Dengvaxia Phenomenon: Lived Experiences of Parents with Dengvaxia-vaccinated Children

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Abstract.

Background: Dengue has always been a major public health problem in the Philippines and is endemic in all regions of the country. Because of the growing number of incidence of dengue in the country, many were convinced to vaccinate their children with anti-dengue vaccine. Dengvaxia is an anti-dengue vaccine licensed and approved for use by the government in December 2015. However, the second quarter of 2016 saw uproar and issues about the vaccine, causing panic and fear among parents of the vaccinees. Immediate suspension of the vaccine was ordered due to the multiple controversies following the Dengvaxia issue.

Purpose: The main purpose of the study was to identify and describe the experiences of the parents who have children vaccinated with Dengvaxia.

Methods: The study utilized a qualitative Hermeneutic phenomenological research design. Using a semi structured interview guide questionnaire, a total of 14 parents of Dengvaxia-vaccinated children were purposively selected and interviewed. Data were analyzed using Colaizzi’s phenomenological method in data analysis.

Results: The experiences of the parents has revealed four themes and fifteen categories. These themes are as follow: drives for participation, emotional disequilibrium, damage controls, and the phenomenon aftermath. Parents experienced difficult times emotionally, psychologically and physically especially at the height of the controversy while focusing on the health and well-being of their children. The mental
trauma faced by the parents due to the fear for their children’s lives was an adversity that they had to hurdle through.

**Conclusion:** The entire experience put uncertainties towards the immunization programs of the government but the lessons learned from the experience exhibited every family’s resilience in the midst of the controversy.

**Keywords:** Dengvaxia, experiences, parents


**Introduction**

Dengue remains as the most monitored mosquito-borne disease in the world, and has been known to strike at tropical and sub-tropical countries [1]. Besides being a tropical country – with the urbanization, overpopulation, improper waste disposal, lack of public health infrastructure and services; this epidemic remains a major health issue in the Philippines. In December 2015, a vaccine against dengue was licensed and approved for use in the Philippines by the Food and Drug Administration (FDA) after multiple tests and clinical development. The Department of Health (DOH) then launched a program that offered free vaccination to public school pupils the following year. Mass vaccination was conducted as a public health service towards the areas with the highest number of dengue cases [2]. However, in July 2016, the World Health Organization (WHO) released a paper saying that Dengvaxia may be ineffective or may theoretically even increase the future risk of severe dengue illness in those who are seronegative (has not had dengue) at the time of first vaccination regardless of age [3]. Furthermore, the pharmaceutical company that created the vaccine announced the results of their latest clinical data analysis concluding that Dengvaxia is riskier for people not previously infected by the virus. A significantly lower efficacy (including negative vaccine efficacy) was noted for children younger than 9 years of age. It was analyzed that high rates of hospitalizations during breakthrough dengue infections of persons who were vaccinated when seronegative, with vaccine appearing to induce enhancing antibodies [4]. The ADE or antibody dependent enhancement of virus infection is the mechanism wherein virus-specific antibodies enhance the entry of virus, and in some cases the replication of virus [5]. A person infected with dengue develops an immune response to that dengue subtype. The immune response produced specific antibodies to that subtype specific surface proteins that
prevents the virus from binding to macrophage cells (the target cell that dengue viruses infect) and gaining entry. Literature suggests that ADE of DENV infection not only facilitates the virus entry process but also could modify innate and adaptive intracellular antiviral mechanisms [6]. An increased rate of severe dengue was distinguished following vaccination with Dengvaxia and subsequent infection with any dengue virus serotype in persons not previously infected by dengue virus. Aside from this, the results show that vaccination of individuals can increase hospitalization of vaccine-sensitized individuals and disease burden increases considerably. The participants of this study claim that side effects include headache, injection site reactions, malaise, weakness, fever, and muscle pain. Immediate suspension of the vaccine was ordered by the FDA due to the multiple controversies following the Dengvaxia issue, with more and more complications appearing both in the recipients and its provider. In the heat of the controversy, a series of deaths occurred soon after, which caused an uproar of fear and paranoia to spread among the parents of those that were vaccinated. As majority of the Dengvaxia vaccine was carried out through mass vaccination, the rumors and gossip about the dangers of immunization disseminated quickly. Vaccination rates of other vaccines in rural health units (RHU) decreased to as much as 60% after the issue outbreak [7]. Consequently, the Philippine health department attributed the measles outbreak during the first quarter of 2019 to the vaccine hesitancy caused by the Dengvaxia scare [8]. Meanwhile, specialists from the Dengue Investigative Task Force of the Philippine General Hospital (PGH) found out that the fourteen deaths believed to have been caused by Dengvaxia have inconsistent causal association to the immunization [9]. A conclusive study is yet to confirm if the deaths of several vaccinees are indeed caused by the vaccine failure. The study aimed at identifying and describing the experiences of the parents who have children vaccinated with Dengvaxia.

**Methods**

A qualitative Hermeneutic phenomenological research was utilized in this research because it revolves around the analysis of the parental perspective with regards to the Dengvaxia vaccines. In essence, qualitative research is public conversation that amplifies certain interpretations in such a way the participants define the study. It brings not only explicit meanings voiced by social actors in conflictive situations but also their implicit culture — the moral vocabularies, the self-descriptions, and customary tales and rules of thumb. The data that were interpreted are based on a subjective background in which case the usual statistical treatment used in quantitative research is not applicable. The study dealt with lived experiences of parents with children who are vaccinated; thus, it is a qualitative research. In addition, qualitative research involves “case studies, narrative records, or interviews which are coded to provide a detailed description of a phenomenon,” and that it aims to convert specific observations into generalities [10]. Furthermore, this research method profoundly understands the voices behind the people’s experiences, and it gives
interpretations regarding the social conditions, which have been ignored by dominant interests [11]. To obtain the participants of the study, the researchers utilized the purposive and snowballing sampling method. For the purpose of homogeneity, the following criteria for the selection of the participants were utilized; (1) a parent of a vaccinee who has received at least one dose of the CYD-TDV vaccine, (2) at least 18 years old (3) willing to consent and participate. Purposive sampling is an effective non-probability sampling technique that selects sample from a small population based on a specific criterion predetermined by the researchers [12] and snowballing is a type of purposive sampling which identifies subjects from a population by chain referral [13]. The researchers primarily used purposive sampling to deliberately select participants from the population where Dengvaxia vaccinees are propagated. Then, the researchers asked the participant to be referred to another person who meets the same criteria. The snowballing process was repeated until data saturation was reached. Using a semi structured interview guide questionnaire a total of 14 participants were interviewed. This study utilized Colaizzi’s method in analyzing the data gathered from a series of interviews with parents of children vaccinated with Dengvaxia. This method of data analysis is widely characterized consisting of seven steps. Furthermore, Colaizzi emphasized that the researchers must obtain a description of the experience from participants by direct questions. However, Colaizzi also emphasized that these questions can only be obtained by examining and documenting personal assumptions of the researchers about the topic and discussing these presumptions with others [14].

In the conduct of this research study, the researchers adhered to the ethical standards of autonomy, informed consent, anonymity, confidentiality, beneficence and justice.

**Results**

The participants of the study consisted of 14 mothers, 30 to 50 years of age having a child who is a recipient of at least 1 dose of the Dengvaxia vaccine during the mass immunization program. The lived experience of the mothers with dengue vaccinated children has revealed four (4) themes and fifteen (15) categories that emerged during data analysis. The first theme, *Drive for Participation*, represents the parent’s inadequate idea about the vaccine prior to the immunization. They were encouraged to immunize their children due to the prevalence of Dengue. Furthermore, the vaccine was very promising and was distributed for free, making the parent’s consent voluntarily in vaccinating their children with Dengvaxia. Four categories supports this theme namely; *Unaware of the Consequences* about the possible effects of the vaccine, *Dengue Prevalence* which exhibits the pervasiveness of Dengue in the country, the reason for parents to take part in the vaccination of their children. *Free Vaccination* wherein the vaccine is free of charge which influenced them to participate and *Consenting Voluntarily* stating their willingness to participate in the vaccination program.
Emotional Disequilibrium focuses on the parents’ disarrayed feelings toward the immunization program. Mainly due to cluelessness, the parents did not know what to feel when news broke out that Dengvaxia does more harm than good. Parents became fearful for their children’s lives, while others were angered at the government for being careless and in a hurry in implementing the vaccine. This caused the parents to feel miserable and fearful for their children. The following are the categories under this theme: Raised Alarms: Fear of the Vaccine, the feeling of parents when news about the vaccine spreads all over the country serves as a stimulus that requires a particular action to avoid possible harm that may affect their children. It is clearly exemplified that parents started to worry about the possibilities of their children experiencing pain or even death. It prompted them to take each action carefully so that their children will be safe at all times. Anger at Play wherein parents expressed frustrations, they usually settle their emotions of anger into statements that can epitomize what they felt throughout the experience. Misery, describes the agony, distress and grief of the participants and Mistrust which show how the parents’ trust or reliance on the vaccination program of the government was lost.

Damage Controls. In the course of the phenomenon, parents notably exhibited intense protective actions to counteract the dengue vaccine’s possible adverse effects and ensure their children’s safety. And, as trust on the government and immunizations falters, most seek help from themselves, gathering information on the vaccine. The government provided free hospital admission, visits and medications to regain public confidence on the country’s healthcare system. Categories include: The Parents at Work which showcases the different countermeasures or actions done by parents following the controversy, A Mother’s Love, depicts how the parents protected their children from the vaccine’s adverse effects or further harm and Help Has Arrived wherein the government has rebuild the public’s confidence on them through giving help to alleviate the parents’ worries by offering support when the need arises, and making sure that the parents’ concerns are heard and acted upon immediately.

Lastly, The Phenomenon Aftermath tackles the lasting effects of Dengvaxia scare and how the participants survive the entire experience. This theme includes four categories which includes; Perceived Long-term Effects, which showcases the effects inflicted on the vaccinees by the Dengvaxia vaccine after it was administered through the mass immunization program, Uncertainty towards Immunization Programs making them doubtful on the safety of the immunization programs, Lessons Learned wherein parents learned to be more cautious and assertive and Resiliency where parents adopt well amidst all struggles and challenges they experience.

Discussion

The participants of this study revealed their struggles in the course of the issue. While some parents could not help but
worry as controversies spread about the national immunization program, some became hyper vigilant concerning their children’s health. Evidently, there is a fall in immunization rates which diminished the trust of participants leading to misconceptions on immunization as a whole. Despite the difficulties, the participants regard their condition as an opportunity for them to learn and fully understand an occurrence by having an open mind in order to learn about the benefits, safety, and risks of vaccines before consenting to something they are unfamiliar with. It reckons that the burden of the vaccine should help inform and refine policy decisions and increase understanding of immunization among the public.

**Conflict of Interest**

The authors declare that there is no conflict of interest regarding the publication of this paper.

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**References**


