

An Integrative Review of Breastfeeding among Adolescent Mothers: An Ecological Model Approach

Sasitara Nuampa, RN, MNS¹, Fongcum Tilokskulchai, RN, PhD¹

Abstract

Purpose: This integrative review aimed to examine factors associated with breastfeeding practices among adolescent mothers based on the multilevel ecological approach.

Design: An integrative review.

Methods: Original research studies published in 2000-2016 were identified using electronic databases (PubMed, Proquest, CINAHL, Cochrane Library, Ovid Medline, and Science Direct). Articles were critically reviewed and extracted using an approach based on the QualSyst tool. From 127 relevant research articles identified, 26 original researches were included in the present review.

Main findings: The key factors of four levels based on the Ecological Model were reviewed including intrapersonal, interpersonal, institutional, and community influences, which influenced breastfeeding decisions and practices.

Conclusion and recommendations: The results identified a need for future experimental research examining an effective intervention specifically tailored for adolescents by adapting multi-level factors on breastfeeding, in order to increase breastfeeding duration and achieve exclusive breastfeeding at six months.

Keywords: adolescent mothers, breastfeeding, integrative review, ecological model

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Corresponding Author: Lecturer Sasitara Nuampa, Faculty of Nursing, Mahidol University, Bangkok 10700, Thailand;
e-mail: sasitara.nua@mahidol.ac.th

¹ Faculty of Nursing, Mahidol University, Bangkok, Thailand

การทบทวนวรรณกรรมเชิงบูรณาการของการเลี้ยงลูกด้วยนมแม่ ในมารดาวัยรุ่น: การวิเคราะห์โดยไชโมเดลเชิงนิเวศวิทยา

ศศิธรา น่วมภา, พย.บ.¹ ฟองคำ ทิลสกุลชัย, PhD¹

บทคัดย่อ

วัตถุประสงค์: การทบทวนวรรณกรรมเชิงบูรณาการครั้งนี้มีวัตถุประสงค์เพื่อค้นหาปัจจัยที่เกี่ยวข้องกับการเลี้ยงลูกด้วยนมแม่ในมารดาวัยรุ่น โดยใช้กรอบแนวคิดเชิงนิเวศวิทยา

รูปแบบการวิจัย: การทบทวนวรรณกรรมเชิงบูรณาการ

วิธีดำเนินการวิจัย: สืบค้นงานวิจัยที่ตีพิมพ์ระหว่าง 2000-2016 โดยใช้ฐานข้อมูลอิเล็กทรอนิกส์ (PubMed, Proquest, CINAHL, Cochrane Library, Ovid Medline, and Science Direct) สกิดงานวิจัยโดยใช้เครื่องมือ QualSyst จากงานวิจัยที่เกี่ยวข้องจำนวน 127 เรื่อง มีงานวิจัยจำนวน 26 เรื่องที่ผ่านการคัดเลือกและนำมาวิเคราะห์ในการศึกษา

ผลการวิจัย: ปัจจัยที่มีผลต่อการตัดสินใจเลี้ยงลูกด้วยนมแม่ การเพิ่มระยะเวลาการเลี้ยงลูกด้วยนมแม่ ครอบคลุม 4 ระดับของโมเดลเชิงนิเวศวิทยา ได้แก่ ปัจจัยภายในตัวบุคคล ปัจจัยระดับบุคคล ปัจจัยที่เกี่ยวข้องกับองค์กร และปัจจัยที่เกี่ยวข้องกับชุมชน

สรุปและข้อเสนอแนะ: ผลของการทบทวนวรรณกรรมเชิงบูรณาการนี้ชี้ให้เห็นความต้องการงานวิจัยเชิงทดลองที่ทดสอบผลของโปรแกรมที่มีความเจาะจงกับมารดาวัยรุ่น โดยครอบคลุมหลายระดับปัจจัยทั้งในระดับบุคคลและสิ่งแวดล้อม เพื่อเพิ่มระยะเวลาของการเลี้ยงลูกด้วยนมแม่ และอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียวยาว 6 เดือนในมารดาวัยรุ่น ตามเป้าหมายระดับประเทศ

Keywords: มารดาวัยรุ่น การเลี้ยงลูกด้วยนมแม่ การทบทวนวรรณกรรมเชิงบูรณาการ กรอบแนวคิดเชิงนิเวศวิทยา

Background and Significance

The World Health Organization has updated recommendations that exclusive breastfeeding should be given to all babies until six months old and should be continued along with complementary food until the first two years of life¹. However, adolescent mothers have lower rates of initiation and exclusive breastfeeding at six months, as well as a shorter duration of breastfeeding². Similar pattern was found in the United States where only 19% of adolescent mothers sustain breastfeeding for six months as compared to 34% of mothers aged 20-29 years and 49% of mothers aged over 30 years³.

Breastfeeding practice in adolescent mothers seemed very difficult to achieve because of conflict with underdeveloped psychological, cognitive, and physical adolescent traits⁴. Several barriers often occurred during maintenance of breastfeeding among adolescent mothers. The barriers cited as reasons for early weaning included stigma, embarrassment, physical exposure, negative attitude, low self-efficacy, lack of knowledge, unskilled breastfeeding, and inadequate support^{2,5-6}. Approaches uniquely designed to target adolescent mothers were particularly important because their transition to parenthood was unlike the transition experienced by older mothers⁷.

Currently, review of breastfeeding literatures revealed that the most effective means of encouraging breastfeeding have been at the individual level⁸. However, gaining a better understanding of adolescent mothers' breastfeeding is a complex phenomenon. Therefore, an ecological model for health promotion that focused on the influences of entire social systems was used as a conceptual framework to analyze the determinants influencing adolescent mothers' decisions to initiate and continue breastfeeding⁹. The multilevel approach could serve the comprehensive ideas of personal attributes and environmental circumstances to design the appropriate interventions for adolescent

mothers. Currently, we still lacked the evidence which integrated comprehensive knowledge about breastfeeding in adolescent mothers. Understanding this phenomenon through social system perspective might be useful to apply unique and inclusive programs to increase rates and durations of breastfeeding among adolescent mothers. Therefore, this study aimed to examine the factors associated with breastfeeding practices based on the multilevel ecological approach.

Objectives

The purpose of this integrative review was to examine the factors associated with breastfeeding decisions and practices based on the multilevel ecological approach.

Research Question

What did the factors associate with adolescent mothers' decisions on breastfeeding practices through perspective of an ecological model?

Methodology

Search Strategy

An integrative review method was selected in order to combine the evidence suitable for adolescent mothers from a variety of published sources. A literature search for this study was undertaken using the PICO framework as a guide for searching with keywords including "teenage mothers", "adolescent mothers", "experiences", "factor(s)", "intervention", "review", "breastfeeding", "breast-feeding" and "infant feeding". These keywords were used in combination with the Boolean operators "AND" or "OR" to search for literatures. Duplicate records and irrelevant titles were removed. After the abstracts were reviewed, relevant full-text papers were obtained. The researchers searched the following electronic databases: PubMed, Proquest, CINAHL, Cochrane Library, Ovid Medline, and Science Direct. Articles were reviewed for the years of publication from 2000 to 2016.

Inclusion and Exclusion Criteria

Articles were eligible for inclusion in the review if they met the following criteria: (1) peer-reviewed journals published in English; (2) published during 2000-2016; (3) full-text articles on qualitative studies, quantitative studies, and mixed-method designs; (4) adolescent mothers aged 11-21 years¹⁰; and (5) primary outcomes of studies on breastfeeding and/or factors influencing breastfeeding. Gray literature, studies published as chapters and books, and literature review were excluded from this analysis.

The identified original research articles were assessed using the QualSyst assessment tool¹¹. A standardized system with scores ranging from 0 to 2 was used to assess all aspects of research quality. The total possible scores of

28 for the quantitative studies and 20 for the qualitative studies were then converted into a standardized score of 1. A QualSyst cut-off score of .55 was chosen in order to capture 75% of articles and ensure valuable data. Following quality scoring, the final selection of articles was reviewed by the authors and inclusion was based on originality and relevance.

Findings

A total of 1,587 articles were identified; following the removal of duplicates and application of initial filters, 127 records were examined in greater detail. Finally, 26 articles were included in this review for the final integrative synthesis as shown in Figure 1. This comprised 10 quantitative studies, 12 qualitative studies, and 4 mixed-methods studies.

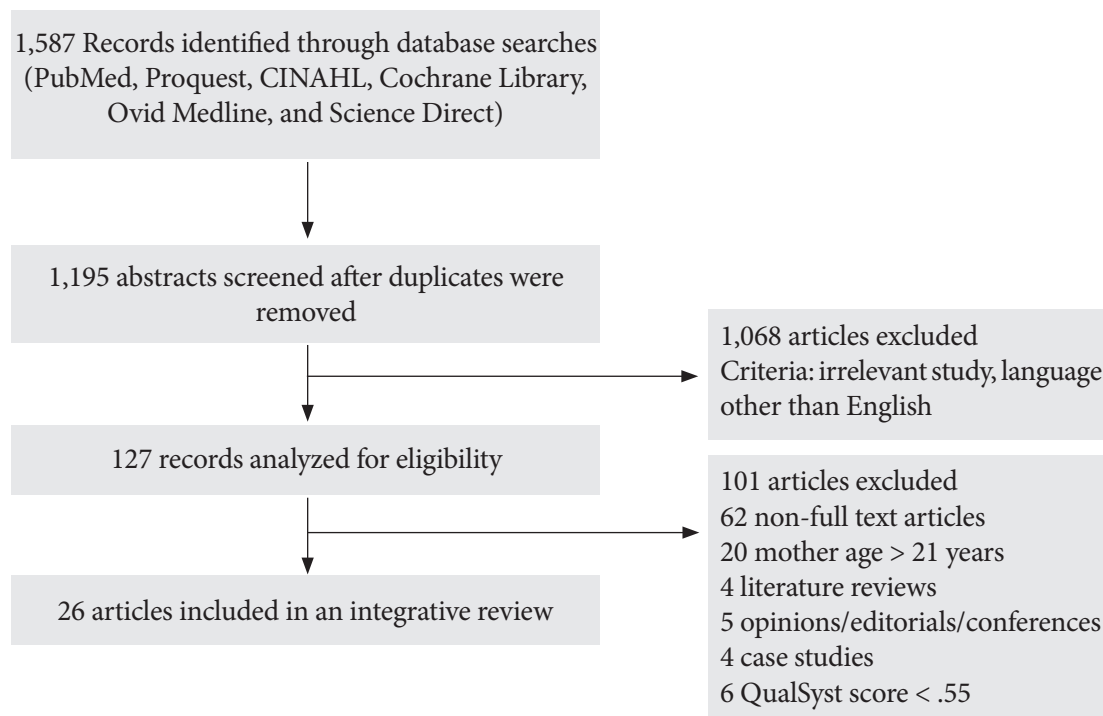


Figure 1 Diagram of systematic search strategy

Article details

In this review, 26 articles published from 2000 to 2016 from 11 journals met the inclusion criteria. The authors were based in four different

countries with a number of articles coming from the United States (54%, $n = 14$), the United Kingdom (19%, $n = 5$), Brazil (15%, $n = 4$), and Canada (11%, $n = 3$). Regarding research

design, the quantitative studies included randomized controlled trials (23%, $n = 6$) and non-experimental studies (15%, $n = 4$); qualitative studies (47%, $n = 12$); and mixed-method studies (15%, $n = 4$). In particular, the qualitative studies consisted of several methods including: focus groups¹²⁻¹⁴; interviews¹⁵⁻¹⁶; combinations of both focus groups and interviews^{2,17-19}; Grounded theory

method²⁰; and Ethnographic method²¹.

Ecological model and breastfeeding practice among adolescent mothers

The results of this integrative review are able to address in four levels of the Ecological model⁹ including intrapersonal, interpersonal, institutional, and community levels, as shown in Figure 2.

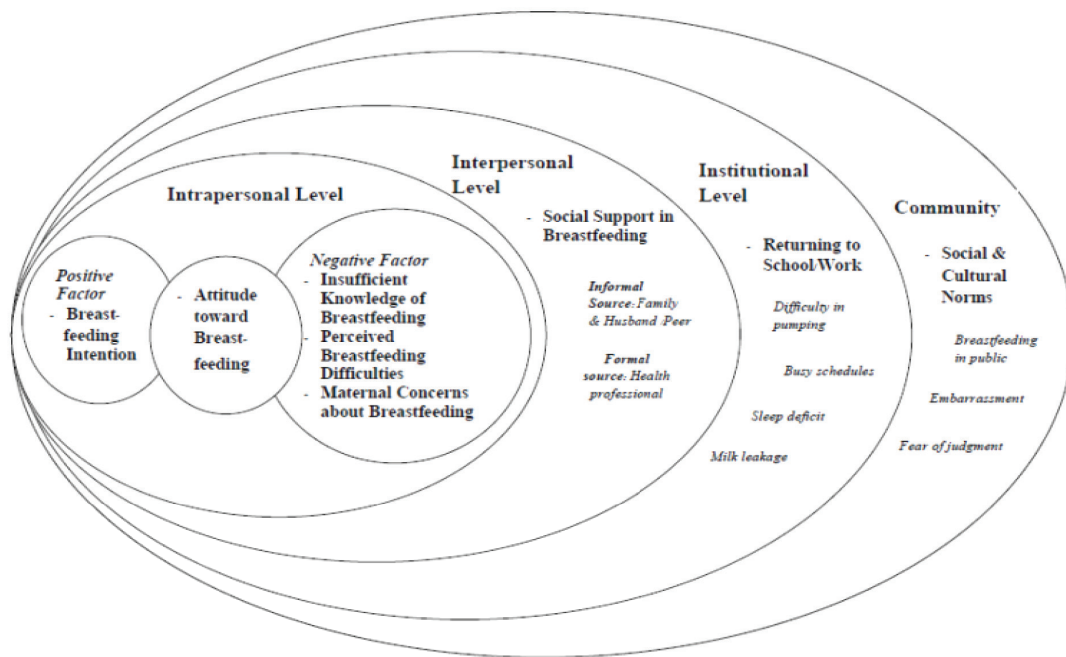


Figure 2 Ecological model and breastfeeding practice among adolescent mothers

Intrapersonal Factors

Attitude toward breastfeeding

Attitudes toward breastfeeding were found to be correlated with infant-feeding decisions and practices both positive and negative influences among adolescent mothers. The adolescent mothers mostly had positive recognition of breastfeeding benefits for infant health; “breastfeeding is the best” was the main expression leading to breastfeeding intention^{15,21}, initiation^{4,16}, and continued breastfeeding^{2,4}. The adolescent mothers less frequently mentioned breastfeeding benefits for themselves; the most prevalent perceptions involved their babies’ outcomes first¹²⁻¹³. Positive breastfeeding

attitudes on infants’ health were received from several sources in environment around the adolescent mothers to facilitate breastfeeding¹². However, breastfeeding advantages for infants might not have been sufficient to maintain breastfeeding among some adolescent mothers⁵. The adolescent mothers perceived breastfeeding advantages on their own through positive experiences. Successful breastfeeding mothers expressed convenient, easy, and economic saving benefits^{2,13,21}, maternal emotional benefits^{2,22}, and promotion of bonding¹⁶. In addition, believed breastfeeding economic benefits was found to be correlated with initiation of breastfeeding¹⁶; believed breastfeeding to be easy was able to

predict continued breastfeeding²². However, the study of Wambach and Koehn found that fewer mothers perceived benefits for breastfeeding in terms of lower costs and promotion of bonding, but they expressed concern about breastfeeding complexity¹³.

To develop autonomy with independency, the adolescent mothers addressed breastfeeding as the mother's choice in addition to understanding that benefits might not be the primary reasons for selecting infant feeding¹². Several studies found the adolescent mothers have received negative breastfeeding information from people around them and have encountered breastfeeding problems in personal experiences which negatively influenced breastfeeding decisions. Breastfeeding was described as painful, difficult, and time-consuming based on what the adolescent mothers heard from family and friends in relation to their decision to try breastfeeding^{12,20}. At the same time, perceptions of breastfeeding problems involved inconvenience that opposed teen lifestyles, difficulty taking outings, and managing breast milk pumping^{13,21}. On the other hand, bottle-feeding was accepted as simple and providing freedom to leave infants with others¹³.

Breastfeeding intention

The adolescent mothers perceived intention to breastfeed since the pregnancy period, even though few adolescent mothers had considered breastfeeding at their first antenatal visit. According to the evidence, breastfeeding intention was correlated with positive attitude toward breastfeeding, particular health benefits for babies^{17,23} and perceptions of breastfeeding as a natural way to feed babies²³. However, the adolescent mothers needed health care professionals to provide early information on breastfeeding advantages and leave them a choice¹⁷. Moreover, the study of Sipsma et al.²³ revealed statistic significantly predictors of breastfeeding intention, including intimate partner violence (OR = .37, $p < .05$) and partner's intention (OR = 14.81, $p < .01$). Breastfeeding intention among adolescent mothers significantly predicted breastfeeding initiation²³. Furthermore, breastfeeding intention was found

to be correlated with breastfeeding duration among this vulnerable group. Adolescent mothers who had long-standing intention to breastfeed were found to be correlated with long-term breastfeeding durations²². At the same time, adolescent mothers planned duration of breastfeeding for less than 3 months were a significant predictor for weaning breastfeeding before 28 days (HR = 2.57, $p < .01$)⁴. Adolescent mothers were keen to be aware of breastfeeding benefits and felt responsible for motherhood to give the best thing for their infants leading to strong breastfeeding intentions that were correlated with continued breastfeeding¹⁶.

Insufficient knowledge of breastfeeding

Knowledge about breastfeeding practice and benefits were a concern in improving breastfeeding outcomes. Unfortunately, most of the studies found adolescent mothers lacked breastfeeding knowledge and skills which became barriers to continued breastfeeding¹⁵⁻¹⁶. Most of the adolescent mothers had poor breastfeeding knowledge and skills to solve breastfeeding challenges¹⁵. They also lacked knowledge about breast milk production and supply, normal patterns, maternal nutrition intake, and quality of milk which might have resulted in unrealistic expectations about breastfeeding challenges¹⁶. Furthermore, the qualities of breast milk and breastfeeding benefits for mothers remained deficient among adolescent mothers. They needed information on the superiority of breast milk and the health advantages of breastfeeding to motivate long-term breastfeeding^{16,24}. Adolescent mothers were able to gain breastfeeding knowledge from a variety of sources including family, friends, health care providers, media, and self-initiated reading²¹. Importantly, adolescent mothers perceived formula feeding as a positive experience and a comfortable feeding method^{16,18,22}. They lacked knowledge about the risks of early introduction of formula feeding that made it easier to make the decision to select formula milk when faced with challenge situations¹⁸.

Perceived breastfeeding difficulties

The review found that perceived difficulties

of breastfeeding was correlated with inadequate breastfeeding knowledge and skills among adolescent mothers. Adolescent mothers who perceived difficulty in learning breastfeeding practices and skills tended to encounter physical discomforts which influenced early weaning from breastfeeding and shorter duration^{6,16,23} and was a strong predictor of exclusive breastfeeding²³. Most of adolescent mothers mentioned breastfeeding difficulty concerning latching techniques^{6,14,16,21}, positioning²¹, managing breastfeeding problems¹⁴⁻¹⁵, and difficult pumping⁶. Difficulty latching on led to formula feeding by hospital staff and was considered a barrier to breastfeeding⁶. However, social support from family members, partners, and health care professionals could assist in learning about breastfeeding, additional adjusting to breastfeeding through accepting the transition to motherhood and enabling adolescent mothers to reduce breastfeeding difficulties²⁰.

Moreover, physical discomfort from breastfeeding practices increased adolescent mothers' perceptions of breastfeeding difficulties. Breastfeeding problems on physical challenges included pain, sore nipples^{5-6,13,15,21,23-24}, and fatigue²¹. Accordingly, the most frequently encountered reason for cessation of breastfeeding among adolescent mothers was pain²³⁻²⁴ which was reported as an early problem experienced at the first week².

Maternal concerns about breastfeeding

There were many concerns about breastfeeding among adolescent mothers. Most maternal concerns conflicted adolescent development and needs, including lack of freedom, and strict maternal diets. In addition, insufficient milk supply was a typical concern among mothers in other age groups; this problem had less concern in adolescent mothers. Dependency on breastfeeding infants was the outstanding concern among adolescents because it represented a conflict in the stage of teen development which required an independent life to complete the tasks of self-identity and autonomy¹⁴. One breastfeeding concern was difficulty in weaning and leading to dependency¹².

Therefore, freedom and ease in receiving help from family members were reasons for weaning from breastfeeding²⁰. Moreover, infants might become too attached to breastfeeding and this dependency was expected to become a barrier to return to school that influenced failure to initiate breastfeeding²¹. A few studies mentioned adolescent mothers' concerns about maternal diet and strict maternal foods as barriers to breastfeeding practice¹³ and long-term breastfeeding². Beliefs concerning breastfeeding myths about maternal foods could affect both infant health and emotions which increased breastfeeding difficulty in normal life²¹. Regarding breast milk supply, inadequate milk was concerned as a breastfeeding barrier to sustaining long-term breastfeeding^{6,24}, which might have been the major reason for weaning from breastfeeding during the first week postpartum².

Interpersonal Factors

Social support in breastfeeding

Social support in breastfeeding among adolescent mothers was expressed as highly prevalent in several studies. Informal (families, partners, and peers) and formal support (health care providers) affected the initiation and continuation of breastfeeding as significant environmental sources of support. Concerning informal support, adolescent mothers perceived family members as primary sources in supporting breastfeeding¹⁶. The breastfeeding support relied on family members who had positive breastfeeding experiences, particularly the babies' grandmothers^{6,14,16,25-27}. Family support provided breastfeeding information on the advantages for infant health as well as serving for models in a breastfeeding environment that influenced breastfeeding initiation⁶, while the quality of support and help in overcoming breastfeeding difficulty increased breastfeeding durations^{16,17}. Breastfeeding support from the babies' grandmother had positive effect which postponed liquids²⁶, decreased complementary foods at 4 months²⁷, and increased prevalence of breastfeeding at 12 months²⁵. However, family members might also provide negative support

with insufficient knowledge and a history of negative attitudes about breastfeeding^{6,14}. Breastfeeding support from husbands was less frequently mentioned among adolescent mothers, while encouragement to breastfeed was the remarkable support from them^{2,16}. On the other hand, intimate partner violence was associated with short breastfeeding duration among the adolescent mothers (HR of cessation = 1.77, $p < .05$)²³. However, family and husband support might involve pressure to breastfeed, because adolescent mothers needed to make their own decisions¹³. In terms of peer influence, the adolescent mothers mentioned peers who had similar experiences would provide value, acceptance, and encouragement about breastfeeding to meet their support¹⁹. Peer-support program could increase exclusive breastfeeding for 35 days in an intervention group comparing with 10 days in control group²⁸. However, some studies presented adverse ideas that peer offered negative views about breastfeeding because breastfeeding practices were not common among peers^{6,15}.

Regarding formal support, adolescent mothers perceived health care providers would be capable of helping them continue breastfeeding. Mothers in home visit program also were nearly 4 times more likely to adhere to AAP guidelines (no complementary foods before 4-6 months), compared with mothers in the control group²⁹. However, adolescent mothers were faced with insufficient and negative support in real situations^{14,15,17,21}. The adolescent mothers perceived that they were disempowered and passive in their postpartum experiences, while additional hospital routines discouraged a positive start in breastfeeding. The adolescent mothers were also judged, provided with miscommunications and given unsympathetic support¹⁹. Conversely, nurses affected breastfeeding knowledge and skills, while promoting breastfeeding confidence¹⁶. The adolescent mothers needed encouragement, provision of information about breastfeeding basic skills, and benefits with problem-solving strategies²¹. According to the study of Hunter,

Magill-Cuerden and McCourt¹⁹ the adolescent mothers needed honest relationships, praise and proactive support with warnings about realistic challenges. They also required active learning through guided internet searches and hands-off techniques in breastfeeding skills¹². Interestingly, breastfeeding programs combined between health professionals and peer support that could increase breastfeeding durations among adolescent mothers. The education/support intervention provided by a lactation consultant could increase breastfeeding duration for 177 days in an intervention comparing with 61 days in control group³⁰.

Institutional Factors

Returning to school/work

Most of the adolescent mothers rarely mentioned returning to work; they had to stop breastfeeding after returned to their studies^{2,20,21}. They provided several reasons for weaning from breastfeeding when they returned to school consisting of difficulty in pumping and busy schedules due to inadequate services facilitating student mothers^{2,6,24}. Moreover, breastfeeding combined returning to studies with increased fatigue due to sleep deficit and milk leakage affecting their self-images⁶.

Community Factors

Social and cultural norms

The adolescent mothers highlighted social and cultural norms as influencing their breastfeeding decisions and practices. The perception of norms in society could occur beyond social media such as television programs, news and additional educational classes from health care providers¹³. Breastfeeding was part of the environment, supported and accepted as a norm could predict breastfeeding duration²². Adolescent mothers who perceived breastfeeding as the norm and a natural occurrence felt comfortable and proud to breastfeed in public which reflected good mothering^{18,22}; breastfeeding means nurturing infants rather than engaging in a purely sexual activity¹⁸. However, adolescent mothers require high levels of self-confidence to breastfeed in public; they also required facilitating resources in the community^{14,31}.

Unfortunately, the majority of evidence found that adolescent mothers perceived breastfeeding in public as not being a social norm^{17,22,31}. They had to encounter the stigma attached to adolescent pregnancy and the sexuality of the breast linked with physical image as well as social criticism and judgment as inappropriate behavior^{12,14,21,31}. Thus, they felt discomfort and uneasiness about breastfeeding in public. They faced embarrassment, self-consciousness and fear of judgment, all of which were barriers to community integration^{2,12-14,16,18,21,31}. The moral norm of breastfeeding among adolescent mothers was able to predict breastfeeding intention³¹. Likewise, discomfort when breastfeeding in public led to decisions to use bottle-feeding outside the home and early weaning from breastfeeding, respectively^{16,17,20,21}. Adolescent mothers commented that common advice on expressing milk or finding a private place for breastfeeding seemed to enable mothers to continue breastfeeding¹⁷.

Discussion

Breastfeeding promotions, which adopt multi-level factors in addition to adolescent mother responsibility, generally enhance optimal breastfeeding outcomes. An integrated view of breastfeeding practices identifies the factors specific to adolescents that may be modifiable for intervention planning. Regarding breastfeeding practice in adolescent mothers, many qualitative studies and few articles on descriptive quantitative studies in western countries show the complexity of the multiple-level factors in the Ecological Model⁹ consisting of intrapersonal, interpersonal, institutional and community factors; however, public policy was not mentioned.

Most factors were explained through intrapersonal level including attitude toward breastfeeding, breastfeeding intention, insufficient knowledge, breastfeeding difficulties, and maternal concerns. Positive attitude toward breastfeeding was typically expressed in terms of advantages for infant health related to infant-feeding practices. However, painful beliefs affected negative attitudes. The adolescent

mothers ignored breastfeeding advantages for maternal health. Healthcare teams should emphasize the maternal benefits of exclusive breastfeeding to promote infant-feeding outcomes³². Breastfeeding attitude was found to be correlated with intention to breastfeed. Healthcare providers should promote breastfeeding commitment through intensive information about breastfeeding benefits and encouragement of breastfeeding responsibility. Elaborate breastfeeding education interventions should contain a variety of contents in excess of basic including breastfeeding challenges, solution, and the risks of formula feeding. Furthermore, inadequate knowledge and skills were correlated with breastfeeding difficulties and physical discomforts influencing early weaning. The adolescent mothers were concerned about breastfeeding troubles in their adolescent lives such as lack of freedom and strict maternal diet concerning breastfeeding myths, while fewer of the mothers mentioned insufficient breast milk. Therefore, the critical stages of adolescent development must be balanced with breastfeeding and new maternal roles²⁰.

Interpersonal factors presented the importance of social support on breastfeeding, particularly concerning informal support from grandmothers. However, the direction of breastfeeding support depended on prior breastfeeding experiences of grandmothers or other female family members. Unfortunately, grandmothers frequently expressed concern about breastfeeding myths as well as lack of current knowledge about best practices, which negatively influenced infant feeding³³. Husband and peer support were less frequently cited among the adolescent mothers. Many adolescents said their peers did not understand what they were going through and distances developed in friendships³⁴. The formal support of healthcare providers was stated as affecting negative breastfeeding outcomes, while this support was the key factor linked with many levels of the ecological model. The adolescent mothers highlighted the need for healthcare providers to offer thorough informational,

instrumental, emotional, and appraisal support³⁵. Moreover, combined professional support and well-trained informal support increased the duration of breastfeeding, while the single support source revealed ineffective results on breastfeeding durations. According to the review of Renfrew et al⁷, extra support by both laypersons and professionals had a positive effect on duration of exclusive breastfeeding.

Institutional factors addressed less illustration about returning to school/work. The adolescent mothers did not have to make decisions about continuing school or finding a job immediately because they were living with their mothers and had not fully taken on the responsibilities of parenthood³⁴. Therefore, adolescent mothers might have good opportunities to learn and achieve concerning the maternal and breastfeeding roles. However, adolescent mothers who return to school/work should receive institutional support to continue breastfeeding. School institutes should formulate and implement strong policies that provide designated locations and spaces that are accessible to all student mothers for the sole purpose of milk expression³⁶.

Lastly, the community factor was mentioned significantly on social and cultural norms related to breastfeeding decisions and sustainability. The adolescent mothers perceived breastfeeding as the norm and a good maternal symbol with high confidence about breastfeeding in public in relation to continuous breastfeeding and perceived breastfeeding conveniences. On the other hand, most adolescent mothers perceived breastfeeding in public as not being a social norm which was correlated with breastfeeding difficulty in engaging in social activities and limited freedom. In particular, the stigma of teenage mothers increased their fear about judgment, embarrassment, and concern about self-image, all of which influenced early weaning from breastfeeding^{17,31}. Therefore, healthcare providers should prepare to manage these situations intensely and uniquely, while common suggestions might not be effective in maintaining breastfeeding. Further research

needs to be conducted to learn the factors associated with adolescents' perceptions about breastfeeding in social and cultural norms to increase optimal breastfeeding.

Conclusion

This integrative review illustrated that health care providers should take the main role and participate with familiar social networks of adolescent mothers such as grandmothers and peers, while husband support remains limited. Multiple-dimensional factors influencing breastfeeding among adolescent mothers were reported. Healthcare providers should recognize that adolescent mothers approach breastfeeding within specific familial, institutional, social, and cultural contexts. The mothers are not the only persons responsible for breastfeeding practices; many environmental factors can affect breastfeeding. Therefore, breastfeeding promotion should be implemented at individual levels combining many levels simultaneously. Moreover, further research should examine multi-level interventions to promote breastfeeding practices, particularly exclusive breastfeeding in this vulnerable group.

Limitation

The research encountered some limitations that conclusions were based on studies from a number of different countries, social contexts, and health systems; therefore, the scope of professional practice for implementation in promoting breastfeeding among adolescent mothers may differ among these settings.

References

1. World Health Organization (WHO). Indicators for assessing infant and young child feeding practices part 1 Definitions. Geneva, Switzerland: WHO; 2007.
2. Wambach A, Cohen M. Breastfeeding experiences of urban adolescent mothers. *J Pediatr Nurs*. 2009;24(4):244-54.
3. Belanoff CM, McManus BM, Carle AC, McCormick MC, Subramanian SV. Racial/ethnic variation in breastfeeding across the US: a multilevel analysis from

- the National Survey of Children's Health, 2007. *Matern Child Health J*. 2012;16 Suppl 1:S14-26.
4. Mossman M, Heaman M, Dennis CL, Morris M. The influence of adolescent mothers' breastfeeding confidence and attitudes on breastfeeding initiation and duration. *J Hum Lact*. 2008;24(3):268-77.
5. Monteiro JC, Dias FA, Stefanello J, Reis MC, Nakano AM, Gomes-Sponholz FA. Breast feeding among Brazilian adolescents: practice and needs. *Midwifery*. 2014;30(3):359-63.
6. Tucker CM, Wilson EK, Samandari G. Infant feeding experiences among teen mothers in North Carolina: findings from a mixed-methods study. *Int Breastfeed J*. 2011;6:14. doi: 10.1186/1746-4358-6-14.
7. Renfrew MJ, McCormick FM, Wade A, Quinn B, Dowswell T. Support for healthy breastfeeding mothers with healthy term babies. *Cochrane Database Syst Rev*. 2012;16(5):CD001141. doi: 10.1002/14651858.CD001141.pub4.
8. Meedya S, Fahy K, Kable A. Factors that positively influence breastfeeding duration to 6 months: a literature review. *Women Birth*. 2010;23(4):135-45.
9. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q*. 1988;15(4):351-77.
10. American Academy of Child and Adolescent's Facts for Families. Stages of adolescent development [Internet]. Washington, DC: AACAP; 2011 [cited 12 May 2016]. Available from: https://www.prearesourcecenter.org/sites/default/files/content/6._stages_of_adolescent_development.pdf
11. Kmet LM, Lee RC, Cook LS. Standard quality assessment criteria for evaluating primary research papers from a variety of fields [Internet]. Alberta, Canada: Alberta Heritage Foundation for Medical Research; 2004 [cited 10 Jan 2016]. Available from: <https://www.ihe.ca/advanced-search/standard-quality-assessment-criteria-for-evaluating-primary-research-papers-from-a-variety-of-fields>.
12. Nelson AM. Adolescent attitudes, beliefs, and concerns regarding breastfeeding. *MCN Am J Matern Child Nurs*. 2009;34(4):249-55.
13. Wambach KA, Koehn M. Experiences of infant-feeding decision-making among urban economically disadvantaged pregnant adolescents. *J Adv Nurs*. 2004;48(4):361-70.
14. Woods NK, Chesser AK, Wipperman J. Describing adolescent breastfeeding environments through focus groups in an urban community. *J Prim Care Community Health*. 2013;4(4):307-10.
15. Smith PH, Coley SL, Labbok MH, Cupito S, Nwokah E. Early breastfeeding experiences of adolescent mothers: a qualitative prospective study. *Int Breastfeed J*. 2012;7(1):13.
16. Nesbitt SA, Campbell KA, Jack SM, Robinson H, Piehl K, Bogdan JC. Canadian adolescent mothers' perceptions of influences on breastfeeding decisions: a qualitative descriptive study. *BMC Pregnancy Childbirth*. 2012;12:149. doi: 10.1186/1471-2393-12-149.
17. Condon L, Rhodes C, Warren S, Withall J, Tapp A. 'But is it a normal thing?' Teenage mothers' experiences with breastfeeding promotion and support. *Health Educ J*. 2012;72(2):156-62.
18. Hunter L, Magill-Cuerden J. Young mothers' decisions to initiate and continue breastfeeding in the UK: tensions inherent in the paradox between being, but not being able to be seen to be, a good mother. *Evidence Based Midwifery*. 2014;12(2):46-51.
19. Hunter L, Magill-Cuerden J, McCourt C. Disempowered, passive and isolated: how teenage mothers' postnatal inpatient experiences in the UK impact

- on the initiation and continuation of breastfeeding. *Matern Child Nutr.* 2015;11(1):47-58.
20. Nelson A, Sethi S. The breastfeeding experiences of Canadian teenage mothers. *J Obstet Gynecol Neonatal Nurs.* 2005;34(5):615-24.
21. Hannon PR, Willis SK, Bishop-Townsend V, Martinez M, Scrimshaw SC. African-American and Latina adolescent mothers' infant feeding decisions and breastfeeding practices: a qualitative study. *J Adolesc Health.* 2000;26(6):399-407.
22. Brown A, Raynor P, Lee M. Young mothers who choose to breastfeed: the importance of being part of a supportive breast-feeding community. *Midwifery.* 2011;27(1):53-9.
23. Sipsma HL, Magriples U, Divney A, Gordon D, Gabzdyl E, Kershaw T. Breastfeeding behavior among adolescents: initiation, duration, and exclusivity. *J Adolesc Health.* 2013;53(3):394-400.
24. Spear HJ. Breastfeeding behaviors and experiences of adolescent mothers. *MCN Am J Matern Child Nurs.* 2006;31(2):106-13.
25. Bica OC, Giugliani ER. Influence of counseling sessions on the prevalence of breastfeeding in the first year of life: a randomized clinical trial with adolescent mothers and grandmothers. *Birth.* 2014;41(1):39-45.
26. Nunes LM, Giugliani ER, Santo LC, de Oliveira LD. Reduction of unnecessary intake of water and herbal teas on breast-fed infants: a randomized clinical trial with adolescent mothers and grandmothers. *J Adolescent Health.* 2011;49(3):258-64.
27. de Oliveira LD, Giugliani ER, Santo LC, Nunes LM. Impact of a strategy to prevent the introduction of non-breast milk and complementary foods during the first 6 months of life: a randomized clinical trial with adolescent mothers and grandmothers. *Early Hum Dev.* 2012;88(6):357-61.
28. Meglio GD, McDermott MP, Klein JD. A randomized controlled trial of telephone peer support influence on breastfeeding duration in adolescent mothers. *Breastfeed Med.* 2010;5(1):41-7.
29. Black MM, Siegel EH, Abel Y, Bentley ME. Home and videotape intervention delays early complementary feeding among adolescent mothers. *Pediatrics.* 2001;107(5):E67.
30. Wambach KA, Aaronson L, Breedlove G, Domian EW, Rojjanasirirat W, Yeh HW. A randomized controlled trial of breastfeeding support and education for adolescent mothers. *West J Nurs Res.* 2011;33(4):486-505.
31. Dyson L, Green JM, Renfrew MJ, McMillan B, Woolridge M. Factors influencing the infant feeding decision for socioeconomically deprived pregnant teenagers: the moral dimension. *Birth.* 2010;37(2):141-9.
32. Mogre V, Dery M, Gaa PK. Knowledge, attitudes and determinants of exclusive breastfeeding practice among Ghanaian rural lactating mothers. *Int Breastfeed J.* 2016;11:12. doi: 10.1186/s13006-016-0071-z. eCollection 2016.
33. Grassley J, Eschiti V. Grandmother breastfeeding support: what do mothers need and want? *Birth.* 2008;35(4):329-35.
34. Devito J. How adolescent mothers feel about becoming a parent. *J Perinat Educ.* 2010;19(2):25-34.
35. Grassley JS. Adolescent mothers' breastfeeding social support needs. *J Obstet Gynecol Neonatal Nurs.* 2010;39(6):713-22.
36. Bostick MW, Albrecht SA, Baghdadi N, Haley C, Spatz DL. Do American colleges and universities support the lactation needs of students? *Breastfeed Med.* 2016;11(7):376-9.