

Janis Henderson, PhD^a

Jennifer K. Chapman, PhD student^b

Shera Thomas-Jackson, PhD, IBCLC, RLC, CPST^c

Lauren Kelly, PhD^d

Miriam Mulsow, PhD^e

Share this:



A return to work and school presents mothers with barriers to breastfeeding. Concerns include negative attitudes toward breastfeeding, scheduling and break-time, and appropriate, private space. Current federal laws require worksite support and provision of adequate accommodations for lactation purposes, as do some state laws. An evaluation of faculty, staff, and students (N = 510) at a large public university, assessed breastfeeding knowledge, attitudes, and support following the implementation of new mother-friendly policies and lactation rooms. Additionally, awareness of the lactation rooms and university policies were assessed. Overall, the university climate reflected high breastfeeding knowledge and positive attitudes. Employees had higher awareness of the new lactation facilities and university policies than did students. Implementation limitations were a need for education and awareness efforts targeted to students. Future directions for worksites and schools are addressed.

Keywords: lactation; university; faculty; students

Breastfeeding is widely supported in the United States (Brand, Kothari, & Stark, 2011), with rates increasing (Centers for Disease Control and Prevention, 2016). For this study, *private breastfeeding* refers to breastfeeding or expressing milk inside the home, while *public breastfeeding* refers to these activities in any other setting. Breastfeeding in private has greater acceptance than does public breastfeeding (Acker, 2009; Li, Rock, & Grummer-Strawn, 2007) despite federal protections of breastfeeding in public (U.S. Department of Labor, 2010) as well as state-level protections in some states. Texas, for example, promotes breastfeeding (Texas Health and Safety Code, 1995), extends protection (Right to Express Breast Milk in the Workplace, 2015), and piloted the federally funded Texas Mother-Friendly Workplace Initiative (MFWPI) to implement lactation rooms and increase breastfeeding resource distribution and breastfeeding awareness education (Texas Mother-Friendly Worksite, n. d.). Because public breastfeeding is less supported than private breastfeeding (Acker, 2009), there is a concern that mothers will hesitate to express breast milk after returning to work.

Mothers' concerns about negative attitudes regarding breastfeeding are linked to breastfeeding cessation (Sheeshka et al., 2001), specifically, negativity associated with the return to work (Brand et al., 2011). Mothers both anticipate (Rojjanasrirat & Sousa, 2010; Thomas-Jackson et al., 2016) and experience difficulties (Johnston & Esposito, 2007; Rojjanasrirat & Sousa, 2010; Taveras et al., 2003) balancing breastfeeding and work (Kimbrow, 2006; Mirkovic, Perrine, Scanlon, & Grummer-Strawn, 2014; Ryan, Zhou, & Arensberg, 2006; Taveras et al., 2003) or school (Springer, Parker, & Leviten-Reid, 2009). The difficulties consist of space and privacy concerns and time constraints, such as break availability and scheduling pumping or feeding (Brand et al., 2011; Odom, Li, Scanlon, Perrine, & Grummer-Strawn, 2013). As a result, these challenges create environments at odds with continued breastfeeding (Hill, 2000), act as barriers to continued breastfeeding (Johnston & Esposito, 2007; Rojjanasrirat & Sousa, 2010; Taveras et al., 2003), and influence breastfeeding choices (Dabritz, Hinton, & Babb, 2009). A return to full- or part-time work (Dunn, Zavela, Cline, & Cost, 2004; Libbus & Bullock, 2002) or school (Taveras et al., 2003) are the strongest predictors of breastfeeding cessation (Taveras et al., 2003).

Support or a lack of support, real or perceived, influence breastfeeding decisions. The presence of colleagues who facilitate support positively influences breastfeeding

a. j.henderson.cfle@outlook.com

b. jennifer.k.harris@ttu.edu

c. shera.jackson@ttu.edu

d. lauthomp@gmail.com

e. miriam.mulsow@ttu.edu

in the work environment (Anderson et al., 2015; Hilliard, 2017). Workplace education promotes positive breastfeeding attitudes (Chezem, Friesen, & Boettcher, 2003; Li, Fridinger, & Grummer-Strawn, 2002; Marrone, Vogeltanz-Holm, & Holm, 2008). A positive link has been found between university students' breastfeeding-related attitudes and later parenting practices (Marrone et al., 2008).

The Present Study

One year after the MFWPI, a program evaluation of the process at a state university was conducted to identify strengths and challenges of the implementation process. The university, when selected as a pilot site, convened a diverse campus community task force with seven members selected to lend expertise, including an IBCLC, an employee from Human Resources, and representatives from university administration. The task force was guided by findings of an existing gender equity survey indicating offices, closets, bathroom stalls, or vehicles were used for on-campus lactation purposes and suggesting inadequate facilities were instrumental in breastfeeding cessation decisions (S. Thomas-Jackson, personal communication, September 22, 2012).

The evaluation findings, submitted to the university human resource department and task force chair, indicated the implementation process was, overall, a success. The rooms were of high quality and met all requirements suggested by the taskforce. However, despite successful implantation of the rooms, use by the intended population was low at the time of the evaluation. Specifically, two sustainability needs were identified:

1. Low dissemination of information on mother-friendly policies, practices, and facilities
2. A method to provide breastfeeding education to employees and students (Harris et al., 2013; Jackson et al., 2014)

To address these concerns, the evaluation team collaborated with the task force lactation consultant to develop an instrument to assess faculty, staff, and students regarding a mother-friendly campus climate. For the instrument, "mother-friendly" was operationalized as

1. Positive knowledge and attitudes regarding breastfeeding and breastfeeding practices
2. Positive support and awareness of university lactation policies, practices, and facilities

"Campus climate" was operationalized as

1. Knowledge of and attitude regarding breastfeeding and breastfeeding practices
2. Knowledge of university lactation-related efforts to create a mother-friendly environment facilitative of continued breastfeeding

Method

Sample

Participants ($N = 510$) were recruited via a campus online announcement system, through invitations issued at Human Resources meetings, and at Faculty, Staff, and Student Senate meetings. Respondent age was assessed using categories (e.g., 18–25 years, 26–30 years, 31–35 years). The majority of respondents were between 18 and 25 years (60%) with fewer than 2% older than 60 years. Respondents were undergraduates (53%), graduate students (16%), and employees (31%). Slightly more than one-third of employees (37%) self-identified as supervisors. Most respondents were female (71%). Most respondents reported White ethnicity (65%). See Table 1 for all demographics.

Survey

The survey was distributed using an online survey platform; participants received questions based on previous responses via question skipping or display options. For example, respondents who did not have a child 2 years or younger did not receive questions targeted to parents who did. The 40-item instrument included

- University breastfeeding policies and practice awareness items—one related to an operating policy and two regarding the lactation rooms; each used a yes/no dichotomous response.
- Attitudinal items related to workplace breastfeeding policies and practices—adapted for a university population from a MFWPI instrument to assess work environments. The instrument, available from the state agency administering the MFWPI grants (Texas Mother-Friendly Worksite, 2014) consists of Likert scale items. Respondents rate agreement to statements (e.g., "Allowing women to take additional unpaid breaks to express/pump milk during the workday is fair" and ". . . additional unpaid breaks to express/pump milk during the workday will interfere with productivity").
- Breastfeeding knowledge and attitudes items—drawn from the Iowa Infant Feeding Attitude

Table 1. Demographic Information for Participants

	N	Valid Percent
University status	508	
Undergraduate students	269	53.0
Graduate students	82	16.1
Employee	157	30.9
Supervisor position	59 (out of 156)	37.8 ^a
Ethnicity	509	
African American	30	5.9
American Indian	7	1.4
Asian	33	6.5
White	329	64.6
Hispanic	87	17.1
Other	23	4.5
Age (years)	510	
18–25	305	59.8
26–30	64	12.5
31–60 ^b	133	26.0
Older than 60	7	1.4
Gender	510	
Male	147	28.8
Female	362	71.0
Baby in last 2 years	58	11.6
Mother	38 (out of 56)	67.9
Father	18	32.1
Ever breastfed	53	94.6

Note. Ns are listed for each section as some had missing numbers.

^aPercentage of employees that were supervisors.

^bCollapsed because of less than 10% per age group.

Scale (IIFAS), an instrument developed to measure new mothers' attitudes. IIFAS has been validated with diverse samples (de la Mora, Russell, Dungy, Losch, & Dusdieker, 1999; Marrone et al., 2008). Respondents indicated degree of agreement on Likert scale items (e.g., "Formula feeding is more expensive than breastfeeding" and "Breast milk is the ideal food for babies").

Analysis

The items from the full campus-climate survey used for analysis include three university-specific items, four items assessing support for mother-friendly workplace policies and practices (e.g., break time, fairness, and productivity), and the 17 IIFAS breastfeeding knowledge and attitudes items. For reporting ease, labels are used to identify the items; items and corresponding labels are shown in Table 2.

A composite score (SCORE) of the 17 IIFAS items provided an indicator of breastfeeding knowledge and attitudes wherein higher scores indicated more knowledge and more favorable attitudes (de la Mora et al., 1999). Two individual IIFAS items relevant to the inquiry were examined in separate analyses. One item asked respondents to rate formula or breastfeeding as a better choice when mothers work outside the home (RETURN-WK). The second item measured agreement as to whether women should breastfeed in public places (PUBLIC-BF).

Table 2. Survey Questions and Labels

Survey Question	Label
Allowing women to take additional unpaid breaks to express/pump milk during the workday seems fair to other employees	FAIR
Allowing women to take additional unpaid breaks to express/pump milk during the workday will interfere with productivity	PRODUCTIVE
How much do you agree or disagree with the following statement: “[The University] should provide space for breastfeeding mothers to express/pump breast milk on campus”	SPACE
Formula feeding is the better choice if a mother plans to work outside the home	RETURN-WK
Women should not breastfeed in public places such as restaurants.	PUBLIC-BF

Three awareness items that asked participants whether they were aware of the university operating policy, aware of the existence of the on-campus lactation rooms, and aware of the location of any one of the lactation rooms were combined into a single composite score (AWARE). Values on this score ranged from 0 (*unaware of all three items*) to 3 (*aware of all three items*).

The two-group comparisons (*t* test and chi-square) were conducted for gender, age, and parental status. Multigroup comparisons (analysis of variance [ANOVA] and multivariate analysis of variance [MANOVA]) were conducted for university status. Statistics are reported in Tables 3, 4, and 5. Three-group comparisons to compare the three university status groups used ANOVA with follow-up post-hoc analyses (Table 6).

Results

The sample ($N = 510$) demonstrated relatively low levels of awareness on the three university-specific items: 33% were aware of the operating policy (OPAWARE), 26% were aware of the rooms (ROOMS), and 13% were aware of room locations (RMLOCATION). For the combined global AWARE variable, 62% were unaware of any of the three items, whereas only 11% were aware of all three items (policy, rooms, and location). Assessment of workplace attitude items indicated most of the sample held favorable attitudes toward breastfeeding in the workplace. Respondents generally believed additional unpaid breaks to breastfeed was fair (65.8%, FAIR), did not believe additional breaks would interfere with productivity (58.6%, PRODUCTIVE), and were supportive of lactation space on campus (78.4%, BFSPACE). Approximately one-quarter of participants

considered formula better than breastfeeding when a mother returned to work (22.8%, RETURN-WK) or believed that women should not breastfeed in public (27.6%, PUBLIC-BF).

Next, *t* tests, chi-square, and multivariate analyses were performed to compare groups (gender, age, parental status, and university status) on breastfeeding attitude and awareness items. Independent-sample *t* tests found gender differences on the FAIR, $t(260) = -2.49, p < .05$, and PRODUCTIVE, $t(254) = 3.53, p < .01$, with a trend toward gender differences on RETURN-WK, $t(279) = -1.91, p = .056$, variables, with females more supportive than males (see Table 3). On the global AWARE variable, comparisons between males and females revealed no significant differences, $\chi^2(6, N = 501) = 6.99, ns$. Examination of group differences on IIFAS SCORE indicated significant gender, $t(298) = -2.03, p < .05$, differences, with males scoring lower than females and younger respondents scoring lower than their older counterparts.

Significant age-related differences were seen with older respondents more supportive than younger respondents on PRODUCTIVE, $t(402) = 5.58, p < .001$; SPACE, $t(441) = -4.98, p < .001$; RETURN-WK, $t(443) = -4.08, p < .001$; and PUBLIC-BF, $t(472) = -6.80, p < .001$, with a trend for support for FAIR, $t(396) = -1.91, p = .056$. IIFAS score was also found to differ by age, $t(399) = -5.07, p < .001$, with older respondents scoring higher than younger (university age) respondents (see Table 4). Age differences on AWARE were also found, with college-age respondents significantly less likely to be highly aware of the campus benefits for nursing mothers, $\chi^2(3, N = 501) = 48.35, p < .001$.

Table 3. Group Differences Between Males and Females

	Male		Female		<i>t</i> Test
	M	SD	M	SD	
FAIR	3.46	1.099	3.73	1.086	-2.49*
PRODUCTIVE	2.72	1.046	2.35	1.037	3.53***
SPACE	4.02	0.920	4.12	0.953	-1.12
RETURN-WK	3.32	1.101	3.53	1.149	-1.92†
PUBLIC-BF	3.52	1.213	3.43	1.330	0.73
IIFAS	59.86	8.062	61.52	9.026	-2.03*

† $p < .10$. * $p < .05$. *** $p < .000$.

Table 4. Full Sample *t* Test Table Age Groups on Breastfeeding Attitude and Awareness Items

	Age 18-25		Older Than 26		<i>t</i> Test
	M	SD	M	SD	
FAIR	3.58	1.057	3.77	1.144	-1.92 [†]
PRODUCTIVE	2.67	1.001	2.14	1.048	5.59***
SPACE	3.93	0.944	4.34	0.890	-4.98***
RETURN-WK	3.31	1.137	3.72	1.097	-4.08***
PUBLIC-BF	3.16	1.306	3.90	1.144	-6.80***
IIFAS	59.46	8.211	63.42	9.091	5.01***

[†]*p* < .10. ****p* < .000.

We report parental status data with caution. The CC instrument was developed based on criteria to assess the MFWPI project; as such respondents were given a dichotomous yes/no item, “Have you or your partner had a child in the previous 2 years.” During the data analysis process, the value of parental status as a comparison group became evident. We conducted parental status analyses and present the findings with the caveat that the findings should be seen as exploratory in nature. Very few respondents (5%) met the NEWPARENT criteria. This subsample was primarily female (65%) and slightly older than the full sample (19% were ages 18-25). Of the NEWPARENTS subset, 58% indicated yes on OPAWARE, 51% indicated yes on ROOM knowledge, and 39% knew RMLOCATION compared to NOT-NEWPARENTS at 30%, 23%, and 9%, respectively. These differences were significant as assessed by chi-square tests, OPAWARE, $\chi^2(3, N = 501) = 18.52, p < .001$; ROOM, $\chi^2(1, N = 500) = 21.66,$

p < .001; and RMLOCATION, $\chi^2(1, N = 499) = 41.08, p < .001$. NEWPARENTS also scored significantly higher on the global AWARE variable, $t(65) = 4.88, p < .001$. Differences by parent status were significant on four of the workplace attitude items PRODUCTIVE, $t(83) = -6.91, p < .001$; BF SPACE, $t(78) = 4.26, p < .001$; RETURN-WK, $t(75) = 4.38, p < .001$; and PUBLIC BF, $t(81) = 6.45, p < .001$ (see Table 5).

A MANOVA was run to compare university status groups on the workplace attitude variables. Results indicated significant variation among university status groups, Wilks' $\lambda = .751, F(12, 954) = 12.2, p < .001$. Follow-up tests revealed group differences on FAIR, $F(2, 482) = 3.30, p < .05$; PRODUCTIVE, $F(2, 482) = 17.39, p < .001$; SPACE, $F(2, 482) = 13.96, p < .001$; RETURN-WK, $F(2, 482) = 13.17, p < .001$; PUBLIC-BF, $F(2, 482) = 20.20, p < .001$; and AWARE, $F(2, 482) = 45.62, p < .001$, with

Table 5. Parental Status on Breastfeeding Attitude and Awareness Items

	Parent		Not New Parent		<i>t</i> Test
	M	SD	M	SD	
FAIR	3.84	1.121	3.36	1.092	-1.39
PRODUCTIVE	1.72	0.833	2.56	1.041	6.91***
SPACE	4.53	0.821	4.03	0.946	-4.29***
RETURN-WK	4.05	1.066	3.39	1.130	-4.37***
PUBLIC-BF	4.31	1.046	3.34	1.287	-6.44***
IIFAS	66.66	9.953	60.29	8.357	-4.66***

****p* < .000.

Table 6. Multivariate Analysis of Variance University Status on Breastfeeding Attitude and Awareness Items

	<i>df</i>	η^2	<i>F</i>
FAIR	2, 482	3.94	3.30*
PRODUCTIVE	2, 482	17.78	17.39***
SPACE	2, 482	11.62	13.96***
RETURN-WK	2, 482	16.35	13.17***
PUBLIC-BF	2, 482	31.64	20.20***
AWARE	2, 482	43.39	45.62***
IIFAS	2, 503	1,244.34	17.13***

p* < .05. **p* < .000.

U'GRADS generally less supportive than GRADS or EMPLOYEES (see Table 6). Tukey post hoc tests were run and revealed that GRADS and EMPLOYEES were similar in terms of their attitudes toward breastfeeding. However, on the global AWARE variable, employees (faculty/staff) reported significantly higher awareness than undergraduates or graduate students. A one-way ANOVA was used to examine variation in IIFAS score by university status. This analysis revealed significant differences, $F(2, 503) = 17.13, p < .001$. Post hoc Tukey comparisons revealed that U'GRADS scored lower on IIFAS than either GRADS or EMPLOYEES, whereas GRADS' and EMPLOYEES' scores were not significantly different.

Discussion

The university community had a generally high breastfeeding knowledge and positive attitudes, with support in the anticipated direction, in that higher levels of knowledge were associated with greater support for breastfeeding practices (Harris et al., 2013; Jackson et al., 2014). However, some notable trends warrant discussion, centered first on the university MFWPI participation and efforts to create a mother-friendly campus, followed by a broader application of the findings.

Mother-Friendly Workplace Initiative Participation and a Mother-Friendly Campus Climate

Awareness of the relevant operating policy (33%) and the new lactation rooms (26%) was found to be generally lower than would be hoped the first 3 years following mother-friendly initiative participation. The program evaluation's findings indicated information regarding

the lactation rooms was disseminated to employees via human resources. However, no organized method was in place to inform students. Thus, it could be expected that new parent, female employees would have high awareness levels, an expectation that was generally true, with about three quarters aware of the operating policy and the location of at least one lactation room. Employee awareness of the relevant operating policy was higher than student awareness, as would be expected.

University student populations are changing. University enrollment has become more diverse with increased numbers of students outside the traditional norm, a population at greater risk for attrition. Parenthood, a nontraditional classification, represents two barriers to degree persistence—situational circumstances (e.g., parenting responsibilities) and institutional policies and practices that exclude some populations (Advisory Committee on Student Financial Assistance, 2012). We suggest the provision of lactation support is critical for students who are breastfeeding mothers. Lactation facilities provide such support and, thus, degree persistence support.

The combined findings of the research grounded in the MFWPI evaluation, this study and past projects (Harris et al., 2013; Jackson et al., 2014), supports a recommendation to develop a mechanism to fulfill the educational expectation of the MFWPI. Doing so would necessitate consideration of the multifaceted nature of a university population, a diversity demonstrated by the variations of our finding by gender and age as well as university and parent status. A global campaign that targets all campus populations combined with target-specific strategies is recommended.

Research supports improvements in breastfeeding attitudes tend to greater effectiveness when specific populations are targeted (Acker, 2009). However, global strategies are necessary for an integrated system of diverse efforts. Informational postings on university-wide announcement systems represent a more global approach. Targeted efforts could include mother-friendly training for supervisors and organization leadership. Student services and student-specific publications (e.g., handbooks) could target students. Educational elements that inform students of the mother-friendly workplace designation of the university could contribute indirectly to increased student breastfeeding knowledge and positive attitudes and is representative of an integrative effect of diverse strategies. In addition, the mother-friendly designation of the university should be included in promotional and recruiting materials (faculty and student recruitment) because a mother-friendly designation is a

useful recruiting tool (Brown, Poag, & Kasprzycki, 2001; Dunn et al., 2004; Libbus & Bullock, 2002).

Promotion as a mother-friendly institution and the implementation of campus educational programs have potential to benefit the university. Research indicates institutional support for new mothers has a positive impact on employee morale, employee retention, employee turnover (Brown et al., 2001; Chow, Fulmer, & Olson, 2011; Dunn et al., 2004; Libbus & Bullock, 2002; Ortiz, McGilligan, & Kelly, 2004), and employee loyalty (Bai, Wunderlich, & Weinstock, 2012). Employers report reduced healthcare and insurance-related costs (United States Breastfeeding Committee, 2002) and lower absentee rates of parenting employees because of lowered rates of illness among breastfed infants (American Academy of Pediatrics, 2012; Brown et al., 2001; Dunn et al., 2004; Libbus & Bullock, 2002). Improved productivity levels, associated with decreased maternal stress, are associated with employers' lactation support (Brown et al., 2001). In educational settings, these benefits can be expected to transfer to higher student morale, improved attendance, and improved performance; which, we speculate, would be instrumental in contributing to degree persistence among parenting students.

Breastfeeding Knowledge, Beliefs, and Attitudes

Acceptance of public breastfeeding is influenced by familiarity, gender, and age. Individuals with previous exposure to breastfeeding (Marrone et al., 2008) or breastfeeding education (Chezem et al., 2003; Li et al., 2007) reflect more positive attitudes about breastfeeding. Females and older individuals tend to have more positive attitudes (Acker, 2009). Men tend to form attitudes about breastfeeding at young ages (Goulet, Lampron, Marcil, & Ross, 2003; Vaaler et al., 2011) and, as fathers, men's opinions are highly influential in their partners' infant feeding choices. Normalizing breastfeeding can have a positive impact on breastfeeding choices and practices and improve women's self-efficacy to choose when and where they breastfeed (Marsden & Abayomi, 2012).

Although positive breastfeeding support is generally high in our sample, there is room for continued education efforts to normalize breastfeeding in segments of this population. The consistent trend in our findings for gender and age differences, with male respondents and younger respondents tending to score lower on measures of breastfeeding knowledge, attitudes, and practice awareness, supports our recommendation for global and targeted educational efforts. For example, programs that provide prechildbearing college students with

breastfeeding education could contribute to acceptance of breastfeeding.

The existing literature for lactation support with a return to school is limited. Mother-friendly efforts should not be limited to the workplace, and an important aspect of the current research is the assessment of university campus climate. The diversity of a university underscores the need to use a broad array of implementation strategies to impact change that benefits individuals across a range of the life span and life course characteristics. Thus, the multiple levels addressed at a university can be useful in guiding future efforts in other settings.

Our initial analysis plan did not include a parental status examination. However, as we assessed our data, we were led to speculate about the influence that the passage of time had on parents' attitudes regarding breastfeeding support. We question whether parents of very young children, whose support needs are more proximal, differ from parents whose children are older and thus are more distant from lactation support needs. Further examination could tease apart the influence of proximity and distance of need on breastfeeding attitudes and acceptance.

Within the limits of our data, we looked at parent status by gender, age, and university status, and our tentative findings suggest each may have a unique influence on new parents and on those parents further removed from the infant years. For example, new parents in our limited sample did not differ by gender, whereas those who were not new parents did. In addition, younger new parents did not differ from older new parents, whereas for those who were not new parents, age appeared to have some influence. It is possible that those who are actively in the new parent stage have an increased propensity to support issues related to breastfeeding than those who have never parented or who are further removed from parenting an infant. Thus, further exploration into these subgroups is warranted.

Limitations and Future Directions

The lack of sample diversity is a limitation of the research. The dichotomous parenting status imposed a limitation, and a rigorous examination by parental status should be undertaken to better understand parenting stage influence on breastfeeding beliefs and attitudes.

The MFWPI evaluation follow-up research provides a guide for future education programs and assessments of the mother-friendly efforts at the university. Policy and practice items can inform implementation of education programs. The IIFAS composite score provides a baseline

referent for follow-up analyses. We recommend periodic inquiry similar in nature to the campus climate instrument to assess the success of programs implemented.

Finally, mother-friendly lactation support needs to extend beyond the workplace. We recommend the inclusion of school return and student populations in future work related to understanding perceptions of breastfeeding in public spaces. To best effect broad-based change, the use of a more inclusive term is recommended. In doing so, efforts to normalize breastfeeding at the workplace, on school campuses, and other public spaces are unified. Rather than limit efforts to the creation of *mother-friendly workplaces* we suggest *mother-friendly environments* as a goal for future endeavors.

Conclusion

The levels of breastfeeding knowledge and positive support present across groups were encouraging. However, continued work is needed; for example, inclusion of students in university policies and supports is critical to address barriers to continued breastfeeding as well as degree completion. In addition, implementation of educational programming to aid normalizing breastfeeding is crucial. Universities are a unique environment to contribute to and benefit from educational efforts to change norms. The turnover of student population necessitates targeted and repeated efforts. The ability to educate students during their college experience can influence future perceptions and decisions, both personal and professional, regarding breastfeeding benefits and the need for supportive environments. Provision of universal education regarding breastfeeding has the potential to change perceptions, increase acceptance, and ultimately increase rates of breastfeeding in diverse settings.

References

- Acker, M. (2009). Breast is best . . . but not everywhere: Ambivalent sexism and attitudes toward private and public breastfeeding. *Sex Roles, 61*(7), 476–490. <http://dx.doi.org/10.1007/s11199-009-9655-z>
- Advisory Committee on Student Financial Assistance. (2012). *Pathways to success: Integrating learning with life and work to increase national college completion*. Washington, DC: Author. Retrieved from <http://files.eric.ed.gov/fulltext/ED529485.pdf>
- American Academy of Pediatrics. (2012). Policy statement: Breastfeeding and the use of human milk. *Pediatrics, 129*(3), e827–e841. <http://dx.doi.org/10.1542/peds.2011-3552>
- Anderson, J., Kuehl, R. A., Drury, S. A., Tschetter, L., Schwaegerl, M., Hildreth, M., . . . Lamp, J. (2015). Policies aren't enough: The importance of interpersonal communication about workplace breastfeeding support. *Journal of Human Lactation, 31*(2), 260–266. <http://dx.doi.org/10.1177/0890334415570059>
- Bai, Y. K., Wunderlich, S. M., & Weinstock, M. (2012). Employers' readiness for the mother-friendly workplace: An elicitation study. *Maternal & Child Nutrition, 8*(4), 483–491. <http://dx.doi.org/10.1111/j.1740-8709.2011.00334.x>
- Brand, E., Kothari, C., & Stark, M. A. (2011). Factors related to breastfeeding discontinuation between hospital discharge and 2 weeks postpartum. *The Journal of Perinatal Education, 20*(1), 36–44. <http://dx.doi.org/10.1891/1058-1243.20.1.36>
- Brown, C. A., Poag, S., & Kasprzycki, C. (2001). Exploring large employers' and small employers' knowledge, attitudes, and practices on breastfeeding support in the workplace. *Journal of Human Lactation, 17*(1), 39–46. <http://dx.doi.org/10.1177/089033440101700108>
- Centers for Disease Control and Prevention. (2016). *Breastfeeding among U.S. children born 2002–2014, CDC National Immunization Survey*. Retrieved from http://www.cdc.gov/breastfeeding/data/nis_data/index.htm
- Chezem, J., Friesen, C., & Boettcher, J. (2003). Breastfeeding knowledge, breastfeeding confidence, and infant feeding plans: Effects on actual feeding practices. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 32*(1), 40–47.
- Chow, T., Fulmer, I. S., & Olson, B. H. (2011). Perspectives of managers toward workplace breastfeeding support in the state of Michigan. *Journal of Human Lactation, 27*(2), 138–146. <http://dx.doi.org/10.1177/0890334410391908>
- Dabritz, H. A., Hinton, B. G., & Babb, J. (2009). Evaluation of lactation support in the workplace or school environment on 6-month breastfeeding outcomes in Yolo County, California. *Journal of Human Lactation, 25*(2), 182–193. <http://dx.doi.org/10.1177/0890334408328222>
- de la Mora, A. D. L., Russell, D. W., Dungy, C. I., Losch, M., & Dusdieker, L. (1999). The Iowa Infant Feeding Attitude Scale: Analysis of reliability and validity. *Journal of Applied Social Psychology, 29*(11), 2362–2380. <http://dx.doi.org/10.1111/j.1559-1816.1999.tb00115.x>
- Dunn, B. F., Zavela, K. J., Cline, A. D., & Cost, P. A. (2004). Breastfeeding practices in Colorado businesses. *Journal of Human Lactation, 20*(2), 170–177. <http://dx.doi.org/10.1177/0890334404263739>
- Goulet, C., Lampron, A., Marcil, I., & Ross, L. (2003). Attitudes and subjective norms of male and female adolescents toward breastfeeding. *Journal of Human Lactation, 19*(4), 402–410. <http://dx.doi.org/10.1177/0890334403258337>
- Harris, J. K., Thompson, L., Dunkerley, S., Parker, A., Henderson, J., Jackson, S., & Mulsow, M. (2013, November). *Breastfeeding at work: Do community perceptions of breastfeeding matter?* Poster session presented at the meeting of National Council on Family Relations, San Antonio, TX.
- Hill, P. D. (2000). Update on breastfeeding: Healthy people 2010 objectives. *MCN: The American Journal of Maternal/Child Nursing, 25*(5), 248–251.
- Hilliard, E. D. (2017). A review of worksite lactation accommodations: Occupational health professionals can assure success. *Workplace Health & Safety, 65*(1), 33–44. <http://dx.doi.org/10.1177/2165079916666547>
- Jackson, S. C., Henderson, J., Harris, J. K., Thompson, L., Dunkerley, S., & Mulsow, M. (2014, July). *A university response*

- to the PPACA: Campus climate and support for breastfeeding mothers. Paper presented at the International Lactation Consultant Association Conference, Phoenix, AZ.
- Johnston, M. L., & Esposito, N. (2007). Barriers and facilitators for breastfeeding among working women in the United States. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 36, 9–20. <http://dx.doi.org/10.1111/j.1552-6909.2006.00109.x>
- Kimbro, R. T. (2006). On-the-job moms: Work and breastfeeding initiation and duration for a sample of low-income women. *Maternal and Child Health Journal*, 10(1), 19–26. <http://dx.doi.org/10.1007/s10995-005-0058-7>
- Li, R., Fridinger, F., & Grummer-Strawn, L. (2002). Public perceptions on breastfeeding constraints. *Journal of Human Lactation*, 18(3), 227–235. <http://dx.doi.org/10.1177/089033440201800304>
- Li, R., Rock, V. J., & Grummer-Strawn, L. (2007). Changes in public attitudes toward breastfeeding in the United States, 1999–2003. *Journal of the American Dietetic Association*, 107(1), 122–127. <http://dx.doi.org/10.1016/j.jada.2006.10.002>
- Libbus, M. K., & Bullock, L. F. C. (2002). Breastfeeding and employment: An assessment of employer attitudes. *Journal of Human Lactation*, 18(3), 247–251. <http://dx.doi.org/10.1177/089033440201800306>
- Marrone, S., Vogeltanz-Holm, N., & Holm, J. (2008). Attitudes, knowledge, and intentions related to breastfeeding among university undergraduate women and men. *Journal of Human Lactation*, 24(2), 186–192. <http://dx.doi.org/10.1177/0890334408316072>
- Marsden, A., & Abayomi, J. (2012). Attitudes of employees working in public places toward breastfeeding. *British Journal of Midwifery*, 20(4), 271–277. <http://dx.doi.org/10.12968/bjom.2012.20.4.271>
- Mirkovic, K. R., Perrine, C. G., Scanlon, K. S., & Grummer-Strawn, L. M. (2014). Maternity leave duration and full-time/part-time work status are associated with US mothers' ability to meet breastfeeding intentions. *Journal of Human Lactation*, 30(4), 416–419. <http://dx.doi.org/10.1177/0890334414543522>
- Odom, E. C., Li, R., Scanlon, K. S., Perrine, C. G., & Grummer-Strawn, L. (2013). Reasons for earlier than desired cessation of breastfeeding. *Pediatrics*, 131(3), e726–e732. <http://dx.doi.org/10.1542/peds.2012-1295>
- Ortiz, J., McGilligan, K., & Kelly, P. (2004). Duration of breast milk expression among working mothers enrolled in an employer-sponsored lactation program. *Pediatric Nursing*, 30(2), 111–119.
- Right to express breast milk in the workplace, H.R. 786 (2015).
- Rojjanasrirat, W., & Sousa, V. D. (2010). Perceptions of breastfeeding and planned return to work or school among low-income pregnant women in the USA. *Journal of Clinical Nursing*, 19(13–14), 2014–2022. <http://dx.doi.org/10.1111/j.1365-2702.2009.03152.x>
- Ryan, A. S., Zhou, W., & Arensberg, M. B. (2006). The effect of employment status on breastfeeding in the United States. *Women's Health Issues*, 16(5), 243–251. <http://dx.doi.org/10.1016/j.whi.2006.08.001>
- Sheeshka, J., Potter, B., Norrie, E., Valaitis, R., Adams, G., & Kuczynski, L. (2001). Women's experiences breastfeeding in public places. *Journal of Human Lactation*, 17(1), 31–38. <http://dx.doi.org/10.1177/089033440101700107>
- Springer, K. W., Parker, B. K., & Leviten-Reid, C. (2009). Making space for graduate student parents: Practice and politics. *Journal of Family Issues*, 30(4), 435–457. <http://dx.doi.org/10.1177/0192513X08329293>
- Taveras, E. M., Capra, A. M., Braveman, P. A., Jensvold, N. G., Escobar, G. J., & Lieu, T. A. (2003). Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics*, 112(1), 108–115. <http://dx.doi.org/10.1542/peds.112.1.108>
- Texas Health and Safety Code. Title 2. Health. Subtitle H. Public health provisions, Chapter 165. Breast-feeding. Subchapter A. Breast-feeding rights and policies. Retrieved from <http://www.statutes.legis.state.tx.us/Docs/HS/htm/HS.165.htm>
- Texas Mother-Friendly Worksite. (n.d.). Worksite assessment. Retrieved from <http://www.texasmotherfriendly.org/program/assess-your-site>
- Thomas-Jackson, S. C., Bentley, G. E., Keyton, K., Reifman, A., Boylan, M., & Hart, S. L. (2016). In-hospital breastfeeding and intention to return to work influence mothers' breastfeeding intentions. *Journal of Human Lactation*, 32(4), NP76–NP83. <http://dx.doi.org/10.1177/0890334415597636>
- United States Breastfeeding Committee. (2002). *Economic benefits of breastfeeding*. Raleigh, NC: Author.
- U.S. Department of Labor. (2010). *Fact Sheet #73: Break time for nursing mothers under the FLSA*. Retrieved from <https://www.dol.gov/whd/regs/compliance/whdfs73.pdf>
- Vaaler, M. L., Castrucci, B. C., Parks, S. E., Clark, J., Stagg, J., & Erickson, T. (2011). Men's attitudes toward breastfeeding: Findings from the 2007 Texas Behavioral Risk Factor Surveillance System. *Maternal and Child Health Journal*, 15(2), 148–157. <http://dx.doi.org/10.1007/s10995-010-0605-8>



Janis Henderson, PhD, has a background in program and curriculum development and evaluation. She works as an educator presenting for community and family life education programs, serves as an education consultant, and works with various community organizations. In addition, her background includes teaching undergraduate courses. With a background in mediation and conflict resolution, additional areas of interest are violence prevention and resiliency development from an educational strengths-based approach. Janis serves on the board of directors for the state affiliate of a national organization in the capacity of student and new professional advisor; in addition, she serves as a coadvisor for a university student organization affiliated with the same organizations.



Jennifer Chapman is a PhD student in Human Development and Family Studies at Texas Tech University. Her research interests include social-emotional development in infancy and early childhood and the effects of parent emotion socialization on child development. She is originally from Houston, Texas, and earned a bachelor's degree from Baylor University in 2011 and a master's degree from Texas Tech University in 2013.



Shera Thomas-Jackson, PhD, IBCLC, RLC, CPST, teaches at Texas Tech University in the Human Development and Family Studies program. Shera's main research focus centers around breastfeeding and the mother-infant dyad. Prior to graduate school, she served as a lactation specialist with the Mississippi State Health Department on the Gulf Coast in the Women, Infants, and Children program. She has served her university on the Mother-Friendly Workplace Initiative taskforce and helped put in five lactation rooms across campus. Currently, she serves as the faculty advisor for an undergraduate student organization on campus that is affiliated with a national professional organization. She also serves as an associate editor for *Clinical Lactation*.



Lauren Kelly, PhD, has her doctorate in Human Development and Family Studies from Texas Tech University. Her research interests are child physical and sexual abuse and mental health outcomes, equality in the workplace, sexism, and attitudes toward breastfeeding. Lauren has completed training at the Federal Law Enforcement Center where she studied behavior and criminal activity. Lauren currently works at a treatment foster care nonprofit organization in Albuquerque, New Mexico. She conducts research with the Occupational Therapy Department of the University of New Mexico.



Miriam Mulsow, PhD, is an Associate Professor for the Human Development and Family Studies program at Texas Tech University.

Trends in Symptoms of Postpartum Depression

The Centers for Disease Control and Prevention has released a report entitled, “Trends in Postpartum Depressive Symptoms—27 States, 2004, 2008, and 2012” in the *Morbidity and Mortality Weekly Report*. The report highlights differences in the percentage of women with symptoms of postpartum depression by state and by characteristics. Among the 13 states with data for all three periods (2004, 2008, and 2012), self-reported prevalence of Postpartum depressive symptoms (PDS) declined from 14.8% in 2004 to 9.8% in 2012. During 2004–2012, statistically significant declines were observed in eight of 13 states (Alaska, Colorado, Georgia, Hawaii, Minnesota, Nebraska, Utah, and Washington), and no statistically significant changes in prevalence were observed in five states (Maine, Maryland, Oregon, Rhode Island, and Vermont). In 2012, the overall PDS prevalence was 11.5% for 27 states. https://www.cdc.gov/mmwr/volumes/66/wr/mm6606a1.htm?s_cid=mm6606a1_w

Source: USBC