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Prevalence of Rotavirus Gastroenteritis Among Children Under Five Attending Eyaen Primary Health Centre, Uhunwode LGA, Edo State, Nigeria.

[123]Izevbuwa, Osazee Ekundayo, [1]Otote, Osarumwense, [1]Mokwunye, Favour Ifeoma, [1]Debenwa, Emmanuel Chukwubuikem, and [1]Edohen, Ifueko Daisy.

[1]Department of Biological Sciences, College of Natural and Applied Sciences, Igbinedion University, Okada
[2]Department of Medical Laboratory Science, College of Health Sciences, Igbinedion University, Okada
[3]Medical Laboratory Unit, Department of Laboratory Medicine, Igbinedion University Teaching Hospital, Okada

CORRESPONDING AUTHOR: Izevbuwa, Osazee Ekundayo
osazee.ievbuwa@iuokada.edu.ng

ABSTRACT
Rotavirus is still one of the main causes of severe dehydration and acute gastroenteritis in children under five, especially in environments with limited resources. In this study, children who attended Eyaen Primary Health Center in Uhunmwode Local Government Area, Edo State, Nigeria, had their rotavirus infection prevalence, risk factors, and clinical presentation examined. Using a cross-sectional design, stool samples were collected from 150 children under the age of five and tested for rotavirus antigens using Immunochromatographic techniques (Aria, USA), supported by demographic and clinical data gathered through structured, researcher-administered questionnaires. The overall prevalence of rotavirus infection was 8.7%, with the highest rate (17.4%) observed in infants under one year of age. Significant associations were found between infection and risk factors, including age ($p = 0.038$), low family income ($p = 0.005$), poor sanitation ($p = 0.002$), and lack of vaccination ($p = 0.001$). Children from low-income households and those without access to proper sanitation were disproportionately affected. Vaccinated children had significantly lower infection rates (3.0%) compared to their unvaccinated counterparts (20.0%). Although daycare attendance and overcrowded living conditions did not show statistically significant associations, both showed trends toward increased infection risk. Clinical indicators such as the presence of bloody diarrhea ($p = 0.001$) and mucus in stool ($p = 0.001$) were strongly correlated with infection. These findings underscore the urgent need for expanded vaccination coverage, improved sanitation, and targeted community health interventions to reduce rotavirus transmission and its associated burden in vulnerable populations.

Keywords: Rotavirus, Vaccination, Gastroenteritis, prevalence, under five.

INTRODUCTION
Rotavirus is a type of non-enveloped double-stranded RNA (ds RNA) virus that belongs to the Reoviridae family. Since their discovery in the 1970s, human rotaviruses have been primarily linked to infectious gastroenteritis in infants and children worldwide (Burnett *et al*., 2020). The virus is considered the most frequent cause of diarrhoea in children under five years old, posing a significant public health challenge. Diarrhoeal illnesses are responsible for over 500,000 childhood deaths annually, highlighting the high morbidity and mortality rates associated with this condition (Omosigho *et al.*, 2024). Rotaviruses are known for their triple-layered particle structure, which is formed by the arrangement of these segments, which are: VP1, VP2, VP3, VP4, VP6, and VP7, and six nonstructural proteins (NSP1 to NSP6). The capacity of the virus to multiply inside host cells and spread infection is largely dependent on its genome (Patton, 2023). Rotavirus-related deaths disproportionately affect low- and middle-income countries, with eight African nations, including Nigeria, accounting for 60% of these deaths (Pius *et al*., 2023). In underdeveloped countries, over 75% of children contract rotavirus at least once before their first birthday. This underscores the urgent need for targeted public health interventions, particularly in vulnerable regions with limited access to healthcare, poor sanitation, and low immunization coverage (Pius *et al*., 2023). In Nigeria, rotavirus continues to be a significant contributor to diarrhoea-

related illnesses among children under five. The introduction of rotavirus vaccines has improved disease prevention, yet the burden remains substantial, particularly in states like Edo, where local data is limited (Iyoha & Abiodun, 2015). Understanding the prevalence and impact of rotavirus in Edo State is crucial for developing effective health policies and interventions that aim to reduce child morbidity and mortality (Iyoha & Abiodun, 2015). This study focused on the prevalence of rotavirus gastroenteritis among children under five attending Eyaen Primary Health Centre in Uhunwode Local Government Area, Edo State. By assessing the significance of the problem, this research aimed to contribute to the body of evidence needed to enhance child healthcare services and reduce the disease burden in the State. One of the main causes of severe gastroenteritis in children worldwide, especially in those under five years, is rotavirus. Diarrhoea, Fever, and vomiting are the hallmarks of gastroenteritis, which is a serious public health issue because it significantly increases child morbidity and death, particularly in low- and middle-income nations, for several reasons such as inadequate access to clean water, severe dehydration, malnutrition, and limited healthcare access (Tale *et al*., 2016). About 215,000 deaths among children under five are caused by rotavirus alone each year, making up roughly 28% of all diarrhoea-related deaths worldwide (Izevbuwa *et al*., 2021). Rotavirus, a member of the *Reoviridae* family, is the etiological agent of rotaviral infections (Omosigho et al., 2024). Its segmented double-stranded RNA genome, coupled with frequent genetic reassortment, contributes to the virus's substantial genetic diversity (Patton, 2022). According to Izevbuwa et al. (2021), rotavirus is primarily transmitted via the fecal–oral route, with contaminated food, water, and surfaces serving as common sources of infection. Although rotavirus vaccines have substantially reduced disease burden in many countries, the prevalence of infection remains high in regions characterized by poor sanitation, limited healthcare access, and low vaccination coverage (Burnett, 2020). This study examined the incidence of rotavirus gastroenteritis in children under five, highlighting the importance of this condition for public health and the necessity of efficient prevention and control strategies.

METHODOLOGY

A total of 150 stool samples were collected. Each specimen was aseptically obtained in a sterile commercial stool container and appropriately labeled with the patient's identification and date of collection by caregivers or hospital staff, following standardized instructions for proper sample collection. All samples were subsequently transported under a maintained cold chain to the Medical Microbiology Laboratory at Igbinedion University Teaching Hospital, Okada, Edo State. Upon receipt of the stool samples at the Microbiology Laboratory, they were allowed to thaw to room temperature before serological testing using immunochromatographic methods was performed

RESULTS

Table 1 shows the sociodemographic characteristics of the participants (n = 150). The majority of children were aged 3-4 years (36.0%), followed by those aged 1-2 years (33.3%), and those under 1 year (30.7%). The sample included more females (56.0%) than males (44.0%). Regarding mothers' educational status, most had secondary education (54.0%), followed by tertiary education (26.7%), no formal education (10.0%), and primary education (9.3%). For fathers, 45.3% had secondary education, 36.7% had tertiary education, 14.7% had primary education, and 3.3% had no formal education. In terms of family income, 59.3% of the participants were from middle-income families, 20.7% from low-income families, and 20.0% from high-income families. The number of siblings in the families was evenly distributed, with 34.7% of the participants having 3-4 siblings, another 34.7% having more than 4 siblings, and 30.7% having 1-2 siblings. The mean age of the participants was 1.91 ± 1.26 years. The prevalence of rotavirus gastroenteritis among children under five attending Eyaen primary health centre was found to be 8.7% (13/150), as shown in Figure 1.

Table 1. Sociodemographic Characteristics of Participants

Variable	Number (n=150)	Percentage (%)
Age		
<1 year	46	30.7
1-2 years	50	33.3
3-4 years	54	36.0

Sex		
Male	66	44.0
Female	84	56.0
Mothers' educational status		
No formal Education	15	10.0
Primary	14	9.3
Secondary	81	54.0
Tertiary	40	26.7
Fathers' educational status		
No formal Education	5	3.3
Primary	22	14.7
Secondary	68	45.3
Tertiary	55	36.7
Family's Income		
Low	31	20.7
Middle	89	59.3
High	30	20.0
Number of Siblings		
1-2	46	30.7
3-4	52	34.7
>4	52	34.7

Mean age=1.91±1.26 years.

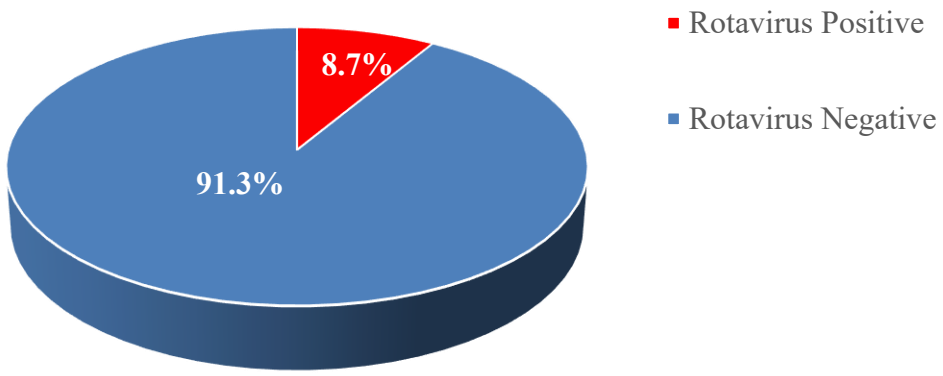

Figure 1: Prevalence of Rotavirus infection among children under five.

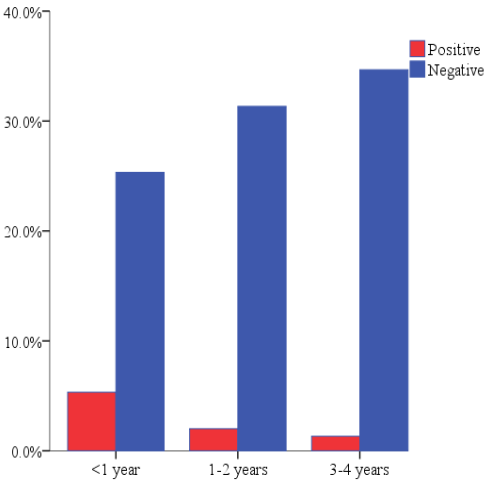

Figure 2. Prevalence of rotavirus infection among age of participants

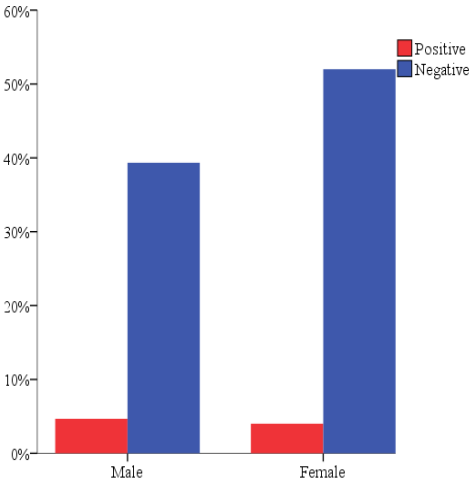

Figure 3. Prevalence of rotavirus infection among male and female participants

Sociodemographic Parameters and Prevalence of Rotavirus Infection

The relationship between sociodemographic parameters and the prevalence of rotavirus infection was analyzed. Age showed a significant association with the prevalence of rotavirus infection (p = 0.038) (figure1), with children under 1 year of age having the highest infection rate (17.4%), compared to those aged 1-2 years (6.0%) and 3-4 years (3.7%) (figure 2). Gender was not significantly associated with rotavirus infection (p = 0.454), though males had a slightly higher prevalence (10.6%) than females (7.1%) (figure 3), with an odds ratio (OR) of 1.542 (95% CI: 0.492-4.831). Mothers' educational status was not significantly related to infection rates (p = 0.872), with the highest prevalence among children of mothers with primary education (14.3%). Similarly, fathers' educational status was not significantly associated with infection (p = 0.619), with the highest prevalence seen in children of fathers with no formal education (20.0%). Family income demonstrated a significant association with rotavirus infection (p = 0.005), with children from low-income households exhibiting the highest infection rate (22.6%). The number of siblings did not show a significant association with the prevalence of infection (p = 0.941), with similar rates across different sibling groups (Table 2).

Table 2: Relationship Between Sociodemographic Parameters and Prevalence of Rotavirus Infection

Variable	No. Examined (%)	No. Infected (%)	OR	95%CI	p value
Age					
<1 year	46 (30.7)	8 (17.4)			0.038
1-2 years	50 (33.3)	3 (6.0)			
3-4 years	54 (36.0)	2 (3.7)			
Sex					
Male	66 (44.0)	7 (10.6)	1.542	0.492-4.831	0.454
Female	84 (56.0)	6 (7.1)			
Mothers' educational status					
None	15 (10.0)	1 (6.7)			0.872
Primary	14 (9.3)	2 (14.3)			
Secondary	81 (54.0)	7 (8.6)			

Tertiary	40 (26.7)	3 (7.5)	
Fathers' educational status			
None	5 (3.3)	1 (20.0)	0.619
Primary	22 (14.7)	3 (13.6)	
Secondary	68 (45.3)	5 (7.4)	
Tertiary	55 (36.7)	4 (7.3)	
Family's Income			
Low	31 (20.7)	7 (22.6)	0.005
Middle	89 (59.3)	3 (23.1)	
High	30 (20.0)	3 (23.1)	
Number of Siblings			
1-2	46 (30.7)	4 (8.7)	0.941
3-4	52 (34.7)	5 (9.6)	
>4	52 (34.7)	4 (7.7)	

P<0.05 indicates significance

Risk Factors and Prevalence of Rotavirus Infection

The analysis of risk factors associated with rotavirus positivity revealed significant associations with vaccination status and proper sanitation. Children who were vaccinated had a significantly lower risk of rotavirus infection (3.0%) compared to those who were not vaccinated (20.0%), with an odds ratio (OR) of 0.124 (95% CI: 0.032-0.473, p = 0.001). Proper sanitation was also significantly associated with a reduced risk of rotavirus infection, with children living in environments with proper sanitation showing a lower infection rate (3.2%) compared to those without proper sanitation (17.5%), with an OR of 0.157 (95% CI: 0.041-0.597, p = 0.002). Daycare attendance and overcrowded living conditions were not significantly associated with rotavirus infection. However, children in daycare had a higher infection rate (12.3%) compared to those not in daycare (5.2%), with an OR of 2.566 (95% CI: 0.754-8.734, p = 0.121). Similarly, children living in overcrowded households had a higher rotavirus infection rate (15.2%) than those in non-overcrowded settings (5.8%), although this association did not reach statistical significance (OR = 2.932, 95% CI: 0.927–9.276; p = 0.058). Conversely, access to clean water showed no significant relationship with infection status (p = 0.771), as infection rates were similar among households with and without clean water (8.3% vs. 9.8%) (Table 3).

Table 3: Risk Factors and Rotavirus Positivity.

Variable	No. Examined (%)	No. Infected (%)	OR	95%CI	p value
Vaccination					
Yes	100 (66.7)	3 (3.0)	0.124	0.032-0.473	0.001
No	50 (33.3)	10 (20.0)			
Daycare					
Yes	73 (48.7)	9 (12.3)	2.566	0.754-8.734	0.121
No	77 (51.3)	4 (5.2)			
Living conditions					
Overcrowded	46 (30.7)	7 (15.2)	2.932	0.927-9.276	0.058
Not Overcrowded	104 (69.3)	6 (5.8)			
Clean water					
Yes	109 (72.7)	9 (8.3)	0.833	0.242-2.867	0.771
No	41 (27.3)	4 (9.8)			

Proper Sanitation

Yes	93 (62.0)	3 (3.2)	0.157	0.041-0.597	0.002
No	57 (38.0)	10 (17.5)			

P<0.05 indicates significance

Symptoms of Gastroenteritis and Prevalence of Rotavirus Infection

The analysis of symptoms of gastroenteritis and their association with rotavirus prevalence revealed significant relationships for diarrhea and the presence of blood or mucus in stool. Children with diarrhea had a significantly higher prevalence of rotavirus infection (25.0%) compared to those without diarrhea (3.5%), with an odds ratio (OR) of 9.167 (95% CI: 1.624-32.019, p = 0.001). Similarly, the presence of blood or mucus in stool was significantly associated with rotavirus infection, with a prevalence of 33.3% in affected children compared to 2.5% in those without this symptom, and an OR of 19.50 (95% CI: 4.932-77.094, p = 0.001). Other symptoms, including vomiting, abdominal pain, fever, and dehydration, did not show statistically significant associations with rotavirus infection. Specifically, vomiting was associated with a higher infection rate (15.4%) compared to no vomiting (7.3%), but this difference was not statistically significant (OR = 2.323, 95% CI: 0.657-8.215, p = 0.181). Abdominal pain was not significantly related to infection (OR = 0.851, 95% CI: 0.265-2.736, p = 0.787), nor was fever (OR = 0.506, 95% CI: 0.133-1.924, p = 0.310) or dehydration (OR = 0.648, 95% CI: 0.136-3.086, p = 0.584) (Table 4).

Table 4: Symptoms of Gastroenteritis and Prevalence of Rotavirus.

Variable	No. Examined (%)	No. Infected (%)	OR	95%CI	p value
Diarrhoea					
Yes	36 (24.0)	9 (25.0)	9.167	1.624-32.019	0.001
No	114 (76.0)	4 (3.5)			
Vomiting					
Yes	26 (17.3)	4 (15.4)	2.323	0.657-8.215	0.181
No	124 (82.7)	9 (7.3)			
Abdominal Pain					
Yes	63 (42.0)	5 (7.9)	0.851	0.265-2.736	0.787
No	87 (58.0)	8 (9.2)			
Fever					
Yes	54 (36.0)	3 (5.6)	0.506	0.133-1.924	0.310
No	96 (64.0)	10 (10.4)			
Dehydration					
Yes	32 (21.3)	2 (6.3)	0.648	0.136-3.086	0.584
No	118 (78.7)	11 (9.3)			
Blood/Mucus in Stool					
Yes	30 (20.0)	10 (33.3)	19.50	4.932-77.094	0.001
No	120 (80.0)	3 (2.5)			

P<0.05 indicates significance

DISCUSSION

This study investigated the prevalence and associated risk factors of rotavirus gastroenteritis among children under five years attending Eyaen Primary Health Centre, Edo State. The overall prevalence of rotavirus infection in this study was 8.7%, which is considerably lower than the 28.7% reported by Izevbuwa *et al.* (2023) in Ilorin, Kwara State. This discrepancy may be explained by variations in geographic and

environmental factors, seasonal differences in sample collection, and differences in the characteristics of the study populations. In the present study, the highest prevalence was recorded among children younger than one year (17.4%), consistent with the findings of Izevbuwa *et al*. (2023), who reported that infants under three years of age experience more frequent diarrheal episodes due to heightened exposure and immature immune systems. The significant association observed between age and rotavirus infection rate in this present study ($p = 0.038$) reinforces the well-documented vulnerability of younger children, particularly infants and toddlers, to rotavirus gastroenteritis. This trend is consistent with findings by Jonesteller *et al.* (2017), who analyzed global surveillance data and reported that children under five years of age accounted for over 90% of rotavirus-related deaths, with the highest incidence among those aged 6 to 24 months. Similarly, Troeger *et al*. (2018), in their Global Burden of Disease (GBD) study, estimated that rotavirus caused approximately 128,500 deaths in children under five in 2016, with an incidence rate of 18,700 per 100,000 population in infants, markedly higher than the findings in older children. These global patterns confirm the age-specific susceptibility identified in this study and highlight the critical importance of early-life preventive interventions, such as timely vaccination. Regarding sex distribution, although a higher infection rate was observed among males (10.6%) compared to females (7.1%), the difference was not statistically significant ($p = 0.454$), suggesting that gender may not be a primary determinant of rotavirus infection. This observation aligns with the findings of Lanata *et al*. (2013), who conducted a systematic review and reported that while male children often exhibited slightly higher rotavirus positivity rates, the pooled odds ratio across multiple studies was only 1.12 (95% CI: 1.01–1.25), indicating a marginal and inconsistent sex-related difference. Furthermore, Bányai *et al*. (2012), analyzing global rotavirus strain data, also noted a male predominance in infections, but without consistent statistical significance across regions, implying that biological sex alone is insufficient to explain infection patterns and that other environmental and behavioral factors likely play a more substantial role. In this study, family income was significantly associated with rotavirus infection ($p = 0.005$), with children from low-income households showing the highest infection rate (22.6%). This is consistent with several Nigerian studies linking low socioeconomic status to higher rotavirus prevalence. For instance, Tagbo *et al*. (2014), found that children from low-income families in Enugu had a significantly higher infection rate (31%) compared to those from higher-income households. Similarly, Ekanem *et al*. (2017), in Calabar, observed that children from families with poor income and education backgrounds were more likely to suffer from rotavirus-associated diarrhea. They reported a statistically significant correlation between low maternal income and infection risk ($p < 0.01$). Additionally, Akinyemi et al. (2015), in Ibadan found rotavirus prevalence to be concentrated in overcrowded, low-income areas lacking basic sanitation, reporting infection rates above 25% in such environments. These data demonstrate how poverty may increase exposure due to factors such as insufficient water supply, poor hygiene, and restricted access to timely healthcare. These findings further emphasize the critical need for equal access to vaccination and sanitary infrastructure in economically disadvantaged Nigerian areas. Vaccination demonstrated a strong protective effect against rotavirus infection in this study, with infection rates significantly lower among vaccinated children (3.0%) compared to unvaccinated children (20.0%) ($p = 0.001$). This protective trend is consistent with numerous studies confirming the effectiveness of rotavirus vaccines in reducing disease burden. For instance, Armah *et al*. (2016), in a post-introduction study conducted in Ghana, found a 65% reduction in rotavirus hospitalization among vaccinated children under five, while Leshem *et al*. (2014), reported a 79% decline in rotavirus-related hospitalizations in countries that introduced the vaccine into their national immunization programs. In Nigeria, similar outcomes have been observed. According to Tagbo *et al*. (2020), analysis of data from the WHO Rotavirus Surveillance Network revealed a notable reduction in rotavirus detection rates, decreasing from 42% during the pre-vaccine period to 18% after the introduction of the vaccine at selected surveillance sites. Akinloye *et al*. (2018) observed a substantially lower rotavirus infection rate among vaccinated infants in southwestern Nigeria, with vaccine effectiveness exceeding 60% against moderate-to-severe diarrhea. These findings highlight the pivotal role of rotavirus vaccination in resource-limited settings and emphasize the necessity of enhancing vaccine coverage and public health measures to further mitigate transmission. Proper sanitation was also significantly associated with

a reduced risk of rotavirus infection in this study. Children living in environments with access to proper sanitation had a much lower infection rate (3.2%) compared to those without adequate sanitation (17.5%) ($p = 0.002$). This observed link reinforces the importance of clean-living environments in preventing the spread of rotavirus and other diarrheal diseases. Similar patterns have been observed in other studies. For instance, Omatola et al. (2020) found that children from households in North Central Nigeria with poor sanitation were significantly more likely to contract rotavirus, with infection rates more than double those in households with clean water and improved toilet facilities. Likewise, Omotola *et al.* (2016), in Osun State, highlighted that open defecation, lack of handwashing facilities, and shared latrines contributed substantially to rotavirus transmission, especially among children under five. Globally, the role of sanitation in rotavirus prevention has been well documented. Walker *et al*. (2011), in their global analysis of child health risk factors, emphasized that improvements in water, sanitation, and hygiene (WASH) could prevent a significant proportion of diarrheal illnesses. Nonetheless, in areas where vaccination is available, poor sanitation can undermine its impact by maintaining high levels of environmental contamination. Together, these findings highlight that improving sanitation is not just a supplementary measure; it is a critical part of an integrated strategy to reduce rotavirus infections, especially in low-resource settings. In this study, the presence of blood or mucus in stool was significantly associated with rotavirus infection ($p = 0.001$), with a prevalence of 33.3% among affected children compared to 2.5% in those without these symptoms. This finding underscores the potential of clinical indicators, such as mucoid or bloody diarrhea, to signal more severe or complicated cases of rotavirus infection. Similar associations have been documented in other studies; for instance, Akinyemi *et al*. (2015) in Ibadan, Nigeria, reported that children with mucus in their stool were significantly more likely to test positive for rotavirus, suggesting a link between viral infection and gastrointestinal mucosal irritation. Although rotavirus infection is generally characterized by watery, non-bloody diarrhea, previous studies, including Bishop *et al*. (1973) and Paulke-Korinek *et al*. (2010), have documented the occurrence of mucoid stools, particularly in moderate to severe cases. Tagbo *et al.* (2014) also found a small percentage of rotavirus-positive cases presenting with blood-streaked stools, suggesting that while uncommon, such symptoms should not rule out rotavirus in clinical diagnosis. In this study, daycare attendance and overcrowded living conditions were not significantly associated with rotavirus infection ($p = 0.121$); however, both factors showed trends toward higher infection rates. Children attending daycare had an infection rate of 12.3%, compared to 5.2% among those who stayed at home. Similarly, children living in overcrowded households had a higher infection rate of 15.2% versus 5.8% among those in less crowded homes ($p = 0.058$). Despite the fact that these results were not statistically significant, they suggest possible associations that are consistent with findings from other research. For instance, Parashar *et al*. (2003) noted that daycare centers often serve as hotspots for rotavirus transmission due to close contact among children, shared toys, and challenges in maintaining strict hygiene. In Nigeria, Omatola *et al.* (2020) reported higher rotavirus infection rates among children attending early childcare facilities, though statistical significance varied by region and sample size. Likewise, Nwachukwu *et al*. (2015) observed a similar trend in southeastern Nigeria, where children in crowded living environments defined as more than three persons per room had increased exposure to enteric pathogens, including rotavirus. While overcrowding and daycare exposure alone may not always reach statistical thresholds, their contribution to overall transmission risk especially in combination with poor sanitation and limited hand hygiene has been widely acknowledged (Dennehy, 2008). These environmental and behavioral factors can amplify the spread of rotavirus in communal and low-resource settings, underscoring the need for improved hygiene practices in both households and childcare centers. The prevalence of rotavirus infection was similar among individuals with access to clean water (8.3%) and those without clean water (9.8%), with no statistically significant difference ($p = 0.771$). This suggests that access to clean water alone may not have a strong direct correlation with rotavirus infection rates. While this might seem counterintuitive, it aligns with findings from other studies indicating that rotavirus is primarily transmitted through person-to-person contact rather than through water, distinguishing it from many other enteric pathogens. For example, Parashar et al. (2003) and Mwenda *et al.* (2010) both emphasized that even if water quality is crucial for general health, rotavirus

tends to spread more through fecal-oral transmission in close-contact settings such as households, daycares, and hospitals, often independent of water source or quality. In Nigeria, Akinyemi et al. (2015) similarly reported that while poor water access increased the risk for bacterial diarrheal infections, it had a weaker association with rotavirus, which was more influenced by hygiene practices and environmental sanitation. Additionally, from WHO and UNICEF reports have highlighted that even in communities with improved water sources, contamination at the point of use (e.g., unclean storage containers or lack of handwashing) can invalidate the protective effects of clean water. This reiterates the idea that clean water must be coupled with proper hygiene, safe food handling, and sanitation practices to effectively reduce rotavirus transmission. Children who presented with fever had a lower rotavirus infection rate (5.6%) compared to those without fever (10.4%), though the difference was not statistically significant ($p = 0.310$). This pattern suggests that fever may not be a reliable distinguishing symptom for rotavirus infection. Rotavirus infection often presents with fever, but it is not a common symptom in all cases. For example, Tagbo *et al*. (2014), in a multicenter Nigerian surveillance study, reported that although fever was frequently observed in cases of acute gastroenteritis, it was not significantly more prevalent among rotavirus-positive children compared with those who tested negative. Similarly, Dennehy (2008) noted that while fever may accompany rotavirus infection, particularly in severe cases, its absence does not exclude the infection, nor does its presence definitively confirm it. Akinyemi *et al*. (2015), also reported a mixed pattern of fever in rotavirus cases in southwestern Nigeria, with some rotavirus-positive children showing no fever at all. This variability supports the idea that fever alone is not a strong clinical indicator for rotavirus and that diagnosis should rely on a broader range of symptoms, such as diarrhea frequency, vomiting, and stool characteristics, alongside laboratory confirmation. Finally, these findings highlight the necessity of integrated public health approaches that incorporate vaccination with long-term advancements in WASH (water, sanitation, and hygiene) practices. To further reduce rotavirus morbidity and death in susceptible groups, community-level interventions and ongoing surveillance are crucial.

CONCLUSION

This study offers critical insight into the prevalence and associated risk factors of rotavirus gastroenteritis among children under five in Eyaen Primary Health Centre, Uhunmwode LGA, Edo State. The observed 8.7% prevalence indicates that rotavirus remains a significant contributor to childhood diarrheal illness in the region. Key risk factors such as low family income, poor sanitation, lack of vaccination, and young age were significantly associated with higher infection rates, emphasizing the vulnerability of children in under-resourced communities. While some factors, like daycare attendance and overcrowding, did not reach statistical significance, they showed concerning trends that align with broader transmission dynamics. These findings underscore the urgent need to enhance routine rotavirus immunization, strengthen water, sanitation, and hygiene (WASH) infrastructure, and improve caregiver education on hygiene and early childhood health. Addressing these risk factors through integrated public health strategies can significantly reduce the burden of rotavirus infections and prevent associated complications such as dehydration and hospitalizations. Ultimately, this study reinforces the value of preventive measures particularly vaccination and improved living conditions as essential tools for reducing the incidence of rotavirus gastroenteritis and improving child health outcomes in Nigeria.

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