

Cultural Values of Japanese American Mothers with the Paid Maternity Leave

Haruka Kokaze^{1*} and Alleee Zhou²

¹Department of Applied Psychology, New York University, New York, NY 10003, USA

²Department of Psychology and Human Development, Vanderbilt University, Nashville, TN 37235, USA

Abstract

Mother-infant interactions are critical for the infant's development across multiple domains, including neurocognitive, linguistic, social, and motor skills. Paid maternity leave has been shown to facilitate positive mother-infant interactions, fostering secure attachment and attentive parenting. This qualitative study explores the cultural values and experiences of Japanese American mothers regarding paid maternity leave and their childcare practices. Four mothers participated in a survey examining their experiences with paid maternity leave, mother-infant bonding, and the challenges of balancing work and family life. Thematic analysis revealed five themes: positive mother-infant experiences and increased awareness of infant milestones, bonding and social support, difficulty balancing home life and work, positive parenting experiences with paid maternity leave, and remaining flaws with the paid maternity leave policy. Participants reported increased attachment and awareness of their infants' developmental milestones, supported by the financial security and time provided by paid maternity leave. Social support from family and community played a significant role in mitigating the stress of balancing work and home responsibilities. However, participants highlighted challenges such as cultural stigma and workplace pressures, which contributed to maternal stress and burnout. Despite these challenges, paid maternity leave was perceived positively, allowing mothers to spend crucial time with their infants and support their development. This study underscores the importance of paid maternity leave in fostering healthy mother-infant interactions and highlights the unique cultural factors influencing Japanese American mothers' experiences. Understanding these cultural values is essential for developing policies that support diverse maternal needs and promote positive developmental outcomes for children.

Introduction

Mother-infant interactions substantially impact the infant's neurocognitive, linguistic, social, and motor skills, which, in turn, support the infant's growing abilities to explore, think, and make sense of their surroundings [1]. Early studies on the growth of mother-infant interactions [2-4]. During the formative months of infancy place a strong emphasis on attachment, an intimate bond formed between a new-born to their mother figure. Countless studies have found that a robust attachment stems from an active, affectionate, and secure interaction between mother and infant [5-7]. Active bonding, defined as a form of uninterrupted and open attachment, is one of the most crucial foundations of attentive parenting (Ainsworth, 1979). Studies show that attentive parenting strongly predicts decreased distress symptoms in children. As reciprocal attachment caregivers, those who share the responsibility of raising children with others (i.e., family members), active mother-infant bonding also increases positive parenting experiences for new mothers by decreasing symptoms of distress post-birth. Thus, paid maternity leave predicts positive parenting, because it facilitates positive mother-infant interactions [8-10].

Studies on active bonding between the mother and infant and maternal affection have also highlighted increased maternal activity as a critical time for infant language growth. According to longitudinal research studying the relation between maternal responsiveness and other aspects of attachment, children whose mothers were more vocally receptive during infancy had larger vocabulary sizes through childhood.

This is important in recognizing the social-interactive foundation of early language acquisition and the significance of maternal participation in accomplishing language milestones for infants' cognitive development [11-13]. Infants' cognitive abilities place a great deal of focus on mothers to support learning, according to studies

on formative stages in new-born language development. As a result, maternal speech that is semantically similar to children's speech is more sensitive to and attentive to their children's exploring efforts [14]. In summation, rich mother-infant interactions are essential in fostering children's development as they provide increased benefits in formative language acquisition and social-interactive behavior that couples positive mother-child dyads, in return.

Methodology

Asian mothers' child-bonding behaviors are influenced by traditional gender ideations and customs, such as women taking on the major caregiver role and offering maternal affection support to their children. In addition, Asian countries' hierarchical structures, which place a strong focus on social position and power, have an impact on Asian mothers' caregiving styles [15]. Due to its impact on their social standing and reputation in the community, Asian mothers may feel a stronger sense of responsibility for their children's upbringing and development. Moreover, filial piety, a Confucian principle that emphasizes respect for elders and the value of family ties, is one cultural component that affects Asian mothers' mother-infant caregiving practices. As a result of this cultural value, Asian mothers tend to place

***Corresponding author:** Haruka Kokaze, Department of Applied Psychology, New York University, New York, NY 10003, USA, E-mail: hk2851@nyu.edu

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greater priority on their children's wants and well-being than on their own.

There are distinct cultural elements that play an essential role in shaping the caregiving practices of Japanese mothers [16-18]. Similar to that of other Asian mothers, another cultural element that influences how Japanese mothers care for their children is the collectivistic nature of Japanese culture [19]. As a result, Japanese mothers are inclined to prioritize the needs of their family members' needs over their own and, thus, perform more caregiving tasks that benefit the family, such as cooking for the entire family or organizing family activities [20]. In addition, like other Asian cultures, the fact that women are frequently expected to assume the role of primary caregiver and to provide emotional support to their children in Japanese society, traditional gender norms and expectations have an impact on how Japanese mothers provide for their children [21]. Moreover, the concept of *amae*, which denotes the dependence and attachment that children have for their mothers, is one cultural element that influences how Japanese mothers provide for their children [22,23]. Japanese mothers are encouraged by this cultural value to give their children more nourishing and protective care. Furthermore, the Japanese culture's emphasis on learning development may have an effect on how mother-child interaction is catered for. As a result, Japanese mothers may use more disciplined and purposeful parenting techniques, such as aiding with homework and extracurricular activities, to encourage their children's learning development [24].

In terms of returning to work, most Japanese mothers still believe that having children is more important than having a successful career [25,26]. Most Japanese mothers are qualified for and take about 36 weeks of paid maternity leave (Organisation for Economic Co-operation and Development). Japanese mothers commonly leave their occupations after getting pregnant to allow time for mother-child bonding following delivery, upholding cultural traditions [27]. For this reason, Japanese women have been socialized to believe that working mothers are unsuited to be mothers [28].

As a result, the belief that Japanese women would stop working after getting married and having children served to offset the labor excess in Japan [29,30]. However, compared to their less educated counterparts, highly educated Japanese mothers are more likely to continue working [31]. This is because highly educated Japanese mothers often receive additional support from their extended relatives and are more likely to keep their full-time jobs [32].

Returning to work for Japanese American mothers: culture in context

The U.S. Bureau of Labor Statistics (2013) predicts that Asian workers will continue to have the second-highest labour force participation rates among all racial or ethnic groups in 2022 [33]. Asian American mothers were found to value and uphold their cultural practices and customs decades after relocating to a new environment [34]. As a result, working Japanese American mothers frequently encounter tough circumstances while attempting to balance the cultural expectations of being both a great caregiver and a great employee at the same time [35]. Cultural stigma in the workforce associated with both pregnancy and burnout has the propensity to affect Asian American mothers' attitudes at work [36]. As a result, Asian American working mothers in the United States are more likely than their White counterparts to experience postpartum burnout due to the demands of both their employment and family life [37]. In a 2020 study where a quarter of the sample consisted of Asian working mothers, 32% of

working mothers reportedly resisted taking time off considering they were not granted paid leave [38]. Due to the fact that less educated Asian mothers frequently hold occupations where they are ineligible for paid leave benefits, not all new Asian American women take advantage of maternity leave [39]. Instead, they often choose to continue working while relying heavily on their partners, parents, or in-laws to take care of their children.

There is no study investigating how Japanese American mothers navigate motherhood under the lack of paid maternity leave in the U.S.; however, it is a fact that there is no nationwide paid maternity leave in the country as of today (Organisation for Economic Co-operation and Development). Due to societal attitudes and rigid work conditions, it is therefore important to understand the experiences of upper-middle-class Japanese American mothers who do take advantage of and have access to paid maternal leave in the United States [40-43]. Additionally, by looking at Japanese-American mothers' experiences with paid leave, this study strives to contrast both Asian and American cultural values that drive the decline and/or use of paid leave options.

Current study

Mother-infant interactions and bonding are essential for infants to develop healthily. However, the majority of the existing study on this subject has been limited to Western cultures. Certain values, such as the collectivistic structure of the nation, conventional gender norms, the idea of *amae*, and the nation's emphasis on learning and development, have a substantial impact on mother-infant relationships and bonding in Japan.

While some of these cultural values may overlap with those in the United States, there are some significant discrepancies, which is seen in both countries' policies regarding the nationwide paid maternity leave policy, with approximately 36 weeks in Japan and 0 weeks in the United States, respectively (Organisation for Economic Co-operation and Development). Given that there is a significant disconnect between the emphasis placed on maternity leave in Japan and the United States on the importance of mothers spending time with infants during their early months, understanding the cultural values underlying these differences is crucial for developing policies that support healthy mother-infant interactions across diverse cultural contexts.

Therefore, the current study sought to address the gap by asking two questions: 1) What are Japanese mothers' experiences and beliefs about childcare and 2) How do Japanese American mothers view maternity leave in the United States?

Participants

The study included four Japanese American heterosexual women who had given birth during the previous three years. Two participants identified as Japanese American, one as Japanese and Caucasian American, and one as Japanese and African American. Mothers' ages ranged from 31 to 35 years old. All mothers were married in standard upper-middle-class nuclear families, and all had been employed full-time at the time their children were entering infancy.

Procedure

Participants were surveyed through a Google Form online. The survey was written in English and required 30-40 minutes of engagement. The survey consisted of six open-ended questions (see Appendix A) regarding participants' racial and ethnic demographics, parenting practices, child behavior, as well as their stances on their paid maternity leave policy and implementation of a nationwide paid maternity leave policy.

Transcription and coding

After submission, surveys were reviewed by two researchers, sentence by sentence. The researchers utilized a grounded theory approach to code the open-ended surveys by selecting commonly occurring themes across different mothers that are appropriate for the research question. To establish inter-rater reliability, the researchers coded the same survey independently, contrasted codes, discussed disagreements, and defined each emergent theme briefly. After inter-rater reliability was achieved, the rest of each survey was coded for the emergent themes at a sentence level. In constructing the coding theme of parenting experiences, the researchers sought to understand what mothers saw as necessary in fostering positive or negative mother-infant relationships.

Results

The findings demonstrate variability among participants' experiences. The color codes that were generated based on the emergent themes included the following: (1) positive mother-infant experiences and increased awareness of infant milestones, (2) bonding and social support, (3) difficulty balancing work and home life, (4) positive parenting experiences and the paid maternity leave, and (5) remaining flaws with the paid maternity leave.

Positive mother-infant experiences and awareness of infant milestones

Three out of four mothers indicated that they were more aware of their infants' development milestones as a result of spending increased time with their infants during the first few months. For example, in terms of infant language development, one participant mentioned that she "noticed that [her infant] was more attentive to Japanese conversations than English television. [Her infant] was attached to [her] mother but [she] think[s] [her child] was happy to see [her] too." Another participant emphasized that she noticed that her child "started to become aware of his surroundings and would constantly be taking them in when he started figuring out facial expressions and experimenting with language by babbling and cooing." Nevertheless, an increase in awareness of infants' developmental needs and attentiveness to specific children's learning cues was mentioned by all four participants. It is worth noting that all participants reported experiencing increased attachment, and more opportunities to focus on their infants' growth when given the financial support and time that paid maternity leave provides.

Bonding and social support

Positive experiences were most prevalently linked to a theme of increased social support. Throughout experiencing a life shift post-birth, all four participants indicated that the presence of families, relatives, friends, or community in the first few months following the birth of their child was a protective factor in balancing work and life. For example, one mother reported that it was "a fortunate situation where [her] mother comes to take care of [her] baby while [she is] at work, so getting access to childcare was not a worry that [she] had." Additionally, another mother reported that she "would not be able to go to work knowing [her] baby is safe without [her] mother." Some specific examples of social support from families that participants noted included decreased anxious feelings from infant separation. Of the four total responses, three participants revealed that they experienced reduced anxiety despite a lack of mother-infant bonding time, knowing their infant was being taken care of by trusted family members.

Difficulty balancing home life and work

At the same time, all four parents indicated they were distressed while simultaneously working and nurturing their infants. Potential sources for burnout symptoms were shown as anxiety about being both a great mother and a great worker, appearing 20 times across all the surveys. Cultural stigmas surrounding parenting expectations interfered heavily with the work responsibilities of these mothers. Two out of four participants worked in the labor-intensive food industry, and another mother juggled multiple professional jobs in academia. Mothers mentioned frustration, guilt, and worry when separated from their infants due to work-related responsibilities, causing conflict in traditional caregiving. Knowing that Japanese mothers are inclined to prioritize the needs of their family members' needs over their own, the results from one mother stated that she, upon returning to work, wished she "was able to spend more time with [her infant]. [She is] often thinking about and missing [her infant] during the work days, and [she] often feel[s] guilty that [she is] not spending all of [her] time with [her infant]."

While mothers in the sample who took advantage of the paid maternity leave specified the privilege they had to remain in their careers, themes of discontent also emerged in all participant survey transcripts. All participants mentioned that the paid maternity leave policy brought additional stressors to the quality of their caregiving dynamics. Within this central theme, there was a noticeable trend in adverse outcomes in Japanese mothers conflicted with pressures exerted by American workplace stress. One mother reported feeling stressed and uncomfortable as she "did not feel completely back to normal after 3 months and did not want to go back to work, but felt that [she] had no choice." Participants commonly reported struggling with one or more stress combinations, inflexible workplace standards, and worse, a feeling that they are judged for being a 'working mother,' all within months of the physical demands of childbirth. They also stated that they have had to significantly adjust their daily routines to allow for increased time alone and sleep to mediate in times of emotional and physical stress.

Positive parenting experiences with the paid maternity leave

Thematic analysis indicated that all four participants reported that taking advantage of the paid maternal leave allowed them to spend more time with their children than they would otherwise. This included mothers detailing that they felt accomplished and content "to be able to spend time with [their] child during the first few months." Additionally, three out of four participants mentioned that they felt grateful, generally satisfied, and eager to interact with their children when they were given options to remain in the work field post-birth. All four participants indicated at least once that their paid maternity leave policy provided less rigidity when returning back to work, including three to four hours on weekdays and all day on weekends. These positive responses reflected a general satisfaction with their current paid leave policy. Moreover, most mothers were very explicit when reporting the conditions of their paid leave policy, with statements such as "I appreciate that they do provide us with at least a few months of paid leave that are very much encouraged, and the option to take a few more months if needed even though these are unpaid." Building on, there was a noticeable trend in participants' quantity of paid leave time; out of four participants who chose to disclose their paid leave term, three identified having more than six weeks.

Remaining flaws with the paid maternity leave

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maternity leave specified the privilege they had to remain in their careers, themes of discontent also emerged in all participant survey transcripts. All participants mentioned that the paid maternity leave policy brought additional stressors to the quality of their caregiving dynamics. Within this central theme, there was a noticeable trend in adverse outcomes in Japanese mothers conflicted with pressures exerted by American workplace stress. One mother reported feeling stressed and uncomfortable as she “did not feel completely back to normal after 3 months and did not want to go back to work, but felt that [she] had no choice.” Participants commonly reported struggling with one or more stress combinations, inflexible workplace standards, and worse, a feeling that they are judged for being a ‘working mother,’ all within months of the physical demands of childbirth. They also stated that they have had to significantly adjust their daily routines to allow for increased time alone and sleep to mediate in times of emotional and physical stress.

Discussion

This qualitative analysis aimed to fill the gaps in the literature with regard to the experiences of Japanese American mothers and their respective paid maternity leave policies. Existing literature indicates a lack of paid maternity leave policy increases maternal psychological stress. In line with these findings, the current study supports past research by highlighting the negative parenting experiences faced by Japanese American mothers. One of the most common shared experiences from the participants was related to heightened stressors in the absence of mother-infant interactions due to conflicts with work. Specifically, feeling guilty for working instead of spending time with their infants and feeling emotionally and physically burnt out from having work and household responsibilities, though it is not clear if this experience is unique to Japanese American mothers. At the same time, although existing literature examining paid leave policy-related factors in mother-infant interactions tends to focus on the negative implications of the current paid maternity leave policy, this study found positive mother-infant interactions associated with the existence of social support. Social support from the significant other, immediate family members, friends, and babysitters within the mother’s network was a protective factor in preventing maternal psychological stress (e.g., burnout), which is in line with existing literature. This might be because reciprocal giving and receiving of support within small communities is valued in many Japanese American cultures. Lastly, the findings on mothers’ improved awareness of infant milestones throughout their paid maternity leave supported the previous literature that a responsive mother’s presence is advantageous to the infants’ growth in language abilities and attachment to caregivers.

To conclude, one of the study’s implications include understanding the advantages of enacting a nationwide paid leave policy to support caregivers and their infants. Another implication is the necessity of early interventions for the mother to reduce the psychological stress that new mothers might experience as they experience cultural pressures around work and childrearing. For instance, community centers and hospitals offer educational workshops on how to cope with psychological stress during and after pregnancy and dispense diapers and baby formula powder for participating. Additionally, policymakers must establish laws requiring nationwide paid maternity leave policies across the United States in addition to other supportive measures for working mothers. For instance, a policy allowing men to take a break from work upon the birth of their children would increase the social support working mothers can receive and encourage fathers to foster father-infant interactions. Lastly and most importantly, given

that positive experiences were most prevalently linked to a theme of increased social support, the federal government must develop a strategy to provide affordable and accessible childcare facilities so that all working women can get through challenging times. Despite an improvement in support services over time, single mothers still face various obstacles to finding employment since it is challenging for them to raise their children while working without the assistance of their spouses. Given that there were only four participants in this qualitative analysis, the results of the current study should be evaluated with care. Future research should investigate this topic using a qualitative methodology with a larger sample size or a quantitative approach (e.g., Generalized Anxiety Disorder (GAD-7) questionnaire) to evaluate the mother-infant interactions and mothers’ stress as more states in the United States start creating more accommodating parental leave policies. Moreover, since convenience sampling was utilized, the participants were homogeneous, primarily consisting of mothers of financially secure Japanese descent mothers from New York, New York. As a result, the study could not provide data on various employed

Conclusion

Japanese American mothers with different paid maternity leave policies, meaning the results are not generalizable across the United States. Additionally, even though the findings were beneficial in understanding the protective factors in preserving satisfying mother-infant interactions, the study could not represent challenges that lower socioeconomic families could be encountering in this economically uncertain COVID-19 pandemic age. Notwithstanding these limitations, the current study offers relevant insight through a preliminary analysis of the influences of various paid maternity leave policies on Japanese American mothers’ parenting experiences

References

1. Brook RD, Franklin B, Cascio W, Hong YL, Howard G, et al. (2004) Air pollution and cardiovascular disease – a statement for healthcare professionals from the expert panel on population and prevention science of the American Heart Association. *Circulation* 109: 2655-26715.
2. Dobbin NA, Sun L, Wallace L, Kulka R, You H, et al. (2018) The benefit of kitchen exhaust fan use after cooking - An experimental assessment. *Build Environ* 135: 286-296.
3. Kang K, Kim H, Kim DD, Lee YG, Kim T (2019) Characteristics of cooking-generated PM10 and PM2.5 in residential buildings with different cooking and ventilation types. *Sci Total Environ* 668: 56-66.
4. Marcus U (2019) HIV infections and HIV testing during pregnancy, Germany, 1993 to 2016. *Euro surveillance* 24: 1900078.
5. Bunn JY, Solomon SE, Miller C, Forehand R (2017) Measurement of stigma in people with HIV: A re-examination of the HIV Stigma Scale. *AIDS Education & Prevention* 19: 198-208.
6. Al-Ani R, Al Obaidy A, Hassan F (2019) Multivariate analysis for evaluation of the water quality of Tigris River within Baghdad City in Iraq. *Iraqi J Agric Sci* 50: 331-342.
7. Blann KL, Anderson JL, Sands GR, Vondracek B (2009) Effects of agricultural drainage on aquatic ecosystems: a review. *Crit Rev Environ Sci Technol* 39: 909-1001.
8. Boynton W, Kemp W, Keefe C (1982) A comparative analysis of nutrients and other factors influencing estuarine phytoplankton production. In *Estuarine comparisons* 69-90.
9. Samet J, Dominici F, Curriero F, Coursac I, Zeger S (2000) Fine particulate air pollution and mortality in 20 US cities, 1987-1994. *N Engl J Med* 343: 1742-17493.
10. Goldberg M, Burnett R, Bailar J, Brook J, Bonvalot Y, et al. (2001) The association between daily mortality and ambient air particle pollution in Montreal, Quebec 1. Nonaccidental mortality. *Environ Res* 86: 12-25.

11. Chakraborti D (1999) Arsenic groundwater contamination and suffering of people in Rajnandgaon district MP India. *Curr Sci* 77: 502-504.
12. Chakraborti D (2003) Arsenic groundwater contamination in Middle Ganga Plains Bihar India. *Environ Health Perspect* 111: 1194- 1201.
13. Dhar RK (1997) Groundwater arsenic calamity in Bangladesh. *Curr Sci* 73: 48-59.
14. Franco F (2003) Geochemical controls on arsenic distribution in the Bacca Locci stream catchment affected by past mining, Italy. *J Appl Geochem* 18: 1373-1386.
15. Hopenhayn RC (1996) Bladder cancer mortality associated with Arsenic in groundwater in Argentina. *J Epidemiol* 7: 117-124.
16. Ondra S (2004) The behavior of Arsenic and geochemical modeling of arsenic enrichment in aqueous environments. *J Appl Geochem* 19: 169-180.
17. Sanjeev L (2004) Study on an arsenic level in groundwater of Delhi. *J Clin Biochem* 19: 135-140.
18. Silvia SF (2003) Natural contamination with Arsenic and other trace elements in groundwater of Argentina Pampean plains *Sci* 309: 187-199.
19. Roychowdhury T (2004) Effect of Arsenic contaminated irrigation water on agricultural land soil and plants in West Bengal, India. *Chemosphere* 58: 799-810.
20. Yokota H (2001) Arsenic contaminated ground and pond water and water purification system using pond water in Bangladesh.
21. Guo Q, Niu W, Li X, Guo H, Zhang N, et al. (2019) Study on Hypoglycemic Effect of the Drug Pair of Astragalus Radix and Dioscoreae Rhizoma in T2DM Rats by Network Pharmacology and Metabonomics. *Molecules* 24: 40-50.
22. Haga T (2013) Molecular properties of muscarinic acetylcholine receptors. *Proc Jpn Acad Ser B Phys Biol Sci* 89: 226-256.
23. Herrera-Solis A, Herrera-Morales W, Nunez-Jaramillo L, Arias-Carrion O (2017) Dopaminergic Modulation of Sleep-Wake States. *CNS Neurol Disord Drug Targets* 16: 380-386.
24. Huang F, Li J, Shi HL, Wang TT, Muhtar W, et al. (2014) Simultaneous quantification of seven hippocampal neurotransmitters in depression mice by LC-MS/MS. *J Neurosci Methods* 229: 8-14.
25. Kon N, Yoshikawa T, Honma S, Yamagata Y, Yoshitane H, et al. (2014) CaMKII is essential for the cellular clock and coupling between morning and evening behavioral rhythms. *Genes Dev* 28: 1101-1110.
26. Bhaskar S, Hemavathy D, Prasad S (2016) Prevalence of chronic insomnia in adult patients and its correlation with medical comorbidities. *J Family Med Prim Care* 5: 780-784.
27. Bian ZH, Zhang WM, Tang JY, Fei QQ, Hu MM, et al. (2022) Effective substance and mechanism of Ziziphi Spinosae Semen extract in treatment of insomnia based on serum metabolomics and network pharmacology. *Chin J Chinese Materia Med* 47: 188-202.
28. Cao JX, Zhang QY, Cui SY, Cui XY, Zhang J, et al. (2010) Hypnotic effect of jujubosides from Semen Ziziphi Spinosae. *J Ethnopharmacol* 130: 163-166.
29. Chen YH, Lan ZP, Fu ZP, Li BL, Zhang ZX (2013) Effect of compound gardenia oil and jujube seed oil on learning and memory in ovariectomized rats. *Chin J Appl Physiol* 29: 406-409.
30. Crouzier D, Baubichon, D, Bourbon F, Testylier G (2006) Acetylcholine release, EEG spectral analysis, sleep staging and body temperature studies: a multiparametric approach on freely moving rats. *J Neurosci Methods* 151: 159-167.
31. Díez-Pascual AM (2019) Synthesis and Applications of Biopolymer Composites. *Int J Mol Sci* 20:2321-2324.
32. Zhao S, Malfait WJ, Guerrero-Alburquerque N, Koebel MM, Nyström G (2018) Biopolymer Aerogels and Foams: Chemistry, Properties, and Applications. *Angew Chem Int Ed Engl* 57:7580-7608.
33. de Lima Nascimento TR, de Amoêdo Campos Velo MM, Silva CF, Costa Cruz SBS, Gondim BLC, Mondelli RFL et al. (2019) Current Applications of Biopolymer-based Scaffolds and Nanofibers as Drug Delivery Systems. *Curr Pharm Des* 25: 3997-4012.
34. Arif U, Haider S, Haider A, Khan N, Alghyamah AA (2019) Biocompatible Polymers and their Potential Biomedical Applications: A Review. *Curr Pharm Des* 25: 3608-3619.
35. Costa R, Costa L, Rodrigues I, Meireles C, Soares R, et al. (2021) Biocompatibility of the Biopolymer Cyanoflan for Applications in Skin Wound Healing. *Mar Drugs* 19: 147-149.
36. Tan C, Han F, Zhang S, Li P, Shang N (2021) Novel Bio-Based Materials and Applications in Antimicrobial Food Packaging: Recent Advances and Future Trends. *Int J Mol Sci* 22: 9663-9665.
37. Sagnelli D, Hooshmand K, Kemmer GC, Kirkensgaard JJ, Mortensen K, et al. (2017) Cross-Linked Amylose Bio-Plastic: A Transgenic-Based Compostable Plastic Alternative. *Int J Mol Sci* 18: 2075-2078.
38. Zia KM, Zia F, Zuber M, Rehman S, Ahmad MN (2015) Alginate based polyurethanes: A review of recent advances and perspective. *Int J Biol Macromol* 79: 377-387.
39. Raveendran S, Dhandayuthapani B, Nagaoka Y, Yoshida Y, Maekawa T (2013) Biocompatible nanofibers based on extremophilic bacterial polysaccharide, Maura from Halomonas Maura. *Carbohydr Polym* 92: 1225-1233.
40. Wang H, Dai T, Li S, Zhou S, Yuan X, et al. (2018) Scalable and cleavable polysaccharide Nano carriers for the delivery of chemotherapy drugs. *Acta Biomater* 72: 206-221.
41. Aniket P, Pallavi D, Aziz A, Avinash K, Vikas S (2017) Clinical effect of suvarna bindu prashan. *JAIMS* 2: 11-18.
42. Gaikwad A (2011) A Comparative pharmaco-clinical study of Madhu-Ghrita and SwarnaVacha Madhu-Ghrita on neonates. *Ayurved MD Research thesis. Jam* 12: 2-7.
43. Singh (2016) A Randomized Controlled Clinical Trial on Swarna Prashana and its Immunomodulatory Activity in Neonates. *Jam* 24: 4-9.

