



Adolescents' Perception, Practice and Coping Strategies during COVID-19 Pandemic in Rivers State, Nigeria

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

COVID-19 is perceived as a major threat to public health and a danger to the economy globally, affecting people's lives by influencing their everyday behaviour and causing feelings of panic anxiety, depression, and often triggering intense fear. The study was aimed at determining the perception, practice and coping strategies of adolescents in Rivers state, Nigeria during the COVID-19 pandemic. A cross-sectional survey was conducted among adolescent via an online Google doc questionnaire administered through WhatsApp instant messaging and about 200 responses were received within two month. About (45%) were middle adolescent (14-16 years), 52% were females, 74% in secondary school and 64% from monogamous family. Majority (66%) believed in the existence COVID-19, 36% of the adolescents perceived it was a deadly disease, 17% said it was a pandemic, 18% reported is a deadly virus that kills people fast and 6% said is a disease that ruined the whole world. About 54% were worried and perceived they might be infected with coronavirus. Majority (94%) practiced one or more forms of COVID-19 preventive practices. Following the coping strategies, majority of the adolescents used more of emotion-focused way of coping than problem-focused way of coping. The male gender used more of problem focused way of coping than the female gender. Findings of this research are useful to better understand the coping strategies utilized by adolescents and help formulate intervention strategies to tackle various psychosocial problems during COVID-19 among adolescents.

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1. INTRODUCTION

Coronavirus disease 2019 (COVID 19), is a respiratory illness devastating lives, public health systems, livelihoods and economies worldwide [1,2]. Globally, on the 25th of August 2020, the total number of cases was reported as 23,518,343 (810,492 deaths), affecting 216 countries. On the same date in Nigeria, a total of 52,800 cases were reported with Rivers ranking 6th in the total number of confirmed cases in Nigeria [3]. Despite the increasing incidence of infected persons with this virus, challenges exist in convincing adolescents and young adults to refrain from physically meeting with friends and taking part in gatherings [4].

Research has found that it is likely that the risk of spread from adolescents over 15 years old does not considerably differ from that of the adults, compliance with public health prevention measures nevertheless may play a vital role [5]. The application of personal hygiene and public health practices that are vital in curbing the spread of COVID-19, such as hand washing and social distancing, may be disconcerting if not difficult in some settings and among certain people [6]. Washing hands with soap and clean water is the first line of defense against COVID-19 [7].

Adolescence is a period often associated with increased risk-taking, an increased need for social connection and peer acceptance, and a heightened sensitivity to peer influence which may make adherence to social distancing challenging [4]. The COVID-19 pandemic is said to may have worsened and increase existing mental health problems among children and adolescents due to the combination of the public health crisis, social isolation, lockdown, and economic recession [8]. Adolescents are not indifferent to the intense impact of the COVID-19 pandemic. They undergo fears, worries, and physical and social isolation and may miss school for a prolonged period [9].

COVID-19 is also perceived as a major threat to health and a danger to the worldwide economy, affecting people's lives by influencing their everyday behavior and causing feelings of panic anxiety, depression, and often triggering intense dread [9]. During the lockdown, it is perceived that the majority of the adolescents were at home with their families. The family is the basic, foundational social unit saddled with the

responsibility of providing physical, social, and emotional support [10,11]. A study conducted to determine the life conditions of adolescents during the lockdown and their association with psychological problems found that difficult family relationships and families living together under stress during the lockdown were associated with adolescent psychological problems [12]. It was also established that students who were staying alone during the COVID-19 lockdown experienced the highest anxiety levels compared to those staying with family and friends [13]. Therefore, this study was conducted to determine the perception, practices, and coping strategies during the COVID-19 pandemic among adolescents in Rivers state, Nigeria. The association between socio-demographic characteristics and perception was determined similarly, correlates between gender, age, family status with different coping strategies used by the adolescents were determined.

2. METHODOLOGY

2.1 Study Area

Rivers State is one of the 36 states of Nigeria. With reference to National Bureau of Statistics (2016) the population is at 7,303,924 persons i.e. 3,525,690 males and 3,778,234 females. There are 2,629,412 young adults aged 15-24 years comprising 36% of the entire population. The capital of Rivers State is Port Harcourt and it is the largest city which is economically important as the center of Nigeria's oil industry. Rivers State houses many ethnic groups. The individuals from Rivers State are known as "Riverians". The inland part of the state consists of tropical rainforest; near the coast, the typical Niger Delta environment consists of many mangrove swamps.

2.2 Study Design, Instrument, and Sampling

This is a descriptive cross-sectional study; information was collected online using an anonymous online questionnaire from adolescents aged 10-19 years in Rivers State to assess their perception, practices, and coping strategies during the COVID-19 pandemic. The questions on perception and practice of COVID-19 were developed following a review of the literature and the coping strategies section was adapted from the Ways of Coping Scale [14,15], coping scale included problem-focused and

emotion-focused coping strategies. Also, behavioural practices such as hand washing, avoiding public places, and transport were included in the survey. In the questionnaire, 14 questions concerning problem-focused, emotion-focused and behavioural dimensions of coping were included.

The questionnaire link was shared to different WhatsApp groups involving adolescents and the adolescents further shared with their circle of friends. Also, the researcher linked up with other adolescent researchers and schools to disseminate the link of the online questionnaire to eligible participants within their networks in Rivers state. The data was collected from July to August 2020.

2.3 Inclusion and Exclusion Criteria

The study included adolescents aged 10 to 19 years both male and female, and excluded adolescents that did not assent to participate in the study.

2.4 Validity and Reliability

The study instrument was validated and pretested before the commencement of the study. The questionnaire was obtained from an instrument that has been validated and some questions were generated to capture the objectives of the study. The instrument was validated by experts in the field of public health and reviewed by the adolescent health to test their comprehension. The questionnaire was pretested with a Cronbach's alpha value for the reliability of 0.8 was obtained.

2.5 Data Analysis and Management

Statistical package for social sciences (SPSS) software version 21 was used for the analysis. Categorical data were presented in form of frequencies and percentages with results presented in tables and charts. Quantitative variables were described as means and standard deviations. ANOVA procedure was used comparing means. The level of significance was set at 0.05.

3. RESULTS

3.1 Socio-Demographic Characteristics of Respondents

Table 1 shows the socio-demographic characteristics of the respondents. About 90(45%) were middle adolescents (14-16 years) and

40(20%) were early adolescents (11-13 years), 96(48%) were males. The majority (90,45%) were currently in senior secondary classes and 52(26%) have completed secondary school. More than half (134,67%) were from monogamous family and 14(7%) were from stepfamily; of which more than half (152,76%) their parents stayed together.

3.2 Perception of COVID-19

Table 2 shows the perception of the respondents. Of the 200 respondents, the majority (132,66%) believed in the existence of COVID-19 while 68(34%) did not believe in COVID-19. In seeking to understand what COVID-19 meant to them 72(36%) reported that it was a deadly disease, 34(17%) said it was a pandemic, 36(18%) said is a deadly virus that kills people fast, 10(5%) said is a disease that ruined the whole world and 6(3%) said is a strong illness/normal disease. About 54% perceived they might be infected with the coronavirus.

3.3 Practices on Prevention of COVID-19

Table 3 shows the various practices of prevention of COVID-19 among the respondents. Of the 200 respondents, 58(28%) practiced washing of hands only, 20(10%) practiced washing hands and wearing nose mask, 16 (8%) practiced social distancing only, 10(5%) did nothing just living their normal lives and 2(1%) prayed as a means of preventing getting infected with COVID-19.

3.4 Association between Socio-Demographic Characteristics and Perception of COVID-19

Table 4 shows the association between socio-demographic characteristics and perception of COVID-19 among adolescents in Rivers state Nigeria. There were no statistically significant associations between sex, age in group, schooling status, parents staying together, and perception of adolescents to COVID 19 ($P>0.05$).

There was a statistically significant association between family type and the perception of COVID 19 ($P < 0.05$). Of the one hundred and thirty-four adolescents from monogamous families, 92(68.7%) believed in the existence of COVID-19, and of the thirty-four that were from a polygamous family, 16(47.1) believed in the existence of COVID-19 ($P= 0.04$).

3.5 Coping Strategy for COVID-19 among Adolescents

Table 5 shows coping strategies for COVID-19 among the respondents. In the problem-focused way of coping, of the 200 respondents, 85% agreed that they listen to experts and follow their advice, likewise, 58% disagreed that they have seen something like COVID-19 before.

In the emotion-focused way of coping, of the two hundred respondents, 84% agreed that they hope for a miracle, 76% disagreed that they have tried to make themselves feel better by eating, drinking, or taking medication.

In behavioural dimensions of coping, of the two hundred respondents, 84% agreed that they wash or disinfect their hands more often than before; likewise but only, 56% agreed that they maintain 1.5 m social distancing.

3.6 Association between Gender and Coping Strategies

Table 6 shows the association between gender and coping strategy for COVID-19 among the respondents. For each of the coping strategies, the means of the item responses were computed and compared with demographic characterizes. Usage of the problem-focused way of coping was significantly different between males and females ($M=2.48\pm 0.71$ vs. 2.18 ± 0.58 , $P=0.01$) There was no significant association between sex and emotion-focused and behavioural dimensions of coping.

3.7 Association between Age and Coping Strategies

Table 7 shows the association between age and coping strategy for COVID-19 among the respondents. There were no significant associations between age and the three coping strategies.

3.8 Associations between Family Status and Coping Strategies

Table 8 shows the association between family status and coping strategies for COVID-19. Usage of the problem-focused way of coping was significantly different between those whose parents stay together and do not stay together ($p=0.003$). Those that their parents stay together ($M=2.40$, $S.D=0.68$, $n=152$) use more of problem-focused strategies than those that their

parents do not stay together ($M=2.08$, $S.D=0.50$, $n=48$).

Similarly, usage of emotion-focused way of coping was significantly different between those whose parents stay together and do not stay together ($p=0.001$). Those in families where their parents stay together ($M=2.84$, $S.D=0.73$, $n=152$) use more of emotion-focused strategies than those that their parents do not stay together ($M=2.42$, $S.D=0.64$, $n=48$). There was no significant association between parents staying together and behavioural dimensions of coping

4. DISCUSSION

This study was conducted to determine the perception, practice, and coping strategies of adolescents during the Covid-19 pandemic in Rivers state, Nigeria. The majority (66%) of the adolescents believed in the existence of COVID-19 while (34%) did not believe in COVID-19. In seeking to understand what COVID-19 meant to them, it was perceived as a deadly disease, a pandemic, a deadly virus that kills people fast, a dangerous disease, a strong illness/normal disease, and a disease that ruined the whole world. However, about 54% were worried and perceived they might be infected with coronavirus disease. In a study conducted among students in the Southern Philippines about (62.64%) perceived a high-risk level of becoming infected [16]. This was contrary to a study conducted among Italian adolescents that found a low perception of risk of COVID-19 [17]. The difference between the current and prior findings may be due to the study locale, timeline, and population.

Regarding preventive practices against coronavirus disease, adolescents were involved in one or more practices to prevent contracting the virus during the pandemic. The majority (94%) practiced either one or more prevention measures against COVID-19 which includes washing of hands, wearing a face mask, using hand sanitizers, and social distancing. About (5%) reported they did nothing at all and 1% prayed as the only means of preventing getting infected with COVID-19. This was in line with studies that reported respondents practiced hand washing, used hand sanitizers, wore a face mask, avoided crowded places, and decreased contact with friends [18-21]. These similarities in the findings may be as a result of increased publicity on preventive practices during the pandemic and the burden of the disease. However, a study reported that social distancing

measures were challenging as 61% said this would risk income [19]. The difference between the current and former study may be due to differences in the study population.

Stress theories that focus on coping with stressful life events have shown that many strategies can essentially be reduced to a problem-focused dimension and an emotion-focused dimension [22]. The coping strategies used by adolescents during the COVID-19 pandemic were categorized into three groups namely problem-focused, emotion-focused and behavioural dimension ways of coping. Following the problem-focused way of coping, a majority agreed that they listened to experts and follow

their advice, have talked to others to learn more about it, and have thought about it repeatedly. Similarly, a study conducted among Belgian adolescents revealed that anxious participants indicated to use social media more often to actively seek a manner to adapt to the current situation, and a lesser extent as a way to keep in touch with friends and family [23]. Also, a study conducted among youth from the southeastern United States found that youth engaged in problem-focused coping strategies [24]. On contrary, a study conducted among female midwifery students in Turkey found that they usually preferred to follow mass media and to pray as a strategy of coping with coronavirus infection diseases [21].

Table 1. Socio demographic characteristics of adolescents in rivers state Nigeria

Characteristics	N=200	%
Sex		
Male	96	48.0
Female	104	52.0
Age in group		
Early adolescent (11-13)	40	20.0
Middle Adolescent (14-16)	90	45.0
Late Adolescent (17-19)	70	35.0
Highest school attended		
Junior secondary	58	29.0
Senior secondary	90	45.0
Completed secondary	52	26.0
Family type		
Monogamy	134	67.0
Polygamy	34	17.0
Single parents	18	9.0
Step family	14	7.0
Parents stay together		
Yes	152	76.0
No	48	24.0

Table 2. Perception of COVID 19 among adolescents in Obio-Akpor LGA rivers State

Characteristics	N=200	%
Do you believe in COVID 19		
Yes	132	66.0
No	68	34.0
What is COVID 19 to you		
Infectious/contagious disease/transmittable	16	8.0
Deadly disease	72	36.0
A virus/ bad virus/deadly virus	36	18.0
Pandemic	34	17.0
Bad sickness	6	3.0
Strong illness/normal disease	6	3.0
Dangerous disease	8	4.0
A trash/nothing	10	5.0
A disease that ruined the whole world	12	6.0

Table 3. Practices of Prevention of COVID 19 among adolescents in Rivers State, Nigeria

Characteristics	N=200	%
Personal practices on prevention of COVID 19		
Washing my hands	56	28.0
Following all preventive measures	10	5.0
Wearing nose mask and hand sanitizing	8	4.0
Hand sanitizing	12	6.0
Wearing nose mask	14	7.0
Washing hands and hand sanitizing	16	8.0
Washing hands and listening to radio	4	2.0
Social distancing	16	8.0
Washing hands and wearing nose mask	20	10.0
Nothing, I do what I do normally	20	10.0
Self-isolation and washing hands	10	5.0
Social distancing and nose mask	2	1.0
Staying indoors	10	5.0
Praying only	2	1.0

Table 4. Association between socio-demographic characteristics and perception of COVID-19 among adolescents in Rivers state, Nigeria

Variable	Believe in existence of Covid-19		
	Yes n(%)	No n(%)	Total N = 980
Sex			
Male	60(62.5)	36(37.5)	96
Female	72(69.2)	32(30.8)	104
	$\chi^2 = 1.008$	P Value = 0.318	
Age in group			
Early adolescent (11-13)	32(80.0)	8(20.0)	40
Middle Adolescent (14-16)	58(64.4)	32(35.6)	90
Late Adolescent (17-19)	42(60.0)	28(40.0)	70
	$\chi^2 = 4.714$	P Value = 0.095	
Highest school attended			
Junior secondary	40(72.0)	18(28.0)	58
Senior secondary	64(71.1)	26(28.9)	90
Completed secondary	28(53.8)	24(46.2)	52
	$\chi^2 = 6.186$	P Value = 0.103	
Family type			
Monogamy	92(68.7)	42(31.3)	134
Polygamy	16(47.1)	18(52.9)	34
Single parents	12(66.7)	6(33.3)	18
Step family	12(85.7)	2(14.3)	14
	$\chi^2 = 8.286$	P Value = 0.040	
Parents stay together			
Yes	96(63.2)	56(36.8)	152
No	36(75.0)	12(25.0)	48
	$\chi^2 = 2.280$	P Value = 0.131	

Table 5. Coping strategy for COVID 19 among adolescents in rivers state, Nigeria

Characteristics	S.A %	A %	N.S %	D %	S.D %
Problem focused way of coping					
I listen to the experts and follow their advice	41.0	45.0	9.0	2.0	3.0
I talk to others to learn more about it	38.0	47.0	6.0	7.0	2.0
I have repeatedly thought about it	32.0	45.0	12.0	9.0	2.0
I've seen something like this before	8.0	7.0	27.0	36.0	22.0
Emotion-focused way of coping					
I turn to other activities to distract myself.	12.0	20.0	21.0	31.0	16.0
I wish I could change my worries	36.0	34.0	8.0	17.0	5.0
I hope for a miracle	53.0	31.0	7.0	7.0	2.0
I try to make myself feel better by eating, drinking or taking medication	7.0	9.0	6.0	51.0	27.0
Behavioural dimension of coping					
I wash or disinfect my hands more often	49.0	35.0	5.0	9.0	2.0
I avoid public places/events	36.0	23.0	12.0	17.0	12.0
I avoid public transport	24.0	16.0	14.0	32.0	14.0
I avoid contact with risk groups	29.0	18.0	13.0	26.0	14.0
I have bought larger quantities of hand s.	37.0	36.0	7.0	14.0	6.0
I maintain 1.5m social distancing	35.0	21.0	22.0	14.0	8.0

Note: (S.A=strongly agree, A=Agree, N.S= Not sure, D= Disagree, S.D=strongly disagree)

Table 6. Association between sex and coping strategy for COVID 19 among adolescents in rivers state, Nigeria using ANOVA (comparison of means)

Characteristics	Mean	Std.	Sig
Problem focused way of coping			
Male	2.48	0.71	0.01*
Female	2.18	0.58	
Emotion focused way of coping			
Male	2.86	0.69	0.25
Female	2.63	0.74	
Behavioural dimensions coping			
Male	2.52	0.92	0.17
Female	2.54	0.90	

*Significant

Table 7. Association between age and coping strategy for COVID 19 among adolescents in rivers state, Nigeria using test of linearity (ANOVA)

Characteristics	Mean	Std.	Sig
Problem focused way of coping			
Early adolescent	2.55	0.76	0.20
Middle adolescent	2.20	0.65	
Late adolescent	2.35	0.56	
Emotion focused way of coping			
Early adolescent	2.78	0.47	0.24
Middle adolescent	2.81	0.80	
Late adolescent	2.62	0.74	
Behavioural dimensions coping			
Early adolescent	2.18	0.83	0.10
Middle adolescent	2.55	0.93	
Late adolescent	2.40	0.93	

Table 8. Association between parents staying together and Coping strategy for COVID 19 among adolescents in rivers state, Nigeria using ANOVA (comparison of means)

Characteristics	Mean	Std.	Sig
Problem focused way of coping			
Stay together	2.40	0.68	0.003*
Do not stay together	2.08	0.50	
Emotion focused way of coping			
Stay together	2.84	0.73	0.001*
Do not stay together	2.42	0.64	
Behavioural dimensions coping			
Stay together	2.49	0.91	0.79
Do not stay together	2.22	0.92	

*Significant

Following the emotion-focused way of coping, the majority were worried and wished to change their worries and hoped for a miracle. While majority disagreed that they have tried to make themselves feel better by eating, drinking, or taking medication. This was similar to the findings that found that Chinese adolescents and youths experienced psychological problems, depressive and anxiety symptoms during the pandemic, using the more emotional coping strategy [25]. In another study, it was found that some Italian adolescents used an emotion-focused way of coping (adolescents planned their daily routine, engaging in structured activities and developing new interests and gave a positive reading of the ongoing period), as an adaptive coping strategy to COVID-19 [26].

With regards to the behavioural dimensions of coping, the majority agreed that they wash or disinfect their hands more often than before, avoid public places, and maintained 1.5m social distancing. This was following a study conducted among youth in Kenya which found that since they started receiving messaging on COVID-19, most youths have adopted behavior necessary to slow down the infection [27]. In another study among students in Southern Philippines, it was found that to cope with the anxiety some students used behavioural dimension (followed strict protective measures, avoided social contact, large meetings, and gatherings) [16].

In determining the most used coping strategy by adolescents during the pandemic, the finding showed that adolescents' used more of the emotion-focused way of coping than the problem-focused way of coping regarding overcoming the anxiety associated with the pandemic. This was similar to the findings among Chinese and Italian adolescents [25]. The similarities in the findings may be as a result of

anxiety and the fear of the unknown associated with the pandemic. According to the stress theory by Lazarus & Folkman [28], adolescents from this study used more emotion-focused coping strategy because most of the adolescents lacked the capacity to challenge or change pandemic thus resulting in wishful thinking, distancing and emphasizing the positive.

An association was found between sex and problem-focused way of coping, males agree they coped more often with problem-focused strategies than females. There was no significant association between sex and emotion-focused and behavioural dimensions of coping. In a study, it was revealed that the female gender was the higher risk factor for depressive and anxiety symptoms [25].

There were no significant association between age and problem-focused, emotion-focused and behavioural dimensions of coping. Although early adolescent seems to use problem-focused way of coping than a late adolescent, middle adolescents seem to use emotion-focused way of coping than a late adolescent. Also, middle adolescents seem to use behavioural dimensions of coping than an early adolescent. All these different coping strategies used by different groups of adolescents may have served as a protective factor against anxiety and depression associated with the pandemic. In collaboration, a study conducted among junior high and high school students in China found that resilience and positive coping were protective factors for the occurrence of depression, anxiety, and stress symptom [29].

5. CONCLUSION

In conclusion, the majority of the adolescents believed in the existence of COVID-19 and had

different perceptions towards it. More than half were worried and anxious of getting infected with the coronavirus disease. Some of the adolescents had poor perception about COVID-19 while most irrespective of their perception practiced one or more forms of preventive measures which include wearing of facemask, regular hand washing, social distancing, and use of hand sanitizers. However, a few resulted in praying as the only means of prevention against coronavirus. Age, sex, schooling status was not significantly associated with the adolescent perception of COVID-19. Nevertheless, there was an association between adolescents' family status and perception of COVID-19. Adolescents from monogamous family tend to believe more on the existence of coronavirus than those from polygamous family. Following the coping strategies, the majority of the adolescents used more of the emotion-focused way of coping than the problem-focused way of coping. There was no significant association between age and the different coping strategies. The male gender used more of the problem-focused way of coping than the female gender. Also, adolescents whose parents stayed together used more of the emotion-focused way of coping, probably because they lack ability to change the situation.

One of the limitations of the study is that the survey was conducted online, which could induce some biases, such as a low representation of adolescents in Rivers state. Also adolescents, without a mobile phone and those with limited access to the Internet were exempted from the study. Despite the limitations, the findings of this research are informative for formulating effective intervention strategies to tackle various psychosocial problems during COVID-19 among adolescents.

CONSENT AND ETHICAL APPROVAL

Ethical approval was obtained from the University of Port-Harcourt Teaching Hospital Ethical Committee. For adolescents below 18 years, consent was sought from their parents and caregivers, and assent to participate in the study was sought from the adolescents. For those above 18 years, informed consent was obtained from them.

Information obtained from the respondent was kept private. To ensure the confidentiality of the participants no names were used for the identification of respondents.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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