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IMPACT OF MIGRATION ON EARLY LEARNERS' VACCINATIONS IN A MOUNTAIN LEARNING ECOLOGY

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Abstract

Mountainous regions in the world are vulnerable to seasonal movements of people from one region to another, which could make or mar the health care of young school children. When parents move from the mountainous regions in search of greener pastures in major cities, the children that are left behind could suffer exclusion from timely vaccinations that could protect them from stressful life events. This study presents the impacts of parental migration on the health care of school children in a mountain community in Nigeria. The sample of the study comprises 28 school-aged children purposefully selected in a mountain learning ecology in Nigeria. The study projects the need for a participatory health care system for school children in global mountain communities to eradicate diseases that are preventable by vaccines by the year 2021.

Keywords: Migration, Early Learners, Immunizations, Health Care, Mountain Learning Ecology, Nigeria

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INTRODUCTION

The immunization of children is one of the primary medical instruments that is essential in mitigating childhood mortality in most nations of the world. Research indicated that vaccination is regarded as one of the integral achievements of public health (Hu et al., 2015). The regard accorded 'immunization' is evident in the illness-prevention merits of receiving vaccines to safeguard children against common as well as life-and-death diseases such as diphtheria, measles, tetanus, tuberculosis, poliomyelitis and yellow fever. Scholars recently remarked that widespread immunization coverage is required to combat preventable infectious diseases such as tuberculosis, pertussis, polio, measles, tetanus, and Covid-19 (Bawah et al., 2010).

Before the escalation of the Covid-19 pandemic, vaccination mandates (Greyson et al., 2019) for school attendance were global standards in the United States, Europe and Australia. Greyson et al. (2019) referred to the Canadian Medical Association's 2015 resolution that recommended the authorisation of elementary and secondary schools by the Canadian provincial governments to require the immunization declaration status of school children. Greyson et al. (2019) further asserted that the CMA's resolution provided for conversations between relevant authorities and parents, where children are inadequately immunized. An earlier research by Anekwe et al. (2015) emphasised the benefits inherent in children's vaccination and its effects on educational attainment. Anekwe et al. (2015) used the longitudinal data from health and demographic surveillance system (HDSS) to estimate the causal effect of childhood measles vaccination on the educational outcomes of children born from 1995 to 2000 in a poor KwaZulu-Natal countryside. One important philosophical relevance of the research conducted by Anekwe et al. (2015) was that for every five to seven children that took measles vaccination by twelve months of age, an additional year of schooling was gained.

It is consequent on the advantages inherent in immunization, that scholars have identified it as the fundamental of primary health care and cost effective preventative health measure (Brooke & Omeri, 1999); a protective measure for children's cognito-physico development (Anekwe et al., 2015) and providing community protection benefits to children and adults (Anderson et al., 2018). Despite the philosophical contributions of researchers on children vaccinations, it was noted that little is evident from previous research on the nexus between parental migration and school children's vaccinations in difficult geographical terrains in Africa.

Previous research (Bardenheier et al., 2003; Luman et al., 2002; Hu et al., 2006; Hu et al., 2007) have shown that immunization coverage is basically hindered by difficulties such as late birth order, poverty, parental education, complex transport, access to service and children's migration. It could be observed from the position of these scholars that there are gaps in previous research on the hindrance parental migration could pose to children's immunization. With this research, the researchers aim to close this gap by evaluating the impact of parental migration on school children's immunization.

Research have shown that stressful life events have grave health implications for people experiencing them (Smeekens et al., 2012; Folkman 2011; Chen & Cole, 2009). Furthermore, family issues such as temporary loss of parents, through migratory separation (Brodzinsky et al., 1992) are primary sources of stress to children left behind. The concept of migration has gained considerable attention among scholars, in different nations of the world. This instance was evident in the research of (Wang & Mesman, 2015) that reported that during mass migration from rural to urban China, a quarter of rural children relocated with their parents to the urban geographical locations, while the remainder were left behind.

According to the study of Chen et al. (2016), about 36 million children have migrated from the rustic geographical locations to urban areas, while more than 61 million children were 'left behind' by their migrant parents in rural China. The findings of Chen et al. (2016), is relevant to the context of this research because Nigeria and China have common trends of transnational families. Thus, (Mazzucato et al., 2015) describe this type of transnational families as "*the leaving behind of children in the care of the other parent or care giver when a parent migrates*". Chen et al. (2016) reported that these internal migratory patterns in China evolved in the 1980s due to the government's economic reformatory strategy of 1978. Hence, this study investigated the effects of migration on early learners' vaccinations in a mountain learning ecology in Nigeria.

LITERATURE REVIEW

Parental Migration

Migration is defined as a movement culminating in a stable change of place in which individual lives are involved (Lo et al., 2016: 2). Also, Asis & Ruiz-Marave (2013: 356) stated that the relationship among migration of parents, care arrangements and learning outcomes has been the focus of research in different contexts. The relationship between migration and health of the teeming school children in different parts of the world is unfortunately excluded from international scholarly enquiries. According to the study of Rossi (2008), little sustained scholarly discourses investigated the impacts and intimations of migration on youngsters and youths whose families migrated in developing countries of the world. Rossi (2008)'s revelation attested to the purposeful selection of the learning ecology where the researchers carried out this study in Nigeria, which is a developing country.

The notion of migration has also caught the attention of organizations involved in children's well-being on the global scene. The United Nations Children's Fund (2005) stated that children who move from one location to another have opportunities and are confronted with challenges. Some of the opportunities available to children left behind are remittances which strengthen household finances, improve consumption and pay for schooling. However, difficulties such as access to social services, neglect by foster parents as well as social and cultural dislocations may alter the well-being of children left behind. Despite the challenges confronting children left behind in the developing countries of the world, (Whitehead & Hashim, 2005), reported that the wide-ranging implications of migration for youngsters have received little attention despite the recognition accorded 'migration' in the international policy agenda.

A recent but emerging pool of research reported that as at 2010, about one million eight hundred and twenty five thousand West Africans, majority of them Nigerians and Ghanaians left their countries in search of greener pastures in the developed countries of the world (World Bank, 2011; Cebotari et al., 2017). A key feature of the parental migration in Nigeria and Ghana is that many of the migrating parents' children stayed back in the locales left by their parents. It is therefore, integral to aim of this study to investigate the impacts of parental migration on early learners' immunization in schools in difficult geographical terrains in Nigeria.

Immunization of Children

Research has shown that childhood vaccination has emerged as one of the most beneficial strategies to sway and halt diseases peculiar to public health. The National Conference of State Legislators (2015) acclaimed that immunizations are the most affordable public health break throughs. The National Conference of State Legislators attested that immunizations not only protect the citizenry but individuals and chiefly citizens with immune system disorders. In a recent study of migrant school children (Kaji et al., 2016), it has been discovered that health intervention by immunization ameliorated 2.5million deaths annually. The World Health Organization (2013, 2017) provided further information that despite the break through recorded via immunization, diseases that are not resistant to vaccines are currently the primary causes of morbidity and mortality in developing nations.

Vaccines are amalgams of killed or transformed microscopic organisms or their toxins that can trigger an immune and block future diseases by including active immunity and immunological memory (Paul et al., 2012: 740). The declaration of these scholars show that the components used in immunizing children are not artificial but natural. This definition also shows that the aim of immunizing school children is to prevent diseases that have the potential to disrupt their physiological and psychological well-being in future. The holistic function of immunization is to protect children from pandemic diseases. It is consequent on the benefits inherent in immunizing children that the global immunization programme evolved. Scholars

stated that this programme included oral polio vaccine (OPV), bacillus chalmette guerin, diphtheria, pertussis, tetanus toxoid, hepatitis B, measles and haemophilus influenza vaccines (Prasanna et al., 2014) and recently, Penta vaccine (URL¹).

Olayinka (2017) reported that there are currently five million unimmunized children in Nigeria. The investigations carried out by this scholar from the National Immunization Coverage Survey from 2016 to 2017 showed that seventy-seven percent of children from ages 12 to 23 months were not fully immunized, while as much as 40% had not received any immunization. In the light of the foregoing, it behoves on the researchers to investigate the impacts of migration on early learners' immunizations in rural schools nested in mountainous terrains in Nigeria.

Learning Ecology

Scholars admitted that ecological frame of reference on development underscores the necessity to interpret the diverse contexts that children experience and in which they develop (Barron, 2004; Rogoff, 2003; Brofenbrenner & Evans, 2000). Barron (2004: 6) defined a learning ecology as the open set of contexts, made up of configuration of activities and material resources including relationships existing in co-located physical or virtual spaces that provide opportunities for learning. Barron (2004)'s definition projects a learning ecology as a space in which learning occurs (Ige, 2017; Ige & Hlalele 2017; Siemens, 2007). The concept, 'ecology' has been applied in transdisciplinary climes to mean different things. Some of the uses of 'ecology' across disciplinary divides are: information ecology (Letiche & Menms, 2003; Nardi & O'Day, 1999). Urban learning ecologies (Ige 2017); rural learning ecologies (Hlalele 2013); mountain learning ecologies (Ige & Hlalele, 2017); e-learning ecologies (University of Illinois at Urbana-Champaign, 2017). Information ecology, is presented as a system of people, practices, values and technologies in a geographical location (Letiche & Menms, 2003: 330; Nardi & O'Day, 1999: 49). These scholars expatiated that information ecologies comprise major factors of a learning organization which depends on the socio-technological system supporting the information exchange. Ige (2017: 311), defined urban learning ecologies as spaces in which learning take place in urban environments. Hlalele (2013: 467), subscribed to Barron's (2004, 2006) notion of an ecology as an environment that fosters and supports the creation of communities. In this study, a mountain learning ecology is a system of pupils and teachers in rocky geographical environments. In order to elicit responses from the respondents on the impacts of parental migration on early learners' immunization, these research questions were raised to guide the study:

- What are the immunization profiles of the early learners in the selected mountain learning ecology?
- Is there any significant influence of parents' location on the immunization of early learners in the selected mountain learning ecology?

METHODOLOGY

A 'design' describes the blueprint of the research architect or engineer. Nel (2017) emphasized the need to prepare the conduct of research to enable a researcher apply the appropriate method of research that covers the valuable aspect of the study to prevent repeat visits for collection of missing data with the emerging themes from the analysis.

The data for this study was collected in the first quarter of 2017. The descriptive survey of both quantitative and qualitative types was adopted for the study. The researchers used other data collection instruments such as weighing monitor scales and standard metre rules. These instruments were helpful in collecting the weight and height of each of the pupils to enable the researchers calculate the Body mass index using the calculator constructed by Barlow SE and Expert Committee in 2007. The internal consistency of the research questionnaire utilized for the study tagged 'Montane Early Parental Care Activities Questionnaire (EPCAQ) is 0.92. The 'EPCAQ' enabled the researchers to elicit responses from the pupils on impacts of parental presence or absence on their children's immunizations. Data analytic tools such as frequency counts, mean, standard deviation and inferential statistics such as T.test were used to analyse the data from the participants in the studied mountain learning ecology.

The ethical component of this research was carried out through meetings with the management and staff of the government special school selected for this study to enable the researchers access the pupils. The meetings afforded the researchers the opportunity to seek consent from the management of the school that acted in loco parentis and explained the mission of the researchers to the participants. The informant consent that was sought from the school management enabled the researchers and research assistants to conduct interviews and administer the questionnaire. The school selected has a special status in the league of government schools in the state because the government committed funds to provide state of art teaching and learning facilities that meet teaching and learning global standards.

FINDINGS

Table 1: Immunization Profiles of the Pupils

Whooping Cough	Freq.	Percent	Valid Percent	Cumulative Percent
Immunized	18	64.3	64.3	64.3
Not Immunized	10	35.7	35.7	100.0
Total	28	100.0	100.0	
Measles	Freq.	Percent	Valid Percent	Cumulative Percent
Immunized	14	50.0	50.0	50.0
Not Immunized	14	50.0	50.0	100.0
Total	28	100.0	100.0	
Tetanus	Freq.	Percent	Valid Percent	Cumulative Percent
Immunized	23	82.1	82.1	82.1
Not Immunized	4	14.3	14.3	96.4
Not Indicated	1	3.6	3.6	100.0
Total	28	100.0	100.0	
Polio	Freq.	Percent	Valid Percent	Cumulative Percent
Immunized	4	14.3	14.3	14.3
Not Immunized	24	85.7	85.7	100.0
Total	28	100.0	100.0	
Diphtheria	Freq.	Percent	Valid Percent	Cumulative Percent
Immunized	18	64.3	64.3	64.3
Not Immunized	9	32.1	32.1	96.4
Not Indicated	1	3.6	3.6	100.0
Total	28	100.0	100.0	

Table 1 shows that 18 (62.1%) of the pupils were not vaccinated for diphtheria, while 10 (34.5%) have been vaccinated. 5 (17.2%) of the pupils have received vaccinations for tetanus. 18(62.1%) of the pupils stated they are not vaccinated for whooping cough, while 11 (37.9%) have taken the whooping cough immunization 14(48.3%) of the pupils have not received measles immunization, while 15 (51.7%) have been vaccinated. The polio vaccinated drive seemed successful in the location studied as 25 (86.2%) pupils have been vaccinated for polio, while 4(13.8%) are yet to take the polio immunization.

Table 2: T-test showing the influence of Parents' Location on Early Learners' Immunization

	Parents location status	N	Mean	Std. deviation	T	Df	Sig.	Remarks
Whooping Cough	Migrated	10	0.70	0.48	3.23	22	.004	Sig.
	Intact	14	0.14	0.36				
Measles	Migrated	10	0.50	0.53	-.332	22	.743	Not Sig.
	Intact	14	0.57	0.51				
Tetanus	Migrated	10	0.50	0.97	1.58	22	.128	Not Sig.
	Intact	14	0.07	0.27				

Polio	Migrated	10	1.00	.00	1.58	22	.128	Not Sig.
	Intact	14	0.78	0.43				
Diphtheria	Migrated	10	0.40	0.70	0.176	22	.862	Not Sig.
	Intact	14	0.36	0.50				

*Data from 4 learners were excluded from the analysis because they did not indicate their parents' location status.

Table 2 reveals that the absence of one or both parents have effect on the whooping cough immunization of pupils in the selected learning ecology ($t = 3.23$, $df = 22$, $p > 0.05$). The pupils with absent parents did not benefit from whooping cough immunizations like their counterparts with present parents. Other results show that parental migration had no impact on the pupils' measles vaccination ($t = -.332$, $df = 22$, $p < 0.05$); tetanus vaccination ($t = 1.58$, $df = 22$, $p < 0.05$); polio vaccination ($t = 1.58$, $df = 22$, $p < 0.05$), and diphtheria ($t = 0.18$, $df = 22$, $p < 0.05$).

DISCUSSION

The findings of this study attested to educational researchers' age-long suspicion that parental migration could have a backwash on the well-being of young school children. The surmises of scholars on the potential impacts of parental migration could be linked to (Chen et al., 2017) that one of the social costs of massive migration in the global age is the increasing number of children left behind in the rural migrant-sending communities. The mountain learning ecology selected for this study fits into Chen et al.'s (2017) description, consequent on her sedentary outlook or nature.

The analysis of the data in this study shows that the migration of parents has influence on the access of school pupils to whooping cough immunization. This finding confirms the report of Chen (2009), which used the China Health and Nutrition Survey to evaluate the effects of parental migration on children's health status. Chen (2009), discovered that parental migration has adverse effects on the health status of children aged 6-18 years old but have no significant effect on the health status of children 0-5 years old. The sample purposefully selected for this study comprised children aged 8 to 14 years old, which makes the findings of Chen (2009) applicable to this study. The significant influence of parental migration obtained in this study confirms as well the assertion of Meng & Yamauchi (2017), that parental migration is likely to affect children's human capital development aggregate.

The outcome of this study also shows that parental migration has no significant influence on early learners' measles, tetanus, polio, and diphtheria's immunizations. This does not mean that the early learners that constituted the sample for the study have fully received the vaccines for these diseases. The need to fully immunize children led the World Health Organization to initiate the global action plan to stave off vaccine-preventable diseases by the year 2021. The selected mountain learning ecology is situated in Nigeria, which is one of the 194 countries that subscribed to the global action plan. The researchers feel that the outcome of this study could provide further information that will enable developing countries to achieve the global action plan by 2021.

RECOMMENDATIONS FOR FURTHER RESEARCH

The sample selected for this study is limited to a school in a mountainous geographical location, thus, there is need to replicate this study in other learning ecologies to gain a true perspective of the immunization state of the teeming children in Nigeria. It would be difficult to generalize with a sample of 28 early learners available for this study. It should be noted from Table 2 that only 24 learners specified their parents' location status, while 4 learners failed to do so. This poses a limitation to the study.

A further discourse should examine a participatory programme that could give opportunity to children left-behind in mountain learning ecologies to have access to immunization. It was noted in the analysis of the data got from the participants in the selected learning ecology, that most of them were partially vaccinated against preventable diseases. The proposed programme

will enable researchers to identify children in mountain learning ecologies that are not vaccinated or partially vaccinated against vaccines-preventable diseases and contact the relevant health agency to provide the necessary immunization services.

CONCLUSION

This study has contributed to the available knowledge on the impacts of parental migration on children's health. The research investigated if the presence or absence of a parent could enhance or deter the immunization of young children. The outcome of this study shows that early learners with intact parents are fully immunized while those with absent parents are partially vaccinated against vaccine – preventable diseases. This study has, therefore, revealed another dimension (i.e. partially immunization) to impact of parental migration on the health status of children left – behind, which has not been adequately addressed in the educational research literature. This study made useful suggestions that would help educational researchers and teachers to ameliorate the effects of parental absence on young school children. The research was specifically focused on a mountain area due to the difficulties inherent in accessing children in such geographical locations. The outcomes of this study provide information that can be used for further research in mountain learning ecologies across the world. Consequently, this study proposes an action immunization programme for early learners' in mountainous geographical terrains in Nigeria.

COMPETING INTERESTS

The researcher hereby declare that there is no personal or monetary relationship, which may duly or unduly, influenced the writing of this report.

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