CLINICAL PSYCHOLOGY

Psychological Distress Associated with Conjunctivitis and Cholera Outbreaks among Schoolchildren in Agatu Local Government Area, Benue State, Nigeria: An Empirical Investigation

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Abstract

This study investigated the psychological impact of conjunctivitis and cholera outbreaks on schoolchildren in Agatu Local Government Area of Benue State, Nigeria. A cross-sectional survey design was adopted using 268 primary and junior secondary school pupils. They comprised 141 (52.6%) males and 127 (47.4%) females. Their ages ranged from 7–15 years with a mean age of 11.34 years (SD=2.41). Multi-stage sampling was used to draw the participants. The Revised Children's Anxiety and Depression Scale (RCADS), a Disease-Related Fear Scale and a School Functioning Checklist were used for data collection. Four hypotheses were generated and tested using Multiple Linear Regression, Pearson correlation and Standard Multiple Regression. The result indicated that experience of conjunctivitis and cholera significantly influenced psychological distress among schoolchildren. The result further showed that severity of illness and fear of reinfection made significant contributions to anxiety and depressive symptoms. School absenteeism and perceived stigma associated with the diseases also predicted poorer psychological outcomes. The result further showed that social support moderated the relationship between disease experience and psychological distress. It was recommended that school health programmes, early psychological screening and community hygiene education should be strengthened in Agatu LGA to mitigate the mental health consequences of recurrent infectious disease outbreaks.

Keywords: Psychological distress; conjunctivitis; cholera; schoolchildren; Agatu LGA; Benue State; infectious disease outbreaks

1 Introduction

Infectious disease outbreaks remain a major public health challenge in many parts of Nigeria, particularly in rural and semi-urban local government areas with limited access to clean water, sanitation and primary healthcare. Conjunctivitis (commonly called "Apollo" in many Nigerian communities) and cholera continue to affect school-aged children, leading not only to physical morbidity but also to significant psychological consequences. Schoolchildren who experience these illnesses often face pain, discomfort, social isolation, school absenteeism, fear of reinfection and, in some cases, stigmatization by peers and community members.

Agatu Local Government Area of Benue State has recorded recurrent episodes of conjunctivitis and cholera, especially during periods of flooding and poor environmental hygiene. These outbreaks disrupt school attendance, interfere with learning and generate anxiety among children and their families. While medical responses focus on treatment and prevention, the psychological impact on affected children has received limited empirical attention in the Benue context. Mental health

problems such as anxiety, depressive symptoms, sleep disturbance and fear of recurrence are common sequelae of infectious disease experiences among children, yet they are rarely screened or addressed in school settings.

Psychological distress in schoolchildren refers to unpleasant emotional experiences that interfere with daily functioning, including symptoms of anxiety, depression, irritability and concentration difficulties. When linked to infectious disease, distress may arise from the acute experience of illness, the fear of transmitting the disease to family members, social rejection by classmates, and prolonged absence from school. In settings where water-borne and eye infections recur seasonally, children may develop anticipatory anxiety each rainy season.

This study is anchored on the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) and the Health Belief Model. The transactional model conceptualizes stress as a transaction between the child and the disease-related environment. Appraisal of the illness as threatening, combined with limited coping resources, can lead to elevated psychological distress. The Health Belief Model helps explain how perceived severity, susceptibility and barriers influence both health behaviour and emotional responses. Together, these frameworks guide the examination of how conjunctivitis and cholera experiences translate into measurable psychological outcomes among schoolchildren in Agatu LGA.

1.1 Disease experience and psychological distress

Studies in Nigeria and other African settings have shown that children who experience infectious diseases often report higher levels of anxiety and depressive symptoms compared with their unaffected peers. Ngbea (2022) examined emotional abuse and mental health among orphans in Benue State and highlighted the vulnerability of children facing multiple stressors. Although focused on orphanhood, the findings underscore the importance of assessing psychological outcomes in Benue children exposed to adverse conditions. Other local investigations have linked school disruption caused by illness to poorer emotional well-being and reduced academic engagement.

Cholera outbreaks, in particular, generate intense fear because of the rapid onset of severe diarrhoea, dehydration and the possibility of death. Children who witness the illness in family members or classmates may develop heightened vigilance and sleep problems. Conjunctivitis, while usually less life-threatening, produces visible redness and discharge that can attract teasing and social exclusion, thereby amplifying self-consciousness and anxiety among school-aged children.

1.2 Fear of reinfection, absenteeism and school functioning

Recurrent outbreaks create a cycle of fear. Children who have recovered from conjunctivitis or cholera may still worry about reinfection, especially when environmental conditions remain unchanged. Prolonged or repeated absenteeism further isolates children from peers and teachers, reducing opportunities for social support and academic recovery. Research on schoolchildren in conflict-affected and disease-prone Nigerian communities has demonstrated that absenteeism and perceived stigma are significant predictors of psychological distress.

1.3 Social support as a protective factor

Family and school support can buffer the psychological impact of illness. Children who receive emotional reassurance from parents, teachers and peers tend to report lower anxiety and better

adjustment after recovery. Conversely, children who experience blame, isolation or inadequate care are more likely to develop persistent distress. Therefore, the following hypotheses were postulated:

1. Experience of conjunctivitis and/or cholera will significantly influence psychological distress among schoolchildren in Agatu LGA.
2. Severity of illness and fear of reinfection will positively predict anxiety and depressive symptoms.
3. School absenteeism and perceived stigma will significantly contribute to poorer psychological outcomes.
4. Social support will moderate the relationship between disease experience and psychological distress.

2 Method

2.1 Design

This study adopted a cross-sectional survey design to examine the psychological impact of conjunctivitis and cholera on schoolchildren in Agatu Local Government Area. This design is appropriate because it allowed the researchers to collect self-reported and parent/teacher-assisted data from a large number of pupils at a single point in time. The independent variables were disease experience, severity, fear of reinfection, absenteeism and perceived stigma; the moderating variable was social support; and the dependent variable was psychological distress (anxiety and depressive symptoms).

2.2 Study area and population

Agatu Local Government Area is located in the western part of Benue State and is predominantly occupied by the Agatu people. The area experiences seasonal flooding and has historically faced challenges with water, sanitation and hygiene, conditions that facilitate the spread of cholera and conjunctivitis. The study population comprised primary and junior secondary school pupils aged 7–15 years enrolled in public and private schools within the LGA.

2.3 Sampling technique

Multi-stage sampling was employed. First, four wards with recent reports of conjunctivitis or cholera cases were purposively selected. Second, eight schools (five primary and three junior secondary) were randomly selected from the wards. Third, pupils who had experienced conjunctivitis, cholera or both within the preceding 12 months, together with a comparison group of unaffected classmates, were selected using stratified random sampling to ensure gender and age balance. A total of 280 questionnaires were distributed; after data cleaning, 268 valid responses were retained for analysis.

2.4 Participants

The participants were 268 schoolchildren in Agatu LGA. They comprised 141 (52.6%) males and 127 (47.4%) females. Ages ranged from 7–15 years with a mean of 11.34 years (SD=2.41). Of the sample, 97 (36.2%) reported experience of conjunctivitis only, 64 (23.9%) cholera only, 41 (15.3%) both diseases, and 66 (24.6%) no recent experience of either disease (comparison group). Educational level: 178 (66.4%) were in primary school and 90 (33.6%) in junior secondary school. Most participants (81.3%) lived in rural communities within the LGA.

2.5 Instruments

Revised Children's Anxiety and Depression Scale (RCADS) – Short Form: Psychological distress was measured using an adapted short form of the RCADS (Chorpita et al., 2000) suitable for the age range. The scale assesses anxiety and depressive symptoms on a 4-point frequency scale. The present study obtained Cronbach's alpha of .87 for the total distress score, .84 for anxiety and .81 for depression subscales.

Disease-Related Fear and Severity Scale: A researcher-developed 10-item scale assessed perceived severity of the illness episode, fear of reinfection and worry about transmitting the disease to family members. Items were rated on a 5-point Likert scale. Cronbach's alpha in the present study was .83.

School Functioning and Stigma Checklist: This checklist captured days of school missed due to the illness, perceived teasing or avoidance by classmates, and self-reported concentration difficulties after returning to school. Reliability coefficient was .78.

Social Support Scale (Child Version): A brief 8-item measure assessed perceived emotional and practical support from parents, teachers and peers. Cronbach's alpha was .85.

2.6 Procedure

Informed consent was obtained from the schools. Head teachers and class teachers facilitated access. Parental consent and child assent were also obtained. Trained research assistants (including postgraduate psychology students) administered the instruments in classroom settings, reading items aloud for younger pupils and clarifying terms in local language where necessary. Confidentiality was assured and no identifying information was recorded on the questionnaires. All 268 valid questionnaires were retained for analysis.

2.7 Data analysis

Data were analyzed using SPSS. Descriptive statistics summarized the sample. Hypothesis one was tested with multiple linear regression; hypothesis two with hierarchical regression; hypothesis three with standard multiple regression; and hypothesis four with Hayes Process moderation analysis. Significance was set at $p \leq .05$.

3 Results

The results in Table 1 show that experience of conjunctivitis and/or cholera significantly influenced psychological distress; [R^2=.464, F(3,264)=76.214, p<.001]. Children who experienced both diseases showed the strongest association (β=.412), followed by cholera only (β=.341) and conjunctivitis only (β=.287). Therefore, hypothesis one was supported.

Table 1. Multiple linear regression showing the influence of disease experience on psychological distress among schoolchildren in Agatu LGA.

Variable	R	R^2	F	β	t	Sig.
Constant	.681	.464	76.214		9.876	.000
Conjunctivitis only				.287	5.124	.000
Cholera only				.341	6.018	.000
Both diseases				.412	7.345	.000

Note: Reference group = no disease experience; all predictors $p < .001$.

The results in Table 2 show that illness severity and fear of reinfection significantly predicted anxiety and depressive symptoms after controlling for demographics; [R^2=.524, F=72.891, p<.001]. Fear of reinfection (β=.401) made a slightly stronger contribution than severity (β=.356). Therefore, hypothesis two was supported.

Table 2. Hierarchical regression showing the contribution of illness severity and fear of reinfection to anxiety and depressive symptoms.

Variable	R	R^2	F	β	t	Sig.
Step 1 (Demographics)	.218	.048	4.412			.005
Step 2 (Severity + Fear)	.724	.524	72.891			.000
Illness Severity				.356	6.789	.000
Fear of Reinfection				.401	7.612	.000

Note: $\Delta R^2 = .476$, $p < .001$.

The results in Table 3 show that school absenteeism and perceived stigma significantly contributed to psychological distress; [R^2=.358, F(2,265)=73.845, p<.001]. Perceived stigma (β=.378) made a stronger contribution than absenteeism (β=.312). Therefore, hypothesis three was supported.

Table 3. Standard multiple regression showing the contribution of school absenteeism and perceived stigma to psychological distress.

Variable	R	R^2	F	β	t	Sig.
Constant	.598	.358	73.845		11.234	.000
School Absenteeism				.312	5.678	.000
Perceived Stigma				.378	6.891	.000

Note: Both predictors $p < .001$.

The results in Table 4 show that social support significantly moderated the relationship between disease experience and psychological distress; [R^2=.507, F=90.456, p<.001]. The significant negative interaction term (β=-.194, p<.001) indicates that higher social support weakens the positive association between disease experience and distress. Therefore, hypothesis four was supported.

Table 4. PROCESS moderation analysis showing the moderating role of social support in the relationship between disease experience and psychological distress.

Variable	R	R^2	F	β	t	Sig.
Constant	.712	.507	90.456		8.912	.000
Disease Experience				.389	7.234	.000
Social Support				-.276	-5.112	.000
Interaction (Disease × Support)				-.194	-3.567	.000

Note: Interaction term significant; social support buffers the effect of disease experience on distress.

4 Discussion

Hypothesis one was tested to determine whether experience of conjunctivitis and/or cholera significantly influences psychological distress. Findings indicated a clear dose-response pattern: children who experienced both diseases reported the highest distress, followed by those with cholera only and conjunctivitis only. This is consistent with the understanding that more severe or multiple infectious episodes generate greater emotional burden in school-aged children.

Hypothesis two confirmed that illness severity and fear of reinfection are strong predictors of anxiety and depressive symptoms. Fear of reinfection emerged as particularly potent, suggesting that the anticipatory component of distress may outlast the acute physical illness. This finding aligns with the transactional model of stress, in which ongoing threat appraisal sustains elevated distress.

Hypothesis three showed that school absenteeism and perceived stigma independently contribute to poorer psychological outcomes. Stigma associated with visible symptoms (especially conjunctivitis) or with the social perception of "dirty" water-borne disease can lead to teasing and exclusion, amplifying internalising symptoms. Absenteeism further removes children from supportive school routines.

Hypothesis four demonstrated that social support buffers the impact of disease experience on distress. Children who reported higher support from parents, teachers and peers showed weaker associations between illness experience and psychological symptoms. This protective effect highlights the practical value of strengthening family and school support systems during and after outbreaks.

5 Conclusion

Based on the findings of the present study, the following conclusions were drawn:

1. Experience of conjunctivitis and cholera significantly increases psychological distress among schoolchildren in Agatu LGA, with dual exposure producing the strongest effect.
2. Illness severity and fear of reinfection are significant positive predictors of anxiety and depressive symptoms.
3. School absenteeism and perceived stigma independently contribute to elevated psychological distress.
4. Social support significantly moderates (buffers) the relationship between disease experience and psychological distress.

6 Recommendations

Based on the findings, the following recommendations are made:

1. School health programmes in Agatu LGA should incorporate brief psychological screening for anxiety and depressive symptoms following outbreaks of conjunctivitis or cholera.
2. Teachers and parents should be trained to recognize signs of fear of reinfection and social stigma and to provide supportive responses rather than isolation.
3. Community hygiene and water-sanitation interventions should be paired with mental-health literacy messages to reduce both disease incidence and associated psychological burden.

4. Education authorities should develop catch-up learning and peer-support mechanisms for children who miss substantial school time due to infectious disease.

5. Further longitudinal research is needed to track the long-term psychological trajectories of children exposed to recurrent outbreaks in Benue State.

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