A STUDY ON THE CONTRIBUTION OF A DIGITAL COMMUNITY TOWARDS THE PARENTAL ECOSYSTEM TRANSFORMATION

ABSTRACT

A research study was conducted to identify digital communities' role and sphere of influence in a parenting ecosystem. This report provides an overview of the target segment needs assessment and digitalization of their physical communities and support systems. Primary research was done via telephonic calls and zoom interviews of pregnant and new mothers and couples. Forty participants took part in the study to share their experiences and pain points. In addition to this, a WhatsApp group of 350 participants was created to observe the engagement on a digital medium. The study helped us validate the need for a social support system beyond the existing physical network of the participants to reach out to others with similar or better parenting approaches. 70% of the participants have expressed their willingness to join digital parental communities. The findings have been helpful to understand the role of a digital society, which can enhance the offerings of parenting facilitators and support parents in implementing better parenting practices. Of the last 10-12 years, there has been a steady increase in regional parenting networks. As a result, we picked the impact and influence of digital parental networks on these women's lifestyles and how they have aided in the growth of a conscious and good parenting style as our research topic. The conclusion outlines the impact of these communities and the significant concerns that have arisen due to their increased use.

Keywords: Parenting facilitators, pregnant mothers, new mothers, digital parental communities, parenting approaches

1. INTRODUCTION

Generation Y, also called millennials, were born between 1981 and 1996 [1]. They currently fall into the age bracket of 25 to 40 years, i.e., predominantly new or early-stage parents' category. Millennial parents across the globe have refrained from the traditional parenting approach by adopting a critically different and comparatively progressive parenting style. Planned Parenthood is a predominant aspect of this approach, where the parents choose to have a decent income and stability in life to ensure they can provide their off-springs with all the resources they need. Millennials also see the highest Number of working women compared to any previous generation, with both the partners juggling professional and personal roles.

In India, millennial parents have access to the Internet, online discussion forums, social media, products, and service providers through the digital medium with widespread intelligent phone penetration and affordable data packs. These technologies have paved the way for these millennial parents to seek information, exchange experiences, and support a like-minded community of parents in a similar journey through online platforms.

As part of this research, we have interacted with several women and couples, predominantly from Tier-1 and Tier-2 cities of India, who have conceived, delivered, and contributed to the upbringing of a

child, to understand their experiences concerning the traditional approach of parenting and new-age parenting with the exchange of data via online platforms [2].

A steady rise in regional parenting communities has also been identified in the past 10-12 years. Hence, we chose our area of study as the impact and influence of digital parental communities on these women's lifestyles and how they have enabled the rise to a conscious and positive parenting style. The conclusion summarizes the impact of these communities and significant issues that are being addressed with the increase in these community platforms.

2. LITERATURE REVIEW

Traditionally, new or young parents always sought parenting advice from their parents and others in their social network. In most traditional Indian cultures, it was a norm for a pregnant woman to deliver the child at her maternal place so that her parents could support her in taking care of the newborn. This is when the older generation imparts their knowledge to the new mother, all the dos and don'ts that are to be learnt and implemented by a new mother to continue in the path of upbringing as done by the previous generation [3].

With the rise of nuclear families and also the working population among Indian women, these traditions and rituals have undergone some changes. Women juggling multiple roles on the personal and professional front have had little time to spare for a few norms like these, unable to take off work even until the day before the delivery or not having an extended period of maternal leave, etc. The rise in income levels with both partners has also led to hiring nannies/ baby sitters, availing daycare centers, etc. Hence, the Indian parenting culture has significantly transformed in the past 10-12 years [4].

Parenting in our country has also been shifting to a conscious parenting style from a predominantly authoritarian approach which sometimes causes more harm than not in the child's developing relationship with the parent [5]. Couples prefer a planned-parenthood approach which includes a conscious, upbeat parenting style. For example, parents today avail financial consultation for a stable higher education even before the child is born. Many millennial parents do thorough research online for the different kinds of investments for pregnancy, child's education, life insurance, etc, and also reach out to others who have availed such premium plans and investments. According to a Forbes report, 66% of millennials had invested for their child's college education [6] even before the child began schooling while the previous 2 generations were significantly lower. The red-free fundus image is obtained from the mean of green and blue channel images. Along with the classical LBP [7], features from the completed modeling of LBP are also utilized for the classification using K-Nearest Neighbor (KNN) [8]. The extracted color-based and LBP features are analyzed independently for glaucoma diagnosis using an SVM classifier. SVM classifier calculates a hyperplane that separates the feature space with maximum margin. The complex texture features are discussed for fundus image classification [9].

Also, smartphone penetration, affordability of cheap data packages, and formation of parenting specific communities has led to an exponential rise in the awareness amongst new parents, regarding the traditional approaches that do not seem to be completely aligned to their ideologies and values. With social media and budding parenting communities acting as a guide for conscious and positive parenting approaches, parenting and parenthood in India have surely changed with the advent of the Internet. Networking with like-minded parents on the digital communities and sharing experiences also validates these approaches and an incentive to continue pursuing the same [10].

3. RESEARCH METHODOLOGY

The study population consisted of women aged between 25 to 40 yrs of age, predominantly expectant and pregnant mothers and a minor segment of those who have delivered in the past 8yrs. various research methods have been followed to conduct the primary and secondary research in sequence.

3.1. Sources of Primary Research:

Respondents to the primary research were mothers who belonged to Tier1 and Tier2 cities of India such as Mumbai, Pune, Hyderabad, Bangalore, Kochi, Visakhapatnam, etc. All of the samples were married, and their first pregnancy experience was primarily recorded. Overall, the sample was highly educated and some were working mothers. The research includes women who delivered only between Jan 2013 and July 2021 [11].

Primary research was conducted in 2 types, in-depth interviewing and observational methodology. Each approach is suited to identify specific data points and facts. The enormous focus was placed on the data collection and keywords identification, which leads to analyzing how digital communities serve this purpose [12].

Following the observational methodology, a sample of 340 new and expectant mothers were identified through interest forms/ Questionnaires and placed together in a WhatsApp group to observe engagement between women in the same stage of parenting. This research includes women who delivered between Jan 2019 and July 2021 [13].

For the in-depth interviewing, a sample of 40 women was selected and interviewed individually regarding their emotional journey while conceiving, pregnancy, delivery and early motherhood stages. Most of the interviews were done on zoom, recorded and a transcript file was generated later for our references. Some interviews were even conducted via phone calls.

A research questionnaire was prepared with open-ended questions that allowed the mother to go beyond the scope of the questions and share their experiences. Initially, the color components of input funds images such as Red, Green and Blue (RGB) are separated. Then, only the green channel is utilized to locate the OD region [14]. Along with the classical LBP, features from the completed modeling of LBP are also used for the classification using K-Nearest Neighbor (KNN) [15]. The development of the questions/topics to touch upon resulted from a literature review of the secondary sources mentioned earlier [3]. Research topics were in 5 broad sections, demographics, planning and pregnancy, delivery, post-delivery, and emotional journey. Questions asked in the interview included the following -

- Age of the mother, and location (city)
- Number of children and their age(s)
- Process of preparation and planning to have a child
- Lifestyle changes; diet and exercise
- Pregnancy journey through the three trimesters
- Experience with the hospital and care providers
- Spouse/ family involvement and support from work
- Role of social networks such as friends and cousins who are in a similar stage of parenting.
- Role of social media, digital platforms, and the information overload
- Emotional journey during pregnancy and anxieties regarding the arrival of the baby
- Delivery experience, recovery, and emotional journey during this phase
- Dealing with the lifestyle change post-delivery
- Newborn baby care, sleep patterns, and breastfeeding
- Realizations and regrets in hindsight

Willingness to join a digital parenting community

3.2. SOURCES OF SECONDARY RESEARCH:

To better understand a new mother's jobs and journeys, it is important to define the user personas. Since parenting has a broad scope and involves multiple user personas, our area was restricted to the pregnant and early-stage parenting demographic. For the secondary data, reliable and consistent data was assembled from the various touch points of millennial parents, such as the digital parenting communities on Facebook and Instagram.

This included the following:

(a) A dummy profile was created to join parenting groups on Facebook, thereby collecting relevant user data regarding challenges, pain areas and sources of validations.

(b) Consistently following updates and engagements on Instagram profiles of mothers and couples who prefer to document their early-stage parenting journeys on the platform and seek guidance from the larger community.

(c) Pregnancy and post pregnancy books and publications which give detailed information regarding the prospective pain areas and challenges that an expectant mother would face and tips to deal with them. A must read for those trying to understand this journey – "Pregnancy" by Rujuta Diwekar, "The baby book" by William Sears and Martha Sears and "What to expect when you are expecting – 4th edition" by Heidi Murkoff and Sharon Mazel.

(d) Joining relevant service provider's online sessions: Building a community platform involves a two-sided market i.e., end-users (parents) and the service providers (parenting facilitators). It was critical to study how the facilitators were servicing the parenting market currently and driving engagement amongst the digital community members to identify their level of influence.

For this purpose, we have identified three regional parenting communities on Instagram, which we have considered as case studies for our research, "Coimbatore Parenting Network", "Chennai Parenting Network," and "Conscious Parenting Summit". The secondary and primary research observations are compiled and enlisted further in the report.

4. RESULTS & FINDINGS

4.1 FINDINGS FROM THE STUDY CONDUCTED ON MOTHERS:

As defined earlier, the research aimed to identify their jobs-to-be-done and the challenges/ pain areas in executing the same. Effectively, post-data collection, the data was analyzed and segmented into two categories, based on pain areas experienced by these women during pregnancy and post-delivery is shown in Table 1.

Table 1: Pain Areas during Pregnancy of Women

Pain areas during pregnancy	Percentage of Women
Unprepared for a pregnancy	65%
Overwhelmed with suggestions	59%
Changed doctors in the first trimester	38%
Regret having an inactive lifestyle	42%
Fear of congenital disabilities or complications	52%

It was observed that there were several challenges women faced during the initial stages of pregnancy stages which majorly impacted their emotional health, such as

a)   Being unprepared for an accidental pregnancy – 65% of the interviewed women from the tier1 and tier2 cities have put significant effort into building their career paths or felt that they were too young to have a child in the initial 2-3 years of the marriage. Hence, facing an unplanned pregnancy was one of the first challenges being faced by women, which sometimes took even 2-3 months for them to accept, leading to significant emotional disturbances in the process.

b)   Feeling overwhelmed with suggestions - 59% of the interviewed women experienced a high level of stress due to an overload of information, tips, and advice for expectant mothers regarding lifestyle changes, diet, exercise, etc. The various sources that added to this stress included parents and in-laws, friends, and the heavy online research done by these women. They felt this added significantly to their stress levels, especially when there were conflicting inputs on how to approach any particular issue.

c)   Facing a traumatic experience with the gynecologist - 38% of the interviewed women have expressed traumatic experiences with the hospitals or caregivers as the concerns and needs of the expectant mother were not addressed by the gynecologist. In some cases, mothers were body-shamed by the nursing staff and attendants during the consultations. Due to these factors, mothers were forced to change two, sometimes even three, doctors within the first two semesters.

d)   Regret having an inactive lifestyle – 42% of the interviewed women has realized in hindsight that having an inactive lifestyle during their pregnancy has led to major lifestyle problems for the women, obesity, health complications, and a child's delayed development. Women who have had two pregnancies observed a difference in the child's development when the mother had a regular exercise compared to being inactive.

e)   Fear of birth defects or complications in the baby's delivery or development - 52% of the interviewed women have expressed a deep sense of fear and anxiety regarding the baby's developmental aspects of premature birth, deformities, congenital disabilities, disorders, etc. This is identified through prenatal diagnosis tests during the 2nd trimester and sometimes even the 3rd trimester. Women are also anxious regarding their childbirth experience [7].

Few predominant challenges that women faced post-delivery significantly impacted the women's emotional and mental health. Thus her recovery post-delivery is as indicated in Table 2.

Table 2: Women's Mental Health

Pain areas post-delivery	Percentage of Women
Lack of sleep/ insomnia	42%
Faced breastfeeding issues	80%
Underwent post-partum depression	69%
Lack of spousal support	28%
Unable to bond with the baby post-delivery	19%
Overwhelmed with the environment	82%

a)   Lack of sleep or insomnia – All women faces a significant reduction in their sleep during the initial days of the newborn baby's arrival. However, this gets better over time with family support and sleep-training the baby. 42% of women we interviewed felt they suffered from lack of sleep and

support to attend to the baby. Traditionally, women felt that breast-pumped milk was not advisable to feed the baby. However, with the current lifestyle of working women, many women have opted to go for breast-pumped milk storage for their children after consulting with their gynecologist.

b) Face breastfeeding issues -80% of the interviewed women have faced challenges while breastfeeding their baby. Various problems that arise include a low milk supply, inability to latch the baby, pain and soreness around the nipple, oversupply of milk which leads to engorgement and pain, etc.

c) Underwent post-partum depression – 69% of the interviewed women have experienced mild to severe post-partum depression, sometimes lasting as long as 3 to 4 months. Several factors can trigger this, including hormonal imbalances, past history of mental illnesses, family support, physical and lifestyle changes, etc. Women with PCOS or other mental illnesses were observed to have a higher chance of experiencing post-partum depression.

d) Lack of spouse support or involvement – 28% of the interviewed women have felt that the spouse's involvement in the delivery and baby care process was quite limited which caused additional stress to the women.

e) Unable to bond with the baby post-delivery – 19% of the interviewed women expressed that they could not bond with their baby in the initial few months of the delivery. All of these women have also suffered moderate to severe post-partum depression. This could be attributed to low acceptance of lifestyle changes, lack of family and spouse support, delivery trauma, etc.

f) Overwhelmed with the environment-82% of the interviewed women have felt overwhelmed with post-delivery exhaustion, lack of sleep along with the frequent visitors, and their inputs/ suggestions. Few inputs by external sources other than the couple seemed somewhat coercive and conflicting to the couple's choices, which stressed the new mother.

Out of the women interviewed, 36% were from joint families who have had support from other family members to take care of the baby, while 64% were from a nuclear family setup. Most of them have had external support, like family members who visited for a short duration or nannies/doulas for the first six months after the delivery.

All the women interviewed have identified and emphasized the importance of having external support for at least two to three months for the mother to have sufficient time to recover from the delivery and feel capable of taking additional responsibility.

16% of these women have also suffered from problems while trying to conceive and have sought help from fertility experts and doctors.

Few steps taken by these women to address the previously mentioned pain areas are shown in Table 3.

Table 3: Women's Education Session

Attend prenatal education sessions	58%
Attend postnatal education sessions	67%
Seek support from a social network	83%

A significant percentage of these women and couples have availed online/offline sessions to educate themselves about various aspects of pregnancy and delivery such as healthy diet and exercise for a smooth pregnancy, preparation for childbirth, Lamaze sessions for the couple, prenatal

yoga sessions, post-partum health and fitness, breastfeeding sessions, lactation, post-partum mental health, focus on the mother's identity, etc.

From the research conducted, we observed an increase in women reaching out for education and sessions post-delivery, from 58% to 67% majorly for breastfeeding, mother's emotional health, post-partum depression, etc. The majority of these women have expressed that engaging with other parents in the similar-stage journey, hearing their experiences and stories have helped them prepare better for the same situations [6]. A significant 83% of these women have expressed that they seek support from their social groups or external networks to better understand pregnancy and delivery.

4.2 FINDINGS FROM THE RESEARCH STUDY CONDUCTED ON DIGITAL PARENTING COMMUNITIES:

To understand the impact of a community platform, we need to study its two-sided market. It is critical to complement the user by researching the service providers in these communities that drive engagement around specific pain areas. This has given us a better understanding of the need gap in the market. While the research on parents yielded multiple pain areas for our understanding, secondary research was conducted by mapping the activities of these pain points to the actions of existing community platforms to get our data points validated regarding the support offered by these digital parenting communities and relevant service providers to young mothers. We have chosen Coimbatore Parenting Network as our first case study.

4.3 INTRODUCTION TO CPN

Coimbatore Parenting Network (CPN) is a parenting support group that was started as an offline community for young mothers living in Coimbatore to meet and support each other. It is being run by a founding committee of five women who are service providers and facilitators for various aspects of the motherhood journey, such as gentle parenting, informed birthing, lactation, mental health education, etc. Due to the pandemic, their activities have shifted online, and since then, they have observed an exponential rise in their community members. Currently, CPN has about 12000 followers on Instagram.

They have subject matter experts who conduct regular online events to create awareness amongst the parenting community regarding their areas of expertise. This includes gynecologists, certified midwives, lactation counselors, mental health advocates, Lamaze trainers, prenatal yoga experts, parenting coaches, parenting bloggers, influencers, natural birthing centers, and other maternity care providers. Women are encouraged to talk openly about issues they face and seek support from the community, which helps alleviate some fears.

Another significant activity conducted by the group is breast milk collection which is donated to the Coimbatore Government Hospital almost every month. Traditionally, there was a huge misconception that there won't be sufficient milk for her baby if a lactating mother presents breast milk. During the COVID pandemic, CPN also eliminated many misconceptions regarding vaccinations for lactating mothers [8]. Historically, breastfeeding has been a significant area that this community targets on spreading awareness and helping mothers unlearn traditional misconceptions by providing valuable data backed by scientists and health experts [9].

4.4 PRIMARY RESEARCH CONDUCTED ON CPN'S REACH AND INFLUENCE:

We have been following their Instagram business handle since three months and collecting engagement data to analyze the reach of the community. Major jobs done by the online parenting community platform include

- Non- Event Content Creation – posted daily on Instagram
- Promotions and Event Marketing – daily on the handles of all the founding members

- Event Hosting – At least two events per week conducted on Zoom, Google meet.
- Community building – daily posts, discussions, and myth-breaking daily on any parenting concept.

Table 4: Engagement on the Platform

Total Number of followers	11.9K followers
Participation in IG Live	At least 300-600 followers
Responses received for Polls	At least 20-40K responses
Responses received for Questions	At least 20-30 responses

*Followers include males and females.

- With these engagement stats, the digital community platform has supported women by achieving the following.

- Creating a safe space for women to open up and share issues without hesitancy.
- Building a community on the shared experience of motherhood is entirely personal.
- Making mothers and parents feel a sense of belonging in the community
- Making an aggregate community platform available for all parenting challenges.
- Breaking myths and taboos on traditional parenting approaches and creating awareness backed by science and health experts.
- Collecting excess breast milk and donating to orphan infants or those with low milk supply.

CPN has also collaborated with parenting facilitators and researchers outside Coimbatore to promote awareness by hosting everyday events with them. For example, CPN has also worked towards building awareness regarding natural birthing process and its impact on the mother's emotional health. In this regard, they have also promoted "Sanctum Birth Centre" from Hyderabad, which is run by a certified midwife, Dr. Vijaya Krishnan [11]. Sanctum birth centre aims to prevent a bad hospital experience for an expectant mother by providing a comfortable environment. Out of 952 deliveries done in 2018 and 2019, 92% were natural births. This also helps the mother heal faster and reduces the pain areas new mothers face, as mentioned earlier.

The success of CPN has also paved the way for other regional parenting groups to emerge, such as Chennai Parenting Network, Mysore Parenting Network, etc., as the need for a digital community is evident [12].

5. Discussions

Early-stage parenting is a complex task evolving as the child develops into a mature adult. Research studies about India in the parenting aspects have been highly limited. We have been able to source only a handful of research studies conducted on this target segment. Also, because online communities for a niche market are only just building up, there is not enough research conducted on the influence of these digital communities [13].

Based on the literature review and the various modes of research conducted, the takeaway statement for this research study would be in 2 aspects -
• High level of willingness among women to explore information found online and joins digital parenting communities. They are already having an immediate access to online data such as

articles, blogs, videos, etc. Finding apt ways to meet this growing demand for a niche community platform that can immediately connect them to professionals will be fruitful [14].

•We see a steady rise in regional digital communities, specifically for expectant and new mothers who need that kind of a support system that brings more awareness, especially when the population is undergoing a major transition in its parenting style.

•Studies conducted on prenatal education and support received by women in other countries have resulted in lower levels of mental health conditions among new mothers, higher levels of happiness and satisfaction in their overall quality of life [15].

6. CONCLUSION

From the extensive research that was conducted, we validated our initial assumptions about the pain areas for the end-users. We have identified that prenatal education in India is lacking, and it can be facilitated through a digital networking platform.

The following points were validated based on the primary and secondary research conducted -

*   Need for antenatal and postnatal education/awareness.
*   Increased focus on the mother's mental health.
*   Need for an emotional support system and a social group of like-minded parents.
*   Interest in seeking other's motherhood experiences and stories to learn from.
*   Need for uninterrupted engagement with others in a similar path.

The emergence of niche communities will provide parents with new ways of connecting with other parents and exchanging their pregnancy and parenting experiences. These communities allow each user to communicate with another parent and follow their pictures and stories.

There are specific spaces on existing platforms like Facebook groups for parents, hash tags for users on Instagram. YouTube has been one of the main content generators for antenatal and postnatal education. However, these are generic platforms and all over the place. The parenting segment will surely welcome a digital community for a niche target segment such as the early-stage mothers who will also benefit from such a focused engagement.

In conclusion, we have observed a staggering 80% willingness to join digital parental communities such as those surveyed on Facebook, Instagram, and WhatsApp to facilitate the aforementioned points. Digital Parent Communities are still in their nascent stages in India. Our research has seen several regional parenting communities coming alive in the past 2-3 years focused on promoting conscious, positive parenting practices, such as Coimbatore Parenting Network, Chennai Parenting Network, Mysore Parenting Network, etc. With a more significant number of niche community platforms coming up, early-stage parenting will also benefit overall with digital communities for which India has an abundant market.

Ethical Approval:

As per international standard or university standard ethical approval has been collected and preserved by the authors.

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