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Utilizing “Positive deviance inquiry” to explore factors influencing child health: A qualitative study

Rupali Sabale, Barsha Gadapani Pathak, Rukman M. Manapurath

Abstract:

BACKGROUND: India is a lower middle-income country with one of the fastest growing economies in the world. Despite improvements in its economy, it has a high child mortality rate, with significant differences in child mortality both between and within different states. In this research, we tend to explore factors as to how a particular child’s growth is optimal. With this aim, we utilized positive deviance inquiry to study the factors influencing under five child’s health.

MATERIALS AND METHODS: This qualitative study was carried out in Naigoan, an urban health setting of metropolitan city with 37 sample size between July 2020 and September 2020. It consisted of total 16 in-depth interviews (IDIs), 3 focus group Discussion (FGDs), and 7 key informant interviews (KIIs) which were performed by predesigned guides.

RESULTS: Various themes evolved with the interviews; however, triangulation of the concept (from FGDs, IDIs, and KIIs) occurred with the following themes: satisfaction among mothers for health-care services, community participation, family support, and new interventions.

CONCLUSION: Mothers’ satisfaction to health-care services, community participation, family support, and innovations by the health-care providers are the influencing factors in promoting child’s health. Further research can be conducted to understand the in-depth understanding of each factor.

Keywords:

India, positive deviance inquiry, qualitative study, under-five children

Introduction

India is a lower-middle-income country with one of the fastest growing economies in the world. Despite improvements in its economy, it has a high child mortality rate, with significant differences in child mortality both between and within different states.^[1] It contributes to the highest global share of deaths among the under-fives.^[2] Causes for underfive mortality are multifactorial. Factors that have greatest impact on child health are low birth weight, nutrition, environment, and poverty.^[3] Malnutrition is one of the major public health problems attributing to underfive mortality. According

to National Family Health Survey-4 estimates (2014–2015), 21% are wasted, 36% are underweight, and 38% are stunted.^[4] There are various quantitative studies done to explore the factors that influence malnutrition in underfives.^[5-7] Tette *et al.*^[5] conducted an unmatched case–control study of malnourished and well-nourished children and examined socioeconomic factors, health outcomes, and the uptake of interventions to prevent malnutrition. Ghosh^[6] in her review article concluded that socioeconomic determinants, intrahousehold parental and child level factors play a crucial role in the nutritional status of children. Islam *et al.*^[7] in their study got significant association of prevalence of undernutrition and socioeconomic status, literacy status

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Department of Community
Medicine, Seth G. S.
Medical College and K.
E. M. Hospital, Mumbai,
Maharashtra, India

Address for correspondence:

Dr. Barsha Gadapani
Pathak,
Department of Community
Medicine, 3rd Floor Library
Building, Seth G. S.
Medical College and K.
E. M. Hospital, Mumbai,
Maharashtra, India.
E-mail: pathakbarsha@gmail.com

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of parents, infant, and young child feeding practices and size of the family. However, it is always observed that, in a same community either urban or rural with the similar socioeconomic factors, there are some children who are growing optimally while some are not. In this research, we tend to explore factors as to how a particular child's growth is optimal. With this aim, we utilized positive deviance inquiry to explore the factors influencing under five child's health. The positive deviance/Hearth approach aims to rehabilitate malnourished children using practices from mothers in the community who have well-nourished children despite living in poverty.^[8] The "traditional" use of the Positive Deviance (PD) approach involves studying children who thrive despite adversity, identifying uncommon model behaviors among positive deviant families, and then designing and implementing an intervention to replicate these behaviors among mothers of malnourished children.^[9] PD studies mainly use primary data collection both for identification of positive deviants and for PD inquiry (PDI): the inquiry into what causes the deviant outcomes. PD studies have been done in various countries in different field of research. In India, it is mainly done for research on urban governance.^[10] There is a paucity of qualitative research on utilizing PDI to explore factors influencing child's health in urban setting. Thus, the study was planned to identify PDs and conduct PDI in the urban setting. Through this, we planned to conceptually map out the elements which will help in building a concept about the positive implementers and the challenges which are eventually affecting the under-five children's health. We also seek to explore factors which influence the growth monitoring of the underfive child.

Materials and Methods

Study was conducted after seeking approval from the Institutional Ethics Committee of Seth G. S Medical College and K. E. M Hospital. Ethical considerations were observed and maintained while obtaining informed consent, confidentiality of the information, and right to withdrawal from the study. Research was conducted within all the ethical standards such as written informed consent, privacy of data, confidentiality, and right to withdraw from the study. It was conducted for 2 months (July–September 2020) in urban settings of metropolitan area of Mumbai. This area has 42 Bombay Development Department chawls and population generally consists of lower middle and upper lower socioeconomic status.

Operational definition of positive deviants (PDs)

We defined PDs as a child in the age group of 12–60 months, with birth weight of atleast 2.5 kg and who showed good growth curve on the growth chart.

Choosing PDs

As per the definition, we had to choose PDs whose birth weight is known and also their monthly weight is recorded in the growth chart. For this, we chose purposive sampling from the underfive clinic.

The underfive clinic is run by the Department of Community Medicine in the same community since 1981. It is located in the premises of public health department's Health Post, Maternity Home, and Pediatric clinic. Thus, all the underfive children residing in the area are also registered in this clinic. Components of this clinic are growth monitoring, immunization, health education, family planning, and care in illness. In this clinic, one of the components, namely, growth monitoring and nutrition counseling is provided by the Department of Community Medicine. Growth record of each child is also maintained. Thus, to select PDs, growth chart of each registered child was scrutinized. The total of 392 beneficiaries got registered from January 2018 to August 2019. Out of these, we found 185 PDs. These 185 PDs had normal birth weight, and their growth curve was normal. Out of those 185 PDs, 16 of them never missed even a single follow-up to underfive clinic.

The location of residence of the identified 185 positive deviants was spotted on the map. From the mapping, we could identify clustering of PDs at some areas. The health-care providers, namely, community health workers and auxiliary nurse midwives (ANMs) working in those areas were then identified as key informants apart from mothers, fathers, and grandparents of those PDs.

Data collection procedure

Purposive sampling method was applied to select the primary care takers of under-for focused group discussion (FGDs) and in-depth interviews (IDIs). Similarly, purposive sampling was applied to select the stakeholders, namely, community health volunteers (CHVs) and ANMs. Those stakeholders whose place of work was where the PDs resided were selected for key-informant interviews. The data collection process for each method is elaborated below:

In-depth interviews (IDs)

Ids were conducted of 16 PDs (who never missed a single follow-up visit) with the help of predesigned IDI guide. The interviews of mothers, fathers, and grandparents of PDs were conducted after seeking their written informed consent. It lasted for almost 40–45 min. During interviews, observations were also made regarding housing and environmental conditions of PDs.

Focused group discussion (FGD)

FGDs were conducted among the mothers of identified 185 PDs. The FGDs were skillfully moderated by one

of the coinvestigators which led to an open discussion among the group participants and were conducted in the under-five clinic premises. Each FGD consisted of six mothers and were conducted with the help of FGD guide for 30–40 min.

Key informant interview

Interviews of the identified public health department personnel were conducted at their work place. The key-informant interview was conducted on (1) health-care providers in under-five centers: in-charge of under-five clinic, medical social worker; (2) public health provider in the community such as public health nurse, ANM, and CHV.

The time and date of IDs, FGDs, and key informant interview (KII) were fixed depending on the convenience of the participants. All the interviews were digitally recorded with the help of Olympus Digital voice recorder device.

Data analysis

FGDs, IDs, and KIIs were digitally recorded; then verbatims were transcribed by an independent transcribers and back-translated into English (wherever required). All quotes were encoded using the qualitative software program Atlasti. software (V8) trial package. Inductive content analysis approach was utilized to analyze the FGDs, IDs, and KIIs data. During the first stage, we carefully identified systematic recurrence of codes throughout the data series and grouped them together by means of content analysis, generating open codes. Subsequently, axial coding was followed and more similar looking open codes were grouped under a subtheme. Following the constant comparison analysis among the various subthemes, we ultimately generated the major themes.

Results

Total 16 IDs, 3 FGDs, and 7 KIIs laid to saturation of data.

Figures 1, 2 and Table 1 mention the codes guiding us to form subthemes and ultimately the themes [Figure 3].

The major subthemes which emerged out of the FGDs were inquisitive nature of mother, knowledge of mother, apprehension for child's health, gratification with health-care services, pleased response to child's overall growth, reminder calls, interesting IEC materials, responsible husband, cooperative elderly in-laws. These subthemes were further grouped into four themes: assertive attitude of mothers, satisfaction among mothers regarding services, new interventions, and family support [Figure 1].

Triangulation of the concept (from FGDs, IDs, and KIIs) occurred with the following themes: satisfaction among mothers for health-care services, community participation, family support, and new interventions.

The primary care givers of the under-five children highlighted few challenges which they sometimes face that may interrupt their daily follow-ups to under-five clinic and may also hamper with child's growth. The most commonly faced challenges by primary care givers (especially mothers) were: overstress due to conditions such as managing jobs and family together, large family size, and nonresponse to mother's health by other family members. Emergency situations such as illnesses in the family, heavy rains, visit to hometown, wrong information from social media, peer groups, and age-old unscientific customs, financial burden due to child schooling expenses, sickness expenses, and other home-related expenses were other challenges faced by them.

Observations on the housing environment of PDs

It was observed that mothers and the other care givers of the child followed strict hygienic practices, for example, washing hands before serving food to child, cleaning breast before breastfeeding, bathing practices, proper waste disposal inhibiting growth of flies/rodents, use of clean utensils, etc. Another observation made was diversity in the food pattern, for example, inclusion of seasonal fruits, pulses, milk products, nonvegetarian items – eggs, fish, chicken, etc., in their routine diet regimen.

Discussion

This qualitative research study used a PDI to explore factors which favored to health of the child and monitoring the growth of their child despite facing similar challenges like their peers. Promotion of positive deviant behaviors can be crucial to bring sustainable change as these behaviors are likely to be affordable and acceptable by the wider community.^[11] Here, we discuss those four major themes that emerged through this research.

Satisfaction among mothers for health-care services

Those mothers who have acquired proper scientific knowledge about child health exhibited assertiveness. She had confidence in taking care of her child. Mothers felt that when they receive proper guidance on breastfeeding, complementary feeding, immunization, prevention of illness, growth monitoring, etc., then they felt empowered. Fadare *et al.* in their study concluded that mother's knowledge of food choices, feeding, and health-care seeking are vital for producing good nutrition outcomes for young children.^[12] Well-educated mothers were found to be a step ahead compared to their peer groups.^[13] These mothers were more inquisitive,

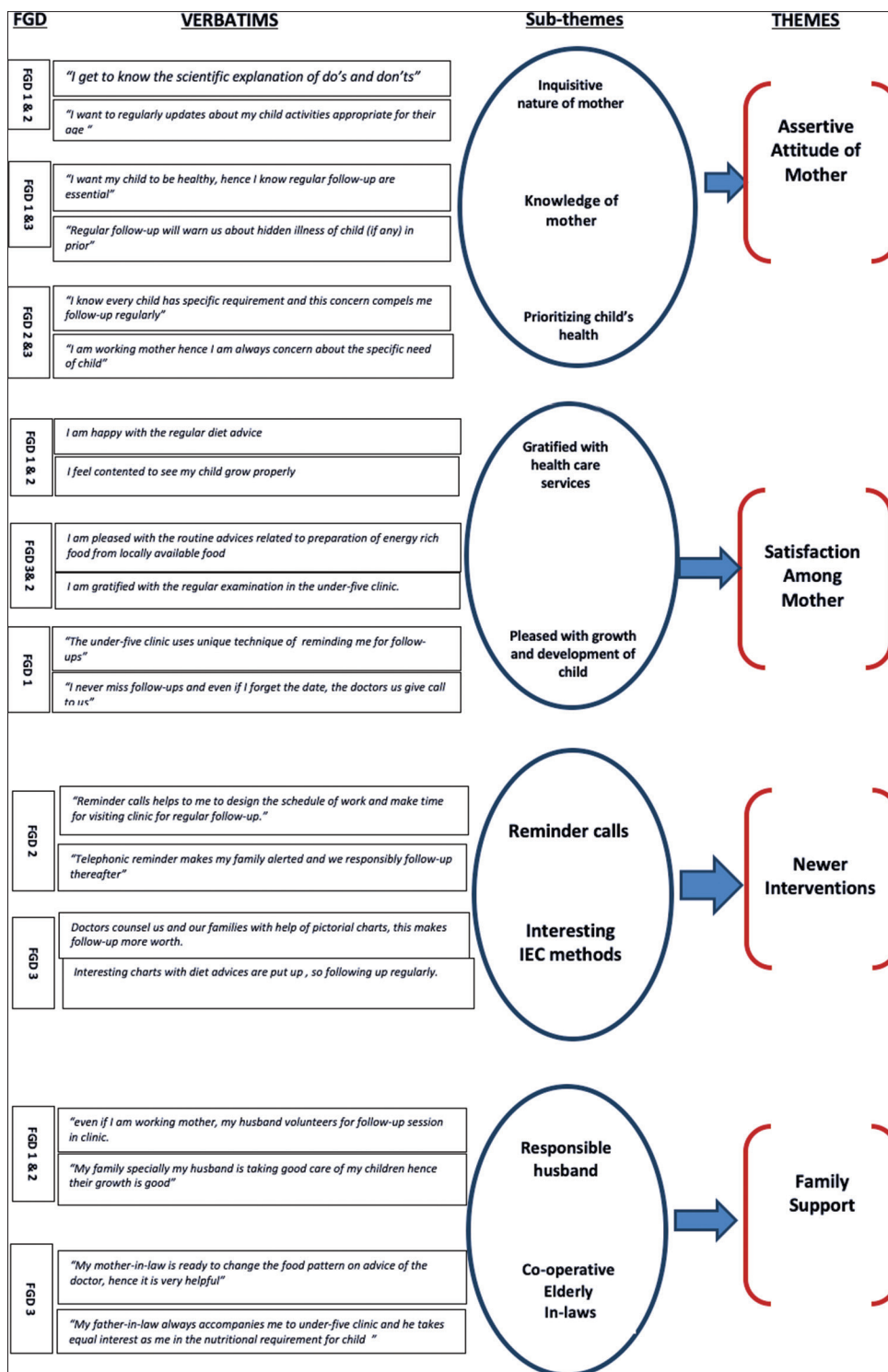


Figure 1: The following figure shows the verbatims recorded, subthemes and themes generated after FGDs

had attitude to seek more scientific information, and followed doctor's advices without getting distracted with advertisements, wrong information from peer groups, or any age-old wrong practices. This in turn helped in proper development of the child. Most of them have acknowledged the vigilant nature of doctors toward their child's health which have helped

in early detection of illness and prevention of further complications.

Community participation

The underfive clinic and public health department organizes community programs in the community. This worked as a positive motivation for mothers as they

Table 1: Key-informant interviews of stake-holders

Themes	KII	Stake-holders interview comments
Community participation	1	<i>Involvement of all family members especially in-laws and fathers is essential of child's health - In-charge of under-five clinic OPD</i>
Acknowledgment of mother's health	2	<i>Acknowledging mothers' requirement and giving her advice pertaining to her health is also a very significant step. This makes mother feel their importance and they take good care of themselves and also their baby- PHN</i>
ANC period attitude	3	<i>Mother's and family's attitude about ANC care along with proper care and visits to health center inculcates a positive attitude among them. This attitude is carried out during care of their new-borns and infants - ANM</i>
Shared responsibility	4	<i>The health of our child is the responsibility of me and my family and not only my wife....this will help mother to get time for herself and take care of herself. This will encourage her in giving good care to child - Father of under-five child</i>
Family support	5	<i>We have only 2 rooms in house but I try to provide comfortable space to my daughter-in-law while breast-feeding my grandchild and often accompany her to doctor and listen to advices given by expert...I feel happy in sharing the baby concern... it strengthens our bond - Mother-in-law</i>
Satisfactory advices	6	<i>Counselling the mothers about proper nutrition and regular growth monitoring where the mothers can see positive effect in their child's health makes them satisfied and let them adhere to regular follow-ups and adherence to advice - Community health worker</i>
Adequate information	7	<i>Interaction with mother and understanding their immediate requirement and give counselling accordingly, explaining them to use energy rich diet for child with current available local resources, importance of family planning and spacing child etc., makes mothers more vigilant and hence they care for child in appropriate manner - MSW</i>

OPD=Outpatient department, PHN=Public health nurse, ANM=Auxiliary nurse midwife, ANC=Antenatal care, KII=Key informant interviews, MSW=Medical social worker

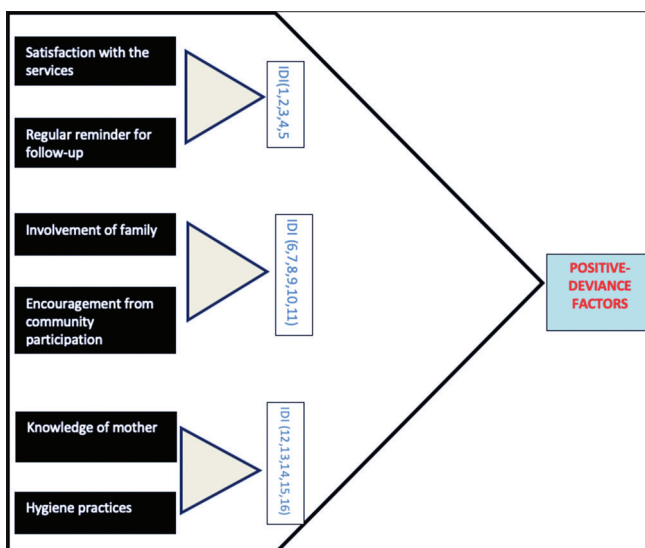


Figure 2: Themes generated after in-depth interviews with mothers

gained a lot of knowledge on diet and nutrition, ideas regarding preparing energy-rich diet, obliteration of malpractices during child care going on community, etc.,As a lot of community people take part in these program and they learn together by practically performing the activities, the knowledge acquired during this time is put into practice regularly, resulting into a positive behavioral change. Systematic review done by Marston *et al.* concludes that there is lack information about why participation interventions do/do not succeed. Qualitative investigation can help fill this information gap and should be at the heart of future quantitative research examining participation interventions – in maternal/new born health and more widely.^[14]

Family support

In some of the PD families, fathers and grandparents also shared responsibility in taking care of the underfive



Figure 3: Triangulation of the themes

in their family and mother during her antenatal period. Grandparents exhibited a flexible attitude to change the age-old dietary practices. With the broadening of paternal roles, there has been growing attention to how fathers affect children. Early research focused on the consequences of fathers' absence for children's well-being. More recent studies have focused on how father involvement may be associated with children's well-being.^[15] Similarly, further research can be done on role of grandparents on child's health. Moreover, those families who take good care of mothers and follow proper antenatal care-visits has always emerged to continue their good habits of follow-up in health-care center during postnatal care period and underfive child care.

Newer interventions by health-care providers

PDs identified in this study were from underfive clinic. The newer intervention that was implemented in 2018 was telephonic reminder calls 1 day before their

scheduled follow-up date for growth monitoring. This intervention helped the mothers to design their regular household work and come for visit. Another intervention was used colorful charts (nutrition flag) depicting balanced diet. Nutritional counseling was provided with the use of these IEC materials and advices were given on the dietetics with the use of locally available foods. This motivated families to give a variety of foods to their underfive child and it also ensured regular growth monitoring. Growth monitoring consists of routine measurements to detect abnormal growth, combined with some action when this is detected. It aims to improve nutrition, reduce the risk of death or inadequate nutrition, help educate carers, and lead to early referral for conditions manifest by growth disorders.^[16]

We observed that few mothers did face challenges while seeking health care, especially growth monitoring service for their underfive child. However, there was one or other abovementioned influencing factor/s prevailing in that family which overcame that challenge and they could come for follow-up in the underfive clinic for growth monitoring. Furthermore, apart from these factors, environmental health, personal hygiene, and dietary diversity also played the important role in child's growth and development.

Our PDI has brought the four principal elements which influence the underfive child's health. Similar findings were observed by the study conducted by D'Alimonte *et al.* in the urban slums of Mumbai on nutrition practices using positive deviance approach.^[17] In a systematic review conducted by Machado *et al.*, the authors concluded that positive deviance approach may help change nutrition behaviors with the aim of reversing child malnutrition.^[18] Our study is focused on the first step of this PD approach, i.e., defining PDs and conducting PDI. The findings of the research can thus be a guiding tool for policymakers and public health department to design the programs with the involvement of community and providing quality services in the urban setting. Marsh *et al.*^[19] in their review on positive deviance believes that positive deviance is a valuable tool that should be part of international health policymakers' toolbox for the 21st century. Qualitative design has helped to get in-depth idea about all these factors, which is portrayed by many previous studies.^[20]

Strength and weakness

The strength of this research is the utilization of the qualitative design and involvement of multiple qualitative techniques with the involvement of all stakeholders directly and indirectly for child's health. Hence, results are meant to be exploratory, descriptive, and of higher credibility. The weakness is the small study sample and involvement of only one urban

area (consisting of 42 chawls) of the metropolitan city; hence, the results are not generalizable to the entire city or Maharashtra state. Second, the composition and group dynamics of the FGDs can influence the responses of the participants.

For future studies, the emergent themes of positive deviance, as presented above, can be studied in depth and explored for further understanding.

Conclusion

Mothers' satisfaction to health-care services, community participation, family support, and innovations by the health-care providers are the main influencing factors in promoting child's health. The research has thrown insights as to why the underfive child grows and develops optimally. This can be a guide in framing the programs pertaining to underfive children health or for conducting the interventional programs. Further research can be conducted to understand the in-depth understanding of each factor.

Acknowledgment

We appreciate all the participants who collaborated for this study. Code of ethics was followed and proper ethical considerations were observed and maintained while obtaining informed consent, confidentiality of the information, and right to withdrawal from the study.

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Conflicts of interest

There are no conflicts of interest.

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