

Focus Group Discussion with Parents and Caregivers Regarding Childhood Vaccination - A Systematic Review

Neeti Sharma¹, Sanchita Pugazhendi², Jayanti Semwal³

How to cite this article:

Neeti Sharma, Sanchita Pugazhendi, Jayanti Semwal. Focus Group Discussion with Parents and Caregivers Regarding Childhood Vaccination - A Systematic Review. *Int J Pediatr Nurs.* 2020;6(3):135-144.

Abstract

Introduction: FGDs (focus group discussions) are commonly conducted in research to have a deeper understanding of a phenomenon and for various other reasons. Also in respect to vaccination among children and adolescents, fgds have been conducted for studying coverage, hesitancy, refusal, knowledge, attitude and other variables.

Methods: Studies conducted after the year 2000 till 2020 have been reviewed using search results from pubmed, DOAJ and Google Scholar. Studies that meet eligibility criteria and quality assessment (CASP) were reviewed using PRISMA guidelines.

Results: all the studies included were of high quality. 14 studies met the eligibility criteria and quality assessment criteria according to CASP checklist with score ≥ 7 . This included 11 qualitative and 3 mixed method studies using FGDs as a part of their study. The studied aspects were parents and caregivers knowledge, experience, perceptions, attitude, health system barriers and decision making process and factors affecting it.

Conclusion: there is high variability in the number of participants, sessions conducted and total sample size that ranged from 3-13, 1 and 12-98 respectively depending upon data saturation which seems to have been attained early in these cases. The knowledge and attitude regarding vaccination is seen to be favourable except for few vaccines like MMR and hepatitis. Some health system barriers have also been identified but are limited to underdeveloped countries. Overall vaccination coverage and the related factors and the concerns about vaccination decision are determined by parent's education status and information provided by HCPs.

Keywords: Parents; Caregivers; Focus group; Vaccination; Children.

Introduction

Use of focus group discussion in health sciences research is common. Focus group discussions is one of the methods which is used in qualitative studies to discuss people's perspective, attitudes and beliefs regarding a topic. This technique helps researcher

bridge the gap between the scientific knowledge and local understanding of a phenomenon. This technique also helps researcher to understand the link between people's perception and their socio cultural context.¹

Focus group discussions (FGDs) is used in health research for varied purposes. Exploration is an important function of FGD in areas where little is known about the phenomenon. The facts that emerge after exploration can further be distilled to develop main themes. Other purposes can be monitoring, evaluation and assessment of outcomes. According to Khan & Manderson (1992) FGDs provide cultural rationale for people's action under specific circumstances and can be used for enrichment of social and behavioural researches. However the researcher must adhere to

Author Affiliation: ¹Associate Professor, Department of Child Health Nursing, Murari Lal Memorial College of Nursing, Solan, Himachal Pradesh 173223, India. ²Principal and Dean, ³Professor and Head, Department of Community Medicine, Swami Ram Himalayan University, Dehradun, Uttarakhand 248016, India.

Corresponding Author: Neeti Sharma, Associate Professor, Department of Child Health Nursing, Murari Lal Memorial College of Nursing, Solan, Himachal Pradesh 173223, India.

E-mail: sharmaneeti8509@gmail.com

methodological recommendations.^{2,3} Onwuegbuzie et al reported the use of 3-12 participants in a single focus group meeting which was noted by other methodologists as well ((Morgan, 1997; Vaughn et. al., 1996, Baumgartner, Strong, & Hensley, 2002 and many others). However, over recruitment of participants by 20% - 50% have also been suggested by Morgan (1997) and Wilkinson (2004). Three to six focus groups are considered adequate to reach data saturation or theoretical saturation where each group can meet once or more than that.⁴ In a similar study by M.A Masadeh (2012) the size of focus group suggested was 4-6 with the rationale that a larger group is difficult to control and is sufficient enough to generate themes. Also, the length of session may vary from half an hour to as long as two and half hours. Moderation of the session can be done by the investigator or by an assistant as per the requirement of the research, however it's been also learnt that the researcher knows exactly how and when to ask a particular question and hence investigator's asking questions is more relevant. The author however concludes that there is no strong consensus regarding all this is and is mainly guided by the research question.⁵

In Past, Focus group discussions have been conducted with caregivers and parents in relation to vaccination among children with the objective of studying vaccine hesitancy, parents knowledge, perception, attitude and barriers to vaccination, vaccination decision making and factors affecting vaccination uptake and coverage. All the studies have used different methodology to study the research question in terms of sampling, size of group, number of sessions and characteristics of the subjects (Table 1.1).

Systematic reviews are available regarding parents and caregivers' experiences related to vaccination. A review by Kaufman et. al.,⁶ explored the studies on parents needs for information, tailored intervention, primary source of information regarding vaccination. In another systematic review by Kang et al.,⁷ facilitators and barriers of parental attitudes and beliefs toward school-located influenza vaccination were studied with the aim of developing an evidence based implementation program to increase influenza vaccine coverage. Studies on parental attitudes, beliefs and awareness on compulsory vaccination of HPV have been reviewed by Gualano et al.⁸ where 22 studies were reported to have positive attitude for HPV vaccination. An another systematic review and meta-analysis of observational studies focussing on HPV vaccination was done by Newman et al.,⁹ the

review compiled 79 studies from over 15 countries which used HPV vaccine uptake as primary outcome.

A vast literature is available on use of FGDs for studying various aspects of vaccination, however till date there is no review available on the use of focus groups in vaccination studies that provides an information on what methods have so far been utilized in this regard. The reviewer intends to provide a deeper understanding of the FGDs and summarizes aspects that can be studied using this method to have an informed decision. The current systematic review summarizes published studies, qualitative and mixed method studies that involve using focus groups with parents and caregivers so that further studies in this direction could benefit. The focus has been on childhood vaccination for the reason that most vaccinations done during period are of utmost importance and are associated with more side effects and parental concerns.

Materials and methods

Search strategy

To find relevant literature, a systematic search was conducted. The review was conducted in accordance with PRISMA guidelines.¹⁰ The thorough search was conducted in Pubmed, Google Scholar and DOAJ. To have a look into current scenario studies published during and after year 2000 were included. Hand searches for references were also done. Language for the studies was restricted to English.

Study selection and data extraction

The duplicate studies were screened out. All the study titles and abstracts were assessed for eligibility based on predetermined criteria. No consideration was given to author's qualification. Only full text available articles were considered. The following criteria were used to select studies for review.

Inclusion criteria

- Published in English language
- Published between 2000 till 2020
- Studies conducted on parents and caregivers of children aged upto 60 months.

- Studies conducted on antenatal women probing vaccination among children and related aspects.
- Researches related to vaccination among children.
- Study design includes both qualitative and quantitative methods involving face to face or other method of focus group discussion (online).

Exclusion

- Lacks quality methodological reporting
- Vaccination among adults and teens.

Results

Studies included systematic search lead to generation of 15 full text articles on pubmed, 3 on DOAJ, 17500 on google scholar. The citations were imported to Endnote X9 and duplicated were removed. Studies were then assessed for titles and abstracts and for availability of full text article. 41 studies were screened for eligibility criteria and finally 14 studies were found eligible for inclusion in the review Each study was evaluated for the following data for review namely a. the type of study, b. objectives of the study, c. study setting, d. Population characteristics, e. Outcome variable assessed, f. Details pertaining to FGD conducted,

group size, number of sessions and duration for each, g. Results of the study (Fig. 1).

Methodological appraisal was done using CASP (Critical Appraisal Skills Program) which is a checklist used for quality assessment of qualitative studies. Studies with total item score of ≥ 7 were included in the review.

Knowledge and attitude

Knowledge and attitude of caregivers are important factors that immunization related decisions. Elias Legesse and Worku Dechasa¹³ used focus groups discussions to assess 591 mothers and caregivers. They were asked 5-6 questions related to immunization. 98% answered that immunization prevents communicable diseases, 83.6% knew about VPDs, and more than 90% subjects knew signs and symptoms of VPDs. 2/3rd of the subjects (71%) were found to have good knowledge about immunization. Regarding attitude, 99.3% of the total respondents had favourable attitude towards immunization. Harmsen et. al.,²² in their study reported that parents felt that they were not educated enough about vaccination and the VPDs. They also reported simply informing that fever should be expected after vaccination is not enough. They needed to know more about vaccine side effects , their ingredients and about the need for new vaccines. Similar findings were reported by Holyachi et. al.,¹¹ in their study where mother’s

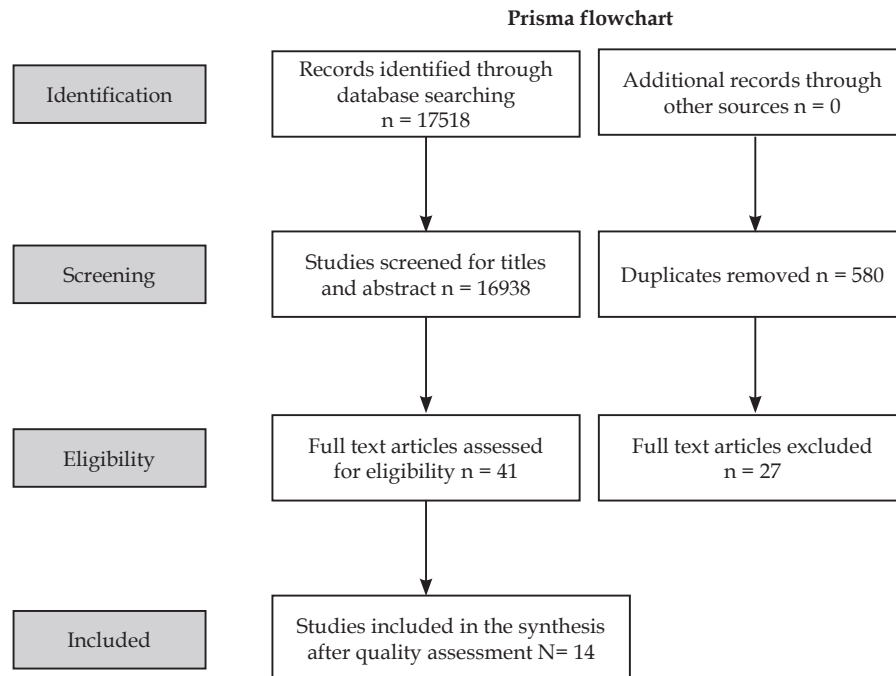


Fig. 1: Prisma flowchart

Table 1.1: Study characteristics.

Author	Study setting	Population	Study design and FGD detail	Intervention	Analytic method and Outcome
Sharankumar Holyachi, Prakash R Kengnal, Ashok Kumar ¹¹	Primary health centre India	antenatal and postnatal women	Qualitative 10 focus group comprising 5 women each (with 5 groups for antenatal and 5 for postnatal group total 60 participants)	Conducted through ANMs and ASHA workers over 2 months. Apart from sociodemographic details, their knowledge about vaccination, potential barriers for vaccination and social and personal influencers of vaccination decision making and satisfaction with National Immunization program was assessed	Content analysis -Health seeking- positive experience Attitude for vaccination- positive, vaccines prevent diseases Satisfaction- satisfied, relationship cordial with health workers Knowledge levels- insufficient, injections preferred over oral vaccines Grounded theory approach 5 main themes identified- a. Vaccine decision making - theme 1 timing of vaccines (during pregnancy or birth), 2-decision making as continuously evolving process, 3- seeking multiple vaccination information source
Jason M. Glanz et al., ¹²	Hospital based Colorado (USA)	Parents of children below 4 years	Mixed method, (fgd + survey) 7 focus groups (24 subjects total) with 3-5 participants in each lasting 60-90 min Electronic Survey	Vaccine hesitant and vaccine delaying parents of children aged 4-24 months surveyed electronically then questionnaire sent by mail to a random sample of the vaccine acceptors (n=500) and all of the delayers (n=227) and refusers (n=127). In the next step FGDs were conducted with parents who either delayed or refused vaccination.	Trust and confidence in physician advice- theme 4 -clear distinction between trust in physician and trust in his/her advice, theme 5-parents belief in physician's competency in presenting vaccine related information Content analysis 76.8% children fully vaccinated, 98% mothers knew vaccines prevent diseases, 99.3% had positive attitude, 71.2% had sufficient knowledge.
Elias Legesse and Worku Dechasa ¹³	Urban and rural health centres (Ethiopia)	Mothers of children aged 12-23 months.	Cross sectional (both quantitative -and qualitative methods) using in depth interviews and FGDs. 3 FGDs sessions-12 mothers in each lasting about 60 min.	Factors associated with immunization coverage among Parents and caregivers (n=591) were assessed. missed opportunities, coverage by card, attitude and drop out studied.	
M. Kagomé, M. Yé, E. Nébié, A et al., ¹⁴	Community health centre (Africa)	Mothers, community women leaders (godmothers), health workers	Qualitative 4 FGDs- 1 with mothers and godmothers each, 2 with health workers, with 5-9 subjects each	A combination of in depth interviews (n=29) and FGDs (n=4) and observation conducted to study community perception and knowledge towards vaccination.	Thematic analysis CHWs are important for immunization coverage, mobility as a serious barrier to vaccination identified, less knowledge due to illiteracy, health workers wouldn't open vial if sufficient children not present - one of the reason for missed or delayed vaccination.
G T Pihl, H Johannessen, J Ammentorp et al., ¹⁵	Hospital (Denmark)	Expecting mothers and fathers	Qualitative 5 FGDs with 3-8 subjects	Determining parents perspective (lay epidemiology) and its role in their decision making regarding BCG vaccination.	Thematic analysis Favourable and unfavourable arguments regarding BCG vaccination

D D. Fredrickson, Terry C. D , Connie L. et. al., ¹⁶	Hospital (USA)	Health care professionals and mothers	Qualitative 32 focus groups including 30 of HCPs and 2 of mothers.	FGDs conducted to assess providers and parents perception regarding childhood immunization refusal.	Grounded theory approach Refusal to immunization rare as reported by physicians, reasons for refusal found as negative messages from TV, religious and philosophical beliefs, severity of disease, medical contraindications and antigovernment sentiments. Total refusal was rare but parents expressed concerns. open thematic coding Utilization of immunization services between two geographical regions, comparison of vaccine decision making patterns and hesitancy, knowledge level of subjects.
N.N. Akwataghibe, Elijah A. Ogunisola J et. al., ¹⁷	Community (Nigeria)	Caregivers of children, women in reproductive age group and men(young an old) and stakeholders involved in immunization.	Mixed method research (cross sectional survey, indepth interviews and FGDs) 16 FGDs (6-7 subjects in each session, N=98)	Household survey of caregivers – to determine coverage for DPT, pentavalent, semistructured interviews- with frontline health workers and other stakeholders, FGDs- with community men and women of reproductive age group to assess their expectations and needs related to immunization.	
Jessica Kaufman, Rebecca Ryan, Sophie Hill ¹⁸	Hospital (Australia)	Parents of children upto 6 years, health care professionals involved in immunization services.	Qualitative focus group design 3 FGDs with parents(n=12, 3-5 subjects per session), 4 with professionals (n=19, 3-7 subjects per session), duration 60-80 minutes.	Face to face FGDs and teleconferencing	Thematic analysis 6 Themes describing parents experiences with vaccination communication, decision making and impression of communication, 5themes related to professionals- designing communication intervention, parents need, want and experiences, challenges and perceptions regarding good communicator.
M Fadda, E. Galimberti, V. Carraro et. al., ¹⁹	Vaccination centres (Italy)	Parents of children with pending MMR dose.	Qualitative study employing FGDs 6 focus groups (n=28, each group 4-6 participants) lasting an hour.	Decision making related to MMR vaccination through FGDs	Thematic analysis Average knowledge of subjects related to vaccination, major themes emerged related to competency, autonomy, information orientation, importance of decision and related stress.
A J. Lil, C. Tabu, S. Shendale et. al., ²⁰	Health centres (Kenya)	Caregivers (of child below 24 months) and health workers	Qualitative, 6 FGDs with caregivers, 8 with health workers with 5-13 participants on average lasting about 45 min and 35 indepth interviews with key informants lasting 30 min.	Caregivers- attitude, satisfaction, need for improvement of healthcare services and vaccination. Health workers- staffing, resources, vaccine stock outs and supplies.	Thematic analysis Positive attitude of caregivers, satisfied with health services but there is need for improvement. Rumours and misconception existed. Shortage of health staff and vaccines reported.

Framework analysis Health workers are main source of information, radio in rural and TV in urban areas, content on side effects management received, more detailed when mother is present, clinic environment not good long waiting lines, traditional institutions strong information source

Health workers report misconception (religious) and rumours hamper vaccination, poor communication skills and lack of motivation.

FGDs with caregivers to enquire their source of information, its type, perception of communication technique and ways to improve it. In-depth interviews with health workers to enquire the content of information given, frequency, inclusion of other health and child related topics, target population and about personnel delivering service.

Qualitative (observation n = 40 + FGDs, n = 12 + In-depth interviews n=14) Each FGD 6-8 subjects lasting 30-45min

Caregivers of children, health workers and community leaders.

Hospital (antenatal and immunization clinics) Nigeria

A Oku, A.Oyo-Ita, C. Glenton et. al.,²¹

Thematic analysis Parents reasons/ justification for vaccination refusal- good nutrition prevents diseases, children's immune system will be overcharged, low risk perception of diseases, risk of vaccine side effects, there are benefits of having disease.

250 parents of partially vaccinated children identified and were invited online, consenting parents joined the online forum and attended five sessions in a week. Group setting asynchronous, moderated posted questions from Monday to Friday related to vaccine refusal.

Qualitative with 8 online focus groups session (n=60) with 7-8 subjects each.

Parents of children aged 0-4 years

Netherland

I. A. Harmsen, L. Mollema, R. A. C. Ruiter et. al.,²²

Grounded theory approach Parents felt unwelcome pressure to vaccinate the child, had less belief in Govt recommendations and safety detail of MMR vaccine. Uptodate information desired by subjects.

Focus groups with parents who refused and accepted MMR vaccination. Parents perspective on MMR vaccine safety and related controversy.

Qualitative, 6 FGDs total 48 participants

Parents of children aged 14 months to 3 years

Community (Britain)

M. Evans, H. Stoddart, L. Condon et. al.,²³

Content analysis Barriers like distrust in immunization program, health services issues, vaccine side effects reported.

IDIs with key informants and FGDs with parents to explore vaccine hesitancy

Qualitative, 4 FGDs (n=35)

Parents (fathers and mothers) with atleast one child below 5 years

mobile community (Chad)

M.F. Abakar, D. Seli, F. Lechthaler et. al.,²⁴

Source-original

Table 1.2: Detail of Focus Groups Among Studies.

Focus group	Study 11	Study 12	Study 13	Study 14	Study 15	Study 16	Study 17	Study 18	Study 19	Study 20	Study 21	Study 22	Study 23	Study 24
Group size range	5-6	3-5	12	5-9	3-8	5-10	6-7	3-5	4-6	5-13	6-8	7-8	4-9	5-9
No of focus group with parents/ caregivers	10	7	3	4	5	2	16	3	6	6	12	8	6	4
No of sessions with each group	1	1	1	1	1	1	1	1	1	1	1	5	1	1
Duration of session	Not reported	60-90 min	60 min	Not reported	Not reported	Not reported	Not reported	60-80 min	60 min	45 min	30-45 min	asynchronous	60 min	60 min
Total sample size for FGD	60	24	36	26	22	Not reported	98	12	28	50	84	60	48	35

Source-original

perceived knowledge about what vaccine was being given to the child and for what condition, was poor. Their attitude was reported to be good and for the child's benefit. There was no negative experience of vaccine side effects after vaccination. N N. Akwataghibe et al.,¹⁷ did mixed method study to study factors affecting immunization services utilization. Focus groups were conducted with parents from two tribal areas. The study showed a good level of awareness among parents regarding immunization value. Some aspects like vaccine schedule and need for competition of immunization, needed more interventions. Some believed vaccines could cause paralysis and is a method of population control used by the 'White man'. People also believed in traditional healing of some illnesses like measles instead of vaccination against them. Utilization of immunization services was reported to be affected by availability of delivering facilities. Greatest demotivating factor for immunization was cited as adverse events following immunization. A J. Li²⁰ in their study on reasons for missed opportunities for vaccination report good knowledge and attitude towards vaccination. However, they expressed that giving many injections at one visit were not good for the child who can get sick. Also they had misconceptions regarding vaccines causing permanent health damage and variance in the quality of vaccines being given. The caregivers expressed satisfaction with the health services and health workers.

Vaccine hesitancy and refusals

For past few years parents concerns over immune system overloading due to vaccination and need for artificially induced immunity is a much studied topic as previous years have a rise in vaccine refusals and hesitancy. Doren D. Fredrickson¹⁶ explored parents perceptions and reasons for vaccine refusals. Study reports that refusal was rare but hesitancy was more frequent and that too for specific vaccines. Study also concluded that parents resisted due to lack of understanding, sickness of child was also seen as a reason for not vaccinating the child. Few conditions were seen as less threatening by parents like Hepatitis B and varicella.

Harmsen et. al.,²² studied vaccination refusal via online focus groups to study parents views about national immunization program and reasons for vaccine refusals. In this study the parents expressed that some diseases were not severe and even obsolete, some vaccines can cause permanent side effects like autism, epilepsy asthma etc. Few

parents believed in child getting natural diseases through active infection. Parents also believed that healthy lifestyle and nutrition can omit the need for vaccination.

Decisions making for vaccination

Gitte Thybo Pihl¹⁵ studied "lay epidemiology" and its role in affecting parents and caregivers decision to vaccinate their children with BCG vaccine. The study was conducted on antenatal women and fathers. The author defines lay epidemiology as individual's risk evaluation for a disease based on personal experience or experiences of the people in their network. It has a huge impact on parental decision making. Expecting parents expressed that if the vaccine prevents disease and also other problems which otherwise have a heritable pattern, they will vaccinate. Trust in the vaccine and its association with relatively less side effects also motivates parents to vaccinate. J M Glanz et. al.,¹² conducted a mixed method study (FGDs and online surveys). It was seen that decision making regarding vaccination starts prenatally and is an evolving process. Parents consider vaccination during pregnancy and also during making birth plans. They generally trust their physician's advice but are unsure to follow their instructions related to vaccination and wanted to have more information on vaccine related side effects. The study also reports that parents who delay or refuse childhood vaccination tend to constantly re-evaluate their decisions. Marta Fadda et. al.,¹⁹ explored parents perspectives on decision making for MMR vaccination. Parents felt that they feel competent when they had appropriate and adequate knowledge. Also empowerment was linked to availability of a trustworthy paediatrician. Parents viewed themselves as active information seeker and passive recipient of information. For few parents decision to vaccinate or not was time consuming and stressful.

M Evans et. al.,²³ discovered four factors influencing parents decision for MMR vaccination which were a. belief about risks and benefits v/s risk of contracting the illness, b. Information provided by media and other sources about safety of MMR vaccine, c. confidence and trust health professional's advice and, d. To view importance of vaccination from government's and individual point of view. The study was conducted among both immunizer and non immunizer parents for MMR. The study highlighted parents concerns and showed that even with minimal risk realization parents may still not

vaccinate their children, parents also believe their concerns regarding autism, crohn's disease, asthma associated with MMR vaccine aren't addressed by GPs and media sources. Sometimes few adverse reaction may be over exaggeratedly presented.

Barriers to immunization

S Holyachi et. al.,¹¹ conducted FGDs with antenatal and postnatal women. The subjects reported several barriers to vaccination like non availability of a male person for accompanying to clinics, prior negative experience , household chores and social environment. M. Kagoné¹⁴ studied community perception and barriers to vaccination. The author reports poor knowledge among mothers due to illiteracy. Among the barriers to immunization services one of the identified barrier reported was health workers waiting for a certain number of children to be available before opening the vial. Their behaviour with mothers was also seen important. Parents reported that health workers would sometimes shout at mothers or will be rude. This would cause mothers to delay or refuse vaccination. Mothers experience related to vaccination was seen as important motivating factor for further immunizations. M F Abakar²⁴ assessed demand side barriers to vaccination and found that people didn't trust their national immunization program as the information they received was too little, the messages they received were more intimidating than motivating. The subjects who were a nomadic community were received poorly by health workers who were also dirty and didnot have any knowledge about vaccines or the program. All these were identified as barriers to vaccination.

Vaccination communication interventions

Afiong Oku²¹ did a qualitative study on caregivers, health workers and traditional/religious. The author concluded that the mode of communication used by caregivers were radio for rural subjects and television for urban subjects. Information regarding vaccination was also received through health workers who told about vaccination schedule, side effects and management however the content delivered in rural setting was less compared to urban areas. The environment in the clinics was also not favourable with low ventilation, long waiting hours and inappropriate treatment of mothers by health workers especially when they are overburdened and mothers come late. The subjects from urban areas wanted text reminders and rural

subjects desired town announcers.

Discussion

The current review highlights studies conducted using focus group interviews in related to vaccination among children. The review focuses on primary vaccination done and includes study upto the age of 5 years. The methodology used for conducting the discussions have been concluded in (Table 1.2). It is seen that for the reviewed studies minimum 2 to a maximum of 16 focus groups were formed. The number of participants per session ranged from 3 to 13. While many studies have not reported duration of each session , still it has ranged from 30-90 min. For most studies, the focus group session with each group was conducted once. The sample size has ranged from 12 to 98 in the reviewed studies. Most studies are qualitative (11 in number) and 3 have mixed methods. Vaccine refusal and hesitancy has been found a frequently studied phenomenon after studies on knowledge and attitude. The studies show that parents and caregivers have a good knowledge and positive attitude for vaccination. Yet subjects have also reported to a desire for more detailed information about newer vaccines, their ingredients and alternative options also.^{11, 13, 22} Similar results were obtained through studies done by O Q B Al-lela²⁵ and P.R.T Kumar²⁶ using mixed method and other quantitative methods. These studies suggest good immunization coverage among children whose parents have good knowledge and favourable indicators. Barriers for vaccination were identified as vaccine side effects, household chores and have been largely attributed to parental beliefs, attitudes by many studies^{27,28}, other factors have also been found to affect parents decision that the current review has pointed out are related to health workers behaviour, their content of health education delivered to parents, and there is mistrust among parents about Govt disseminating selective information about few vaccines like MMR. The decision to vaccinate the child or not seemed to be affected by personal experiences within the communication network of people, availability of adequate information, it depended on the physician and was seen as an evolving process that starts in late pregnancy. Misleading information, negative beliefs and attitudes about specific vaccines need to be addressed to increase vaccine uptake and coverage.²⁹ Vaccine hesitancy was observed for some vaccines due to fear of permanent health consequences. Parents rationalized vaccine

refusal to the illnesses being obsolete and less in severity. They also preferred the child to develop natural immunity to diseases than overloading his system with vaccines.^{16,22} Overall the focus group discussions have brought forward a multitude of factors affecting vaccination process and decision making and gives a deep insight into what matters most to the parents when their child has to get a vaccine.

Conclusion

The review includes studies from both high and low income countries and shows contrasting outcomes in all aspects especially lack of trust in government, level of knowledge and training of health professionals including physicians and dispensing vaccines in developing countries whereas parental concerns in developed countries are more about side effects, immune system overloading, to have more control over vaccination related decisions. The reviewer has come across striking differences in parents opinions, depth of their understating and their influencers during this study. The stakeholders needs to keep in mind all these in mind while planning an intervention or policy.

Strengths and limitations

This review is based on studies conducted regarding vaccination among children using focus group discussions as a tool for data collection, first as per our knowledge. Standard reporting methods were used for this review. Limitation is that mixed method studies have also been reviewed which used focus group discussion as a part of their study.

Conflict of interest – Nil

Funding – Nil

References

- O. Nyumba T, Wilson K, Derrick CJ, Mukherjee N. The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and evolution*. 2018 Jan;9(1):20-32.
- van Eeuwijk P, Angehrn Z. How to... Conduct a Focus Group Discussion (FGD). *Methodological Manual*.
- Khan ME, Manderson L. Focus groups in rapid assessment procedures. *Food and Nutrition Bulletin*. 1992 Jun;14(2):1-9.
- Onwuegbuzie AJ, Dickinson WB, Leech NL, Zoran AG. A qualitative framework for collecting and analyzing data in focus group research. *International journal of qualitative methods*. 2009 Sep;8(3):1-21.
- Masadeh MA. Focus group: Reviews and practices. *The Journal of Applied Science and Technology*. 2012 Dec;2(10).
- Ames HM, Glenton C, Lewin S. Parents' and informal caregivers' views and experiences of communication about routine childhood vaccination: a synthesis of qualitative evidence. *Cochrane Database of Systematic Reviews*. 2017(2).
- Kang GJ, Culp RK, Abbas KM. Facilitators and barriers of parental attitudes and beliefs toward school-located influenza vaccination in the United States: systematic review. *Vaccine*. 2017 Apr 11;35(16):1987-95.
- Gualano MR, Olivero E, Voglino G, Corezzi M, Rossello P, Vicentini C, Bert F, Siliquini R. Knowledge, attitudes and beliefs towards compulsory vaccination: a systematic review. *Human Vaccines & Immunotherapeutics*. 2019 Apr 3;15(4):918-31.
- Newman PA, Logie CH, Lacombe-Duncan A, Baiden P, Tepjan S, Rubincam C, Doukas N, Asey F. Parents' uptake of human papillomavirus vaccines for their children: a systematic review and meta-analysis of observational studies. *BMJ open*. 2018 Apr 1;8(4):e019206.
- Moher D, Liberati A, Tetzlaff J, Altman DG, Prisma Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS med*. 2009 Jul 21;6(7):e1000097.
- Holyachi S, Kengnal PR, Kumar A. Parental perception of childhood vaccination through focused group discussion approach amongst women in Karnataka, India. *Natl J Community Med*. 2018;9(1):19-24.
- Glanz JM, Wagner NM, Narwaney KJ, Shoup JA, McClure DL, McCormick EV, Daley MF. A mixed methods study of parental vaccine decision making and parent-provider trust. *Academic pediatrics*. 2013 Sep 1;13(5):481-8.
- Legesse E, Dechasa W. An assessment of child immunization coverage and its determinants in Sinana District, Southeast Ethiopia. *BMC pediatrics*. 2015 Dec 1;15(1):31.
- Kagoné M, Yé M, Nébié E, Sié A, Müller O, Beiersmann C. Community perception regarding childhood vaccinations and its implications for effectiveness: a qualitative study in rural Burkina Faso. *BMC public health*. 2018 Dec 1;18(1):324.
- Pihl GT, Johannessen H, Ammentorp J, Jensen JS, Kofoed PE. "Lay epidemiology": an

- important factor in Danish parents' decision of whether to allow their child to receive a BCG vaccination. A qualitative exploration of parental perspective. *BMC pediatrics*. 2017 Dec 1;17(1):194.
16. Fredrickson DD, Davis TC, Arnould CL, Kennen EM, Humiston SG, Cross JT, Bocchini JA. Childhood immunization refusal: provider and parent perceptions. *Family Medicine-Kansas City*-. 2004 Jun 1;36:431-9.
 17. Akwataghibe NN, Ogunsola EA, Broerse JE, Popoola OA, Agbo AI, Dieleman MA. Exploring Factors Influencing Immunization Utilization in Nigeria – A Mixed Methods Study. *Frontiers in public health*. 2019 Dec 20;7:392.
 18. Kaufman J, Ryan R, Hill S. Qualitative focus groups with stakeholders identify new potential outcomes related to vaccination communication. *PloS one*. 2018 Aug 1;13(8):e0201145.
 19. Fadda M, Galimberti E, Carraro V, Schulz PJ. What are parents' perspectives on psychological empowerment in the MMR vaccination decision? A focus group study. *BMJ open*. 2016 Apr 1;6(4).
 20. Li AJ, Tabu C, Shendale S, Okoth PO, Sergon K, Maree E, Mugoya IK, Machekanyanga Z, Onuekwusi IU, Ogbuanu IU. Qualitative insights into reasons for missed opportunities for vaccination in Kenyan health facilities. *PloS one*. 2020 Mar 30;15(3):e0230783.
 21. Oku A, Oyo-Ita A, Glenton C, Fretheim A, Ames H, Muloliwa A, Kaufman J, Hill S, Cliff J, Cartier Y, Owoaje E. Perceptions and experiences of childhood vaccination communication strategies among caregivers and health workers in Nigeria: a qualitative study. *PloS one*. 2017 Nov 8;12(11):e0186733.
 22. Harmsen IA, Mollema L, Ruiters RA, Paulussen TG, de Melker HE, Kok G. Why parents refuse childhood vaccination: a qualitative study using online focus groups. *BMC public health*. 2013 Dec;13(1):1-8.
 23. Evans M, Stoddart H, Condon L, Freeman E, Grizzell M, Mullen R. Parents' perspectives on the MMR immunisation: a focus group study. *Br J Gen Pract*. 2001 Nov 1;51(472):904-10.
 24. Abakar MF, Seli D, Lechthaler F, Schelling E, Tran N, Zinsstag J, Muñoz DC. Vaccine hesitancy among mobile pastoralists in Chad: a qualitative study. *International journal for equity in health*. 2018 Dec 1;17(1):167.
 25. Al-Lela OQ, Bahari MB, Al-Qazaz HK, Salih MR, Jamshed SQ, Elkalmi RM. Are parents' knowledge and practice regarding immunization related to pediatrics' immunization compliance? a mixed method study. *BMC pediatrics*. 2014 Dec;14(1):1-7.
 26. Kumar PR, Kavinprasad M. A study to assess the parent's knowledge and attitudes on childhood immunization. *Int J Community Med Public Health*. 2018 Oct 25;5(11):4845-8.
 27. Mills E, Jadad AR, Ross C, Wilson K. Systematic review of qualitative studies exploring parental beliefs and attitudes toward childhood vaccination identifies common barriers to vaccination. *Journal of clinical epidemiology*. 2005 Nov 1;58(11):1081-8.
 28. Guzman-Holst A, DeAntonio R, Prado-Cohrs D, Juliao P. Barriers to vaccination in Latin America: A systematic literature review. *Vaccine*. 2020 Jan 16;38(3):470-81.
 29. Tabacchi, G., Costantino, C., Napoli, G., Marchese, V., Cracchiolo, M., Casuccio, A., Vitale, F. and Esculapio Working Group, 2016. Determinants of European parents' decision on the vaccination of their children against measles, mumps and rubella: A systematic review and meta-analysis. *Human vaccines & immunotherapeutics*, 12(7), pp.1909-1923.