fall of 2019.

Summary

The lack of a consistent policy or guideline for lactation support across the DoD/DHA or within the MTF remains as a glaring gap in practice. The creation of an EBPG intended to support AD servicewomen and their infants in their breastfeeding goals at the MTF is a step in addressing this practice gap. The framework of Pender's (2015) health promotion model heightened by Rogers's (2003) diffusion of innovations theory guided the focus of research in this population. Military women have expressed a perceived lack of support in breastfeeding their babies, more so among enlisted servicewomen where health inequities found in the larger U.S. population are translated

to the military health care setting (Drake et al., 2017; Martin et al., 2015; Uriell et al., 2009). The project was predicated upon an ardent belief that all women should have access to the support needed to meet their breastfeeding and infant feeding goals.

Section 3: Collection and Analysis of Evidence

The stated problem was the noted absence of an EBPG for breastfeeding support of the AD servicewoman at the targeted MTF. The purpose in creating an EBPG was to bridge the gap between existing research and practice at this site. Data are lacking on local perception of breastfeeding support, as well as initiation and duration rates at this MTF. Data show distinct drops in breastfeeding duration for women of Alaska, despite encouragement of breastfeeding policies in the state and across the nation (CDC, 2016a, 2018). Analysis of both extant literature on breastfeeding in the military and lactation support in the MHS informed the development of an appropriate EBPG not only to benefit this facility, but also to translate to policy creation across the DoD/DHA.

Practice-Focused Question

An EBPG was created focusing on provision of lactation support intended to improve the education of both patients and providers and resulting breastfeeding duration rates of AD servicewomen and their infants seen in the women's health, family health, pediatric, and perinatal departments of the MTF. The EBPG was independently validated by a panel of experts selected for their professional use of EBP and their lactation expertise, as well as (in several cases) their historical military health care system experience.

Clarification of Purpose

Transformation of the MHS into an integrated entity is an ongoing goal of leadership (AFMOA, n.d.). The aspiration of military administration is the patient-centered medical home (PCMH), and learning how the system works at an organizational

level increased my nursing knowledge and should contribute to the knowledge of others who follow (Del Rossi, Kientz, Padden, McGinnis, & Pawlowska, 2017; Hudak et al., 2013). Johnson, Lamson, Schwartz, Goldhammer, and Ellings (2015) indicated that future work on the use of research frameworks should include marketing of a health care concept (in this case, breastfeeding) to resound with decision makers and stakeholders.

In applying Pender's health promotion model framework through the lens of Rogers's diffusion of innovations theory, the power of adopters of innovations may be harnessed (Pender et al., 2015; Rogers, 2003). The MHS may be one of the largest service organizations in existence and use of the above models should be anticipated to be successful in such environments (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004; Pender et al., 2015; Rogers, 2003). Use of the model and framework will allow for presentation of the EBPG as written to the site and eventual testing of its efficacy in the context of the MTF and eventually across the DoD/DHA.

Operational Definitions

Breastfeeding support was operationalized as use of EBPs thought by current experts (and supported by literature) to increase initiation and duration of breastfeeding or breastmilk feeding.

Active duty (AD) servicewoman was operationalized as any full-time service person who receives paid maternity leave from what is considered full-time primary employment within one of the branches of the armed or uniformed services.

Sources of Evidence

Multiple professionals who are dedicated to the support of breastfeeding and nurturing of the breastfeeding dyad were used as resources to support the premise of this scholarly project. These resources included the experts approached to participate in providing feedback as part of the capstone expert panel. Robyn Roche-Paull (2010), who wrote a text on lived experiences of breastfeeding that were encountered while serving in the military, and Linda Smith, an experienced entrepreneur who taught breastfeeding skills to medical students and provided training to those wishing to sit for their board certification in lactation, both consented to participate on the capstone panel. Terriann Shell, who was both an RN and IBCLC, provided expert feedback; Ms. Shell had participated in lactation activities throughout her entire career, including at the state and national policy-making levels. Ada Scott, an RN and IBCLC with extensive neonatal intensive care unit (NICU) experience, agreed to provide professional feedback, replacing an expert panelist who withdrew from the project relatively recently. Lastly, Ginger Osborn, a nurse educator and IBCLC with both a military service history and experience in a baby-friendly hospital setting, served on the expert panel.

Relationship of Evidence to Purpose

The EBPG for the MTF was guided by model policies based on criteria as set forth by the BFHI *Ten Steps* (Baby-Friendly USA, 2016); the WHO (2016a, 2016b, 2017, 2018); the AAP (2012), ACOG (2016); and the ABM (Chantry et al., 2015; Hernández-Aguilar et al., 2018), among others. In addition, practices were researched, outlined, and included in the EBPG that were found to be pertinent to AD servicewomen (who may

have unpredictable, intermittent, or erratic schedules). These practices included but were not limited to pumping, hand expression of milk, and preparation for unique milk-storage needs.

Topinka, Turner, Lee, and Brown (2016) anticipated the need for increased support of breastfeeding for AD mothers and called for command flexibility and an openness to continuing the dialogue regarding culture change currently underway in the military setting. Topinka et al. emphasized the concept of patient-centered health care. Opposing points of view, or those recommending what some might consider softer approaches, were also taken into consideration. For example, the USPSTF's inclusion of breastfeeding promotion under the umbrella of support and its emphasis on the need to respect the autonomy of the mother who makes the informed decision not to breastfeed were important points to consider when developing the guiding document for care of this diverse population (Bibbins-Domingo et al., 2016).

Evidence Collection and Analysis to Address Purpose

A thorough review of existing research on breastfeeding in both civilian and military contexts, encompassing both historical literature and recently published studies, was included as part of the EBPG development and was outlined in a literature review matrix. Analysis of articles was conducted per the parameters outlined by Fineout-Overholt, Melnyk, Stillwell, and Williamson (2010), with faculty permission.

Analysis and Synthesis

Systems for Evidence Analysis

Evidence-based recommendations were gathered from respected authoritative bodies, which included but were not limited to Healthy People 2020 (HealthyPeople.gov, 2017), the U.S. Surgeon General (USDHHS, 2011), the Baby-Friendly Hospital Initiative (Baby-Friendly USA, 2012, 2016), and the WHO (2017) to inform the creation of the EBPG. Recommendations from these respected authorities were reviewed in conjunction with the existing literature on the diverse breastfeeding perceptions and policies within the MHS. The synthesis of well-researched and supported conventions that guided the creation of the EBPG protocol may increase patient advocacy through use of existing policy and may facilitate creation of more robust policies within the MTF, the MHS and eventually the DoD/DHA.

Procedural Integrity

Procedural integrity was ensured by following Walden University's (2017) *Manual for Clinical Practice Guideline Development (CPGD)*. Within the manual are instructions for ensuring anonymity of sites and sources as required by the Institutional Review Board (IRB, Walden University, 2017). The intention to protect all personnel and patients from any harm during the course of the EBPG project was realized.

Analysis Procedures

Simple statistical analysis was performed, showing the percentage of answers to four Likert scale questions as provided by each of the professional respondents serving as expert panelists (see Tables 1 through 4). Qualitative commentary from the panelists is

shared in Table 5, with brief analysis included. Some of the provided feedback guided changes made to the EBPG in its current iteration, as seen in Appendix B.

Summary

Upon approval, after oral defense and requested revisions, the project moved forward. There were multiple sources of evidence in the creation of the EBPG for use in the MHS and at the targeted MTF. Resources included experts in the field of lactation, perceptions of MHS support from military personnel, data on current initiation rates, and literature, including research within and outside the MHS and guidelines created locally and globally. A synthesis of available information on the subject of lactation support and the needs of the AD servicewoman helped direct and advise creation of the guideline for breastfeeding support in this unique population. In Section 4, I present a synthesis of the data, including professional feedback from the expert panelists and the application and dissemination of the EBPG for breastfeeding support in the AD population at the targeted MTF and potentially the DoD/DHA across the entirety of the MHS.

Section 4: Findings and Recommendations

Introduction

The targeted MTF has no hospital-based policy guiding lactation support. The EBPG project intended to help address this lack took longer than anticipated and was impacted by a variety of issues. Working to make changes and do research within the MHS or individual MTF is a difficult and arduous task, as information sharing not only may have implications for privacy violations, but also may create opportunities for breaches of classified information (Hudak et al., 2013). Personnel changes are made on a regular basis, at times with little or no notice, to meet staffing and readiness needs in a global military health system. The health research protection office (HRPO), despite Walden University IRB approval, was reluctant to allow dissemination of the EBPG to AD members serving in the pertinent flights: perinatal, pediatrics, women's, and family health clinics. This led to the replacement of expert panelists with experts in lactation and maternal-child health who were non-AD but had some association with or background in military healthcare.

Peer-reviewed research articles on breastfeeding support in general and breastfeeding support in the MHS were analyzed, as were statements by expert professional organizational consensus. Selections were carefully reviewed and included in a literature matrix for reference (see Appendix B for the EBPG, which includes the literature matrix). In addition, five expert panelists were invited to rate the applicability of the developed EBPG to the MTF and MHS setting. Those asked to participate in feedback were all experts in the field of lactation, with the majority having military

experience as a spouse, as an AD servicewoman, or a combination of the above. One respondent dropped out of the project and was replaced with an equally qualified professional in the field of lactation and the military health system, after express committee chair permission. See Appendix A for the questionnaire sent to panelists, which allowed for anonymous responses.

Findings and Implications

Simple descriptive statistics show expert panelist respondents' ranking of applicability of the EBPG in Tables 1 through 4 in response to the associated questions (see also Appendix A). All respondents felt it was highly likely that the EBPG would be applicable in the intended units at the targeted MTF, to include women's health, family health, pediatrics, and the inpatient perinatal/postpartum units (see Table 1). All respondents also felt that applicability of the EBPG would be consistent across the various U.S. military branches (see Table 2). There was less agreement among respondents regarding the promotion of a philosophy of increased advocacy and breastfeeding support by healthcare providers to their patients—military servicewomen and their infants (see Table 3). In addition, one respondent actually managed to insert an independent answer and comment that might be the equivalent of 6 on the 1-5 Likert scale (see Table 3, and Table 5). All respondents were once again in agreement that it was highly likely that the applicability of the EBPG would extend across the DoD for dissemination at all MTFs (see Table 4).

Table 1

In Response to Question 1: How Likely Is It That the EBPG Will Have Applicability in Women's Health, Family Health, Pediatric, and Inpatient Perinatal/Postpartum Units?

	Highly unlikely	Unlikely	Neutral	Likely	Highly likely
Proportion of respondents					100%

Table 2

In Response to Question 2: How Likely Is It That the EBPG Will Have Applicability Across Branches of the U.S. Military?

	Highly unlikely	Unlikely	Neutral	Likely	Highly likely
Proportion of respondents					100%

Table 3

In Response to Question 3: How Likely Is It That the EBPG Will Promote a Philosophy of Advocacy for Breastfeeding Support Among Health Care Providers of Military Servicewomen and Their Infants?

	Highly unlikely	Unlikely	Neutral	Likely	Highly likely	Above highly likely
Proportion of respondents				20%	60%	20%

Note. A respondent added an additional category above *Highly likely* on the provided scale, which is now labeled *Above highly likely* in this table.

Table 4

In Response to Question 4: How Likely Is It That the EBPG Has Potential Applicability at the Department of Defense Level for Dissemination Throughout All Military Treatment Facilities?

	Highly unlikely	Unlikely	Neutral	Likely	Highly likely
Proportion of respondents					100%

Qualitative feedback was also received from the panelists (see Table 5 for all commentary). The comments were generally positive, emphasizing the potential of the EBPG to serve the majority of stakeholders, the expressed wish that such a policy had been in existence at the time of service, and the scholarly nature of the document. Specifically, the evidence-based, concrete, specific recommendations that could impact clinical care directly were lauded. The less heartening commentary illustrates the difficulty seen by respondents in the likelihood of convincing leadership and medical providers to fully support the EBPG as policy. This is where, in my opinion, the health promotion model (Pender et al., 2015) underpinned by Rogers's (2003) diffusion of innovations theory may be employed by use of dissemination through enthusiastic early adopters of innovations. In addition, providers and leadership may be influenced by the knowledge that retention of AD servicewomen and improved mission readiness may both be influenced by providing exemplary lactation support (Drake et al., 2017).

Table 5

Respondents' Comments on the EBPG From the Anonymous Survey

Comment type	Comment text
General comments	<p>“The EBPG has huge potential.”</p> <p>“I wish this had been used when I was active duty.”</p> <p>“I can also speak to the lack of a clean place to pump and any support or acceptance/understanding from co-workers, health professionals or commanders.”</p> <p>“The issue will be getting the Providers and Leadership onboard to actually implement it.”</p> <p>“This proposal is scholarly, rigorous, and entirely consistent with the highest-level global/international maternal-child health policies.”</p> <p>“Breastfeeding/Lactation just is NOT a priority, at least not at the MTF where I work.”</p>
Specific comment: Q3	<p>“EXCEPTIONALLY EXCELLENT! More than advocacy—this proposal has concrete, specific and evidence-based recommendations for the clinical practices that make-or-break breastfeeding.”</p>

Positive Social Change

Support of breastfeeding in the AD military population has the potential to support the overall health of mothers and babies in this setting. This, in turn, may increase readiness and deployability of a force that shows less turnover than has traditionally been seen in this population and is therefore better trained. The MHS has the chance to set the tone as one of the largest employers in the world, impacting health on a global scale. Supporting military women in pursuit of their feeding and family goals supports the health of the nation as a whole.

Recommendations

Per feedback from expert panelists, I revised information in the EBPG document. I included the revised *Ten Steps* of the BFHI from the WHO (2017) and reference to

implementation guidance published since then (WHO, 2018). Baby-Friendly USA (2016) has elected to continue using an older iteration of the *Ten Steps*, possibly due to data continuity issues related to collection from participating facilities, although the organization was not clear on the rationale behind the decision. I added information on contacting Robyn Roche-Paull directly in order to obtain the most current list of known military policies. They may change with such rapidity that attaching an appendix with this information was deemed impractical, in that it would likely be outdated within months of publication. This was done per Ms. Roche-Paull's preference and with her express permission.

Contribution of the Doctoral Project Team

In the end, other than my interactions with AD providers within the targeted MTF and the MHS, there was no direct contribution of AD staff to the EBPG project as team members. This issue related directly to the limitations placed on research by the HRPO. I was not permitted to solicit medical opinions from AD members without incurring significant delays to the EBPG project.

Strengths and Limitations of the Project

Strengths of the project included my ability to gain firsthand insight into breastfeeding experiences during the creation of the EBPG by performing my clinical rotation under the auspices of Major Pace in a pediatric and women's health setting at the targeted MTF. In addition, my expert panelists all had significant lactation experience spanning a total of several decades, and the majority of them had served in the military or

experienced the life of a military spouse. All five expert panelists responded to my anonymous survey.

Limitations included the inability to use current AD personnel as expert panelists due to HRPO restrictions. No large-scale research has been done across the entire military health system, spanning all branches of the armed and uniformed services, on the support and difficulties experienced by the AD servicewoman on success or failure in meeting feeding goals. Such research, using the operational definitions and clarified terms related to breastfeeding as provided in earlier sections of this paper, would be invaluable. It would make confirmation of this EBPG as broadly applicable much easier. Currently, generalizability of the EBPG is assumed rather than known.

Section 5: Dissemination Plan

Robyn Roche-Paull indicated that she runs the only targeted AD breastfeeding support group at an MTF. It is called “Breastfeeding Buddies” and is held once a month for all AD breastfeeding/pumping mothers to attend (R. Roche-Paull, personal communication, December 4, 2019). Those who attend receive a place to discuss AD issues related to breastfeeding/pumping, as well as education on how to pump and store milk and how to follow and interpret regulations (R. Roche-Paull, personal communication, December 4, 2019). At 6 months, if a mother in the group is still breastfeeding and/or pumping and giving expressed human milk, she receives a Challenge Coin and a certificate (R. Roche-Paull, personal communication, December 4, 2019). Implementation of an AD support group at all MTFs is a lofty and admirable goal, which may be difficult to achieve without direct intervention by the DoD/DHA leadership. Perhaps further discussion and dissemination of this EBPG will foster such intervention.

Dissemination Plan

The DHA has initiated a lactation working group (LWG) to address deficiencies in support across the MHS (S. Stevens, personal communication, November 8, 2019). I plan to obtain further feedback by working through this group in order to expand the reach of the guideline and perhaps see it used across the military health system. The DoD, through the DHA, is showing expanded interest in family support. With the support of the newly implemented DHA-supported LWG helping meet the requirements of the

HRPO, I may be able to obtain further and more expansive feedback from a statistically significant number of health care providers serving at MTFs around the globe.

In addition, I have been encouraged to present this information at national and international conferences, including those conducted by USLCA, ILCA, and the National Association of Pediatric Nurse Practitioners (NAPNAP). I am in discussion with USLCA's Professional Development Office about presenting a webinar on the EBPG in the coming year. I would also like to submit an abstract for consideration to present the project at the next Military Health System Research Symposium taking place in 2020. The journal *Military Medicine* would be an appropriate outlet for dissemination of the guideline, in addition to peer-reviewed journals that focus on lactation, such as the *Journal of Human Lactation* or *Breastfeeding Medicine*.

Analysis of Self

One of the most important and impactful things which I learned in the creation of this project is the importance of inclusion. There are a multitude of diverse family structures not only in the broader social structure, but also within the military setting. Breastfeeding parents may elect to feed directly from the breast, to feed expressed breast milk by bottle or other device to their babies, and to continue to breastfeed beyond the length of time addressed by military policy or social construct. Parents may be same-gender couples, transgendered, teenagers, or older service members starting their own family without a partner, or they may use a surrogate birth parent. Use of inclusive terminology, at least in an initial statement, would be an improvement to this guideline, as there are parents who prefer the term *chestfeeding* (they may be transgendered

personnel or may be providing donor human milk in a supplemental nursing system). Any changes in this regard must reflect acknowledgment that the majority of the population still thinks of breastfeeding as occurring between a mother and her breastfeeding infant, and that there are some parts of the world where a same sex couple or transgendered person might even be targeted for death. Inclusion would also necessitate dissemination to a much broader range of military health personnel and peer support groups which service the military setting, for more targeted feedback on potential improvements.

Summary

Meeting feeding goals and feeling supported in doing so are goals of every mother and family, regardless of their status as civilians or AD personnel. The human race has survived by providing personalized nutrition to the majority of its most vulnerable population. Support of lactation is a global issue, not only due to the fact that servicewomen may be stationed anywhere around the world, but also because military health care providers may serve not only AD personnel, but also civilian populations wherever they are stationed. This EBPG has the potential to impact maternal-child care in a positive manner on a global scale.

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Appendix A: Anonymous Questionnaire to Subject Matter Expert Panelists

The following survey questions are to be answered after reading the attached evidence-based practice guideline (EBPG) for **Breastfeeding Support of the Active Duty Servicewoman in the Military Health System**. The survey questions are to be answered using the Likert Scale provided. Below each question is space for additional comments the panelist might have. Please answer all questions based on your professional opinion as a subject matter expert in either the military health setting or as a lactation expert (or both). If feedback is such that substantial changes are needed to the EBPG then you may receive this survey along with the revised document for repeat review.

The following survey questions are to be answered after reading the previously sent evidence-based practice guideline (EBPG) for Breastfeeding Support of the Active Duty Servicewoman in the Military Health System. The survey questions are to be answered using the Likert Scale provided. Below the questions there is space for additional comments the panelist might have. Please answer all questions based on your professional opinion as a subject matter expert with experience in either the military health setting or as a lactation expert (or both). Remember, ALL RESPONSES ARE ANONYMOUS and will be tabulated, unless you give identifying information in the comments field.

1 = Highly Unlikely 2 = Unlikely 3 = Neutral 4 = Likely 5 = Highly Likely

1. How likely is it that the EBPG will have applicability in women's health, family health, pediatric, and inpatient perinatal/postpartum units?
2. How likely is it that the EBPG will have applicability across branches of the US military?
3. How likely is it that the EBPG will promote a philosophy of advocacy for breastfeeding support among health care providers of military servicewomen and their infants?
4. How likely is it that the EBPG has potential applicability at the Department of Defense level for dissemination throughout all military treatment facilities?

Any other comments and/or questions:

Appendix B: Evidence-Based Practice Guideline

for Breastfeeding Support of the Active Duty Servicewoman

Evidence-Based Practice Guideline: Breastfeeding Support of the Active Duty Servicewoman in the Military Health System

Heidi A. Koslo, APRN, FNP-BC, IBCLC

Purpose

The purpose of this evidence-based practice guideline (EBPG) is to promote a philosophy of maternal-infant care within the military health system (MHS), operating under the umbrella of the Department of Defense (DoD) and Defense Health Agency (DHA), that advocates for breastfeeding as the infant feeding norm and supports the physiologic functions involved in the establishment of this maternal-infant process. The EBPG was created within the framework of Pender's health promotion model, underscored and supported by Rogers's diffusion of innovations theory (Pender, Murdaugh, & Parsons, 2015; Rogers, 2003). The EBPG is a distillation meant to guide creation of a support system in a military setting, rather than an exhaustive compilation of instructions on lactation care, as many detailed resources and training programs already exist. A lactation support program is meant to assist breastfeeding families with initiating and developing a successful and satisfying experience, while respecting the autonomy of families who make the informed decision not to breastfeed (Bibbins-Domingo et al., 2016).

The EBPG should reinforce the quadruple aim of the military patient-centered medical home (PCMH) by supporting the following: Population health, patient satisfaction with care, control of costs to the military health complex, and mission readiness (Hudak et al., 2013). The EBPG should support the integration of health care service provision across branches as advocated in the mission

of the DHA (2013) in order to achieve the quadruple aim. Buckler (2011) specifically indicated that supporting breastfeeding could enhance readiness as part of one of the largest MHS service lines, maternity and postpartum care. The EBPG should also reinforce the collaborative nature of breastfeeding support practices conducted by advanced practice nurses, including the contributions of specialists such as pediatricians, obstetricians and gynecologists, other advanced practice healthcare providers, nurses at all levels of education and scope of practice, medical technicians, physical and occupational therapists, speech and language pathologists, otorhinolaryngologists, dieticians; not to exclude peer support groups, lactation counselors, and internationally board certified lactation consultants (IBCLCs), among others. Lastly, the EBPG should reinforce and expand any existing military policy or breastfeeding support guideline in place at the time of writing, or created after the writing, of the EBPG.

The EBPG is based on recommendations from the most recent breastfeeding guidelines, model policies and statements issued by the following organizations: The Academy of Breastfeeding Medicine (ABM Protocol Committee, 2010; Chantry, Eglash, & Labbok, 2015; Hernández-Aguilar et al., 2018); the American Academy of Family Physicians (AAFP, 2017); the American Academy of Pediatrics (AAP, 2012); the American College of Obstetricians and Gynecologists (ACOG, 2016); the American Nurses Association (Siska, 2011); Baby-Friendly USA (2012; 2016); the Centers for

Disease Control and Prevention (CDC, 2018); the *Surgeon General's Call to Action to Support Breastfeeding* (U.S. Department of Health and Human Services, USDHHS, 2011); the U.S. Preventive Services Task Force (USPSTF, Bibbins-Domingo et al., 2016); the World Health Organization (WHO, 1981, 2016a, 2016b, 2017, 2018); and WHO/United Nations International Children's Emergency Fund (UNICEF, 2003).

Necessity for the EBPG was extrapolated from previous research done both within and outside the MHS involving military beneficiaries and active duty servicewomen. The research suggests that policy creation and support for breastfeeding has remained suboptimal despite the acknowledged positive health impact that breastfeeding provides for both mothers and infants (Bales, Washburn, & Bales, 2012; Buckler, 2011; Drake, Cadwell, & Dodgson, 2017; Farwell, 2017; Martin, Drake, Yoder, Gibson, & Litke, 2015; Roche-Paull, 2010, 2019; Terry, Barnes, Beal, Enciso, & Love-Zaranka, 2016; Topinka, Turner, Lee, & Brown, 2016; Uriell, Perry, Kee, & Burrell, 2009). Farwell (2017) found that while active duty (AD) women serving in the U.S. military started breastfeeding at similar rates to their civilian counterparts, significant drops in duration were almost universally found at four and six months postpartum, underscoring the point that military mothers are not meeting their feeding goals and require support.

The History of Breastfeeding in the Military

Reproductive and parenting issues have affected female service members throughout United States history. Per Fitzgerald et al, (2013) a woman in 1951 could be discharged from service for being or becoming a parent or becoming pregnant and in 2009 a policy was created (and was rescinded within two months of initial implementation) that

allowed for court-martial if a soldier assigned to Iraq became pregnant. At the advent of the all-volunteer military force era which occurred in 1974 (post-draft requirements), women represented less than 10% of the armed forces (Office of the Under Secretary of Defense, Personnel and Readiness, 2018).

In 2016, women represented 15.5% of the enlisted forces and 22.9% of commissioned officers, after peaking at 18.8% enlisted representation in 2000 (Office of the Under Secretary of Defense, Personnel and Readiness, 2018). In 1996, Wahl and Randall noted the difficulties encountered by military mothers facing field exercises, unit jobs, or deployment without any deference to the presence of a young, breastfeeding infant. The authors also noted the difficulties women experienced in managing a professional life accompanied by high demands while attempting to find satisfaction in their personal life, especially as a single parent (Wahl & Randall, 1996).

Bell and Ritchie (2003a, 2003b), in their two-part article on breastfeeding in the military, reported that breastfeeding support was inconsistent and that while breastfeeding was 'supported' there was no official or standard documentation on how it was to be supported in either the DoD or the TRICARE benefits program. The authors found that lactation consultants were an important component of breastfeeding programs, as other providers, including physicians and nurses, did not have the requisite training to address common problems (Bell & Ritchie, 2003a, 2003b). Bell and Ritchie advocated for full-time lactation consultants, access to space and equipment for pumping at work as most military women did not have private offices, and reduction of workplace exposure to hazardous materials. Stevens and Janke (2003) reported the results of an interactive interview process delineating the following issues AD women were facing: Pumping (time, place, and support during the duty

day), temporary duty assignments (separation from infant), universal breastfeeding concerns such as bonding and lastly, military obligations such as meeting field exercise requirements, weight requirements, and issues of rank. The authors did note that the women in their studies found breastfeeding to be a valuable experience despite the specific concerns related to their military status (Stevens & Janke, 2003).

Saunders-Goldson and Edwards (2004) reported breastfeeding intentions by African American (AA) women were related to educational status and social norms in their home communities, but most tightly tied to age and self-confidence, or personal perception of success (70 of the 95 respondents were active-duty service members). In 2005, Rishel and Sweeney found that interaction with lactation professionals dedicated to that role increased breastfeeding initiation and duration in active-duty mothers, although rates dropped, regardless of such interaction, at four months. Haas et al., in 2006, suggested that the exploration of return to duty impact on active-duty women's breastfeeding rates could help inform development of improved support in this population, and help determine why fewer women were breastfeeding to six months and beyond. In this study, higher education levels and prenatal breastfeeding education both impacted duration rates at both six weeks and six months, although active-duty numbers were not specifically separated out on those two points (Haas et al., 2006).

In 2007, Christ et al. studied the impact of home-visits for the postpartum and two-week infant well exam but found no difference in breastfeeding rates between clinic and home-visit groups. This is despite an aggressive lactation program at the base where the project was carried out (Christ et al., 2007). Of note, lactation consultants were not the providers making the home visits, and this

could make a difference in this care model as the authors emphasized lactation care as an important area requiring further work (Christ et al., 2007). Rosen, Krueger, Carney, and Graham (2008) found a positive correlation between initiation and duration of breastfeeding, including in active-duty women, with attendance at a prenatal breastfeeding education session.

Policies and perceptions of support began to show some change in the last decade. Support for prenatal breastfeeding education throughout every trimester, changes in the way women were queried as to their breastfeeding intentions, and inclusion of other family members in breastfeeding education and support made its way into DoD-wide guidelines on pregnancy management (Department of Defense, Department of Veterans Affairs, 2009). Uriell et al. (2009) found one-third of officers and one-half of enlisted women in the Navy felt supported in their intention to breastfeed but were limited by the lack of a secluded or private place in which to pump their milk. Workplace support is crucial as part-time or extended leaves of absence may not be feasible within the environment of the armed forces (Roche-Paull, 2010). There are still barriers and hurdles to be overcome within the MHS and the DoD.

In 2011, Buckler pointed out that maternity services made up one of the largest healthcare service lines within the system. At that time lactation consultants were not covered providers by the TRICARE benefits system (Buckler, 2011). Marshall et al. (2011) outlined goals of the patient-centered medical home (PCMH) within the MHS, including improving quality of care and increasing patient satisfaction: More consistent provision of lactation services would fall within the parameters of those goals. Bales et al. (2012) reported that AD members who experienced military related difficulties continued to fall short of breastfeeding goals.

A small percentage of AD servicewomen, per Bales et al. (2012) were willing to report barriers consistent with long work hours, discomfort with pumping during the duty day, lack of pumping facilities, and anticipated temporary duty assignments or field and other training exercises which would separate them from their infant(s) or interfere with their ability to pump.

Sleutel (2012) related the personal story (case study) of an active-duty Air Force physician who, in 2007, was deployed to Afghanistan, and her frustrations in continuing to provide milk to her less than 12-month old infant via international shipping. Privilege of rank may have its advantages. Mao, Narang, and Lopreiato (2012) found that while active-duty and non-AD women were equally likely to breastfeed, officers were three times more likely than enlisted mothers to do so. In addition, this study (as do many) defined breastfeeding as providing any human milk to the baby, not differentiating between full and partial breastfed rates (Mao et al., 2012).

Goodman et al. (2013) found that active-duty mothers reported that clear policies outlining number of days allotted to recovery and time off for the primary caregiver, as well as specific timing and length of deployments, were pertinent to their breastfeeding concerns. Fitzgerald et al. (2013) reported that breastfeeding alone was not a limiting condition that would prevent deployment, per policy statements. Active-duty mothers were concerned with inflexibility of family plans related to care of their children, and denials of release from temporary duty or deployment situations when a crisis arose impacting childcare (Goodman et al., 2013). Finally, Goodman et al. reported that mothers felt policies related to family readiness were most supportive of dependent mothers without fully addressing the active-duty woman's needs.

One of the most concerning issues in breastfeeding support has been the correlation between racial disparities and health issues, particularly in AA women (Lundquist, Xu, Barfield, & Elo, 2014). In 2016, 43.4% of female Army accessions were labeled as racially diverse by the DoD (Office of the Under Secretary of Defense, Personnel and Readiness, 2018). Lundquist et al. (2014) were able to report that in the military setting, racial disparities in breastfeeding initiation were greatly reduced between AA and other women, possibly due to the stable employment, educational and health care opportunities afforded to all active-duty personnel. In addition, diffusion of positive health behaviors across groups may be seen in a military environment which is less segregated than a civilian one (Lundquist et al., 2014).

There is a sense of hopeful progress. Given these overall improvements and successes, is an evidence-based guideline within the MHS and the DoD/DHA needed in order to improve breastfeeding support in the active-duty population? More recent research indicates the broader scope of needs for breastfeeding support of the active-duty servicewoman remain unmet.

Guideline Development and Rationale

Currently, each branch of the armed and uniformed services (as well as some military installations) have their own set of policies and protocols related to pregnancy and breastfeeding, offering some rights and protections (although not equal ones) across the branches (Martin et al., 2015). This list is more current and summarized well, available from Robyn Roche-Paull (2019) by email (see reference list), author of *Breastfeeding in combat boots: A survival guide to successful breastfeeding while serving in the military*. Drake et al. (2017) found variation across the branches impacts women as to interpretation of what constitutes access to adequate

facilities and length of work breaks. Strong consideration should be given to adoption of the EBPG (or a derivation of it) as a standard or universal policy across all branches of service, providing consistency and continuity in support by policy and procedure. Pertinent to breastfeeding support is the report by the Office of the Under Secretary of Defense, Personnel and Readiness (2018) that over one-third of the AD armed forces in 2016 were aged 20 to 24 years, a prime child-bearing and breastfeeding demographic.

Previously discussed research has been limited by low numbers that have not distinguished between dependent and active-duty participants and inclusion of only one installation or one branch of service. In a more recent study, which was able to obtain survey responses from active-duty women across all military branches, Martin et al. (2015) found that Air Force personnel had the greatest perception of support and Army personnel had the lowest. Additionally, Martin and colleagues found that Hispanic women of enlisted Army status were at the highest risk of not meeting breastfeeding goals due to lack of breastfeeding support. The authors concluded that standardized and consistently enforced policies promoting culture change in perceptions of the importance of breastfeeding support across the branches were still needed (Martin et al., 2015).

Previously discussed research indicated that prenatal breastfeeding support had a positive impact on breastfeeding initiation and duration in the MHS but did not necessarily differentiate between dependent and active-duty mothers. Walton, Shaffer, and Heaton (2015) found that breastfeeding rates were equal in those women seen by certified nurse midwives (CNMs) as in those of similar gestational age attending Centering Pregnancy group prenatal appointments, and breastfeeding duration rates at six weeks postpartum were slightly higher. The

majority of attendees were younger, enlisted, active-duty and first-time mothers (Walton, Shaffer, & Heaton, 2015). The Centering Pregnancy prenatal program was found to be a cost-effective and efficacious education program with a positive breastfeeding outcome for AD mothers and will hopefully be expanded to all MHS facilities that have a labor and delivery unit (Walton et al., 2015).

Topinka et al. (2016), after review of national and military policy and breastfeeding law, suggest that the MHS and DoD/DHA have not only the opportunity to catch up with the civilian public health culture, but also the duty to provide leadership in the arena of workplace and public breastfeeding support and culture change. Despite reporting that return to work itself did not impact breastfeeding success, active-duty military women stated that lack of feeding or pumping locations, lack of hydration, inadequate breastmilk storage areas, and workplace and job demands all affected their ability to continue breastfeeding and meet their lactation goals (Braun, Kennedy, Womack, & Wilson, 2016). Terry et al. (2016) found that implementing all the steps of the Baby Friendly Hospital Initiative (BFHI – discussed later in more detail) raised breastfeeding rates to surpass 90% in a military hospital, but it took almost five years due to staff turnover rate and conflicts with active-duty readiness training schedules (as compared to almost half that time in a nearby nonmilitary hospital). An interesting and unexpected finding was that along with increased breastfeeding rates, the hospitals had increased patient volume as women were choosing to give birth in a baby-friendly facility (Terry et al., 2016). Wouk, Tully, and Labbok (2016) found that prenatal interventions per step 3 of the BFHI were effective in helping women make informed decisions about infant feeding, and increased overall initiation rates, although level of efficacy of specific interventions was unclear.

Drake et al. (2017) called for a more uniform and specific lactation policy from the DoD/DHA, in coordination with TRICARE, to decrease individualized interpretation of policy by supervisors. Interpretation rather than clear policy may particularly and negatively impact the most vulnerable enlisted and minority personnel (Drake et al., 2017). Farwell (2017) in her integrative review of literature on breastfeeding in the military, found that barriers included the pressures and opposing commitments based on service rank as well as personal versus professional roles, a lack of pumping facilities at the assigned worksite, difficulty in meeting physical and weight standards across the branches, potential exposure to hazardous materials and fear that such exposures may negatively impact the infant, and mother/infant separation for extended periods.

Englert and Yablonsky (2019), in a scoping review and gap analysis of health-related topics concerning women in the U.S. military, found a total of five breastfeeding articles, only one of which was considered 'high-quality,' and reported that breastfeeding comprised a significant gap in the obstetric-gynecologic health service line. Buckler (2011) reported that maternity care was one of the largest service lines in the MHS, indicating it would make sense to appropriately support it. Yet the primary concerns of active-duty servicewomen who decide to breastfeed do not appear to have changed significantly since Wahl and Randall's 1996 report.

The U.S. Surgeon General, the highest-ranking medical officer in the serving in the U.S. Public Health Service, issued a *Call to Action* (2011) to all leadership in government, community and medical settings to begin the endeavor to support families in meeting their breastfeeding goals. A clear but flexible blueprint was issued, yet almost a decade later many of the items, including

public health infrastructure, surveillance mechanisms, health system employee education, worksite lactation programs, and others remain either lacking in enforcement or unaddressed altogether (CDC, 2018).

The major points of the EBPG borrow strongly from model policy created by the Academy of Breastfeeding Medicine (ABM) clinical protocol and the ABM position on breastfeeding (ABM, 2010; Chantry et al., 2015; Hernández-Aguilar et al., 2018). Additionally, this EBPG explicitly delineates points pertinent to consider in delivery of lactation services and education to support the unique needs of the AD servicewoman in the United States MHS. The guideline could be disseminated and serve as model policy across all military branches as DoD/DHA protocol, similar to the DoD/VA updated and standardized maternity leave policy issued February of 2016 (Secretary of Defense, 2016).

The Benefits of Breastfeeding versus the Risks of Not Breastfeeding

The benefits of breastfeeding have been consistently reported in the literature for decades. The strategy of discussing the risks of not breastfeeding, and indeed the purported extent of benefits of breastfeeding, have been questioned by Wilson and Wilson (2018), among others, in recent years. As already acknowledged, the research and levels of evidence for illness or chronic disease prevention by breastfeeding is limited by the inability to conduct randomized controlled trials on large populations. Unfortunately, Wilson and Wilson (2018) elected to compare research on the impact of breastfeeding on chronic disease to studies which are more clearly able to show causation links to the recommended intervention (such as aspirin use or screening mammography). The authors also questioned the potential harms in breastfeeding advocacy (Wilson & Wilson, 2018). Patnode,

Henninger, Senger, Perdue, and Whitlock (2016), under the auspices of the U.S. Preventive Services Task Force (USPSTF), found many benefits and few perceived or reported harms related to breastfeeding promotion and support interventions in their well-done review of randomized-controlled trials. Indeed, Bibbins-Domingo et al. (2016), in the formal USPSTF position on use of primary care interventions to support breastfeeding, reported such interventions to have a moderate net benefit on breastfeeding rates with harms “no greater than small” (p. 1692). Yet this research was quoted by Wilson and Wilson (2018) in support of the argued potential harms of breastfeeding support and promotion as likely to engender feelings of guilt in mothers who are not successful or decide not to breastfeed.

Some authors have advocated discussing the risks of not breastfeeding, as lactation is a normal mammalian function and formula feeding is a replacement for this function (Spatz & Lessen, 2011). Regardless of the terminology used, research continues to support the importance of breastfeeding as the infant’s first food whenever possible. Mosca and Gianni (2017) found that an overwhelming body of evidence continues to verify the benefits of human milk on maternal and child health, both short and long-term, including:

- Mortality reduction compared to those never breastfed, including partial or predominant breastfeeding
- Decreased risk of diarrheal and respiratory illness, including associated hospitalizations, to five years of age
- Reduced risk of otitis media, which is dose-related, to two years of age
- Decreased likelihood of development of type II diabetes mellitus
- Reduced risk of overweight and obesity
- Reduced risk of leukemia development for those any breastfed

- An increase in intelligence quotient that remains statistically significant even when adjusting for confounding factors
- Reduction of multiple complications associated with prematurity.

Maternal health outcomes were confirmed, including:

- Appropriate birth spacing
- Overall reduction in breast and ovarian cancer incidence, which are dose related
- Protective effect on development of Type 2 diabetes mellitus
- Lastly, a possible small reduction in long-term adiposity development, also dose related (Mosca & Gianni, 2017).

Bartick et al. (2016), in a cost analysis of seven disease conditions, estimated that suboptimal breastfeeding rates cost the United States \$3 billion in medical and \$1.3 billion in nonmedical costs annually as well as \$14 billion in premature death costs. Global economic value of breastmilk production, if 95% of infants and children were optimally breastfed, was estimated at more than \$3,380 billion annually, a gain of \$1,400 billion (Holla-Bhar, Iellamo, Gupta, Smith, & Dadhich, 2015). Drake et al. (2017) speculated that breastfeeding support cost would be minimal and return on investment high for the MHS and TRICARE, including retention of already well-trained personnel who are loyal to their employer, improved health of women, and reduction in health care benefit costs. Munn, Newman, Mueller, Phillips, and Taylor (2016) suggest that costs and the commensurate savings associated with breastfeeding support make it a health imperative.

McFadden et al. (2016), in a commentary published in the *Lancet* on their own Breastfeeding Series, discussed the strength of marketing campaigns to mothers and providers alike by artificial baby milk manufacturers along with the companies’ global efforts to undermine not only maternal but societal confidence in breastfeeding.

Such marketing tactics have turned an important replacement food for infants who cannot be breastfed into a normal choice for any infant (McFadden et al., 2016). Piwoz and Huffman (2015) stated that marketing of infant formula impacts social acceptance of breastmilk substitutes as equitable to or even better than human milk. The use of health care workers to promote breastmilk substitutes by providing free gifts, both that may be given to families, or that are branded and worn by staff, has been shown to have a negative impact on breastfeeding support (Rosen-Carole, Hartman, & the Academy of Breastfeeding Medicine, 2015; Hernández-Aguilar et al., 2018).

It is important to note that compliance with *The Code* is not intended to manipulate women who cannot or who decide not to breastfeed into feelings of guilt, but instead advocates safe infant feeding for all, including appropriate mixing and use of infant formula, and advocates limiting the marketing of formula as a choice rather than what it should be: A mutual provider/mother decision based on evidence-informed practice (Soldavini & Taillie, 2017). In an interesting analogy Thorley (2015) compared the supply of infant formula to hospitals for free distribution to new mothers (and other marketing tactics) as akin to the appearance of endorsement provided by governments when providing branded tobacco products to soldiers, which was practiced world-wide for decades.

In whatever manner the conversation is framed the overriding message is that health care interests of populations should be considered above financial interests of corporations in an ethical society. At the same time the partnered decision-making between provider and mother, and maternal opinion on the best care of her infant, must be respected and supported.

Barriers to Breastfeeding as an Active Duty Servicewoman

Military women face the same barriers as all mothers when it comes to breastfeeding. Thulier and Mercer (2009) reported multiple variables encompassing barriers to breastfeeding success: Demographic (e.g., socioeconomic and marital status), biological (e.g., physical challenges and maternal smoking), social (e.g., return to work and inconsistent professional input) and psychological (maternal intention, interest, and confidence). Common reasons for early cessation of breastfeeding include lack of support and guidance from family, community and hospital staff, with difficulty in finding skilled support a specific concern among mothers (Cleminson, Oddie, Renfrew, & McGuire, 2014).

Despite high initiation rates of over 83%, a drastic reduction to 50% (any breastfeeding) at three months and 25% (any breastfeeding) at six months, illustrates that women are not receiving the support they need to continue breastfeeding from family, the health care system, or from employers (CDC, 2018). Between the 1950's and 1970's in the United States only about one in five women elected to initiate breastfeeding, reducing the likelihood that the next generation of women knew anyone, personally or professionally, with lactation or breastfeeding experience (Sriraman & Kellams, 2016). Hospital discharge packs containing infant formula samples affect maternal self-confidence, and the products themselves may be labeled in such a way that parents misunderstand use of the product, which increases early cessation (Piwoz & Huffman, 2015).

Jolly et al. (2012) indicated that peer support might be more effective in settings where there is little lactation support infrastructure (low- or middle-income countries) and less effective in higher-income countries. However, community normalization of

breastfeeding and peer support, both of which are culturally influenced, continue to factor into breastfeeding success or failure, according to Bevan and Brown (2014). Yimyam and Hanpa (2014) found that an active support campaign for the lactating and pumping working mother resulted in higher exclusive, as well as any, breastfeeding rates than prior to initiation of the campaign. These apparently contrasting findings make sense when one considers the inconsistency of lactation support across different regions and settings.

In addition, there are potential, perceived and/or real disadvantages of breastfeeding in a military job setting, and these are the issues that must be addressed to provide appropriate support to servicewomen. Active-duty women face unique workplace and job demands that induce them to elect early cessation of breastfeeding so as to avoid conflicts and challenges in the duty setting (Farwell, 2017). These issues may be related to pumping and storage of milk and the inappropriate locations which may be provided for same, and the inability to maintain adequate hydration due to demanding and unpredictable schedules which in turn affects maternal milk supply (Braun et al., 2016).

Workplace barriers also include pending deployments or temporary duty assignments, leave limitations, and lack of access to a breast pump (Bales et al., 2012). Per Chen, Johnson, and Rosenthal (2011), education on breastfeeding from a variety of sources and teaching on the use of breast pumps was associated with a longer duration of breastmilk feeding in those returning to work. However, a negative association was reported by Chen et al. (2011) when women came into contact *only* with health care providers (which was attributed to the variability of knowledge and evidence-based practices among those providers). Drake et al. (2017) called for enhanced access to breast

pumps, supplies, and lactation services for all women.

Fear of exposure to hazardous materials, their impact on the milk supply, and exposure to the infant, are additional barriers for active-duty women (Drake et al., 2017). Embarrassment or harassment in what remains the male-dominated career field of military service may impact continued breastfeeding on return to duty (Braun et al., 2016). Disturbingly, Martin et al. (2015) found that race and rank (Hispanic enlisted) and branch of service (Army) negatively impact the servicewoman's perception of support and ability to succeed in her breastfeeding goals.

The issues of family planning, structure, pregnancy, breastfeeding, and childcare affect the military servicewoman uniquely in that they may challenge perception of readiness and certainly affect deployment status (Fitzgerald et al., 2013). Berry (2010) clarified implementation of regulations which apply to nursing mothers in federal employment, as mandated by the Affordable Care Act (ACA), but unfortunately this applies only to civilian federal employees. In 2011, Buckler confirmed that the Affordable Care Act (ACA) protections for breastfeeding in the workplace did not apply to military women.

While all branches now have some sort of policy in place to protect and support breastfeeding to some extent, guaranteed break time and sanitary places to pump are not necessarily mandated by the ACA, and continue to vary between branches (Farwell, 2017). The Academy of Breastfeeding Medicine Committee's (2010) model policy statement and updates (Chantry et al., 2015; Hernández-Aguilar et al., 2018) call for eliminating institutional barriers to breastfeeding success. The American Nurses Association (Siska, 2011) calls for nurses, as America's most trusted professionals, to

advocate for breastfeeding as a health promotion and disease prevention behavior which should be continued on the mother's return to the work force. In addition, all major healthcare professional organizations support breastfeeding or feeding of human milk to infants as the norm, and indicate removal or reduction of barriers across all organizational cultures, which would include the DHA, on behalf of the integration of all military health services (AAP, 2012; AAFP, 2017; ACOG, 2016; Bibbins-Domingo et al., 2016; CDC, 2018; USDHHS, 2011; WHO, 1981, 2016a, 2016b, 2017, 2018; WHO/UNICEF, 2003).

The military complex is a set of institutions with many policies and directives which may be contradictory and difficult to navigate and streamline; the collaboration of TRICARE and the DoD via the DHA is likely to be beneficial to both (Drake et al., 2017). Topinka et al. (2016) equated commitment to breastfeeding to commitment to principled leadership which is a quality sought after in military personnel. Supporting active-duty servicewomen in their infant feeding goals, from the Department of Defense down and across all branches of service cared for within the MHS, may therefore be considered a leadership issue and should be seen as a military health system imperative.

Education Needs

Education of providers on the practical support of the breastfeeding family is desperately needed. The U.S. Surgeon General notes "there are few opportunities for future physicians and nurses to obtain education and training on breastfeeding, and the information on breastfeeding in medical texts is often incomplete, inconsistent, and inaccurate" (USDHHS, 2011, p. 46). Radzimirski and Callister (2015) reported lack of consistency in knowledge from providers on current lactation practice, along with insufficient assessment and therapeutic skills, promoted early weaning, especially on

maternal return to work. Rosen-Carole et al. (2019) found that while provider attitudes related to provision of breastfeeding support increased over a period of two decades, education of providers had not changed in quality or quantity, leaving them ill-prepared to provide practical support. The Academy of Breastfeeding Medicine Protocol Committee (2010), reiterated by Chantry et al. in the 2015 revision, and Hernández-Aguilar et al. in the 2018 revision of the Academy of Breastfeeding Medicine's position statement, emphasized the role that physicians play in breastfeeding support and the imperative to provide training in medical school, during practice, and through research forums.

The United States Breastfeeding Committee (USBC, 2010) endorsed a detailed list of core competencies considered to be key to all health care professionals, with more extensive proficiencies advised for maternal-child health providers, and the recommendation to add these competencies to all levels of health care curricula. The United States Lactation Consultant Association (USLCA, 2017) provides a helpful guide to understanding levels of education and credentials in lactation support. It should be noted that neither organization suggests that board-certification be a requirement for all providers in maternal-child health, but instead promote awareness of limitations so that providers can refer to the most appropriate lactation professional when women are having problems (USBC, 2010; USLCA, 2017).

In a systematic review of structured as opposed to unstructured breastfeeding education, Beake, Pellowe, Dykes, Schmied, and Bick (2011) found that multi-faceted programs including structured classes taught by knowledgeable professionals were more closely associated with higher breastfeeding initiation rates. The authors noted that the costs for additional staff training must be offset against the potential for reduction of

health care needs over time (Beake et al., 2011). Haas et al. (2006) noted that education in the form of in-service sessions provided by lactation professionals in a military hospital improved the ability for staff at all levels to communicate and facilitate healthy support practices.

Mellin, Poplawski, Gole, and Mass (2011) found a provider-targeted breastfeeding educational program (including protocols) improved knowledge, comfort levels, and attitudes in an inpatient setting with a resulting increase in breastfeeding rates. Deloian, Lewin, and O'Connor (2015) found web-based training to be a good first step, in combination with hands-on training working with breastfeeding mothers, in enhancing nurses' abilities in lactation support. Lack of provider education was addressed by Edwards et al. (2015) through the creation of a self-paced tutorial for physicians and other clinicians to learn more about support of maternal breastfeeding goals in both inpatient and postpartum settings.

Davis, Stichler, and Poeltler (2012) found that mandatory education engaging providers at all levels (including mother-baby nurses) had a significant impact on provision of evidence-based information to postpartum women. The major problem with providing education in the MHS for active-duty personnel in postpartum units may be the high rate of staff turnover and training schedules (Terry et al., 2016). Demirtas (2012) found that supporting maternal self-efficacy and empowerment were associated with breastfeeding success, as was individualized teaching. Demirtas (2015) later noted that nurses can play a significant role in informational breastfeeding support, but that they should be skilled in guiding even experienced mothers through common breastfeeding problems, such as management of nipple pain and damage.

Per Sriraman and Kellams (2016), providers continued to express concerns at the prospect of telling a woman how to feed her infant, including the possibility of inducing feelings of guilt in women who make the decision not to breastfeed or who have lactation failure issues. It should be noted that providers discuss such subjects as obesity and weight loss, child discipline, smoking cessation, among others; the same motivational interviewing techniques may also be used to encourage and support breastfeeding (Sriraman & Kellams, 2016). Trusted health professionals are often the source of incorrect information on breastfeeding due to utilization of personal experiences of infant feeding rather than evidence-based practices, as well as the inappropriate marketing provided by companies producing infant formulas in the guise of educational materials (Piwoz & Huffman, 2015).

Spieker et al. (2015) considered the potential prevention of maternal and infant excess weight gain important enough to include in the prenatal and postpartum pilot prevention program in the military setting. The results of the prospective studies by Spieker and colleagues (2015) are pending and may prove useful for future iterations of this guideline. Farwell (2017) concluded that policy change advocacy in the MHS, as well as addressing military-specific education needs of servicewomen, their commanders and their health care providers, is still needed.

Literature Review and Levels of Evidence

The literature search and references included a number of articles greater than ten years old. This is partially due to inadequacy in research focusing on the AD servicewoman and breastfeeding rates, facilitators and barriers to breastfeeding on return to work (Farwell, 2017). Therefore, older research articles were entailed referencing breastfeeding and the military population for the express purpose of comparison between

past, current, and planned or changing MHS policies, and to place such policies within the context of a changing military health care climate. Articles were assessed per the hierarchy of evidence according to Fineout-Overholt, Melnyk, Stillwell, and Williamson (2010). It should be noted that the majority of evidence related to breastfeeding support will not rank at levels I to III since for both ethical and practical reasons breastfeeding families cannot be randomized or placed in controlled research conditions.

Twenty-six references were obtained from national and international expert bodies and comprise consensus opinion based on extant evidence of the importance of breastfeeding for maternal-child health. Several references include policies, standard operating procedures, or memoranda, as well as calls to action by professional, political, and military bodies. One is a twice updated consensus, so while it is listed three times it is counted only once in the list of 26: Chantry et al. (2015) and Hernández-Aguilar et al. (2018) are both clinical updates of the Academy of Breastfeeding Medicine Protocol Committee's Clinical Protocol #7 (2010).

Thirty-one references were included on the importance and general management of breastfeeding, cost-analysis, risk-reduction, and other issues which may be applicable across the spectrum of breastfeeding support. Of the 30 articles found that mentioned both U.S. military and breastfeeding, 21 were published in the last 10 years (2009 or later), and several rely heavily on information and findings from the nine articles published greater than 10 years ago (and included for their historical background on the subject). Eleven of the pertinent articles were published in 2015 or later. Some resources that did not appear in the initial searches using listed Boolean search strings were culled from reference lists within the published literature found on this subject.

Search Strategy

Scholarly articles and consensus opinions were selected that pertained to creation of an evidence-based practice guideline; that of supporting breastfeeding in the unique role held by the AD military servicewoman.

Electronic Databases	Research or Professional Organizations	Inclusion Criteria	Exclusion Criteria
CINAHL NCBI PubMed ScienceDirect OVID	ILCA USLCA AWHONN ACOG AAP WHO UNICEF USPSTF AAFP	Pertinent to the support of breastfeeding or the importance of breastmilk, including the components of same, in maternal/child health	Articles were excluded that pertained to military health protocols outside of the United States, or that otherwise had no bearing on current practice, such as protocols or articles that have been significantly updated or revised by professional bodies (i.e., only the updated versions were consulted).
		Pertinent to breastfeeding in relation to the health of the military servicewoman, physical or mental	
		Articles older than ten years were included to give some historical perspective to breastfeeding policy changes in the military health system	

Boolean search strings

Breastfeeding OR breast feeding OR breast-feeding AND military AND policy

Breastfeeding OR breast feeding OR breast-feeding AND protocol OR consensus OR guideline

Breastfeeding (OR breast feeding OR breast-feeding) AND military AND policy.

Protocols, consensus statements and guidelines were sought from major professional medical, nursing, and government entities.

Where applicable, studies were analyzed and rated for level of evidence per Fineout-Overholt et al. (2010). Section one contains expert consensus documents and clinical practice guidelines issued by respected professional organizations focused on maternal-child health, as well as key government and military policies and recommendations. Section Two contains articles on the evidence-base for breastfeeding support in general. Section three contains articles with specific reference to breastfeeding support research in the military health system.

Type of evidence	Level of evidence	Description
Systematic review or meta-analysis	I	A synthesis of evidence from all relevant randomized controlled trials.
Randomized controlled trial	II	An experiment in which subjects are randomized to a treatment group or control group.
Controlled trial without randomization	III	An experiment in which subjects are nonrandomly assigned to a treatment group or control group.
Case-control or cohort study	IV	Case-control study: a comparison of subjects with a condition (case) with those who don't have the condition (control) to determine characteristics that might predict the condition. Cohort study: an observation of a group(s) (cohort[s]) to determine the development of an outcome(s) such as a disease.
Systematic review of qualitative or descriptive studies	V	A synthesis of evidence from qualitative or descriptive studies to answer a clinical question.
Qualitative or descriptive study	VI	Qualitative study: gathers data on human behavior to understand <i>why</i> and <i>how</i> decisions are made. Descriptive study: provides background information on the <i>what</i> , <i>where</i> , and <i>when</i> of a topic of interest.
Expert opinion or consensus	VII	Authoritative opinion of expert committee.

(Fineout-Overholt et al., 2010)

Analysis of Literature:

Summary Table of References	
Section One: Expert Consensus Documents, Clinical practice guidelines, Key Government/Military Policies	
Citation	Level of Evidence
Academy of Breastfeeding Medicine Protocol Committee. (2010). ABM Clinical Protocol #7: Model Breastfeeding Policy (Revision 2010). <i>Breastfeeding Medicine</i> , 5(4), 173–177. doi:10.1089/bfm.2010.9986 — see updates, per Chantry, Eglash & Labbok (2015) and Hernández-Aguilar et al. (2018)	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
American Academy of Family Physicians. (2017, May 17). Family Physicians Supporting Breastfeeding (Position Paper). Retrieved from https://www.aafp.org/about/policies/all/breastfeeding-support.html	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
American Academy of Pediatrics. (2012). Breastfeeding and the use of human milk. <i>Pediatrics</i> , 129(3), e827–e841. doi:10.1542/peds.2011-3552	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
American College of Obstetricians and Gynecologists. (2016). Optimizing support for breastfeeding. Committee Opinion No. 658 Summary. <i>Obstetrics & Gynecology</i> , 127(2), 420–421. doi:10.1097/aog.0000000000001311	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Assistant Secretary of Defense. (2011, February 23). Memorandum for Assistant Secretary of the Army, Assistant Secretary of the Navy, and Assistant Secretary of the Air Force. Subject: <i>TRICARE policy for access to care: HA POLICY 11-005</i> [Memorandum]. Retrieved from https://health.mil/Policies/2011/04/26/TRICARE-Policy-for-Access-to-Care	Federal Policy
Baby-Friendly USA. (2016). <i>Guidelines and evaluation criteria for facilities seeking baby-friendly designation</i> . Albany, NY: Baby-Friendly USA. Retrieved from https://www.babyfriendlyusa.org/get-started/the-guidelines-evaluation-criteria	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Berry, J. (2010, December 22). <i>Nursing mothers in federal employment</i> [Memorandum from the United States Office of Personnel Management, Washington, DC]. Retrieved from http://www.dol.gov/whd/nursingmothers/NMothersFederalEmplymnt.pdf	Federal Memorandum – OPM
Bibbins-Domingo, K., Grossman, D. C., Curry, S. J., Davidson, K. W., Epling, J. J., García, F. R., ... Pignone, M. P. (2016). Primary care interventions to support breastfeeding: US Preventive Services Task Force recommendation statement. <i>Journal of the American Medical Association</i> , 316(16), 1688-1693. doi:10.1001/jama.2016.14697	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)

Summary Table of References	
Section One: Expert Consensus Documents, Clinical practice guidelines, Key Government/Military Policies	
Citation	Level of Evidence
Centers for Disease Control and Prevention. (2018). <i>Breastfeeding report card, United States, 2018</i> . Retrieved from https://www.cdc.gov/breastfeeding/pdf/2018breastfeedingreportcard.pdf	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Chantry, C. J., Eglash, A., & Labbok, M. (2015). ABM Position on Breastfeeding—Revised 2015. <i>Breastfeeding Medicine, 10</i> (9), 407–411. doi:10.1089/bfm.2015.29012.cha	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Department of Defense, Department of Veterans Affairs. (2009). <i>VA/DoD Clinical Practice Guideline for Pregnancy Management (v 2.0)</i> . Washington, DC: Veterans Health Administration. Available from https://www.healthquality.va.gov/guidelines/WH/up/	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Feldman-Winter, L., Procaccini, D., & Merewood, A. (2012). A model infant feeding policy for Baby-Friendly designation in the USA. <i>Journal of Human Lactation, 28</i> (3), 304–311. doi:10.1177/0890334412440626	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Headquarters, 1st Armored Division, Ft. Bliss, Texas. (2015, June 1). <i>Breastfeeding policy</i> [Standard Operating Procedure]. Retrieved from https://www.breastfeedingincombatboots.com/military-policies/	Standard Operating Procedure – for Ft. Bliss, TX – which chose to be more detailed on local policy than the standard ARMY policy.
Healthy People 2020. (2016). 2020 topics and objectives: Maternal, infant, and child health. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Hernández-Aguilar, M.-T., Bartick, M., Schreck, P., Harrel, C., Young, M., ... Noble, L. (2018). ABM Clinical Protocol #7: Model Maternity Policy Supportive of Breastfeeding. <i>Breastfeeding Medicine, 13</i> (9), 559–574. doi:10.1089/bfm.2018.29110.mha	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Rosen-Carole, C., Hartman, S., & the Academy of Breastfeeding Medicine. (2015). ABM Clinical Protocol #19: Breastfeeding Promotion in the Prenatal Setting, Revision 2015. <i>Breastfeeding Medicine, 10</i> (10), 451–457. doi:10.1089/bfm.2015.29016.ros	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Secretary of Defense. (2016, February 6). DoD-wide changes to maternity leave (directive-type memorandum [DTM] 16-002). Washington, DC: Department of Defense. Retrieved from http://dmna.ny.gov/hro/agr/army/files/1458071249--Maternity%20Secdef%2005Feb2016.pdf	DoD directive memorandum
Secretary of the Air Force. (2017, January 6). Air Force guidance memorandum to <i>Medical care management</i> (Air Force Instruction 44-102; §§ 4.15.1–3 breastfeeding and breast pumping). Washington, DC: Department of Defense. Retrieved from http://static.e-publishing.af.mil/production/1/af_sg/publication/afi44-102/afi44-102.pdf	USAF guidance memorandum

Summary Table of References	
Section One: Expert Consensus Documents, Clinical practice guidelines, Key Government/Military Policies	
Citation	Level of Evidence
Secretary of the Army. (2015, November 10). <i>Revised breastfeeding and lactation support policy</i> (Army Directive 2015-43). Washington, DC: Department of Defense. Retrieved from http://breastfeedingincombatboots.com/wp-content/uploads/2015/11/AD-201543-Breastfeeding-Lacation-Support-Policy.pdf	Army directive
Siska, K. (2011, May). The imperative of breastfeeding: Policy changes to promote the health and economic benefits of infant feeding. <i>ANA Issue Brief</i> , American Nurses Association. Retrieved from http://nursingworld.org/MainMenuCategories/Policy-Advocacy/Positions-and-Resolutions/Issue-Briefs/Breastfeeding.pdf	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Spatz, D. L., & Lessen, R. (2011). <i>Risks of not breastfeeding</i> . Morrisville, NC: International Lactation Consultant Association. Available from http://www.ilca.org/learning/jhl	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
United States Breastfeeding Committee. (2010). <i>Core competencies in breastfeeding care and services for all health professionals</i> (Revised edition). Washington, DC: United States Breastfeeding Committee. Retrieved from http://www.usbreastfeeding.org/core-competencies	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
United States Lactation Consultant Association. (2017). Who's who? A glance at breastfeeding support in the United States. Retrieved from http://uslca.org/wp-content/uploads/2017/07/2-page-Whos-Who-updated-July-2017-Watermark.pdf	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
U.S. Department of Health and Human Services. (2011). <i>The Surgeon General's call to action to support breastfeeding</i> . Washington, DC: Author, Office of the Surgeon General. Retrieved from https://www.surgeongeneral.gov/library/calls/breastfeeding/index.html	U.S. Surgeon General – call to action
World Health Organization. (1981). <i>International code of marketing of breast-milk substitutes</i> . Geneva, Switzerland: Author. Retrieved from http://www.who.int/nutrition/publications/infantfeeding/9241541601/en/	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
World Health Organization. (2016a). Health topics: Breastfeeding. Retrieved from http://www.who.int/topics/breastfeeding/en/	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
World Health Organization. (2016b). Infant and young child feeding. Retrieved from http://www.who.int/mediacentre/factsheets/fs342/en/	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
World Health Organization. (2017). <i>Guideline: Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services</i> (Licence: CC BY-NC-SA 3.0 IGO). Geneva, Switzerland: Author. Retrieved from http://apps.who.int/iris/handle/10665/259386	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)

Summary Table of References	
Section One: Expert Consensus Documents, Clinical practice guidelines, Key Government/Military Policies	
Citation	Level of Evidence
World Health Organization and UNICEF. (2003). <i>Global strategy for infant and young child feeding</i> . Retrieved from http://www.who.int/nutrition/publications/infantfeeding/9241562218/en/ (Fineout-Overholt et al., 2010)	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
Bartick, M. C., Schwarz, E. B., Green, B. D., Jegier, B. J., Reinhold, A. G., Colaizy, T. T., & ... Stuebe, A. M. (2017). Suboptimal breastfeeding in the United States: Maternal and pediatric health outcomes and costs. <i>Maternal & Child Nutrition, 13</i> (1), 1-13. doi:10.1111/mcn.12366	None	Suboptimal breastfeeding leads to higher financial costs due to morbidity and mortality	Statistical simulation and model based on disease data	Cost accounting techniques, in US dollars	The statistical model assumes steady breastfeeding states and cannot account for the potential impact of new research	Level IV – (hypothetical) Cohort Study based on a simulation model (Fineout-Overholt et al., 2010)
Bass, P. F. (2015). Evidence-based support for breastfeeding. <i>Contemporary Pediatrics, 4</i> , 24-29. Retrieved from http://contemporarypediatrics.modernmedicine.com/contemporary-pediatrics/news/evidence-based-support-breastfeeding	None	Those not knowledgeable or skilled in breastfeeding support are less likely to promote it, but education programs targeted to physicians can change this suboptimal practice	Use of expert consensus from professional physician organizations	Use of expert consensus from sources physicians trust; discussion and alternatives for common diagnoses for which physicians recommend breastfeeding cessation	Lack of suggestions on how busy professionals can find time to enhance their knowledge	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Beake, S., Pellowe, C., Dykes, F., Schmied, V., & Bick, D. (2011). A systematic review of	None	Structured programs worked better than standard	Systematic review of acute and primary care structured vs. non-	Use of worldwide consensus and expertise,	Different clinical and methodological study designs made	Level V – Systematic Review (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
structured compared with non-structured breastfeeding programmes to support the initiation and duration of exclusive and any breastfeeding in acute and primary health care settings. <i>Maternal & Child Nutrition</i> , 8(2), 141–161. doi:10.1111/j.1740-8709.2011.00381.x		care in supporting initiation and duration of breastfeeding	structured breastfeeding support programs r/t initiation and duration	including BFHI, WHO, and UNICEF	meta-analysis impossible	
Bevan, G., & Brown, M. (2014). Interventions in exclusive breastfeeding: A systematic review. <i>British Journal of Nursing</i> , 23(2), 86–89. doi:10.12968/bjon.2014.23.2.86	None	Women welcome breastfeeding support access and appear to prefer group support	Systematic review of interventions targeted toward support of exclusive breastfeeding	Use of empirical research studies	Few studies found addressing interventions in a methodical evidence-based manner	Level V – Systematic Review (Fineout-Overholt et al., 2010)
Chen, P. G., Johnson, L. W., & Rosenthal, M. S. (2011). Sources of education about breastfeeding and breast pump use: What effect do they have on breastfeeding duration? An analysis of the infant	None	Physician/PA education to patients on breast pump use had a negative association with breastfeeding duration; group support had a	Secondary data analysis from the infant feeding practices survey II	Almost 3,000 participants almost 2,000 of whom were followed to 12 months post-partum	Women who did not breastfeed were not asked detailed questions about sources of breastfeeding or breast pump education, therefore the effects of	Level IV – Case control/cohort study (Fineout-Overholt et al., 2010)

Summary Table of References						
Section Two: Articles Pertinent to Breastfeeding Support						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
feeding practices survey II. <i>Maternal and Child Health Journal</i> , 16(7), 1421–1430. doi:10.1007/s10995-011-0908-4		positive association			education on those women could not be determined	
Clark, D. L. (2011). Protecting breastfeeding through implementation of the international code: What's law got to do with it? <i>Breastfeeding Review</i> , 19(2), 5-7. Retrieved from https://www.breastfeeding.asn.au/bfreview?q=bfreview	None	Breastfeeding is the most effective public health intervention to prevent infant morbidity and mortality; company promotion increases the use of breastmilk substitutes	Review (from a legal perspective) of the impact of formula promotion on maternal/ infant health outcomes	Use of universally acknowledged resources/ references	Potential bias	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)
Cleminson, J., Oddie, S., Renfrew, M. J., & McGuire, W. (2014). Being baby friendly: Evidence-based breastfeeding support. <i>Archives of Disease in Childhood - Fetal and Neonatal Edition</i> , 100(2), F173–F178. doi:10.1136/	None	The need for support for initiation and maintenance of breastfeeding vs. negative impact of formula feeding on health outcomes of	Review and summary of expert consensus	Use of universally acknowledged resources/ references	UK focus	Level VII – Expert Opinion/Consensus (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
archdischild-2013-304873		mothers and infants				
Davis, S. K., Stichler, J. F., & Poeltler, D. M. (2012). Increasing exclusive breastfeeding rates in the well-baby population: An evidence-based change project. <i>Nursing for Women's Health</i> , 16(6), 460-470. doi:10.1111/j.1751-486X.2012.01774.x	Rosabeth Moss Kanter's structural theory of organizational empowerment	Mandatory breastfeeding education for mother-baby nurses was found to be effective	Implementation of (1) mandatory evidence-based education to the nursing staff on Maternal-Infant units related to breastfeeding basics and (2) change to hospital policies and practices related to the support of breastfeeding mothers. Used a pre-/post-test methodology and organizational data to measure the effectiveness of the change	Identified physicians, advanced practice providers, as also in need of mandatory education to ensure consistency in education/information provided to families	Did not assess how provider attitudes and care influenced breastfeeding rates; although it did acknowledge that previous research has shown the importance of providers who truly believe in the evidence-base of exclusive breastfeeding as fostering positive maternal-infant health outcomes	Level IV – Cohort Study (Fineout-Overholt et al., 2010)
Deloian, B. J., Lewin, L. O., & O'Connor, M. E. (2015). Use of a web-based education program improves nurses' knowledge of	None	Gaps exist in nurses' breastfeeding knowledge. Knowledge improved in all	To evaluate the baseline knowledge vs. knowledge gained of nurses (at all levels from	Large sample size; fills a gap in the published knowledge base of nurses r/t breastfeeding	Although it was a large sample size of almost 8,000 nurses, it was not a randomly selected sample population.	Level III – Control Trial without Randomization (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
breastfeeding. <i>Journal of Obstetric, Gynecologic & Neonatal Nursing</i> , 44(1), 77–86. doi:10.1111/1552-6909.12534		areas based on comparison of pretest and posttest scores	student to advanced practice) who completed Breastfeeding Basics (online educational program). Baseline scores were analyzed to determine if nurses' knowledge varied in a variety of categories. Pretest and posttest scores on all modules and in specific questions with low pretest scores were compared as a measure of knowledge gained.	support, and identified that although nurses know that breastfeeding is beneficial, they are lacking in the skills to provide specific support	Researchers were unable to determine if knowledge is retained or if the nurses changed their clinical practice based on the program	
Demirtas, B. (2012). Strategies to support breastfeeding: A review.	None	Mothers benefit from strategies that encourage	Reviewed articles were published	Intent to explore strategies to support	Cultural differences between the US, the MHS,	Level V – Systematic Review of

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
<i>International Nursing Review</i> , 59(4), 474-481. doi:10.1111/j.1466-7657.2012.01017.x		breastfeeding and with guidance that supports their self-efficacy and feelings of being capable and empowered, and is tailored to their individual needs	between the years 1995 and 2011, focusing on the strategies related to the support received by mothers. Two experts independently read and analyzed 38 articles	breastfeeding & aimed to reveal how international support compares with Turkey – if there are differences in needed support. The review reflects that even though there are some differences, the principles remain the same across the world and there is a great deal of similarities to support breastfeeding	international and Turkish practices may make the review less pertinent	Qualitative or Descriptive Studies (Fineout-Overholt et al., 2010)
Demirtas, B. (2015). Multiparous mothers: Breastfeeding support provided by nurses. <i>International Journal of Nursing Practice</i> , 21(5), 493–504. doi:10.1111/ijn.12353	None	The study aimed to identify the support (information, practical and emotional) that multiparous	Descriptive and cross-sectional study on 278 multiparous mothers who took part in the research prior to their discharge	Interviews were conducted when support was fresh in maternal minds, prior to discharge	Cultural differences may make translation to other populations difficult	Level VI –Qualitative or Descriptive Study (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		<p>mothers received from nurses in the early postpartum period. Experiencing breastfeeding problems was the only statistically significant predictor of in-hospital supplementation. No significant associations are indicative for the need of more effective implementation of informational, practical and emotional breastfeeding support for multiparous mothers.</p>	<p>from a maternity hospital in Ankara, Turkey. The instrument used was a 38-item questionnaire</p>			

Summary Table of References						
Section Two: Articles Pertinent to Breastfeeding Support						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		Antenatal education and support could be more likely to make a difference.				
Edwards, R. A., Colchamiro, R., Tolan, E., Browne, S., Foley, M., Jenkins, L., ... Nordstrom, C. (2015). Online continuing education for expanding clinicians' roles in breastfeeding support. <i>Journal of Human Lactation</i> , 31(4), 582–586. doi:10.1177/0890334415585977	Malcolm Knowles's theory of andragogy, which describes 5 components that are essential for successful adult learning.	The project demonstrated the value of a multiorganizational and interprofessional team working together to provide a needed resource.	The project established a government, academic, health care provider, and professional society partnership to create the content for the online continuing medical education (CME) tutorial.	Adult oriented learning that is free and accessible.	Participants were self-selected.	Level IV – Cohort Study (Fineout-Overholt et al., 2010)
Feldman-Winter, L., Douglass-Bright, A., Bartick, M. C., & Matranga, J. (2013). The new mandate from The Joint Commission on the perinatal care core measure of exclusive breast milk feeding: Implications for practice	n/a	n/a	n/a	n/a	n/a	n/a Analysis of The Joint Commission core measures, with guidance on implementation of data tracking

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
and implementation in the United States. <i>Journal of Human Lactation</i> , 29(3), 291–295. doi:10.1177/0890334413485641						
Holla-Bhar, R., Iellamo, A., Gupta, A., Smith, J. P., & Dadhich, J. P. (2015). Investing in breastfeeding – the world breastfeeding costing initiative. <i>International Breastfeeding Journal</i> , 10(1). doi:10.1186/s13006-015-0032-y	None	WBCi is a policy advocacy initiative to encourage integrated actions that enable breastfeeding. WBCi will help countries plan and prioritize actions and budget them accurately. International agencies and donors can also use the tool to calculate or track investments in breastfeeding	Attempts to determine the financial investment that is necessary to implement UNICEF’s <i>Global Strategy for Infant and Young Child Feeding</i> , and to introduce a tool to estimate the costs for individual countries. The article presents detailed cost estimates for implementing the <i>Global Strategy</i> and outlines the WBCi Financial	The unique strengths of this study and the research that underpins it are that it provides both conceptual and practical advances which can inform global, country level, and community efforts to implement the <i>Global Strategy</i> . This includes its strong and comprehensive conceptual basis	Limitations include that up to date research to underpin program level cost estimates on reducing suboptimal IYCF is sadly lacking; there is an urgent need to update and extend previous economic studies on interventions to increase breastfeeding	n/a – cost analysis, economics review

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
			Planning Tool. Estimates use demographic data from UNICEF’s State of the World’s Children 2013			
Jantzer, A. M., Anderson, J., & Kuehl, R. A. (2018). Breastfeeding support in the workplace: The relationships among breastfeeding support, work-life balance, and job satisfaction. <i>Journal of Human Lactation</i> , 34(2), 379-385. doi:10.1177/0890334417707956	None	These results suggest that employers can enhance the lives of their breastfeeding employees both at work and at home by providing workplace breastfeeding support, especially through providing time for expressing human milk in the workplace	Examined how workplace breastfeeding support predicted work–life variables and job satisfaction. Using a self-report, survey design, the authors analyzed online surveys from 87 women in a rural, community sample who indicated that they had pumped at work or anticipated needing to pump in the future	Clarifies the previously identified relationship between workplace breast-feeding support and job satisfaction	Rural community setting may not translate to other groups or work settings	Level VI – Qualitative or Descriptive Study (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
Jolly, K., Ingram, L., Khan, K. S., Deeks, J. J., Freemantle, N., & MacArthur, C. (2012). Systematic review of peer support for breastfeeding continuation: Metaregression analysis of the effect of setting, intensity, and timing. <i>BMJ</i> , 344(4), d8287–d8287. doi:10.1136/bmj.d8287	None	Although peer support interventions increase breastfeeding continuation in low- or middle-income countries, especially exclusive breast feeding, this does not seem to apply in high income countries, particularly the United Kingdom, where breastfeeding support is part of routine postnatal healthcare. Peer support of low intensity does not seem to be effective. Policy relating to	Study selection, data abstraction, and quality assessment were carried out independently and in duplicate. Risk ratios and 95% confidence intervals were calculated for individual studies and pooled. Effects were estimated for studies grouped according to setting (high income countries, low or middle income countries, and the United Kingdom), intensity (<5 and ≥5 planned contacts), and timing of peer support (postnatal period with or without	Use of only RCTs, considered the strongest level of evidence	Definitions of exclusive breastfeeding and support descriptions often differed widely or were incomplete across the studies evaluated	Level I – Systematic Review of Randomized Controlled Trials (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		provision of peer support should be based on more specific evidence on setting and any new peer services in high income countries need to undergo concurrent evaluation	antenatal care), and analysed using metaregression for any and exclusive breast feeding at last study follow-up			
Keim, S. A., Boone, K. M., Oza-Frank, R., & Geraghty, S. R. (2017). Pumping milk without ever feeding at the breast in the Moms2Moms Study. <i>Breastfeeding Medicine, 12</i> (7), 422-429. doi:10.1089/bfm.2017.0025	None	Pumping without feeding at the breast is associated with shorter milk feeding duration and earlier introduction of formula compared with feeding at the breast with or without pumping. Establishing	Study participants were those delivered at Ohio State University Wexner Medical Center in 2011 and completed a questionnaire at 12 months postpartum (n=478). We used bivariate and multivariate approaches (survival	Study was able to partially characterize women who exclusively pumped to provide human milk for their infants vs. those who both fed at the breast and pumped, based on sociodemographic and infant feeding practices	Lacked details from participants on why exclusive pumping was used. Whether low milk supply was the impetus for pumping in an attempt to increase supply, or whether pumping led to lower milk supply and earlier cessation could not be determined	Level IV – Cohort Study (Fineout-Overholt et al., 2010)

Summary Table of References						
Section Two: Articles Pertinent to Breastfeeding Support						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		feeding at the breast, rather than exclusive pumping, may be important for achieving human milk feeding goals	analysis) to compare women who pumped but never fed at the breast with women who fed at the breast with or without pumping.			
McFadden, A., Mason, F., Baker, J., Begin, F., Dykes, F., Grummer-Strawn, L., ... Renfrew, M. J. (2016). Spotlight on infant formula: Coordinated global action needed. <i>The Lancet</i> , 387(10017), 413–415. doi:10.1016/s0140-6736(16)00103-3	None	n/a	n/a	n/a	n/a	Editorial/ Commentary
Mellin, P. S., Poplawski, D. T., Gole, A., & Mass, S. B. (2011). Impact of a formal breastfeeding education program. <i>MCN, The American Journal of Maternal/ Child Nursing</i> , 36(2),	None	An educational program and adherence to protocols can increase exclusive breastfeeding as well as improve healthcare	Quasi-experimental study that included a survey to obtain a preintervention baseline measurement and a	This program demonstrated increased nursing observation of breastfeeding, which has been identified as important in	Healthcare provider results from this study are limited by the small sample size as well as the fact that this study was carried out in a suburban hospital with a primarily	Level IV – Cohort Study (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

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82–88. doi:10.1097/nmc.0b013e318205589e		provider knowledge, comfort level, and attitudes about breastfeeding. Interventions also resulted in an increase in nurse observation of breastfeeding, nighttime breastfeeding, and a decrease in the use of formula supplementation at night. Positive changes can be made with an educational program and protocols	postintervention measurement 6 months after the implementation of the formal breastfeeding education program	successful breastfeeding. Hospital practices that decrease formula supplementation and increase night- time breastfeeding have also been identified as keys to breastfeeding success	affluent White population. Results may not be generalizable to other populations or settings	
Mosca, F., & Gianni, M. L. (2017). Human milk: composition and health benefits. <i>La Pediatria Medica e Chirurgica</i> –	None	On the basis of the available evidence, human milk not only provides	Summary of the most current evidence-based research on human milk	n/a	n/a	Level VII – Expert Opinion or Consensus (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
<i>Medical and Surgical Pediatrics</i> , 39(2). doi:10.4081/pmc.2017.155		the perfectly adapted nutritional supply for the infant but also plays a crucial role in in promoting healthy growth and development. Protection, support and promotion of breastfeeding should be considered as a public health issue	composition, health benefits and impact on functional outcomes			
Munn, A. C., Newman, S. D., Mueller, M., Phillips, S. M., & Taylor, S. N. (2016). The impact in the United States of the baby-friendly hospital initiative on early infant health and breastfeeding outcomes. <i>Breastfeeding Medicine</i> , 11(5), 222–230.	Social Ecological Model	Results from the review support the BFHI’s success in facilitating successful breastfeeding initiation and exclusivity. Breast-feeding duration also	The integrative review encompasses both empirical and theoretical literature, as well as experimental and nonexperimental studies.	Informs systematic modification of breastfeeding policies and initiatives associated with Baby-Friendly practices on multi-	This review was limited to studies conducted in the United States; thus, potentially missing lessons learned from studies conducted in other countries. Additionally, articles were only	Level V – Systematic Review (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
doi:10.1089/bfm.2015.0135		appears to increase when mothers have increased exposure to Baby-Friendly practices, but deficiencies in breastfeeding tracking mechanisms have limited reliable breastfeeding duration data.		dimensional and systems levels.	included if outcomes were reported or measured. Studies addressing barriers or facilitators to implementation of the BFHI, without mention of outcome measures, were not included in the current review. Therefore, exclusion criteria could have limited the availability of qualitative evidence to address BFHI implementation factors.	
Patnode, C. D., Henninger, M. L., Senger, C. A., Perdue, L. A., & Whitlock, E. P. (2016). Primary care interventions to support breastfeeding. <i>Journal of the American Medical Association</i> , 316(16),	Analytic framework.	The updated evidence confirms that breastfeeding support interventions are associated with an increase in the rates of	Review of randomized clinical trials and before-and-after studies with concurrent controls conducted in a developed	Applicability in the US setting, and therefore the military health setting, given the trials included were from countries with similar	Inclusion criteria left out some widely cited studies including PROBIT; potential for publication bias was also reported by the authors.	Level I – Systematic Review of RCT’s (Fineout-Overholt et al., 2010)

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
1694. doi:10.1001/jama.2016.8882		any and exclusive breastfeeding. There are limited well-controlled studies examining the effectiveness of system-level policies and practices on rates of breastfeeding or child health and none for maternal health.	country that evaluated a primary care–relevant breastfeeding intervention among mothers of full- or near-term infants. Of 211 full-text articles reviewed, 52 studies met inclusion criteria. Thirty-one studies were newly identified, and 21 studies were carried forward from the previous review.	attitudes and practices with some breastfeeding support as standard of care. RCT analysis, often considered the gold standard of true research.		
Piwoz, E. G., & Huffman, S. L. (2015). The impact of marketing of breast-milk substitutes on WHO-recommended breastfeeding practices. <i>Food and Nutrition Bulletin</i> , 36(4), 373–386. doi:10.1177/0379572115602174	Theory of Planned Behavior	Adoption of stricter regulatory frameworks coupled with independent, quantitative monitoring and compliance enforcement are	Literature review.	Target toward sales and marketing of breast-milk substitutes and their influence on World Health Organization-recommended	Focus on low- and middle-income countries and populations may weaken the generalizability of the research.	Level V – Systematic Review (Fineout-Overholt et al., 2010).

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		needed to counter the impacts of formula marketing globally.		breastfeeding behaviors.		
Radzysinski, S., & Callister, L. C. (2015). Health professionals' attitudes and beliefs about breastfeeding. <i>The Journal of Perinatal Education, 24</i> (2), 102–109. doi:10.1891/1058-1243.24.2.102	None	Data analysis suggests inconsistencies between the health-care provider's perceived support and behaviors, lack of knowledge, and significant lack of skill in the assessment and management of breastfeeding couples.	Interviews of health care professionals.	Continuum of health care professionals including obstetricians and pediatricians (including residents), advance practice providers including nurse midwives, nurses and lactation consultants were interviewed.	Small n = 53. Limitations of the study include the fact that this is a cross-sectional study and interviews were conducted with study participants only once. Also, findings reflect the perspectives of a convenience sample which may limit the transferability of the findings.	Level VI – Qualitative Descriptive Study (Fineout-Overholt et al., 2010).
Rosen-Carole, C., Allen, K., Thompson, J., Martin, H., Goldstein, N., & Lawrence, R. A. (2019). Prenatal provider support for breastfeeding: Changes	None	Significant changes in breastfeeding attitudes and knowledge occurred over 2 decades; factors	Prospective cross-sectional study of prenatal care providers in Monroe County, NY	Tracked responses related to the same group of providers in the same location comparing them	Overall small numbers, included only 3 TRICARE beneficiaries, and may not be generalizable to other locations	Level VI – Qualitative Descriptive Study (Fineout-Overholt et al., 2010).

Summary Table of References						
Section Two: Articles Pertinent to Breastfeeding Support						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
in attitudes, practices and recommendations over 22 years. <i>Journal of Human Lactation</i> , 1-10. doi:10.1177/0890334419830996		associated with low support were generally modifiable, which was not the case previously. While obstetric providers made progress in breastfeeding support, barriers remain, including a lack of ownership, and inadequate training.		to responses over 20 years earlier.	related to regional and cultural differences.	
Sinha, B., Chowdhury, R., Sankar, M. J., Martines, J., Taneja, S., Mazumder, S., ... Bhandari N. (2015). Interventions to improve breastfeeding outcomes: A systematic review and meta-analysis. <i>Acta Paediatrica</i> , 104(467), 114-134. doi:10.1111/apa.13127	None	To promote breastfeeding, interventions should be delivered in a combination of settings by involving health systems, home and family and the community environment concurrently.	To provide comprehensive evidence of the effect of interventions on early initiation, exclusive, continued and any breastfeeding rates when delivered in five settings.	195 of 23,977 identified articles were included. Reported the pooled relative risk and corresponding 95% confidence intervals as our outcome estimate. In cases of high	There were only a few studies in the categories of work environment or policy environment for which a quantitative measure was available and therefore the pooled estimate for these groups may not represent the	Level V – Systematic Review /Meta-analysis (Fineout-Overholt et al., 2010).

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
				heterogeneity, we explored its causes by subgroup analysis and meta- regression and applied random effects model.	true effect. For some categories (e.g. interventions in community environment to promote continued or any breastfeeding) no studies were found. There were insufficient studies examining the effect of mass media/social media so these were grouped with community environment which may have masked their effect as an independent intervention that could possibly have a large impact.	
Soldavini, J., & Taillie, L. S. (2017). Recommendations for adopting the <i>International Code of Marketing of Breast-milk</i>	None	Adopting legislation that implements, monitors, and enforces the International	n/a	n/a	n/a	n/a This article discusses recommendations for translating the

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
<p><i>Substitutes</i> into U.S. policy. <i>Journal of Human Lactation</i>, 33(3), 582–587. doi:10.1177/0890334417703063</p>		<p>Code in its entirety has the potential to contribute to increased rates of breastfeeding in the United States, which can lead to improved health outcomes in both infants and breastfeeding mothers.</p>				<p><i>International Code</i> into U.S. policy</p>
<p>Sriraman, N. K., & Kellams, A. (2016). Breastfeeding: What are the barriers? Why women struggle to achieve their goals. <i>Journal of Women's Health</i>, 25(7), 714–722. doi:10.1089/jwh.2014.5059</p>	None	<p>By providing mothers, along with their partners and families, with factual and current evidence-based recommendations, healthcare professionals can educate and assist mothers at-risk.</p>	Literature Review	<p>Addresses barriers in at-risk populations, with suggestions on how providers can positively impact and support breastfeeding goals.</p>	<p>No clear call to action, providers must be motivated to change practices in their settings.</p>	<p>Level V – Systematic Review (Fineout-Overholt et al., 2010).</p>

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
Thulier, D., & Mercer, J. (2009). Variables Associated with Breastfeeding Duration. <i>Journal of Obstetric, Gynecologic & Neonatal Nursing</i> , 38(3), 259–268. doi:10.1111/j.1552-6909.2009.01021.x	None	Human lactation is a complex phenomenon and the duration of breastfeeding is influenced by many demographic, physical, social, and psychological variables.	Meta-analysis	Analysis of duration rather than initiation of breastfeeding, and the variables that affect duration. Data included all variables, both positive and negative, that were found to influence the outcome of breastfeeding duration.	Due to the complexity of the breastfeeding relationship, there may be missing data variables that have the potential to influence duration of breastfeeding.	Level V – Systematic Review /Meta-analysis (Fineout-Overholt et al., 2010).
Wouk, K., Tully, K. P., & Labbok, M. H. (2016). Systematic review of evidence for baby-friendly hospital initiative step 3. <i>Journal of Human Lactation</i> , 33(1), 50–82. doi:10.1177/0890334416679618	None	Future studies should test the strength of maternal breastfeeding intentions, assess the role of family members in influencing breastfeeding outcomes, compare the effectiveness of	This systematic review describes interventions related to Step 3 of the Ten Steps, which involves informing pregnant women about the benefits and management of breastfeeding. Our main objective was to determine	The research studies were either randomized controlled trials or quasi-experimental studies conducted in developed or developing countries (n=38)	Varying study quality and lack of standardized assessment of participants’ breastfeeding intentions limited the ability to recommend any single intervention as most effective.	Level V – Systematic Review (Fineout-Overholt et al., 2010).

Summary Table of References

Section Two: Articles Pertinent to Breastfeeding Support

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		different health care providers, and include more explicit detail about the time and full cost of different interventions.	whether prenatal clinic- or hospital-based breastfeeding education increases breastfeeding initiation, duration, or exclusivity.			
Yimyam, S., & Hanpa, W. (2014). Developing a workplace breast feeding support model for employed lactating mothers. <i>Midwifery</i> , 30(6), 720–724. doi:10.1016/j.midw.2014.01.007	None	Breast feeding rates at six months after implementation of the breastfeeding support campaign were significantly higher than rates before, both for exclusive breast feeding and any breast feeding respectively. These results suggest that breast feeding should be	24 employed mothers participated before/33 after implementation of the breastfeeding corner/support campaigns. Data were collected by semistructured questionnaires about breastfeeding practices within six months after giving birth. Both groups interviewed before and after	Emphasized not only benefits to mothers and babies, but to the workplace, incentivizing employers to consider similar interventions in workplace support.	Based in Thailand, may not provide generalizability, small sample size (n = 57).	Level III – Controlled Trial Without Randomization (Fineout-Overholt et al., 2010).

Summary Table of References						
Section Two: Articles Pertinent to Breastfeeding Support						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		encouraged in every workplace depending on context. Individual advice and help for employed mothers should be provided from pregnancy through weaning in the postpartum period.	the implementation of breastfeeding support. Additional data came from representatives of the workplace administrator and head of work divisions through interview/focus group discussion as well as field notes.			

(Fineout-Overholt et al., 2010)

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
Bales, K., Washburn, J., & Bales, J. (2012). Breastfeeding rates and factors related to cessation in a military population. <i>Breastfeeding Medicine</i> , 7(6), 436–441. doi:10.1089/bfm.2011.0113	None	Few subjects able to meet breastfeeding goals.	Survey	Included and compared both active duty members and beneficiaries.	Relatively small number of subjects (n = 254).	Level IV – Cohort Study (Fineout-Overholt et al., 2010)
Bell, M. R., & Ritchie, E. C. (2003a). Breastfeeding in the military: Part I. Information and resources provided to service women. <i>Military Medicine</i> , 168(10), 807–812. doi:10.1093/milmed/168.10.807	None	Minimal policy in place to guide breastfeeding support; quality and content of hospital programs varied greatly. There is meager support for active-duty women when they return to work.	Literature review and survey of DoD facility lactation programs.	Provides historical perspective.	Greater than 10 years old.	Level V and VI – Literature review and descriptive survey (Fineout-Overholt et al., 2010)
Bell, M. R., & Ritchie, E. C. (2003b). Breastfeeding in the military: Part II. Resource and policy considerations. <i>Military Medicine</i> , 168(10), 813–816. doi:10.1093/milmed/168.10.813	None	Selected policy implications for breastfeeding support discussed and recommendations for policy creation are presented.	As above	As above	As above	As above
Braun, L. A., Kennedy, H. P., Womack, J. A., & Wilson, C.	None	Studies examining	A final sample of 82 articles was	Previous literature reviews	No explanation	Level V – Integrated

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
(2016). Integrative literature review: U.S. military women’s genitourinary and reproductive health. <i>Military Medicine</i> , 181(1), 35-49. doi:10.7205/MILMED-D-15-00242		military gender-specific health care delivery are limited. Research to understand factors important for women in a changing military environment can improve health care delivery and outcomes, and military readiness.	identified that specifically addressed military women’s genitourinary and reproductive health. Studies were clustered into five categories that described challenges within an evolving military health care environment and higher influx of women. Categories included (1) pregnancy health, (2) deployment and preventive health, (3) sexually transmitted infections (STIs), (4) family planning and contraceptive services, and (5) sexual violations.	concentrated on broader health care issues of military women. This review updates and expands the literature identified in three previous reviews. Mentions breastfeeding within the context of gender-specific health care delivery.	was found for differing STI rates and other findings across branches of the military.	Literature Review (Fineout-Overholt et al., 2010)
Buckler, A. G. (2011). The military health system and TRICARE: Breastfeeding	None	The MHS and TRICARE have recognized the	n/a	Perspective on military health policies and	No clear pathway or suggestions	Editorial

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
promotion. <i>Breastfeeding Medicine</i> , 6(5), 295–297. doi:10.1089/bfm.2011.0065		importance of increasing breastfeeding rates in military families, but there is still a lot of room for improvement.		procedures extant at time of publication.	provided for implementing change.	
Christ, M., Sawyer, T., Muench, D., Huillet, A., Batts, S., & Thompson, M. (2007). Comparison of home and clinic well-baby visits in a military population. <i>Military Medicine</i> , 172(5), 515–519. doi:10.7205/milmed.172.5.515	None	Home visits for routine well-child care are valid and are associated with greater maternal satisfaction, better anticipatory guidance, and equivalent clinical outcomes.	At 4 to 6 weeks after birth up to three attempts were made to contact the primary caretaker by telephone. If the family was contacted and enrolled, a telephone questionnaire was administered. Questions targeted issues including maternal satisfaction, quality of anticipatory guidance, and breastfeeding success. Clinical outcomes were assessed by using	Included active-duty military personnel, although it did not differentiate between outcomes in these two groups. The authors understood the importance of breastfeeding success as a significant clinical outcome in this population.	A small number of subjects were ultimately enrolled, primarily because families were often lost to follow-up monitoring. Unable to include more than two branches (only Army and USAF personnel included, or their dependents).	Level VI – Qualitative Descriptive Study (Fineout-Overholt, et al., 2010). Greater than 10 years old.

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
			contacts with a pediatric advice line, acute office visits, and visits to the emergency department.			
Drake, E., Cadwell, K., & Dodgson, J. E. (2017). Call for improved military policy to support breastfeeding among U.S. armed forces. <i>Nursing Outlook</i> , 65(3), 343–345. doi:10.1016/j.outlook.2017.04.007	None	Supporting breastfeeding would promote retention of loyal and well-trained service personnel, improve the health of women, and see an anticipated reduction in TRICARE costs.	n/a	n/a	n/a	Executive Summary/Call to Action.
Englert, R. M., & Yablonsky, A. M. (2019). Scoping review and gap analysis of research related to the health of women in the U.S. military, 2000 to 2015. <i>Journal of Obstetric, Gynecologic & Neonatal Nursing</i> , 48(1), 5–15. doi:10.1016/j.jogn.2018.10.009	Used published theoretical frameworks of quality to develop a novel instrument in which objective criteria were	Guidelines and priorities for research on the health of women in the U.S. military are still decentralized or nonexistent. Of identified gaps in seven of eight major topic areas	Scoping review: Used to map an existing body of diverse literature to characterize the extent, range, and nature of research activities within a topic area	Almost 1,000 articles accessed on the topic of women’s health in the military.	No extant quality rating instrument that incorporated objective criteria that could be used across multiple study designs; therefore, a	Level V – Systematic Review (Fineout-Overholt, et al., 2010).

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
	used to assess several elements of quality across diverse study designs and topics.	and in 26 of 73 subtopic areas, most were found in the obstetric-gynecologic health topic area and the psychological health topic areas. Breastfeeding falls specifically within the OBGYN area.			new instrument was developed. Because this instrument has not been assessed for validity or reliability, it is possible that quality ratings may be biased toward particular topics and/or research designs.	
Farwell, A. L. (2017). Integrative review of breastfeeding duration and influencing factors among women serving active duty in the U.S. Military. <i>Journal of Obstetric, Gynecologic & Neonatal Nursing</i> , 46(2), 171–181. doi:10.1016/j.jogn.2016.10.011	Guided by Cooper’s five stages of review synthesis.	Breastfeeding initiation rates are similar to those for civilians, but military women may stop sooner. Perception of military work as a barrier is associated with shorter duration,	Targeted literature review.	Targeted toward extant research on active duty rather than “all” beneficiaries; in the past these groups have been lumped together.	Dearth of current research on the experiences, limitations, and barriers of the active-duty servicewoman, limiting the breadth of the review.	Level V – Systematic Review (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		and enlisted personnel were less likely to breastfeed to 12 months than officers. Military women experienced work-related barriers: lack of facilities for pumping, pressures and obligations r/t rank, conflicts between mother/AD demands, PT standards, concerns r/t exposure to hazardous material, and prolonged separations from infants.				
Fitzgerald, A. S., Duboyce, R. L., Ritter, J. B., Omori, D. J., Cooper, B. A., & O'Malley, P. G. (2013). A primer on the unique challenges of	None	The issues of sexuality, family planning, pregnancy, breast	Hypothetical case study of application of extant policy to	Interesting exercise in how policy might affect a service member's	No firsthand reports were used of actual experiences	Level VI – Descriptive Study

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
female soldiers’ reproductive issues in a war-ready culture. <i>Military Medicine</i> , 178(5), 511–516. doi:10.7205/MILMED-D-12-00384		feeding, and family care are unique in this population and affect soldier readiness and deployment planning. Many of these challenges are amenable to physician intervention and guidance to ameliorate the barriers to service. Both clinicians and policy makers should be attentive to advancing a system that affords equal opportunity and optimizes health for all service members.	a female service member.	reproductive rights and parenting capabilities.	related by female service members.	(Fineout-Overholt et al., 2010).
Goodman, P., Turner, A., Agazio, J., Throop, M., Padden, D.,	Grounded Theory: to	Mothers described	Qualitative research with	Focused on active-duty mothers and	Small number of participants,	Level VI – qualitative or

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
Greiner, S., & Hillier, S. L. (2013). Deployment of military mothers: Supportive and nonsupportive military programs, processes, and policies. <i>Military Medicine</i> , 178(7), 729–734. doi:10.7205/milmed-d-12-00460	study relationships between deployed mothers and their children.	beneficial features of military programs such as family readiness groups and behavioral health care, processes such as unit support, and policies on length and timing of deployments. Aspects that were not supportive included inflexibility in family care plans, using personal leave time and funds for transporting children, denial of release to resolve caretaker issues, and limited time for reintegration.	interviews structured around stages of deployment.	their experiences working within the parameters of military policies related to family health, including breastfeeding and bonding.	35 active-duty mothers with a child or children under 12 years.	descriptive study (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
Haas, D. M., Howard, C. S., Christopher, M., Rowan, K., Broga, M. C., & Corey, T. (2006). Assessment of breastfeeding practices and reasons for success in a military community hospital. <i>Journal of Human Lactation</i> , 22(4), 439–445. doi:10.1177/0890334406293163	None	Breastfeeding rates increased at a Naval Base after lactation support services by an IBCLC were added. Education services and higher education level were predictors of breastfeeding at 6 months. Work-related reasons were listed by only 10% of women as the reason for cessation.	Prospective, anonymous, cross-sectional survey.	Included active duty servicewomen. 934 survey responses were received. Tracked percent of respondents breastfeeding at 6 weeks and 6 months; 73% of active-duty mothers were breastfeeding at 6 weeks; which dropped to 53%, lower than any other group, including military dependents.	Avid breastfeeding mothers may have been more likely to return their surveys; the number of surveys sent was not tracked so the return rate is unknown. Active duty members' input was not separated from beneficiaries' input as to reasons for cessation.	Greater than 10 years – added for historical perspective
Hudak, R. P., Julian, R., Kugler, J., Dorrance, K., Ramchandani, S., Lynch, S., ... Reeves, M. (2013). The patient-centered medical home: A case study in transforming the military health system. <i>Military Medicine</i> , 178(2), 146–152. doi:10.7205/milmed-d-12-00170	None Analysis of the PCMH (patient-centered medical home) within the	Preliminary MHS outcome measures, as well as recent private sector studies, suggest that the PCMH initiative has the potential to address some	Qualitative Case Study of the PCMH experience.	Informs the reader as to the efforts made in the MHS to improve the patient experience while controlling costs and meeting the military quadruple aim.	Does not take into account the almost diametrically opposed goals of readiness and patient access to care.	Level VI – Qualitative Study (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
	military health system.	of the inadequacies of the current MHS health care system. It is a balanced approach that addresses military readiness, population health outcomes, and patient experience of care while also reducing per capita cost. The result may be the transformation of the military's health care delivery system to better meet the needs of its beneficiaries.				
Hughes, K. N., Rodriguez-Carter, J., Hill, J., Miller, D., & Gomez, C. (2015). Using Skin-to-Skin Contact to Increase Exclusive Breastfeeding at a Military	Knowles – Adult Learning Theory	Military women face unique challenges when it comes to breastfeeding.	Implementation of SSC within 1 to 3 hours s/p birth within a military health facility;	Intervention tracked within a military health setting.	Active-duty servicewomen were not tracked separately	Level IV – Case Control or Cohort Study

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
<p>Medical Center. <i>Nursing for Women's Health</i>, 19(6), 478–489. doi:10.1111/1751-486x.12244</p>		<p>SSC in the early postpartum period is an effective intervention to increase exclusive breastfeeding during the hospital stay and foster future positive breastfeeding outcomes. Through this project, staff knowledge of the benefits of SSC to women and newborns improved and the hospital's exclusive breastfeeding rate increased by 20 percent.</p>	<p>second-phase included fostering SSC in the postpartum unit.</p>		<p>from beneficiaries.</p>	<p>(Fineout-Overholt et al., 2010).</p>
<p>Lundquist, J., Xu, Z., Barfield, W., & Elo, I. (2014). Do black–white racial disparities in breastfeeding persist in the military community?</p>	<p>None</p>	<p>Breastfeeding is more prevalent among all women in the</p>	<p>Retrospective cohort analysis of PRAMS data.</p>	<p>Strong numbers, 6,601 military women/beneficiaries included, compared</p>	<p>Could not distinguish between active duty soldiers</p>	<p>Level IV – Retrospective Cohort Study</p>

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
<p><i>Maternal and Child Health Journal</i>, 19(2), 419–427. doi:10.1007/s10995-014-1524-x</p>		<p>military setting and the black–white gap in breastfeeding duration common among civilians is significantly reduced among military affiliates. Breastfeeding is a crucial component of maternal and child health and eliminating racial disparities in its prevalence is a public health priority. This study is the first to identify the military as an important institutional context that deserves closer examination to glean potential policy</p>		<p>to data from the civilian sector. An advantage to a sample heavily weighted toward military spouses is that they are not subject to military admission criteria, as soldiers are, and yet they experience all of the economic and community benefits of military affiliation. The argument being, even active duty women have time to initiate breastfeeding.</p>	<p>and spouses and daughters from the data; military demographics indicate that the vast majority of mothers in the military community are not active duty, but rather spouses, at about a 1:4 ratio.</p>	<p>(Fineout-Overholt et al., 2010).</p>

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		implications for civilian society.				
Mao, C. Y., Narang, S., & Lopreiato, J. (2012). Breastfeeding practices in military families: A 12-month prospective population-based study in the national capital region. <i>Military Medicine</i> , 177(2), 229–234. doi:10.7205/milmed-d-11-00181	None	Active duty enlisted mothers, and families in a lower socioeconomic status, particularly those receiving WIC assistance, may need additional breastfeeding support in order to increase the prevalence and duration of their breastfeeding. Despite the profound and widely accepted benefits of breast milk, additional research is necessary to better understand the barriers that prevent sustained breastfeeding among military	Prospective, longitudinal study of infant-feeding practices.	Active duty mothers represented 31% of our sample population (total n = 253): 44% Army, 23% Air Force, 21% Navy, 8% Marine Corps, and 3% Public Health Service and National Oceanic & Atmospheric Administration. Among women on active duty, 62% were enlisted and 38% were officers.	It is confined to the experience of only one military treatment facility; however, manpower data for the entire Department of Defense does closely parallel the demographic distribution of “our” study. Self-reporting of breastfeeding practices has its own limitations, specifically recall bias and participant dropout.	Level IV – Prospective Cohort Study (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		families and active duty mothers.				
Marshall, R. C., Doperak, M., Milner, M., Motsinger, C., Newton, T., Padden, M., ... Mun, S. K. (2011). Patient-centered medical home: An emerging primary care model and the military health system. <i>Military Medicine</i> , 176(11), 1253–1259. doi:10.7205/milmed-d-11-00109	None Applicability of the PCMH model within the military health system.	PCMH in the MHS has similar setbacks and benefits when compared with the civilian world, except the model in the MHS must include provisions focused on readiness and the transient environment of the military. The MHS is presented with challenges outside of those faced in the civilian sector because of military requirements. Further compounding	n/a	n/a	n/a	n/a – Commentary and analysis.

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		these issues is the need to deal with both direct and purchased care sectors, often within the same episode of patient care.				
Martin, S., Drake, E., Yoder, L., Gibson, M., & Litke, C. A. (2015). Active duty women’s perceptions of breast-feeding support in the military setting. <i>Military Medicine</i> , 180(11), 1154-1160. doi:10.7205/MILMED-D-14-00498	None	The DoD may be able to improve breastfeeding rates for all active-duty mothers by implementing and adhering to lactation policies and focusing support efforts for enlisted women in all branches of services.	Cross-sectional survey; n = 318 respondents from five military branches serving on active duty worldwide.	The online survey method enabled accessibility for women in all branches of the military at various installations around the world. This increased the generalizability of the results across military ranks and services.	The 12-question WBSS does not provide a comprehensive evaluation of all factors that can affect the perceptions of breast-feeding support.	Level VI – Cross-Sectional Survey, Cohort Study (Fineout-Overholt et al., 2010).
Rishel, P. E. N., & Sweeney, P. (2005). Comparison of breastfeeding rates among women delivering infants in military treatment facilities with and without lactation consultants. <i>Military Medicine</i> , 170(5), 435–	None	Dedicated breastfeeding professionals improve breastfeeding initiation, which benefits infants,	Retrospective cohort study by chart review.	Compared data from 3 military health care facilities, beneficiary vs. AD mothers and duration of breastfeeding.	Greater than 10 years – added for historical perspective	Level IV – Cohort Study (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
438. doi:10.7205/milmed.170.5.435		mothers, families, society, and the military.				
Rosen, I. M., Krueger, M. V., Carney, L. M., & Graham, J. A. (2008). Prenatal breastfeeding education and breastfeeding outcomes. <i>MCN, The American Journal of Maternal/Child Nursing</i> , 33(5), 315-319. doi:10.1097/01.NMC.0000334900.22215.ec	None	Women attending a prenatal breastfeeding education class had higher rates of initiation and duration.	Retrospective cohort design: Controls were matched for sponsor or personal rank, marital status, and smoking status.	Included both active and non-active duty women, and provided demographic data including race/ethnicity on participants.	Prerequisite to class attendance was a desire to breastfeed (self-selection bias)	Level VI – Retrospective Cohort Study (Fineout-Overholt et al., 2010).
Saunders-Goldson, S., & Edwards, Q. T. (2004). Factors associated with breastfeeding intentions of African-American women at military health care facilities. <i>Military Medicine</i> , 169(2), 111–116. doi:10.7205/milmed.169.2.111	Theory of Planned Behavior	This study notes the importance of health care providers in promoting African-American women to breastfeed by initiating culturally sensitive strategies that enhance social support and personal confidence toward	100 questionnaires distributed by convenience sampling were received.	Provides historical perspective. 30% beneficiary respondents, 70% active-duty respondents. All active-duty respondents were enlisted.	Greater than 10 years old.	Level IV – Cohort Study (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		breastfeeding success.				
Sleutel, M. R. (2012). Breastfeeding during military deployment. <i>Nursing for Women's Health</i> , 16(1), 20–25. doi:10.1111/j.1751-486x.2012.01696.x	None	This article describes the experiences of a breastfeeding deployed soldier, and explores relevant facts, policies, standards and practice implications. Her efforts to get breast milk to her son during her deployment included obstacles, adventures and administrative issues.	Single case study experience.	This personal case study illustrates policy and practice implications, as well as potential for advocacy.	The military member was a USAF family practice physician with a 7-month-old breastfeeding son. Stationed in Texas, she was deployed to Afghanistan in 2007; she was not enlisted rank.	Case Study – personal experience.
Spieker, E., Sbrocco, T., Theim, K., Maurer, D., Johnson, D., Bryant, E., ... Stephens, M. (2015). Preventing obesity in the military community (POMC): The development of a clinical trials research network. <i>International Journal of Environmental</i>	None	At the completion of this project, the researchers will have examined the feasibility and acceptability of three obesity	The POMC program is an aggregate of three separate two-group randomized-controlled pilot trials (RCT). dissonance-based	n/a	n/a	Planned research which should help inform obesity prevention methods, of which breastfeeding

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
<i>Research and Public Health</i> , 12(2), 1174–1195. doi:10.3390/ijerph120201174		prevention programs, after which fully powered trials may be conducted.	counseling is conducted with pregnant women and with young adults completing their first term of enlistment in the Army, and adolescents receive interpersonal psychotherapy.			support is but one.
Stevens, K. V., & Janke, J. (2003). Breastfeeding experiences of active duty military women. <i>Military Medicine</i> , 168(5), 380–384. doi:10.1093/milmed/168.5.380	None	Active duty women may experience not only their own unique challenges, but these are layered on the challenges faced by all working women who decide to breastfeed.	Interactive interview process of nine active-duty women, helping to inform providers in addressing the needs of active-duty women.	Provides historical perspective. Focus on active duty U.S. military women.	Greater than 10 years old.	Level VI – Qualitative/ Descriptive Study (Fineout-Overholt et al., 2010).
Terry, M. V., Barnes, C., Beal, K., Enciso, A. J., & Love-Zaranka, A. (2016). A tale of two baby-friendly hospitals: Comparison of a military and a civilian experience. <i>Breastfeeding Medicine</i> , 11(8),	None	BFHI implementation compared between 2 facilities. The time from process initiation	To compare and contrast military hospital and civilian hospital experiences of achieving Baby-Friendly	A direct comparison of a military vs. civilian process; showing increased rates at both facilities but emphasizing the	The two hospitals were located in a high-population area of the country, and	Level IV – Case Control/Cohort Study. (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
409–410. doi:10.1089/bfm.2016.0111		to completion was notably longer for the military facility, due to staff turnover and training schedules. The military facility training all new staff members at their orientation to the base hospital. The civilian facility oversaw the training of significantly more IBCLC nurses who were able to facilitate 24/7 inpatient lactation assistance compared with the limited availability of inpatient lactation	designation, and to examine administration and staff responses as well as institutional and patient postimplementation outcomes. Staff, administration, and chairs of Baby-Friendly committees at both hospitals were interviewed.	need for committed staff that are not reassigned frequently to maintain the process.	findings may not be generalizable.	

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		consultants at the military facility.				
Thorley, V. (2015). Free supplies and the appearance of endorsement: Distribution of tobacco to soldiers and artificial infant formula to new mothers. <i>Journal of Human Lactation</i> , 31(2), 213–215. doi:10.1177/0890334414567776	None	Provision of formula samples to vulnerable mothers is analogous to provision of free branded tobacco products to soldiers as endorsement of the product by the institution.	n/a	n/a	n/a	Commentary
Topinka, J. B., Turner, L. R., Lee, K., & Brown, J. (2016). An expression of change: Breastfeeding in the military. <i>U.S. Army Medical Department Journal</i> , 70-74. Available from http://www.cs.amedd.army.mil/amedd_journal.aspx	None	Change will require legislative and policy support.	n/a	n/a	n/a	Case Study and review of military and national policy.
Uriell, Z., Perry, A., Kee, A., & Burrell, L. (2009). Breastfeeding in the Navy: Estimates of rate, duration, and perceived support. <i>Military Medicine</i> , 174(3), 290–296. doi:10.7205/milmed-d-03-8807	None	Almost half of enlisted and over one-third of officers indicate they were not given a comfortable, secluded location	A stratified random sample was selected from the population of all active component U.S. Navy personnel, pay-grades E2-E9 and	The sample (consisting of those who had served active-duty) for these questions consisted of the 47% (1,388) of enlisted women and	The Navy is a unique work environment in that a large portion of jobs occur in industrial environment	Level IV – Cohort Study (Fineout-Overholt et al., 2010).

Summary Table of Analyzed References

Section Three: Articles Pertinent to Breastfeeding in the Military

Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		for breastfeeding or pumping, although the majority are given time to do so. Also, two-thirds of enlisted and half of officer women indicate they stopped breastfeeding because of a work-related reason.	01-05, who had been in the service for at least 1 year. This was a descriptive, exploratory cross-sectional study.	40% (807) of officer women who indicated that they had been pregnant while in the Navy.	and personnel often are at sea for many months, factors not found in most jobs. Thus, the results of this exploratory study may not be generalizable to entities outside the Navy.	
Wahl, C. K., & Randall, V. F. (1996). Military women as wives and mothers. <i>Women's Health Issues, 6</i> (6), 315–319. doi:10.1016/s1049-3867(96)00064-3	None	Despite advances in programs addressing the concerns of military wives and mothers, many policy questions pertaining to military women remain, including nondeployment of breastfeeding women or mothers of small	n/a	Provides historical perspective.	Greater than 10 years old.	Commentary

Summary Table of Analyzed References						
Section Three: Articles Pertinent to Breastfeeding in the Military						
Citation	Theory	Main Finding	Method	Strengths	Weaknesses	Level of Evidence
		infants, treating the family as the unit of analysis and not just the service member, and providing programs such as WIC and Head Start to its members overseas.				
Walton, R. B., Shaffer, S., & Heaton, J. (2015). Group prenatal care outcomes in a military population: A retrospective cohort study. <i>Military Medicine</i> , 180(7), 825–829. doi:10.7205/milmed-d-14-00273	None	Significant cost savings could be realized by expanding Centering Pregnancy group prenatal care across the MHS.	Retrospective Cohort Study.	In MTFs with volumes greater than 218 per year, the group model of care delivery, Centering Pregnancy, is more cost effective. This study did not uncover any risks associated with the less expensive method of prenatal care.	Clear evidence of non-inferiority was not obtained because of the small sample size. A paradoxical finding was an increase in triage visits in the Centering Pregnancy group.	Level IV – Case Control/Cohort Study. (Fineout-Overholt et al., 2010).

(Fineout-Overholt et al., 2010)

Table Key:

APP = Advanced Practice Provider
APRN = Advanced Practice Registered Nurse
BFHI = Baby Friendly Hospital Initiative
CDC = Centers for Disease Control and Prevention
DHA = Defense Health Agency
DoD = Department of Defense
MHS = Military Health System
MTF = Military Treatment Facility

PA = Physician Assistant
PRAMS = pregnancy risk assessment monitoring system
SSC = Skin to Skin Contact
UNICEF = United Nations International Children's Emergency
Fund
US or U.S. = United States
WHO = World Health Organization
WBSS = Workplace Breastfeeding Support Scale

Recommended Policy Statements and Guidance

1. The DoD/DHA, on behalf of the military health system as well as individual military treatment facilities, should make a commitment to support and enforce the *International Code of Marketing of Breast-milk Substitutes*, often referred to simply as *The Code* (WHO, 1981). Adoption and implementation of *The Code* has been shown to increase breastfeeding rates as well as ensuring quality standards for those who have made the decision to feed their infant(s) breastmilk substitutes otherwise known as infant formula (Soldavini & Taillie, 2017).
2. 84 days maternity leave (42 days of convalescent leave and an additional 42 days of primary caregiver leave) should be granted to all active-duty servicewomen on the birth of a child(ren) per directive-type memorandum (DTM) 16-002 “DoD-Wide Changes to Maternity Leave” (Secretary of Defense, 2016). This should include servicewomen in training who might otherwise be separated from their infant in order to complete their specialty training; their training slot should be preserved until they can return to the training program per the above maternity leave policy. In addition, a 12-month deferment on either deployment or temporary-duty assignment, which would separate the breastfeeding mother from her infant, is recommended (Goodman et al., 2013).
Support the mother’s command structure in provision of appropriate space to pump (not a bathroom) and in meeting other directions and regulations according to existing policies within their branch of service. The following summary list is not all-inclusive of supportive policies within the branches. Robyn Roche-Paull,

author of *Breastfeeding in Combat Boots: A survival guide to breastfeeding successfully while serving in the military* (2010) attempts to keep an updated list of all policies and resources related to pregnancy and lactation across military branches (Roche-Paull, 2019). She will provide this list upon direct personal request by a lactation or medical professional:

- Department of Defense, Department of Veterans Affairs. (2009). *VA/DoD Clinical Practice Guideline for Pregnancy Management* (v 2.0). New/updated release pending.
- Headquarters, 1st Armored Division, Ft. Bliss, Texas. (2015, June 1). *Breastfeeding policy* [Standard Operating Procedure].
- Secretary of the Air Force. (2017, January 6). Air Force guidance memorandum to Medical care management (Air Force Instruction 44-102; §§ 4.15.1–3 breastfeeding and breast pumping).
- Secretary of the Army. (2015, November 10). Revised breastfeeding and lactation support policy (Army Directive 2015-43).
- U.S. Department of Health and Human Services. (2011). *The Surgeon General’s Call to Action to Support Breastfeeding*.

Pumping space/lactation space is specifically and separately addressed in the following, although the Coast Guard policy states that space will be provided “when possible” (Roche-Paull, 2019):

- Air Force: AFGM2019-36-02
- Coast Guard: COMDTINST M1020.8 (series), 5,B
- Marine Corps: MCO 5000.12E
- Navy: OPNAVINST 6000.1D and BUMEDINST 6000.14A

Parental leave, including convalescent as well as primary and secondary caregiver leave, is becoming more standardized but still varies slightly across the branches (Roche-Paull, 2019):

- Convalescent maternity leave: 42 days to 12 weeks, dependent on branch
- Primary caregiver leave: 42 days to 12 weeks, with the Coast Guard allowing up to two years temporary separation with return to rank (allowed once)
- Secondary caregiver leave: 14 to 21 days or three weeks, with allowance for single parents to combine this and take both primary and secondary caregiver leave in some branches

An Assistant Secretary of Defense (2011) updated policy on TRICARE access to care states: “Beneficiaries should have an appointment to visit an appropriately trained provider within 24 hours and within 30 minutes travel time of the beneficiary’s residence” (p. 2) for urgent or acute care. Given the delicate nature of the neonatal weight and feeding profile, infants who present to the pediatric office with excessive weight loss or poor weight gain should be sent to a lactation professional for a full consult and evaluation of both mother and infant, and their feeding relationship (Bass, 2015). This situation meets the TRICARE criteria as above.

There are also varying memoranda and directives addressing uniform wear, postpartum fitness requirements, human milk storage, and deferment from deployment or temporary duty assignments that would separate breastfeeding caregivers and their infants (Roche-Paull, 2019). These should be referenced and available to AD servicewomen, along with medical staff

who can help in approaching command structure for compliance as needed.

3. The military treatment facility (MTF) staff will actively support breastfeeding and be provided annual training (with the number of hours dependent on whether they are providing services directly to breastfeeding mothers/babies) on both in-patient and out-patient units (Davis et al., 2012). Training programs increase provider comfort level in lactation assistance provision and decrease inappropriate formula supplementation and other undermining practices (Mellin, Poplawski, Gole, & Mass, 2011). Education and training are important within the facility to provide consistency of information later received by parents and should include peer supporters, so they are able to better assist professionals in the delivery of an evidence-based message (Bevan & Brown, 2014).

Dedicated lactation professionals with experience, ideally international board-certified lactation consultants (IBCLC’s), or those training toward this goal, should be available 24 hours per day, 365 days per year through the local MTF perinatal, women’s health, or pediatric units. Telephone triage assistance may be an acceptable alternative to in-person staffing during overnight, weekend and holiday shifts. All professionals will follow a written infant feeding policy developed by the institution which should receive annual review and revisions which take into account the advent of new evidence-informed practices developed, and research released, within that year (Hernández-Aguilar et al., 2018). Feldman-Winter Procaccini, and Merewood (2012) found a model policy which could be easily adapted streamlined the process of establishing

- baby-friendly practices between facilities.
4. All pregnant women, including active-duty servicewomen, their families, and other applicable support personnel, will receive information on breastfeeding, its benefits and its potential contraindications, and the health implications and known risks of formula feeding (Clark, 2011; Spatz & Lessen, 2011). This should be initiated in the prenatal setting in order to have the most impact on early and successful initiation (Rosen-Carole et al., 2019). The facility should state, as its goal, exclusive breastfeeding for the first 6 months of the infant's life as advocated by the pediatric authorities on infant feeding, including the AAP (2012), the WHO (1981, 2016a, 2016b, 2017, 2018), as well as WHO/UNICEF (2003), in addition to others listed on the initial page of this document. Two of the goals of Healthy People 2020 (2016) are explicitly stated as follows: To not only increase the proportion of infants who are ever breastfed from 74% to almost 82%, but also to increase the proportion of infants who are exclusively breastfed through six months of life from 14% to 25%.

Documentation of feeding plans should be completed in the woman's chart in preparation for childbirth. In addition, no supplementation of the healthy term newborn in the hospital setting should be done without clear medical indication, and parental informed consent, both of which should be documented for tracking and chart audit purposes (AAFP, 2017). Exclusive breastfeeding should be encouraged except in the rare case of temporary or permanent medical contraindication, and the parents' feeding decision should be documented in the infant's chart (AAP, 2012; AAFP, 2017). Per Feldman-
 - Winter, Douglass-Bright, Bartick, M. and Matranga (2013) hospitals with fewer than 1100 deliveries per year will at some point be required to track the Joint Commission's perinatal core measure: Exclusive feeding of human milk (note that maternal choice not to breastfeed will not be considered a contraindication). Except in the case of a medical provider prescribing an oral medication, exclusive breastfeeding is defined as no other liquids or solids provided to the infant.
 5. Mother and healthy term infant should be supported in skin-to-skin contact (including after an operative or surgical birth) for the hour after birth to encourage an early start to a healthy breastfeeding relationship (ACOG, 2016). This includes delaying administration of routine medications for at least one-hour post-delivery in order to encourage bonding and breastfeeding (AAFP, 2017). Such medications may be administered with the infant in parental arms, or even during feeding which may act as a pain management intervention (ACOG, 2016). Rooming in and skin-to-skin contact should be encouraged for all breastfeeding infants as early and often as possible, taking into account potential safety concerns including falls (ACOG, 2016). The facility should consider the use of hospital-intended side-car bassinet/co-sleepers to reduce the risk of infant falls caused by separating infants in stand-alone bassinets on wheels (Hughes, Rodriguez-Carter, Hill, Miller, & Gomez, 2015).

This should be documented as part of the medical record for mother and infant, along with at least one witnessed and well-documented feeding per shift, completed by a skilled clinician in lactation care (USBC, 2010). Registered nurses and medical technicians may be

- trained in lactation care, but their work should be overseen and managed by an IBCLC and completed according to evidence-based lactation support practices (ACOG, 2016). Some women may make the decision to exclusively feed expressed breastmilk per bottle. Keim, Boone, Oza-Frank, and Geraghty (2017) found that while a diverse group, women who elected to pump exclusively were more likely to experience a reduced supply and supplement earlier with infant formula. Establishing early SSC and helping women establish feeding directly at the breast was associated with achievement of overall feeding goals (Keim et al., 2017). Pumping will, of course, be important in the long-term for active-duty personnel.
6. All pregnant women and parents should be made aware of available resources and how to access and utilize them, both on base and in the wider community (ACOG, 2016). This would include peer support groups, written and video materials, and professional lactation support services as covered by the TRICARE benefits program (Drake et al., 2017). In addition, postpartum breastfeeding families should receive instruction/education as follows and as needed, by an appropriate on-site expert (AAFP, 2017; ACOG, 2016; USBC, 2010):
 - a. The body mechanics of positioning and latch, for both mother and baby.
 - b. Nutritive sucking and swallowing vs. nonnutritive suckling; robust milk ejection reflex.
 - c. Milk production, including transition from the colostrum produced during pregnancy and the early postpartum period, and the transition of colostrum to a mature milk supply.
 - d. Feeding cues and the variations found in frequency of feeding at different periods, including assessment of adequate nourishment.
 - e. Indications for contacting the specialized lactation professional and how to do so (including self-referral per TRICARE).
 - f. Jaundice precautions after discharge.
 - g. Interventions for mastitis or candida infections, plugged ducts, and sore nipples (including flat/inverted nipples).
 - h. Engorgement, breast and lymphatic massage, and hand expression. Hand expression may be needed by active-duty personnel during field exercises or in emergency situations.
 - i. Early establishment of pumping and bottle-feeding in preparation for maternal return to active duty, to avoid bottle/feeding refusal over introduction at the time the mother returns to her duty station.
 - j. Maternal nutrition considerations while breastfeeding, specifically prevention of weight gain and weight management which might be pertinent to return to active duty.
 7. Utilize preexisting policies and support documents as iterated above. Ideally, in addition to extant military policies and even if the MHS/DHA do not intend to seek or maintain UNICEF's Baby-Friendly Hospital designation in any of its facilities, the ten steps to becoming a baby-friendly facility will guide local policymaking at the institutional level (Baby-Friendly USA, 2016; Wouk et al., 2016). Below are the revised ten steps per the WHO (2017, 2018, pp. 42-44) which also published guidance on implementation of the revisions: This

information is now divided into categories with both management and clinical practice implications listed:

Critical Management Procedures –

Step 1a. The International Code of Marketing of Breast-Milk

Substitutes: Comply fully with the *International Code of Marketing of Breast-milk Substitutes* and relevant World Health Assembly resolutions.

Step 1b. Infant feeding policy: Have a written infant feeding policy that is routinely communicated to staff and parents.

Step 1c. Monitoring and data-management systems: Establish ongoing monitoring and data-management systems.

Step 2. Staff competency: Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.

Key Clinical Practices –

Step 3. Antenatal information:

Discuss the importance and management of breastfeeding with pregnant women and their families.

Step 4. Immediate postnatal care:

Facilitate immediate and uninterrupted skin-to-skin contact and support mother to initiate breastfeeding as soon as possible after birth.

Step 5. Support with breastfeeding:

Support mother to initiate and maintain breastfeeding and manage common difficulties.

Step 6. Supplementation: Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.

Step 7. Rooming-in: Enable mothers and their infants to remain together and to practise [sic] rooming-in throughout the day and night.

Step 8. Responsive feeding: Support mothers to recognize and respond to their infants' cues for feeding.

Step 9. Feeding bottles, teats and pacifiers: Counsel mothers on the use

and risks of feeding bottles, teats and pacifiers.

Step 10. Care at discharge: Coordinate discharge so that parents and their infants have timely access to ongoing support and care.

Baby-Friendly USA (2016) has announced that they will continue to utilize the previous iteration of the ten steps within the BFHI, although they were not clear on their rationale.

Application of the EBPG

All breastfeeding, breastfed, and breastmilk-fed patients, with specific focus on the military woman who will return to active-duty. Note that even one breastfeeding or breastmilk feeding per day is considered as applicable to this guideline, and support should be provided at whatever level of milk-making the mother or family is providing to the infant. A broader application of the guideline would include all breastfeeding women falling under the auspices of DoD/DHA employment, including AD and reserve members of the armed and uniformed services, beneficiaries, and civilian and contracted employees. At its most complete application, this guideline may address all individuals giving birth within the MHS.

Exceptions to the EBPG

1. Women and families who have made an informed decision to feed infant formula. These women (and their infants) should be offered care and education in prevention and treatment of engorgement, plugged ducts, mastitis and other health complications which may arise from the decision not to breastfeed (Baby-Friendly USA, 2016). They should be individually coached on appropriate and safe mixing and feeding of infant formula (Baby-Friendly USA, 2016). Families should be treated with respect as to their infant feeding decision

- once made (Bibbins-Domingo et al., 2016).
2. In the presence of contraindications to breastfeeding. Medical contraindications to feeding human milk are rare; they *may* be absolute but are often temporary (Hernández-Aguilar et al., 2018):
 - a. Maternal viral infection: Human Immunodeficiency Virus (HIV), Herpes (active lesions that may contact the infant or the milk during pumping), Ebola, human T-cell lymphotropic virus type I or type II (HLTV I & II).
 - b. Current use of certain illicit drugs or prescribed medications.
 - c. Maternal varicella infection.
 - d. Untreated maternal brucellosis or tuberculosis infection.
 - e. Certain infant inborn errors of metabolism may prevent any breastfeeding or may only prevent exclusive breastfeeding.

In Summary

The only current VA/DoD-wide breastfeeding support guidance that exists is included in the Department of Defense, Department of Veterans Affairs (2009) *VA/DoD Clinical Practice Guideline for Pregnancy Management* (v 2.0), which recommends education from preconception planning and repeated throughout each trimester. Most women make the decision on how to feed their infant either before conceiving or early in their pregnancy (Rosen-Carole et al., 2015). Retention of servicewomen after childbirth, given the investment of years of valuable training, should be considered a primary goal of the DoD/DHA. Per Drake et al. (2017) this may be partially accomplished by meeting the needs of infants and mothers within the MHS by mandating DoD/DHA policy that incentivizes breastfeeding success and early bonding through generous leave policies,

creation of milk expression and storage areas (which are convenient, clean, and safe) and acculturation of breastfeeding as the norm for human feeding.

Jantzer, Anderson, and Kuehl (2018) found that women were more satisfied that they achieved an appropriate work-life balance when breastfeeding in the workplace was supported. Sinha et al. (2015) suggested that participation in interventions by all sectors of society (peer, community, health care personnel, and organizations) as well as strong political action, will be required to optimize breastfeeding practices. Given the incentives of better health for women and their families, increased job satisfaction and workforce retention, and decreased costs to the health system, it seems conclusive that a DoD/DHA wide guideline on breastfeeding support makes sense in the military health system.

Disclosure Statement

The author has no financial or other conflicts of interest to disclose. The author endorses the *Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding* and the *International Code of Marketing of Breastmilk Substitutes*.

Acknowledgements and Contributions

I wish to acknowledge the members of a panel of subject matter experts in healthcare provision within the military health system, lactation, and education, who took the time and effort to provide feedback on both breastfeeding and provision of lactation services to AD servicewomen for validation and improvement of this EBPG.

- Ginger Osborn holds a Master of Science in Nursing Education and is an IBCLC in the leading hospital for high-risk deliveries in the state of Alaska (MSN, RNC-MNN, IBCLC). She is a member of the International Lactation Consultant

Association. In addition, she is a former AD servicewoman in the USAF with personal experience of starting a family and breastfeeding as AD personnel. Ginger is dedicated to ensuring the nurses within her unit and under her charge remain current on evidence-based practices in general, and in lactation specifically. She also sees patients directly for inpatient lactation consultations. She is an adjunct clinical instructor for bachelor's program nursing students at the University of Alaska. This vision helps her ensure her patients are meeting their feeding goals, improving outcomes in the population she serves. She precepts student nurses and new nurses to the hospital and the maternal-child unit, and advocates for the *Ten Steps*.

- Robyn Roche-Paull is a bachelor's educated registered nurse in maternal-newborn nursing (BSN, RNC-MNN) and an IBCLC, as well as a United States Navy veteran, who wrote the seminal text on the lived experiences of breastfeeding families encountered while serving in the military. She is a speaker on lactation issues targeting the particular concerns AD personnel may experience and educating consultants and other staff who serve this population. She has managed and updated a list of policies over the years as the MHS has slowly created and then belatedly made improvements to the lactation support policies in existence. She actively works to continue to improve conditions for servicewomen seeking to breastfeed in her current position at an MTF. Ms. Roche-Paull is projecting a revised edition of her book, *Breastfeeding in combat boots: A survival guide to breastfeeding successfully while serving in the military*, within the next several years.
- Ada Scott is a bachelor's trained registered nurse with neonatal nursing certification for 24 years and lactation credentials for 23 (BSN, RNC-LRN, IBCLC). She found the MHS to be unsupportive as a military spouse for 21 years. Ada made the decision to become a lactation consultant in order to help mothers and infants with their breastfeeding journey with a goal to prevent the many problems she experienced. Her own perseverance in breastfeeding through many common obstacles became her impetus to attain her IBCLC credential. She is now honored to be a lactation consultant helping families in a high-risk neonatal intensive care unit (NICU) population. She has a strong rapport with the military population; many high-risk pregnancies are transferred to the hospital where she works from the local MTF. She is familiar with the terminology used in the MHS and the obstacles the AD or dependent mother has within the MHS in receiving lactation support. Ada is driven to helping families overcome these obstacles.
- Terriann Shell is a bachelor's trained registered nurse and IBCLC with certification as a health education specialist (BSN, RN, IBCLC, CHES). She is a fellow of the International Lactation Consultant Association (FILCA). She has been an advocate for breastfeeding families since 1981 on many levels. She continues to support families through a mother-to-mother group and at two separate hospitals where she serves as an IBCLC. Terriann has served on the Board of the International Lactation Consultant Association (ILCA) and as the Lactation Chair on the Board of the International Childbirth Education Association where she developed policies. Currently, she serves as the Vice President of the Alaska Breastfeeding Coalition where she leads the legislation committee which is

working on a jury duty exemption bill for breastfeeding mothers. In addition, she heads a committee which is writing policies for infant and young child feeding in emergencies, focusing on the special needs of families with infants. She is a frequent and well-known speaker and lactation conference planner, including the Lactation Consultant in Private Practice Workshop for the past 22 years.

- Linda J. Smith holds a master's degree in Public Health (MPH) with a global focus, a Bachelor of Science degree in education (BSE) and is an IBCLC and a fellow of ILCA. She is also a Lamaze certified childbirth educator (LCCE) and fellow of the American College of Childbirth Educators (FACCE). Linda is a USAF Colonel's spouse (retired after 26 years of service), and has lived in 13 houses, 9 cities and 2 countries. She lives and has lived on or near military installations through 51 years of marriage. She is an educator of lactation students as the owner and director of *Bright Future Lactation Resource Center, Ltd.*, and has taught well over 100 active-duty military and civilian health professionals in her Lactation Consultant Exam Prep courses. In addition, she has supported hundreds of military families in childbirth education classes over 40 years. Linda is and adjunct instructor for the Wright State University Boonshoft School of Medicine, and affiliated faculty for Union Institute and University, both in Ohio. She has served or is serving on boards, or in a professional advisory capacity, for La Leche League International (LLLI), the WHO, and as a LLLI liaison to WHO/UNICEF's BFHI program, among other activities. Linda was a founder of the IBLCE (International Board of Lactation Consultant Examiners), created the

proctor's manual for the first exam, and co-wrote all of the questions for the first (1985) examination. She is the author of the *Comprehensive lactation consultant exam review* (now in its fourth edition) and contributed chapters to the *Core curriculum for lactation consultant practice*, (1st, 2nd, and 3rd editions), and a chapter to *Breastfeeding and human lactation* (3rd, 4th, 5th and 6th editions). She has multiple other publications to her credit. She is an internationally renowned speaker and educator on the subject of lactation and the issues faced in both the developed and developing world, with a strong focus on current research and ethics considerations.

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Appendix C: Walden IRB Approval Number

05-17-18-0658234