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The mutating discourse of the existing manifestation of poor health seeking behaviour and the Underpining factors inhibiting vaccination uptake in Nairobi informal settlements

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Abstract
On 6th April 2018, the Daily Nation published that the Kenya Institute of Medical Research (KEMRI) had notified the Ministry of Health (MoH) that through its experiments, it had established the outbreak of the vaccine derived poliovirus (cVDPV) in the sewage collected in Kamkunji Sub-County in Nairobi. The report further noted that this poliovirus was easily spread and if not contained, anyone in the area that exhibits the characteristics of informal settlements was likely to be infected by it. This research employs a desk review on the existing literature on vaccination in urban informal settlements. It aims at expounding on the causal factors that inhibit the children from accessing full vaccination in the informal settlements. This research finds that the literacy levels of mothers, marginalization and stigma associated to HIV/AIDS, limited number of health facilities and healthcare workers; personal beliefs; and parental occupational responsibilities are directly correlated to low vaccination uptake in the area. The above factors have been considered to be teething problems to the implementation of vaccination program. The study thus concludes that the above factors are pivotal to be addressed if the quest of attaining a healthy nation and workforce is to be realized.

Keywords: Informal settlements, vaccination, morbidity, mortality, children

Introduction

The continuous increased population growth in a number of urban cities particularly in developing countries in Africa has witnessed a subsequent proliferation of the establishment of informal settlements that are also referred to as slums; which are majorly facilitated by increased migrations that are triggered by pull factors such as employment and comparative cheaper living conditions [1]. These increased migrations have pilled pressure onto the existing resources in the area that have posed population pressure and strain to the limited social services [2, 3, 4, 5]. These informal settlements are considered to be illegal by the government; which in turn lacks proper statistics of its population; hence the reason for increased frustration of limited number of social services such as schools, health facilities and so forth (6). In this sense therefore, this population is thus disadvantaged in terms of access to vital social services thus a major cause of the continued disparity in access of healthcare between them and their counterparts in other urban areas [7].

In Kenya for instance, since the adoption of sessional paper No.10 of 1965 that was entitled African Socialism and Planning, its structure did not cater for population boom in future that is currently observed in Nairobi urban informal settlements [5]. This foregoing has left other entities such as the faith based organizations, non governmental organizations (NGOs) and private organizations to supplement the government in providing health services to the people in these informal settlements [6, 7, 8]. This is attributed by the fact that most of the available public health facilities are not found within the informal settlements but rather around the surrounding environment [6, 9]. The existing population pressure in the informal settlements has made its residents to have hostile living conditions due to poor living conditions, high proximity, lack of water and poor sanitation facilities that have made them to be highly susceptible to highly communicable diseases [7, 9, 10].

This menace has further been a major undoing to the vulnerable population that is, the children and thus the need for giving them vaccinations on a regular basis to minimize their mortality and morbidity rates [11, 12, 13]. According to the World Health Organization (WHO) guidelines, it fronted for the complete vaccination to children with the aim of boosting their body immunity against vaccination related illnesses such as polio, tuberculosis, measles and so forth [14]. Unfortunately, it is estimated that close to 1.5 million children across the globe die from vaccine preventable diseases due to incomplete vaccination thus a worrying trend [14]. In this sense, WHO defines complete vaccination as a process where the child gets all the required vaccines that include: BCG at birth, three doses of pentavalent, three doses of polio and measles [15]. From a birds view, in Africa which is among the developing continents in the international arena, it has been worse hit by high cases of incomplete vaccination of children thus a clear manifestation of the existing high statistics of infant morbidity and mortality rates (3).

Kenya is not exempted from this challenge of incomplete vaccination as it is performing dismally with the ratings that are way below 50 percent that is below the WHO target of 80 percent. For instance, according to a research study that was conducted by Mutua, Murage and Ettarh (6) in informal urban settlements in Nairobi, it found that 62.4 percent of children aged between 12-23 months were the only ones who received measles vaccines, with a whooping close to half of the children being unprotected against the illnesses in Korogocho slums. A further breakdown of the research findings with regards to the important vaccines that are considered as pivotal by the WHO which shows missed

opportunities of full vaccination of the children in Korogocho and Viwandani slums via vaccination card information is as shown below:

Table 1

Vaccination	Korogocho	Viwandani
	%	%
BCG	97.9	99.1
Polio 0	80.7	82.7
Polio 1	96.9	98.4
Polio 2	92.8	96.3
Polio 3	82.6	91.0
DPT 1	95.8	99.1
DPT 2	95.1	98.8
DPT 3	94.8	98.8
Measles	53.6	70.7

***Source*:** Mutua, Murage & Ettarh (2011).

Based on the above findings, it demonstrates that there are increased cases of missed vaccination opportunities among children in the urban informal settlements. This goes against the spirit and aspiration of immunizing children with the overall aim of reducing morbidity and mortality rates of children [12, 16-20]. It is thus important to have a discourse of these impediments towards full vaccination uptake in the informal settlements that include: low literacy levels of mothers, occupational responsibilities, parental beliefs and so forth [6, 7, 9, 10-14, 21-25].

In Kenya, it is estimated that close to 1.5 million infants are target recipients of regular vaccination campaigns to fight against regular disease outbreaks [26]. Despite of the regular vaccination campaigns, it is further estimated that close to 450,000 children are not fully vaccinated [26]. This therefore signifies the importance of digging the causal factors of such failures. In other words, if full vaccination is adhered to, then there will be no cases of disease outbreaks such as polio [27]. There has been continuous failure of matters taking their children for subsequent vaccines which they deem as not important such as vitamin A which has led to increased mortality rates of children before they reach their fifth birthday [15]. For instance, in a survey that was conducted in informal settlements in Nairobi County by Concern Worldwide-Kenya [15], it found that children aged between 12-59 months that had obtained two doses within a year were 49.9 percent which was a dismal display from the national target of 80 percent. It is on this premise that this review provides an insight to some of these challenges and offer probable suggestions on their remedies. This research review thus aims at answering the following questions:

- What are some of the challenges impeding children in informal settlements from getting full vaccination?
- How can these challenges be addressed to attain full vaccination coverage in informal settlements?

2. Challenges influencing full vaccination coverage in informal settlements

a. Maternal literacy levels, age and number of children

In recent times, school going girls at primary and secondary level have been engaging in unprotected sex that has resulted to increased teenage pregnancy. This has been a worrying trend in the country's informal settlements. For instance, the World Health Organization (WHO) notes that more than 14 million adolescent girls give birth per annum; out of which 4.4 million abortions are procured each year [28]. Lack of education has been the root cause of increased teenage pregnancies. According to Gicobi [29] article on 'Teenage Pregnancies', she notes that less education causes early marriages among the girls that led them to having more children in their respective households. This is attributed to the fact that they do not access or have the knowledge on contraception use as compared to their educated counterparts [29]. In addition, in the school set up, it is argued that girls who get pregnant while in school are not allowed to continue with school. For instance, according to Nzioka [30], he estimated that 10,000 girls drop out of school annually due to early pregnancy. These girls end up taking manual jobs such as washing other people's clothes for a pay thus ending up living in the slums. These teenage girls are also not well enlightened on how to use family planning methods due to their low inquisitive nature and knowledge. According to the Kenya Population Situational Analysis [31] report, it states that:

"The poorest of the poor families have an average of eight children whereas their wealthy counterparts have an average of three children".

Children from teenage girls do not receive proper healthcare services and have no good living environments due to limited finances. Most of them end up living in deplorable conditions as the slums that expose their children to diseases that cause high mortality rates [32]. The mark of quality in human beings is marked by the level of their intellect or knowledge that allows them to make better choices for their lives and households. There has been a mutating discourse surrounding the maternal literacy levels vis-a-vis the vaccination uptake; and its impact with regards to full vaccination uptake of their children. There have been a number of studies that have been conducted in the poor and urban informal settlements which demonstrate the negative attribute of high illiteracy levels among the mothers [7, 9, 11, 12, 14, 19, 22, 24, 25, 33-35]. The worrying bit is that the increased maternal illiteracy levels [33] thwarts any efforts that are employed to attain full vaccination of children by the government as information voids are created which are filled by misinformed theories [14]. This high illiteracy levels are also catalyzed by the maternal age in the informal settlements who are young and their statistics are on the rise [11, 14]. This is caused by the early involvement of these girls in sexual activities in as early as the age of 12 years [22].

For instance, according to Watson-Jones *et al*. [22] survey on access and attitudes to HPV vaccination in informal settlements, they found that young girls at the age of between 10-13 years were getting married through cohabitation arrangements. This has resulted to increased number of children in this young families that has affected vaccination uptake in the area [18, 19]. This is because young girls have high fertility rates thus an increased number of children, and due to limited knowledge on the importance of vaccination, they end up defaulting in the process [17, 36]. Education has been pivotal since women with higher education are more likely to go for the uptake of vaccination as compared to the illiterate women [17, 36]. These illiterate women employ the "wait and see" tactic to see the consequences of not giving their children these vaccines hence end up defaulting. For instance, in a study that was conducted by Kiptoo *et al*. [19], on factors influencing low immunization coverage among children between 12-23 months in East Pokot, Baringo County, it found that low education levels triggered a

low immunization uptake of 34 percent of oral polio vaccine (OPV0) at birth and measles was 46.5 percent. This findings are similar to that of Negussie *et al*. [11] in Arbegona District, Southern Ethiopia, that found illiterate mothers portrayed high doubts of the vaccination side effects thus ending up defaulting; and one conducted by Sanjrani and Khalid [35] in Hyderabad slums in Pakistan found that children whose mothers are literate covered 80 percent of full vaccination while those who were illiterate covered 50 percent.

b. Migrations, marginalization and stigma associated with ones HIV/AIDS status

The population of a given geographical area is not always at equilibrium and thus it is subject to fluctuations that are facilitated by events such as births, migrations and deaths. In respect to these study review and migration as our thematic area; it is majorly facilitated by the pull factors such as the perceived employment opportunities and favourable living conditions which lead to increased rural to urban migrations [11]. These migrations results into population boom in informal settlements due to perceived comparative cheaper access to living conditions. There have also been cases of increased in and out migrations in these informal settlements which have had an overall impact in the vaccination accessibility and uptake by children. This has been caused by high default by women in the process of migration who skip the appointment dates of taking their children for immunization [7]. Women migration have also had the challenge of leaving behind important information documents of their children such as immunization cards which makes them not to remember the proper dates of going for the subsequent vaccination jabs [8]. For instance, according to a study that was conducted by Negussie *et al*. [11], it found that migration was a thorn in the flesh of attaining full immunization coverage. In a similar study that was conducted by Sanjrani and Khalid [35] among under five migrant children migrating into urban slums of Hyderabad in Pakistan, it found that 89.5 percent feared long queues when visiting the health facilities; while 96.5 percent were unable to account for the proper date of vaccination.

In Kibera informal settlements, the most common type of movement witnessed is migrations within the same geographical location, with a major push factor being poor conditions of their houses, regular burning of their houses due to spontaneous fire outbreaks caused by illegal electricity connection, gas cookers and their close proximity. In such scenarios, due to their houses being made of corrugated iron sheets, their immunization cards are burnt thus making it difficult to take their children for subsequent vaccination. Women fear going to the hospital to give an oral account of their children vaccination history as they might be send away thus end up as defaulters. These migrations within the area also interfere with the vaccination schedule. In most of the health facilities, different vaccines are given during particular days of the week, hence when mothers are unavailable; they are forced to wait for another opportunity which also has a high possibility of defaulting due to the issues of forgetfulness and lack of time due to occupational responsibilities.

The scotch of HIV/AIDS is one that has penetrated to the life of many families in the informal settlements. It has been among the leading causes of death in the area [36]. During the antenatal and immunization visits, the immunization cards contain private information of birth the mother and child such as their HIV status. Health seeking behavior among the residents have been affected by the status quo as those infected by this HIV pandemic opt for health facilities that are far from their location to avoid stigma and discrimination. The status quo inflicts fear and jitters to infected mothers and drop their children out of the vaccination program. This position is supported by a study that was conducted by Katieno (37) on the effects of stigma among mothers attending regular clinic visits on the prevention of mother to child transmission in Rachuonyo North Sub-County, it found that 75.39 percent of women skipped going for clinic appointments due to stigma related issues.

c. Limited health professionals and health facilities

Human labour is one of the most important resource and component when we are defining work. In the country, it has very low numbers of health professionals such as medical doctors and surgeons as at the year 2010, two leading universities; Moi University and University of Nairobi were the only legalized institutions offering the training (38). This meant that only limited students were enrolled to utilize the resources in these two institutions. Generally, the health sector has been faced with the challenge of poor remuneration of health professionals, inadequate requisite supplies and poor working conditions which have also led to the industrial unrest in search of remedies (12,39). This foregoing thus leads the country to have a concern about the critical aspect of quantitative and qualitative work overload (39).

Since the introduction of the structural adjustment programmes (SAPs) in the country by the International Monetary Fund (IMF) and the World Bank, it led to the cost sharing of health services between government and the public (40). This affected persons in informal settlements particularly in terms of having almost none of public health facilities as those available are found in the periphery environs. This has led to long queues in the surrounding public health facilities thus affecting the quality of services rendered such as patient counseling services (24). For instance, according to a study that was conducted by Nakhaye (12), it found that quantitative workload had an influence of 71.4 percent on the quality of services rendered in the health facilities. The limited health workforce thus makes it difficult for conducting follow ups of the public at the community level. Fortunately, the presence of the community health workers (CHWs) through the Ministry of Health (MoH) acts as a link between the community and health facilities in access of medical information and attention (41). The CHWs work under the community health extension workers (CHEW), whose tasks involve doing household visits in the informal settlements where they gather information about residents health information such as HIV/AIDS, disabilities and tuberculosis; mobilize the community to participate in health programs; and disseminate health information on how these diseases are spread and controlled (13,14,41). The CHWs work has been thwarted by their work not being commensurate with their monthly income; as recently there has been the effort of changing the name to community health volunteers (CHVs). This limited finance has made it difficult for the CHVs to cater for their transportation, lunch and mobile credit when they are doing their fieldwork (42). Limited finances have thus been a thorn in the flesh of trying to increase immunization coverage in these informal settlements as areas where CHVs have been proactive has resulted to higher

immunization coverage as compared to those without (42). This has been exhibited by most of the CHVs who are paid monthly dues of Kshs.2,000.

In addition, there has been the question of education level of the CHVs who are placed in health facilities to offer health talks to patients before seeing the doctors, take anthropocentric measurements such as body weight and height [41]. For instance, in a study that was conducted by Kenga, Kimiywe and Ogada [41] on the knowledge, attitudes and practices of CHVs on growth monitoring and promotion of children under five years in Mwingi West, Kenya, it found that a large number of CHVs were unable to make a proper interpretation of normal growth curves, overweight and underweights thus questioning the information given to mothers at the health facility and household level. Generally, increased shortage of health workers and health facilities has had a negative output in terms of the attitude of the health workers [14].

d. Unprogressive health seeking behaviours

In the earlier discourse, it was argued that the informal settlements in Nairobi lack public health facilities, thus whenever the residents fall sick; they prescribe for themselves medication which they buy on low dosage over the counter which is commonly referred to as 'chemists' [40]. These chemists are mainly business and profit oriented and most of the operators have no solid training in pharmacy; and further lack proper documentation and clearance from membership bodies such as the Kenya Pharmacy Board [40]. This has thus made the residents not to consider visits to health facilities as pivotal thus a challenge to the efforts made at ensuring that there is full vaccination of children of children in the area against communicable diseases. The consumption of immunization services in different households in informal settlements is pegged on a ray of factors that range from personal and social cultural beliefs; level of awareness and religious beliefs [7, 14, 20, 24, 25, 40, 43, 44].

There have been cases where during national immunization campaigns against diseases such as polio in the informal settlements, where health workers and CHVs have been denied access to children in residential areas. The existing health seeking behaviour has led to the continued manifestation of house births in the informal settlements which are conducted by traditional birth attendants (TBA) who are unskilled despite having the presence of qualified health workers in the available health facilities within their environs [36]. This can be attributed to the high poverty levels in the informal settlements to cater for expenses such as hiring ambulances, payment of medicines and doctors consultation fee as most of them live in less than one dollar in a day [1, 45]. This perspective has been supported by Ukachukwu (23) who holds that children coming from economic disadvantaged families are less likely to receive healthcare services and more so, immunization services thus the biggest contributor to their high rates of mortality before their fifth birthday; as compared to their counterparts in the rich families.

This therefore portrays clear lack of sufficient knowledge among the mothers about the pivotal role that is played by them utilizing regular immunization and being given information about the importance of vaccination to their children and so forth (25). This has left most mothers to be ignorant to the subject, depend on their peers for information regarding vaccination thus a contributor to increased mortality rates among infants (25). This is because the infants have weak immunity to fight against any infection and thus vulnerable and easily succumb to illnesses due to unfavourable environmental conditions such as poor sanitation, lack of adequate supply of water and pollution (4,46,47). Informal settlements thus require regular health surveillance to determine any disease outbreaks to be timely contained, an activity that is mostly conducted by nongovernmental organizations (NGOs) such as the Kenya Medical Research Institute in collaboration with Center for Disease Control (KEMRI/CDC) in Kibera; and Africa Population and Health Research Center (APHRC) in Korogocho and Viwandani slums in Nairobi. This has been the case due to limited funding from the government side (48).

Personal socialization and social orientation to certain cultural beliefs has been a detriment to vaccination uptake in the informal settlements (25,35). Culture is one of the supreme practices in communities that stipulate what is considered right or wrong from the community perspective; and a practice that is passed from one generation to the next by word of mouth and deed as early as an individual is at the tender age (44). In such cases, we have seen the importance of vaccines being ridiculed as ones meant for certain communities or families who are prone to sicknesses and weak immunity (43). To others, the consumption of these vaccines by their children is met by the fear of its side effects; as to some, they argue that regular vaccines might cause their children to contract unending flu or get abscesses that might lead them to be lame (24). There has also been the concern about the content of these vaccines that are regularly given to these children thus a mistrust issue between the public and health care workers as in the African setting, people prefer to have a big number of children and discourage family planning. These high numbers of children within the household have had a negative impact in terms of vaccination uptake (33). To them therefore, any regular vaccines that are given to their children and more so, the girls to them is interpreted as forcing their girls to undertake family planning through coercion without their consent (49). This was evident in the country when the Catholic Church was against the tetanus vaccination jab that was given to the girls that led to high statistics of defaulters for reasons centered on family planning following the reports from their laboratory tests (49).

On the religious front, it has also had an impact on vaccination consumption in the informal settlements (43). This is facilitated by the doctrine teachings of their faith that is strengthened by having complete faith in provision of human needs through the help of a supreme being. To them accepting immunization to their children is demeaning the ability of the Supreme Being hence end up being defaulters in the process (20). This is a philosophy that is hold by few Christian faithful mainly from the traditional African churches who view hospital medicines as a mere work of the "white people" meaning the European medical scientists. This is a case that has been cited in a few religions such as the 'Akorino' (20).

e. Parental occupation responsibilities and commitments

The residents in the informal settlement live in stringent economic abilities thus on a daily basis live on a hand to mouth basis (36). It is on this premise that most of them engage in casual jobs just to make ends meet, which makes it difficult for them to take their children for immunization (9). There is also a disconnect of information between the residents and the health

workers in that parents come from work very late and have no time to listen to information regarding the health of their children (9). This position is supported by a research that was conducted by Kariuki (20) on child immunization coverage in Kiandutu slums in Thika District, which found that the occupational responsibilities of most mothers had an overall impact of forgetfulness which inhibited them from vaccinating their children.

3. **Way forward**

The introduction of the structural adjustment programmes in the country led to the cost sharing between the public and government on matters health, hence this has made the vulnerable section of the society such as the poor residents within the slums not to access medication and immunization services (40,45). There has also been limited availability of health facilities and health workers in informal settlements as APHRC (47) notes:

Most of the facilities have between 1-3 functional rooms to deliver their range of services(patient consultation, injection, dressing, in-patient, storage, etc) and only one of the three so-called 'hospitals' had adequate examination room, wards, patient beds and other utilities. Amenities such as piped water supply, electricity and at least one toilet (water flush or pit) were generally available in less than two-thirds of the facilities. The situation analysis in supplies of medical equipment and utilities revealed a serious shortage in most health facilities. Others possessed supplies and equipment not commensurate to their level of standard practice.

It is imperative for the government to ensure that it fosters a strong relation that exists between itself and the private sector; as it is exhibited that the latter has limited capacity to be the sole provider of healthcare (40,48). This has been flagged by a high number of private health facilities that are runned by NGOs, religious groups, individual ownership, community health clinics runned by community based organization (CBO) and so forth (32,45). This existing relationship has bared fruits in the last decade especially in the informal settlements as NGO health providers have been able to conduct morbidity and mortality surveillance which has been able to deal with any disease outbreak (46). An example is the Kenya Medical Research Institute in collaboration with the Centers for Disease Control (KEMRI/CDC) that conducts household morbidity surveillance in Kibera slums; and the African Population and Health Research Center (APHRC) conducts a demographic surveillance study (DSS) in Korogocho and Viwandani slums (46,47). In addition, professionals in the healthcare are licensed under their boards such as the Kenya Medical Dentist and Practitioners Board (KMPDB), Nursing Council of Kenya (NCK), Pharmacists Society of Kenya (PSK); hence their support to the Ministry of Health will be pivotal in conducting regular spot checks in these informal settlements to regulate the unethical selling of drugs over the counter that are commonly referred to as chemists (50).

Literacy levels have been touted to be one of the detriments towards immunization uptake in the informal settlements. It is thus imperative for adult literacy levels to be improved through conducting regular capacity building trainings and seminars to enlighten the illiterate mothers (33). There also ought to be regular community advisory board (CAB) meetings with relevant health stakeholders to enhance regular feedback between the community and the health service providers (33). This has not been the case as most of these meetings have been futile since the information gathered is not disseminated to the community, but rather kept by the CAB members only. This has been a concern due to the rising cases of sexual abuse, violence, drugs and substance abuse that have increased pregnancies among the young girls (36,51). There should be increased public advertisements about immunization through different media platforms such as the radio, television, social media such as facebook, twitter, you tube and so forth as compared to the heavy reliance to health facilities (36,51).

Immunization timings should also be considered especially in terms of reducing the increased rates of defaulters. They should thus be given during weekends and public holidays to accommodate more mothers that are heavily occupied by occupational responsibilities. In addition, getting these mothers makes it easier for them to give consent to their children and avoid cases of coercion. The process of immunization should also adhere to the professional code of ethics among its healthcare workers and CHVs to ensure that critical aspects such as privacy, confidentiality and anonymity are adhered to prevent witnessed cases of stigma and marginalization specifically among the HIV positive mothers. Much effort should be placed at ensuring there are adequate health monitors that will help in monitoring children vaccination history due to increased migrations within the study area (5). This can be achieved through employing a good number of CHVs to locate these mothers in informal settlements through their community health units; and provide information to mothers and give referrals to the health facilities.

The health sector should also be properly funded by the government to ensure both the quantitative and qualitative requirements are met in terms of adequate supply of human personnel, hospital equipments, infrastructure and good working environment (50). Much effort should be placed on ensuring that the available health professionals are retained at all cost through providing proper remuneration and good employment terms, offer them an opportunity for career growth through having regular trainings and seminars to sharpen their skills(52).If this is addressed, this will help in changing the attitude of the health workers. For instance, in a study that was conducted by Amref (52) on factors affecting the motivation and retention of healthcare workers in disparate region in Kenya, it found that 50.9 percent of its respondents preferred being employed within the NGOs while only 26.9 percent opted to work for the government. This is majorly triggered by the lucrative salary scheme of the NGOs, good working environment, available career development opportunities even though the work tenure is pegged on the availability of funds and sustainability of the project. The few who prefer government employment are enticed by permanent and pensionable terms of employment even though the salary is very low.

The CHVs play a critical role in implementing various health policies at the community level through locating and conducting household visits to do health follow ups on patients, carry out mobilization activities of health related programs, offer information and referrals to the community. Unfortunately, the CHWs are not properly remunerated and recently there have been an effort of changing their name to CHVs. For instance, in Kibera informal settlements, the CHWs are given monthly dues of Kshs.2,000 which cannot facilitate their transport and up keep. It is thus imperative that the CHWs are properly remunerated

through putting them in the salary scheme of the county government and respective health provision organizations so as to lift their morale of providing good and quality services; and achieve their goal targets.

4. Conclusion

To this tail end, health is considered as an important sector in any nation that seeks to propel any development agenda forward. It is also evident that the government has been facing teething problems regarding the implementation and sustainability of these policies to the public. Kenya being part of the international system has been a signatory to the international system that has ratified a protocol such as the United Nations Millennium Development Goal (MDG); and more so, goal number five on maternal healthcare and immunization. This research review has thus elucidated on possible causes derailing the uptake of immunization in informal settlements which range from maternal ignorance due to low literacy levels; migrations, marginalization and stigma associated with HIV/AIDS; limited health professional and health facilities; unprogressive health seeking behaviours; and parental occupation responsibilities and commitments. This research review has thus demonstrated that there is a direct correlation between the above mentioned factors and immunization uptake in informal settlements, and thus it is imperative for both the public, private and even the media to work together in unison achieving this target; improve the level of awareness of the residents; properly funding the healthcare and ensuring that the environment is conducive for the quality delivery of health service to reduce infant morbidity and mortality rates.

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