

## Original Research Article

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# Factors predicting knowledge on COVID-19 misconceptions and perception of government efforts in Ghana: a cross-sectional study

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## ABSTRACT

**Background:** With the increasing rate of COVID-19 cases and mortality across the globe, countries and most people have adopted precautionary and preventive measures to avoid being infected with the disease. However, several trending myths and misconceptions also floods the world during this era.

**Methods:** A cross-sectional study was conducted among 587 participants (53% males, 78% aged 18-30 years, and 74% having at least tertiary level education) in Ghana, using a convenience snowballing sampling approach. A self-designed questionnaire based on "World Health Organization (WHO) myth-busters" was used for data collection. A logistic regression model was developed to explore variables predicting misconceptions.

**Results:** With about 75% of respondents believing they knew "a lot" about coronavirus, 41% (confidence interval: 37-45) reported a high level of knowledge on the new coronavirus misconceptions. Social media (87%), and television/radio (57%) were the major sources of knowledge. Masters/Ph.D. degree education, National democratic congress (NDC) political members, other political party members, excellent self-health ratings, social media, respondents that anticipate a remedy in 1-5 years, and the perception that the government is "not doing enough" in fighting the pandemic, were reported factors predicting knowledge in a multiple logistic regression model ( $p<0.05$ ). Region of residence, political affiliation, self-health ratings, predicted time of remedy, and level of knowledge on covid-19 misconceptions were also associated with the perception of government efforts ( $p<0.05$ ).

**Conclusion:** Most Ghanaians have much belief in trending misinformation related to the pandemic. Public health education and campaigns should address these misconceptions and encourage the public to seek information from credible sources.

**Keywords:** COVID-19, Ghana, Knowledge, Pandemic, Coronavirus, Misconceptions

## INTRODUCTION

The new coronavirus has now turned into a global pandemic claiming countless number of lives. With the infection and spread originally starting in Wuhan, China, it has spread to numerous countries over the continents of the world with Ghana reporting her first 2 imported cases in March 2020.<sup>1</sup> With no approved curative intervention to curb the new coronavirus pandemic at the moment, the

world has no hope than to adopt preventive measures to contain spread and infection.<sup>2,3</sup> Global public health institutions, governments, international and non-governmental organizations as well as national health systems have a responsibility to help protect the people all over the world and their respective nations from this pandemic. Hence, several governments have adopted interventions and strategies aimed at preventing the spread of infection, morbidities, and mortalities associated with

the new coronavirus pandemic.<sup>4,5</sup> With Ghana commended highly for their efforts in the fight against the new coronavirus by international bodies, government interventions and dedicated policymaking have been key factors.<sup>6,7</sup>

Practicing good preventive measures is also dependent on the population being well informed rather than misinformed about the pandemic.<sup>8</sup> Unfortunately, the fears and panic associated with the pandemic have led to numerous misinformation, misconceptions, and myths about the disease which poses a problem in the fight against the disease.<sup>9</sup> With the easy flow of information in our time, the World Health Organization (WHO) has gathered adequate information to educate the public on trending misinformation and myths around the globe.<sup>10</sup> Based on the WHO “myth busters” we conducted this study to ascertain the knowledge level of Ghanaians regarding these trending myths. For this study, the terms ‘myths’, ‘misinformation’, and ‘misconceptions’ will be used interchangeably to mean the same thing. We also assessed respondent’s point of view on governments and national health system interventions in the fight against the new coronavirus.

## METHODS

### *Setting and recruitment*

The study was conducted from March to April 2020. With Ghana’s president announcing a Nationwide lockdown at key and potential hotspots regions of the country, as a precautionary measure to prevent the spread of the virus, we adopted an online cross-sectional study approach to this study.<sup>11</sup> The study targeted Ghanaian citizens. The sample size for this study was calculated using Ghana’s estimated population of about 30 million, 95% confidence interval, a 50% response distribution rate, and a 5% margin of error.<sup>12</sup> The minimum sample size for 385 was calculated using the Cochran formula delivered by the Raosoft sample size calculator.<sup>13</sup>

The sampling of respondents from the population was conducted using a combination of convenience and snowballing sampling approach. Using social media platforms, respondents were recruited conveniently at will. Also, respondents were asked upon their participation in the study to share the study tool with people they know might be interested in participating. The survey was completed by 587 respondents. Respondents in this study were distributed across all regions of the country.

### *Procedures and materials*

A cross-sectional study design was used for this population-based study. The study tool used in this study was a well-structured questionnaire. The questionnaire for the survey was self-designed by the researcher with questions adapted from the World Health Organisation “myth busters” webpage.<sup>14</sup>

Questions design for this survey assessed the respondent’s knowledge of various trending myths and misconceptions as compiled by WHO at the time of the study. Other sections assessed the respondent’s perception of the government’s efforts towards the fight against coronavirus diseases.

The knowledge assessment section of the questionnaire was modeled as a quiz. Respondents were tested on 12 selected myths by responding if they consider the “myth statements” as “true”, “false” or “don’t know”. A correct response to a myth statement was scored 1, with an incorrect response scoring 0. Upon completion of the survey, respondents received an automatic score on how well they perform on identifying facts from myth/misinformation on the new coronavirus. There was an automated message that educated them on coronavirus and warns them against trending misinformation following the submission of the survey.

The questionnaire included both open and close-ended questions. Designed in the English language, the questionnaire took about 10 to 15 minutes to complete. We used online platforms including Facebook, WhatsApp, and Twitter to disseminate the information to almost all Ghanaians on various social media platforms.

The survey was restricted to participants 18 years and above. The survey began with an open disclaimer/ informed consent form describing the purpose of the study, assurance of strict confidentiality, and participant’s free-will to participate in the study. To ensure anonymity, participants were advised not to disclose personal information in the form of names, telephone numbers, emails, etc. in their responses. Participants had the rights to leave the study at any point in time if they so desired.

### *Data management and statistical analysis*

Statistical analysis was conducted using Stata/IC 14.0 (StataCorp LP, College Station, TX, USA). We conducted a descriptive and inferential analysis to assess distribution and association among key variables.

The outcome variable assessed in this study was the knowledge level of coronavirus misconceptions and perception of government efforts in the fight against the new coronavirus. Using a principal component analysis, we generated knowledge assessment scores using responses from the different categories of myth buster questions. Respondents that scored higher were categorized as having a “high level of knowledge”, coded “1” and those that scored lower than half the principal component analysis (PCA) score we categorize as having a “low level of knowledge”, coded “0”. Also, in assessing the perception of government efforts, we asked the question “Do you think the Ghana government (Ministry of Health-MOH) are doing enough or are not doing enough to prevent the spread of coronavirus in Ghana”. Respondents were required to choose from close-ended

responses including “doing enough”, “not doing enough” and “don’t know”. We conducted a logistic regression to assess the extent of association between the level of knowledge and other possible associated variables. Also, a chi-square analysis was conducted to assess the association between perception of government efforts and other independent variables. All inferential statistics were conducted at a 0.05  $\alpha$  level.

## RESULT

### Socio-demographic characteristics

587 respondents participated in this study. From Table 1, most of the respondents were aged 18-30 years (78%), males (53%), single (77%), Christians (93%), had a diploma/ High National diploma/ Bachelor degree (74%) and mainly resided in the Greater Accra Region (36%)- where the disease prevalence is high. By political affiliation, the majority of the respondents preferred not to reveal their political affiliation (65%). However, the two major political parties in Ghana (The new patriotic party- NPP and the national democratic congress-NDC) were represented by 18% and 4% of the respondents respectively. The majority of respondents rated their current health status as very good.

**Table 1: Sample characteristics of respondents (n=587).**

Variables	Categories	N	%
Age group (in years)	18-30	451	77.8
	31-44	114	19.4
	Above 45	22	3.7
Gender	Female	250	42.6
	Male	313	53.3
Marital status	Single	108	77
	Married/ ever	134	23
	Married		
Religion	Christianity	539	92.45
	Muslim	37	6.35
	other religions	7	1.2
Educational level	SHS/JHS/ primary	69	11.7
	Bachelor/ HND/diploma	431	73.6
	Masters/PhD	86	14.7
Region	Ashanti	82	14.39
	Central	106	18.6
	Greater accra	207	36.32
	Other regions	175	30.7
Political affiliation	NDC	21	3.61
	NPP	106	18.21
	Non-Partisan/floating	75	12.89
	Prefer not to say	380	65.29
	Good/fair	93	15.83
	Very good	269	45.83

### Misconception knowledge assessment

As shown in Table 2, the majority of the respondents (75%) perceived they knew “a lot” about the virus. The major sources of knowledge on covid-19 reported by respondents were social media (87%), and television/radio (57%). Other sources included community health talks, newspaper, online news, and other credible sites. With an average score of 5.8/12 (SD=2.8), the majority (59%) of the respondents scored low on the “myth buster” assessment test. The most-believed myth or misconception among the respondents was that “COVID-19 virus cannot be transmitted in areas with hot and humid climates” whereas “new coronavirus affects only older people” was the least believed myth among respondents. Table 2 shows the order of belief by respondents from most to least believed myth. A principal component analysis was conducted to obtain a continuous score report on the myth assessments. A mid-range cutoff point was used to categorize respondents into a high and low level of knowledge. A higher score was associated with a high level of knowledge and vice versa. Almost 41% (confidence interval, CI: 37-45) of respondents had a high level of knowledge on covid19 myths/misconceptions.

We assessed various factors predicting the respondent’s level of knowledge and awareness on trending coronavirus myths and misconceptions using logistic regression.

Age group, marital status, educational level, region of residence, political affiliation, self-health rating, social media, online news, credible website and journals, time to remedy, and perception of government effort were statistically associated with knowledge on misconceptions of new coronavirus.

There was an increased odd of knowledge on misconceptions with increasing age. Compared to the younger age group (18-30 years), respondents age 31-44 years and above 45 years were 1.6 and 2.3 times more likely to have high knowledge on covid-19 misconception, respectively. This was statistically significant with the 31-44 year age group. Males were 1.2 times more likely to have high knowledge than females ( $p>0.05$ ). Respondents with a single marital status were less likely to score high on the misconception test than those who were married/ever married ( $OR=0.7, 0.45-0.99$ ).

The likelihood of having higher knowledge of misconceptions also increased with increasing educational level. Respondents with a bachelor’s degree ( $OR=1.6, 0.93-2.89$ ) and Masters/Ph.D. ( $OR=4.9, 2.46-9.79$ ) degree were more likely to score higher than those with at most a Senior High School education.

**Table 2: Descriptive summary of respondent's knowledge of new coronavirus (n=587).**

Variable	Frequency	%
<b>Respondents perception of level of knowledge</b>		
<b>A lot</b>	433	75
<b>Only a little</b>	23	4
<b>Some</b>	125	22
<b>Sources of knowledge on covid-19</b>		
Social media (WhatsApp, Facebook, Twitter, Instagram)	509	87
TV/radio	336	57
Community health awareness	98	17
Newspaper	78	13
Online news/internet	25	4
Credible sites (online journals, WHO websites, etc.)	13	2
<b>COVID-19 misconception knowledge/awareness level</b>		
<b>Low knowledge</b>	345	59
<b>High knowledge</b>	242	41
<b>Myth statement</b>		
		Correct responses
		N %
COVID-19 virus can be transmitted in areas with hot and humid climates	179	30
Spraying alcohol or chlorine all over your body can kill the new coronavirus	224	38
Eating garlic helps prevent infection with the new coronavirus	201	34
Taking a hot bath can prevent the new coronavirus disease	240	41
Regularly rinsing your nose with salt-water help prevent infection with the new coronavirus	231	39
Hand dryers are effective in killing the new coronavirus	245	42
Antibiotics are effective in preventing and treating the new coronavirus	297	51
Ultraviolet disinfection lamp can kill the new coronavirus	184	31
The new coronavirus can be transmitted through mosquito bites	384	65
Vaccines against pneumonia can protect you against the new coronavirus	291	50
Cold weather and snow can kill the new coronavirus	402	68
New coronavirus affects only older people	530	90
		Wrong responses
		N %
COVID-19 virus can be transmitted in areas with hot and humid climates	311	53
Spraying alcohol or chlorine all over your body can kill the new coronavirus	220	37
Eating garlic helps prevent infection with the new coronavirus	214	36
Taking a hot bath can prevent the new coronavirus disease	197	34
Regularly rinsing your nose with salt-water help prevent infection with the new coronavirus	178	30
Hand dryers are effective in killing the new coronavirus	156	27
Antibiotics are effective in preventing and treating the new coronavirus	133	23
Ultraviolet disinfection lamp can kill the new coronavirus	115	20
The new coronavirus can be transmitted through mosquito bites	95	16
Vaccines against pneumonia can protect you against the new coronavirus	92	16
Cold weather and snow can kill the new coronavirus	76	13
New coronavirus affects only older people	17	3
		Don't know
		N %
COVID-19 virus can be transmitted in areas with hot and humid climates	97	17
Spraying alcohol or chlorine all over your body can kill the new coronavirus	143	24
Eating garlic helps prevent infection with the new coronavirus	172	29
Taking a hot bath can prevent the new coronavirus disease	150	26
Regularly rinsing your nose with salt-water help prevent infection with the new coronavirus	178	30
Hand dryers are effective in killing the new coronavirus	186	32
Antibiotics are effective in preventing and treating the new coronavirus	157	27
Ultraviolet disinfection lamp can kill the new coronavirus	288	49
The new coronavirus can be transmitted through mosquito bites	108	18
Vaccines against pneumonia can protect you against the new coronavirus	204	35
Cold weather and snow can kill the new coronavirus	109	19
New coronavirus affects only older people	40	7

**Table 3: Factors predicting knowledge of covid-19 misconceptions among respondents.**

Variables	Categories	OR	P value	95% CI	AOR	P value	95% CI
<b>Age group (in years)</b>	18-30						
	31-44	1.6	0.022	1.07 - 2.45	1.1	0.657	0.64 - 2.01
	above 45	2.3	0.055	0.98 - 5.59	2.0	0.221	0.64 - 6.45
<b>Gender</b>	Female						
	Male	1.2	0.221	0.88 - 1.72	1.2	0.321	0.81 - 1.83
<b>Marital status</b>	Married/ ever married						
	Single	0.7	0.049	0.45 - 0.99	0.9	0.642	0.50 - 1.52
<b>Religion</b>	Christianity	0.9	0.897	0.20 - 4.08	0.8	0.841	0.10 - 6.31
	Muslim	1.4	0.681	0.27 - 7.18	1.9	0.575	0.21 - 16.3
	other religions						

Continued.

Variables	Categories	OR	P value	95% CI	AOR	P value	95% CI
<b>Educational level</b>	None/SHS/JHS/primary			-			-
	Bachelor/HND/diploma	1.6	0.082	0.93 - 2.89	2.0	0.052	0.99 - 3.83
	Masters/PHD	4.9	0.000	2.46 - 9.79	3.8	0.001	1.68 - 8.71
<b>Region</b>	Ashanti	0.7	0.207	0.41 - 1.20	1.0	0.925	0.51 - 1.82
	Central	0.5	0.005	0.28 - 0.79	0.6	0.070	0.32 - 1.04
	Greater accra	0.8	0.290	0.53 - 1.20	0.8	0.345	0.48 - 1.28
	Other regions			-			-
<b>Political affiliation</b>	NDC	0.4	0.044	0.12 - 0.97	0.3	0.021	0.07 - 0.81
	NPP	0.5	0.032	0.28 - 0.94	0.6	0.224	0.31 - 1.30
	Non-partisan/floating			-			-
	Prefer not to say	0.4	0.001	0.25 - 0.71	0.5	0.011	0.26 - 0.84
<b>Health self-rating</b>	Good/fair			-			-
	Excellent	1.7	0.035	1.03 - 2.89	2.1	0.016	1.15 - 3.92
	Very good	1.6	0.058	0.98 - 2.67	1.5	0.151	0.85 - 2.77
<b>Social media</b>	No			-			-
	Yes	0.4	0.000	0.25 - 0.66	0.3	0.000	0.14 - 0.53
<b>Community health awareness</b>	No			-			-
	Yes	1.0	0.928	0.63 - 1.52	0.9	0.594	0.49 - 1.49
<b>Local newspaper</b>	No			-			-
	Yes	1.1	0.835	0.64 - 1.70	1.0	0.876	0.51 - 1.74
<b>Online news</b>	No			-			-
	Yes	3.2	0.008	1.35 - 7.49	2.0	0.148	0.77 - 5.38
<b>Credible websites/journals</b>	No			-			-
	Yes	4.9	0.016	1.33 - 18.0	2.1	0.309	0.49 - 9.10
<b>Time to remedy</b>	less than a year			-			-
	1- 5 years	2.0	0.000	1.37 - 2.89	1.9	0.004	1.21 - 2.89
	Never	0.7	0.540	0.24 - 2.07	0.8	0.686	0.20 - 2.88
<b>Perception of Governments Efforts</b>	Doing enough	3.4	0.008	1.37 - 8.54	1.2	0.451	0.77 - 1.77
	Not doing enough	4.2	0.002	1.72 - 10.4	0.3	0.042	0.11 - 0.96
	Don't know			-			-

Table 4: Association between Respondent's Perception of government efforts and other variables.

Variables	Categories	Doing enough [n=233, (40%)]		Not doing enough [n=317, (54%)]		Don't know [n=37, (6%)]	P value
		N	%	N	%		
<b>Age group (in years)</b>	18-30	176	75.5	242	76.3	33	89.2
	31-44	49	21.0	62	19.6	3	8.1
	above 45	8	3.4	13	4.1	1	2.7
<b>Gender</b>	Female	100	44.4	138	44.8	12	40.0
	Male	125	55.6	170	55.2	18	60.0
<b>Marital status</b>	Single	172	75.1	245	77.8	30	81.1
	Married/ ever married	57	24.9	70	22.2	7	18.9
<b>Religion</b>	Christianity	220	94.8	285	90.2	34	97.1
	Muslim	11	4.7	25	7.9	1	2.9
	other religions	1	0.4	6	2.0	0	0.0
<b>Educational level</b>	None/SHS/JHS/PRIMARY	30	12.9	33	10.4	6	16.2
	Bachelor/HND/diploma	167	72.0	234	73.8	30	81.1
	Masters/PHD	35	15.1	50	15.8	1	2.7

Continued.

Variables	Categories	Doing enough [n=233, (40%)]		Not doing enough [n=317, (54%)]		Don't know [n=37, (6%)]		P value
		N	%	N	%	N	%	
Region	Ashanti	38	16.9	35	11.3	9	25.7	0.019
	Central	51	22.7	49	15.8	6	17.1	
	Greater Accra	78	34.7	116	37.4	13	37.1	
	Other regions	58	25.8	110	35.5	7	20.0	
Political affiliation	NDC	7	3.0	14	4.5	0	0.0	0.002
	NPP	60	25.9	41	13.1	5	13.5	
	Non Partisan/Floating	15	6.5	46	14.7	5	13.5	
	Others	5	2.2	4	1.3	0	0.0	
	Prefer not to say	145	62.5	208	66.5	27	73.0	
Health self-rating	Excellent	89	38.2	116	36.6	20	54.1	0.013
	Good/Fair	26	11.2	60	18.9	7	18.9	
	Very good	118	50.6	141	44.5	10	27.0	
Credible Websites/ Journals	No	231	99.1	306	96.5	37	100.0	0.097
	Yes	2	0.9	11	3.5	0	0.0	
Time to remedy	less than a year	175	75.8	198	64.1	27	73.0	0.027
	1- 5 years	50	21.7	102	33.0	8	21.6	
	Never	6	2.6	9	2.9	2	5.4	
Level of Knowledge	Low knowledge	140	60.1	174	54.9	31	83.8	0.002
	High Knowledge	93	39.9	143	45.1	6	16.2	

For the region of residence, respondents from other regions reported increased knowledge on misconceptions compared to those from Ashanti, Central, and Greater Accra region, with statistical significance observed among the Central region category. Per political affiliation, compared to those who consider themselves nonpartisan/floating voters, members of the NPP party were 50% less likely to have high knowledge, whereas members of the NDC party were 60% less likely to have high knowledge on covid-19 misconceptions ( $p<0.05$ ). Respondents with excellent and good self-health ratings were 1.7 and 1.6 times more likely to have high knowledge compared to those with good/fair self-health ratings, respectively.

For respondents' source of information on new coronavirus, respondents who resorted to social media were 60% less likely to have high knowledge of covid-19 misconceptions ( $p<0.05$ ). However, respondents that rely on local newspapers ( $OR=1.1$ ,  $0.64-1.70$ ), online news ( $OR=3.2$ ,  $1.35-7.49$ ), and credible websites/journals ( $OR=4.9$ ,  $1.33-18.0$ ) reported increased odds.

Compared to respondents that believe the new coronavirus will be remedied in less than a year, those who believe the remedy could be obtained within 1-5 years were 2 times more likely to have high knowledge on covid-19 misconceptions ( $p<0.05$ ). Those who believed that a remedy will "never" be found were 30% less likely to have high knowledge of covid-19 misconceptions.

Compared to respondents who believed the "don't know", both respondents who perceived that the government is "doing enough" and "not doing enough" in the fight against the pandemic were more likely to have high knowledge of covid-19 misconceptions ( $p<0.05$ ).

We conducted a multiple logistic regression to generate a model that explains the associated risk and protective factors to knowledge on misconceptions about the new coronavirus. Adjusting for all the other variables in the model, variables including master/Ph.D. degree education, NDC political affiliation, respondent who prefer not to say their political affiliation, excellent self-health ratings, social media, respondents that anticipate a remedy in 1-5 years, and the perception that the government is "not doing enough" against the fight against Coronavirus pandemic were statistically significant in the model.

Respondents with a Master/Ph.D. were 3.8 times more likely to score high on the misconception test compared to those with at most a Senior high school (SHS) qualification, holding all other variables constants. NDC party members were less likely to have high knowledge of covid-19 misconceptions ( $AOR=0.3$ ,  $0.07-0.81$ ). Respondents who prefer not to say their political affiliation were 50% less likely to score high adjusting for all other variables ( $p<0.05$ ).

Respondents who believed they have an excellent health status were 2.1 times more likely to have high knowledge

compared to those with good/fair self-health ratings, holding all other variables constants( $p<0.05$ ).

Relying on social media as a source of knowledge reduces the likelihood to have high knowledge by 70%, holding all other variables constants ( $p<0.05$ ). Respondents that believe the remedy will be found within 1-5 years were 1.9 times more likely to have high knowledge on covid-19 misconceptions compared to those who believe it could be remedied in less than a year, adjusting for all other confounding variables.

With regards to the perception of government efforts and knowledge, respondents that believe that the government is “not doing enough” in the fight against the pandemic reported 70% less likelihood of having high knowledge on covid-19 misconceptions ( $p<0.05$ ) while those that believe the government is “doing enough” were 1.2 times more likely to have high knowledge on covid-19 misconceptions ( $p>0.05$ ), adjusting for other variables.

### ***Perception of government efforts***

The majority of the respondents (54%) reported that the government is “not doing enough” in the fight against the new coronavirus pandemic. About 40% thought the government was “doing enough” to fight the pandemic and 6% reported that they “don’t know”.

We assessed the association between respondent’s perceptions of government effort in the fight against new coronavirus pandemic and other variables investigated in this study. Chi-square analysis showed a statistically significant association between respondent’s perception of government efforts and region of residence, political affiliation, self-health ratings, time to remedy, and level of knowledge on covid-19 misconceptions ( $p<0.05$ ).

## **DISCUSSION**

With improved technology in the modern world than at any other time in history, access to information of any kind is easy.<sup>15</sup> Thus, concerning covid-19, there are several concerns raised with regards to misinformation thrown to the public through various platforms especially social media platforms.<sup>16-19</sup> Even though a higher proportion of Ghanaians believe they knew “a lot” about the pandemic, this study shows most of what they believed as truths are myths. Also, the major source of knowledge on new coronavirus is social media. The high reliance on information from social media could be a possible reason for these misconceptions. This can have great consequences for people who believe in such misconceptions. For example, Ghana, as a country having a warm climate, a myth that the virus cannot survive in high temperatures is misinformation that cannot be overlooked, among other myths. Such a notion if widely spread among the populace will generate negligence among the population.

Assessing the association between level of knowledge and social media use, we observe that respondents that resorted to social media as their major source of knowledge on the new coronavirus pandemic were at a reduced risk of having a high knowledge of the misconceptions. This was evident even when adjusted for all other variables in a multiple logistic regression model. This report is similar in several research studies.<sup>16,17,20</sup> On the other hand, we observed an increased likelihood of high knowledge among respondents who seek knowledge from other sources including online news, credible journals, and websites. This result was not statistically significant in a multiple logistic regression model.

Increasing age was also associated with an increasing level of knowledge on the new coronavirus. This could probably be because the older generations use social media less often.<sup>21,22</sup> Hence, they might be less exposed to these trending myths and misconceptions on social media platforms. Thus, low exposure to these trending myths creates a sense of belief in them. Hence the less possibility of believing these misconceptions as truth and scoring high on the test. Another reason for increased knowledge among the older age group can be explained in terms of their educational level. Older people are likely to have higher or advanced education hence may investigate information before they disbelieve them. This is evident in this study as there was also an observed increased odd of knowledge on the new coronavirus misconceptions among respondents with higher educational qualifications than those with lower educational qualifications. This could probably be because those with higher-level education seek information and trust information from credible sources than those with lower-level education.

Also, single people have been reported to spend more time on social media than those that are married due to several reasons such as loneliness, among others.<sup>23</sup> Single people are likely to be exposed to content on social media than the marriage group. This study reported that singles were less likely to have a higher knowledge of misconceptions than those with married/ever married marital status.

In assessing respondent perception on government efforts in the fight against the pandemic, the majority of the respondents reported that the government is “not doing enough” in the fight against the pandemic. This report might seem strange, as Ghana is one of the countries that has been praised by the international community for its strategic and unrelenting efforts to fighting this pandemic.<sup>11,24,25,26</sup> We observed an association between respondent perception of government efforts and the political affiliation of respondents. Thus, it is likely that responses to the perception of government efforts could be politically motivated. In Ghana, the major political parties are the New Patriotic Party (NPP) and the National Democratic Congress (NDC). With the NPP in power during this pandemic period, there is a possibility that respondents of the NDC may perceive the actions of the rival party as inadequate in the fight against the pandemic. Results from this study also show that the NDC members

are less likely to have a higher knowledge of the misconceptions than the NPP members. This was statistically significant when adjusted for all other variables among the NDC category when possible confounding variables are controlled in a multiple logistic regression model.

There was also an association between the perception of government efforts and the level of knowledge. Respondents who believe the government is “not doing enough” in the fight against the pandemic were more likely to have a higher knowledge of the misconception. When we adjusted for all other confounding variables, we observed reduced odds of association.

As a new pandemic, research studies into understanding the new coronavirus is at the early stages. Thus, findings in this study provide a basis for further research in the area of covid-19 misconceptions and myth assessments in Ghana.

Like several cross-sectional studies, this study has several limitations. Firstly, due to the limited sample representativeness, one must be cautious when generalizing findings in this study to other populations like people of low socioeconomic status, living in rural areas, and limited access to the internet.

Also, there could be the possibility of contamination of responses as respondents were not monitored by the researcher. More than one person may for instance answer and submit a response. Also, with the survey completed by most people with tertiary education, it calls into question the level of misconceptions created among those below this academic grade.

## CONCLUSION

In conclusion, this study shows that on average Ghanaians believe 50% of the myths and misconceptions of covid19. Hence, public health agencies and organizations should address these misconceptions and encourage good preventive practices as part of public education to end the covid-19 pandemic. There should also be calls for the public to seek valid information from credible and reliable sources as most information from social media may be unauthentic. Also, most public health education programs related to covid-19 misconceptions should take into consideration possible predictive factors as reported in this study.

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