

COVID-19 Anxiety and Associated Factors among Finalist Undergraduate Science Teachers

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Abstract: *The advent of the COVID-19 pandemic inflicted excruciating psychological problems and elevated social concerns globally, including anxiety among university students. This study assessed the prevalence and factors associated with COVID-19 anxiety among finalist undergraduate students pursuing a degree in bachelor of science with education. A cross-sectional survey utilised data from 132 undergraduate science teachers at a university of science and technology recruited by census technique. Self-report data were obtained using the COVID-19 Anxiety Scale. Descriptive and logistic regression statistics were used to analyse the data. The prevalence of COVID-19 anxiety was found at 11.36%. Career aspects in pursuing postgraduate studies and a close person with a diagnosis of COVID-19 were independent factors associated with COVID-19 anxiety. Students with an intention to pursue postgraduate studies indicated a higher likelihood of COVID-19 anxiety (AOR=4.8, 95% CI: 1.04-21.69, $p < .05$). Furthermore,*

students that had no close person diagnosed with COVID-19 indicated a lower likelihood of COVID-19 anxiety (AOR=0.1, 95% CI: 0.02-- 0.63, $p < .05$). Higher COVID-19 anxiety was associated with lower future academic aspirations. Hence, knowledge of acquaintance diagnosed with COVID-19 was associated with an increased chance of developing COVID-19 anxiety.

Keywords: Correlates, COVID-19 anxiety, Undergraduate science students, Pandemic, Uganda.

1. Introduction

The Corona Virus (COVID-19) Pandemic has swept the world in a series of waves, causing a lot of anxiety and other challenges. With the advent of the pandemic, a cross-section of people felt that their health and future plans were under threat. Undoubtedly, the anxiety arising from the pandemic remains high globally. Moreover, pandemics that involve highly infectious diseases like COVID-19 usually result in mental health challenges, such as fear and anxiety (Lee, 2020; Wango, Wairire, & Kimamo, 2020), and may interfere with the behaviour and overall well-being of the populace (Camero, 2020; Lee, 2020). Hence, peoples' ability to cope with threatening events, in this case, the COVID-19 pandemic, remains topical (Koverova, Raczova, & Holevova, 2021). In that regard, the question remains on the identification of the individuals that feel vulnerable and anxious about the pandemic and the correlates of the concomitant anxiety. So, Grubic, Badovinac, and Johri (2020) recommend a conscientious investigation of the psychological effects of the pandemic on students for early intercession.

According to the World Health Organization, COVID-19 emerged from China in December 2019 and spread extensively to other countries (Omodan, 2020a; Omodan, 2020b), including the first case in Uganda in March 2020. That situation could have led to anxiety, particularly among those groups that constantly interact with many people, teachers or upcoming teachers inclusive. Moreover, the pandemic inflicted mental health problems among students, and elevated emotions regarding the future of their studies (Huckins et al., 2020; Wathélet et al., 2020). Literature shows that anxiety is one such mental health concern afflicted by the COVID-19 pandemic (Arslan, Yıldırım, & Aytac, 2020; Husky, Kovess-Masfety, & Swendsen, 2020; Islam, Barna, Raihan, Khan, & Hossain, 2020; Wang et al., 2020). According to Lee (2020), Corona Virus Anxiety is an emotion felt when one is worried about the COVID-19 pandemic. Presumably, COVID-19 increased anxiety

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among already stressed undergraduate students (Huckins et al., 2020). Moreover, students were more anxious during the initial COVID-19 outbreak than they were during similar time frames before the outbreak (Huckins et al., 2020; Karlovitch, 2020). For instance, higher anxiety was reported among Chinese university students after the COVID-19 outbreak (Ma & Miller, 2020; Wang & Zhao., 2020). So, this study set out to understand the rate of COVID-19 anxiety and the characteristics of finalist teachers that correlate with COVID-19 anxiety. Knowledge of COVID-19 anxiety among teachers in the making was considered necessary to mitigate the inadvertent impact of the pandemic on the teachers' gameness and performance in the field. That, in turn, would overturn the multiplier effects on other people that teachers constantly interact with, such as pupils.

Various reports regarding the rate of COVID-19-related mental health challenges among college students indicate a range from severe to mild cases. To that end, more than 33% of the students in some universities were found to have COVID-19 pandemic-related mental health problems (Camero, 2020), and the majority of the students experienced heightened anxiety and depression (Camero, 2020; Islam et al., 2020). Further, around 18.1% of the students suffered severe COVID-19 anxiety (Islam et al., 2020). A meta-analysis of several studies indicates that 31.9% of the students suffered COVID-19 anxiety during the pandemic-instigated restrictions (Arslan et al., 2020). For instance, a majority (60.2%) of the students believed their level of anxiety increased during the COVID-19 confinement period (Husky et al., 2020).

Moreover, in another study regarding COVID-19 anxiety level in Saudi Arabia, Khoshaim et al. (2020) found that 35% of the students ever had moderate to extreme anxiety. Further, 38.5% of the students in the US had moderate to severe anxiety, and more than 70% accepted the increase in anxiety had occurred after the corona virus outbreak (Wango et al., 2020). Also, about 44.6% of the students in Bangladesh suffered from severe anxiety, 48.4% were moderately anxious, and a mere 3.8% had mild anxiety (Dhar, Ayittey, & Sarkar, 2020). However, 12.3% of the participants in a related study were in the normal range, 30.5% were in the mild, 31.1% were moderate, while 26.1% had severe anxiety (Irfan, Shahudin, Hooper, Akram, & Ghani, 2020). In the same way, Lingawi and Afifi (2020) found 17% moderate and 4% severe anxiety among dental students. According to a study by Cao et al. (2020), the biggest percentage of students, 21.3%, had mild anxiety. Definitely, such divisions in the levels of COVID-19 anxiety could predict a manifest of an array of the accompanying correlates in the contexts in which the corresponding studies were rooted.

Accordingly, diversity in the COVID-19 anxiety correlates, demographic or not, stimulates a fresh debate about the way college students in different settings respond to pandemic anxiety. To that end, college students that did not relocate during the COVID-19 lockdown had higher odds of increased anxiety, as compared to those who moved away from their usual residences (Husky et al., 2020). Similarly, students' location during the time of the pandemic indirectly predicted corona virus anxiety (Chen, Cheng, & Wu, 2020). Students who lived in urban setting had higher chances of suffering from COVID-19 related psychological problems (Tadesse et al., 2020), including anxiety.

Further, literature shows that age is associated with corona virus anxiety. In that regard, Nwachukwu et al. (2020) found that the rates and mean scores of COVID-19 anxiety in a general population in Canada decreased from younger to older age. Also, Pearman, Hughes, Smith, & Neupert (2020) observed that anxiety about developing COVID-19 stress was more likely in older, relative to younger adults and that COVID-19 anxiety could be a risk factor for stress among older adults. Moreover, Khoshaim et al. (2020) found that students' age predicted corona virus anxiety.

As regards students' sex, a study found that women were 16% more likely than men to say that anxiety related to corona virus pandemic had a negative impact on their mental health (Hamel & Salganicoff, 2020). So, sex was associated to COVID-19 anxiety and mental distress among students (Chen, Cheng, & Wu, 2020; Khoshaim et al., 2020; Patsali et al., 2020; Rahman et al., 2020). As such, being a woman predicted a higher level of psychological impact of COVID-19 (Browning et al., 2021; Tadesse et al., 2020). In essence, women were more fearful of the corona virus pandemic than men (Rodríguez-Hidalgo, Pantaleón, Dios, & Falla, 2020). Another study in France shows that being female was more associated with negative COVID-19-related mental health outcomes

(Wathelet et al., 2020). However, Lingawi & Afifi (2021) did not find a significant relationship between gender and corona virus anxiety among dental students.

In investigating other correlates, Khoshaim et al. (2020) found that level of education of college students predicted COVID-19 anxiety. Moreover, being in senior classes predicted anxiety among students (Ma & Miller, 2020). Nevertheless, the level of study was not significantly associated with anxiety among dental students (Lingawi & Afifi, 2020). A similar study done among high school students shows that level of study directly predicted anxiety symptoms (Chen et al., 2020). Furthermore, students' concerns about scholastic performance (Son, Hegde, Smith, Wang, & Sasangohar, 2020) and anxiety about academic days during and after the pandemic were positively associated with anxiety (Dhar et al., 2020). Other than that, it was found that students who had relatives or friends infected with COVID-19 were more likely to be at increased risk of corona virus-related mental health challenges (Aylie, Mekonen, & Mekuria, 2020; Ma et al., 2020). Furthermore, students who lived with their parents and whose relatives had contracted corona virus were at a high risk of anxiety (Aylie et al., 2020). Browning et al. (2021) found that the levels of psychological impact were higher among students who knew someone infected with COVID-19.

In short, literature shows that several other factors predict corona virus pandemic anxiety among college students. For instance, exposure of more than one day to social media was associated with Corona virus-related anxiety (Aylie et al., 2020), and students with low perceived social support had higher odds of experiencing anxiety than those with high perceived social support (Ma et al., 2020). Also, consumption of alcohol among students predicted higher levels of fear among students (Rahman et al., 2020).

As noticed in the literature, a collection of studies exploring levels of COVID-19 anxiety and associated correlates are situated mainly in Asia the West. There was a paucity of empirical evidence and scholarly debate underpinning the presence, extent, and correlates of corona virus-related anxiety among college students in Sub-Saharan Africa. Not only do such lacunae exacerbate students' academic and social challenges, they make interventions in students' mental health harder to estimate as well. This study builds on the gaps to ask: what is the level and correlates of corona virus anxiety among finalist undergraduate teachers of science? This study provides a foundation upon which future debate regarding COVID-19 and accompanying maladies on students could be anchored.

2. Methodology

A correlational design was used to rapidly assess the level and correlates of COVID-19 anxiety among finalist science student-teachers. The design helped in establishing associations among variables, and enabled analysis of the associations among a large number of variables (Gavin, 2008). A quantitative technique was used in data collection and analysis. The present study was conducted among finalist undergraduate teachers of science at a university of science and technology located in South-western Uganda. The teachers that train in that institution qualify in teaching sciences - biology, chemistry, physics and mathematics. At the first COVID-19 lockdown in March 2020, 133 finalist pre-service teachers were in that institution. At that time, the pre-service teachers were in the advanced stages of completing their program, and placements were underway for field deployment in the final practicum. All those arrangements were upset by the advent of the COVID-19 pandemic and the associated restrictions. Teachers constitute part of the population that Government mentioned as vulnerable to COVID-19, and so were the pre-service teachers under field placement. That could be within the nature of their job, interacting with many students from different areas.

Initially, students in institutions of higher learning were in the lockdown that had started in March 2020. The initial lockdown was lifted in phases. For that, prospective participants were found at the campus in December 2020, after the final year students had been released in a phase-like manner to complete their studies. All finalist (third year) undergraduate teachers of science were considered in a census. The census technique was considered since the number of study subjects was small. Factors (independent variables) and COVID-19 anxiety (outcome variable) were investigated during the study. Socio-demographic and other predictor variables were measured on different scales, depending on whether they were categorical or non-categorical, and following

Islam et al. (2020). For instance, were asked: sex ('male', 'female'), current students' age, sponsorship status ('private', 'government'). Other items regarding basic knowledge were included. For instance; knowledge of a close person or acquaintance (relative, friend, leader, etc.) who had tested positive for COVID-19 ('Yes', 'No'), knowledge of a person (relative, friend, leader, etc.) who had died of COVID-19 ('Yes', 'No'), comfortability in attending face-to-face lectures after the COVID-19 lockdown ('Yes', 'No'), concerns regarding the future of studies during the COVID-19 lockdown ('Yes', 'No').

The outcome variable was measured using the Corona Virus Anxiety Scale (CAS) as developed by Lee (2020). The CAS is a five-item scale, e.g., "I felt dizzy, light-headed, or faint when I read or listened to news about the corona virus" (Arslan et al., 2020). The scale on each item was rated on five points to reflect the frequency of each symptom (Lee, 2020). The scale points on each item range from zero (not at all) to four (nearly every day) in the preceding two weeks. The scale has been demonstrated to have good psychometric properties across different populations (Arslan et al., 2020). For instance, it is reliable ($\alpha > .90$), with diagnostic properties of 90% sensitivity and 85% specificity (Lee, 2020). In the current study, the scale had a Cronbach alpha reliability coefficient of .76. Further, it is consistent with similar scales, such as the Generalised Anxiety Disorder-7 (Lee, 2020). The CAS scale is scored dichotomously. A score of ≥ 9 indicates problematic symptoms of COVID-19-related anxiety. A score < 9 indicates normal anxiety symptoms.

Data were imported into Stata version 15.0. One questionnaire of the 133 had incomplete data on the entire CAS and was excluded, leaving 132 eligible questionnaires. Prevalence of COVID-19 anxiety was expressed as a proportion with a score of ≥ 9 to the total sample. We assessed variable relationships using logistic regressions. Factors with a p-value $< .05$ were considered as independent factors associated with COVID-19 anxiety among undergraduate students. However, all the factors with $p < .3$ were entered into the multivariable logistic regression model to adjust for probabilities of confounding (Bursac, Gauss, Williams, & Hosmer, 2008).

2.1 Ethical Considerations and Acknowledgments

Participants' consent was sought verbally, plus an explanation of the study's aim before they responded to the study tool. A statement was enclosed regarding possible arousal of emotions by some of the items, and participants were encouraged to approach the principal researcher in confidence for help in case such emotions arose. The participants were thanked for generously supplying responses to the study instrument.

3. Presentation of Results

This study aimed at establishing the level and correlates of corona virus anxiety among finalist undergraduate science teachers. The study used quantitative techniques in data collection and analysis. Table 1 presents descriptive characteristics, while Tables 2 and 3 present bivariable and multivariable logistic regression results.

Table 1: Characteristics of the Participants (N = 132)

Characteristics		Frequency	Percent
School status	Privately sponsored	48	36.36
	Government sponsored	84	63.64
Postgraduate aspirations	Yes	104	78.79
	No	28	21.21
Gender	Males	105	79.55
	Females	27	20.45
Age in years	<25 years	110	83.33
	25 years +	22	16.67
GPA scores	Pass	4	3.03
	Lower	59	44.70
	2nd upper	67	50.76
	First class	2	1.52
Subject specialisation	Chemistry major	27	20.45
	Mathematics major	38	28.79

	Physics major	19	14.39
	Biology major	48	36.36
Religious affiliation	Anglican	46	34.85
	Roman Catholic	49	37.12
	Others	37	28.03
Residence	Private hostel	117	88.64
	University hostel	11	8.33
	Home	4	3.03
Lockdown place	At home in urban setting	29	21.97
	At home in village/rural setting	60	45.45
	Away from home in urban setting	43	32.58
Level of computer literacy	None	10	7.58
	Beginner	99	75.00
	Intermediate	23	17.42
Readiness for face to face lectures	Yes	92	69.70
	No	40	30.30
Alcohol use in past 6 months	Yes	32	24.24
	No	100	75.76
Lockdown comfort	Yes	103	78.03
	No	29	21.97
Acquaintance COVID-19 positive	Yes	15	11.36
	No	117	88.64
Acquaintance dead of COVID -19	Yes	6	4.55
	No	126	95.45
Source of COVID-19 information	Print media	38	28.79
	e-media	68	51.52
	Internet	12	9.09
	Others	14	10.61
Concerns about future of studies	No	131	99.24
	Yes	1	0.76

Table 1 shows that of the 132 undergraduate teachers enrolled, the majority were aged <25 years (83.3%), preferred to undertake postgraduate studies (78.7%) and had private hostel residence (88.6%). Additionally, most of the undergraduates would go for School Practice (78.0%), had not taken alcohol in the past 6 months (75.8%), were not comfortable in lockdown (78.0%), did not have a COVID-19 positive acquaintance (88.6%), almost none had acquaintance who had died of COVID-19 (95.4%). Almost all participants had concerns with continuity of their studies (99.2%).

3.1 Prevalence and Correlates of COVID-19 Anxiety and its Associated Factors among Undergraduate Students

The prevalence of COVID-19 anxiety among undergraduate teachers was established as a percentage of the overall number of participants. Bivariable and multivariable logistic regressions were used to estimate the correlates of Covid-19 anxiety among the participants. The analyses were recorded in Table 2 and Table 3.

Table 2: Prevalence and Bivariable analysis results of the factors associated with COVID-19 anxiety among undergraduate students

Variables		Level of COVID-19 Anxiety		UOR(95%CI)	p-value
		Anxiety, (n=15, 11.36%) n(%)	No Anxiety (n=117, 88.6%) n(%)		
Status at university	Private sponsored	4(8.33)	44(91.67)	1.0	0.660
	Government sponsored	9(10.71)	75(89.29)	1.3(0.38-4.54)	
Postgraduate	Yes	8(7.69)	96(92.31)	1.0	0.119
	No	5(17.86)	23(82.14)	2.6(0.78-8.72)	
Gender	Males	11(10.48)	94(89.52)	1.0	0.635
	Females	2(7.41)	25(92.59)	0.7(0.14-3.29)	
Age	<25 years	12(10.91)	98(89.09)	1.0	0.377
	25 years +	1(4.55)	21(95.45)	0.4(0.48-3.16)	
GPA	Pass	1(25.00)	3(75.00)	1.0	0.229
	Lower	4(6.78)	55(93.22)	0.2(0.02-2.60)	
	2nd upper/ First class	7(10.45)	60(89.55)	0.4(0.03-3.83)	
Teaching subject Specialization	Chemistry major	4(14.81)	23(85.19)	1.0	0.606
	Mathematics major	4(10.53)	34(89.47)	0.7(0.15-2.98)	
	Physics major	2(10.53)	17(89.47)	0.7(0.11-4.13)	
	Biology major	3(6.25)	45(93.75)	0.4(0.08-1.86)	
Religious	Anglican	7(15.22)	39(84.78)	1.0	0.290
	Roman Catholic	4(8.16)	45(91.84)	0.5(0.13-1.81)	
	Others	2(5.41)	35(94.59)	0.3(0.06-1.63)	
Residence	University	12(10.26)	105(89.74)	1.0	0.663
	Elsewhere	1(6.67)	14(93.33)	0.6(0.06-5.18)	
Lockdown place	At home in urban setting	1(3.45)	28(96.55)	1.0	0.304
	At home in village/rural setting	6(10.00)	54(90.00)	3.1(0.36-27.13)	
	Away from home in urban setting	6(13.95)	37(86.05)	4.5(0.51-39.89)	
Computer literacy	None	3(30.00)	7(70.00)	1.0	0.060
	Beginner	9(9.09)	90(90.91)	0.2(0.05-1.06)	
	Intermediate	1(4.35)	22(95.65)	0.1(0.01-1.19)	
Face-to-face lectures	Yes	10(10.87)	82(89.13)	1.0	0.553
	No	3(7.50)	37(92.50)	0.7(0.17-2.56)	
Alcoholic beverage	Yes	4(12.50)	28(87.50)	1.0	0.565
	No	9(9.00)	91(91.00)	0.7(0.19-2.42)	
Comfort with face-to-face lectures	Yes	9(8.74)	94(91.26)	1.0	0.424
	No	4(13.79)	25(86.21)	1.7(0.48-5.88)	
Acquaintance positive with COVID	Yes	4(26.67)	11(73.33)	1.0	0.030*
	No	9(7.69)	108(92.31)	0.2(0.06-0.87)	
Close-positive with COVID	Yes	1(16.67)	5(83.33)	1.0	0.572
	No	12(9.52)	114(90.48)	0.5(0.57-4.88)	
Source of COVID-19 information	Print media	5(13.16)	33(86.84)	1.0	0.209
	e-media	4(5.88)	64(94.12)	0.4(0.10-1.64)	
	Internet	3(25.00)	9(75.00)	2.2(0.44-11.01)	
	Others	1(7.14)	13(92.86)	0.5(0.05-4.77)	

Note: Significance was set at $p < .05$; GPA = Grade Point Average (computed according to the university prospectus); UOR = Unadjusted Odds Ratio; CI = Confidence Interval.

Results in Table 2 show that the level of COVID-19 anxiety among the 132 undergraduate teachers was 11.4%. The only significant factor for COVID-19 anxiety in the bivariable regressions was knowledge of acquaintance diagnosed with COVID-19. Those who knew no one diagnosed with COVID-19 were 0.2 times less likely to report COVID-19 anxiety (UOR = 0.2, 95%CI: 0.06-0.87, $p < .05$).

Table 3: Multivariate analysis results of the factors associated with COVID-19 anxiety among undergraduate students

Variables		AOR (95%CI)	p-value
GPA	Pass	1.0	
	Lower	0.4(0.01-10.68)	0.559
	2nd upper	0.6(0.02-19.39)	0.767
	First class	110.0(0.14-860.23)	0.280
Plan for postgraduate	Yes	1.0	
	No	4.8(1.04-21.69)	0.044*
Religion	Anglican	1.0	
	Catholics	0.4(0.08-2.23)	0.310
	Others	0.2(0.03-1.67)	0.143
Level computer	None	1.0	
	Beginner	0.2(0.02-0.63)	0.143
	Intermediate	0.1(0.01-2.20)	0.150
Friend positive	Yes	1.0	
	No	0.1(0.02-0.63)	0.012*
Source of information	Print media	1.0	
	e-media	0.6(0.09-3.34)	0.527
	Internet	7.0(0.72-68.96)	0.094
	Others	0.8(0.04-17.14)	0.891

Note: Significance was set at p-value $< .05$; AOR = Adjusted Odds Ratio; CI = Confidence Interval.

In the multivariate analyses, interest in pursuing postgraduate studies and having acquaintance diagnosed with COVID-19 were the independent factors significantly associated with COVID-19 anxiety. Ideally, undergraduate teachers without postgraduate aspiration had a higher likelihood of COVID-19 anxiety (AOR=4.8, 95%CI: 1.04-21.69, $p < .05$). Those who did not have acquaintances diagnosed with COVID-19 indicated a lower likelihood of COVID-19 anxiety (AOR=0.1, 95%CI: 0.02-0.63, $p < .05$).

4. Discussion

This study sought to understand the prevalence and factors associated with COVID-19 among finalist pre-service teachers. Bivariable and multivariate logistic regressions were the major analytic strategy. Table 2 shows that the level of COVID-19 anxiety was 11.4%. The findings indicate that intention to seek postgraduate studies and knowledge of acquaintances who had tested positive for COVID-19 were significant correlates of COVID-19 anxiety. In part, the prevalence was lower than the results found in other countries. Literature about Corona-related mental health problems among college students in different countries indicated variations from severe to mild cases. To that end, more than 33% of the students in some universities were found to have COVID-19 pandemic-related mental health problems with high levels of anxiety (Camero, 2020; Islam et al., 2020). Other sources indicate that during the pandemic-instigated restrictions, 31.9% of the college students had suffered COVID-19-related anxiety (Arslan et al., 2020).

Furthermore, 60.2% of the college participants in other studies believed their level of anxiety increased during the COVID-19 (Husky et al., 2020). In Saudi Arabia, it was found that 35% of the students ever had moderate to extreme anxiety (Khosshaim et al., 2020), while 38.5% of the students in the US had moderate to severe anxiety attributable to the corona virus outbreak (Wang et al., 2020). In Bangladesh, students with a high percentage of 44.6% had severe anxiety, 48.4% moderate anxiety, and only a small percentage of 3.8% suffered mild anxiety (Dhar, Ayittey, & Sarkar, 2020). However, in a related study, it was found that 14.1% of the students in Bangladesh experienced

extreme COVID-19 anxiety (Hoque et al., 2021). That percentage was somewhat comparable with the rate of anxiety established in the present study.

Hence, comparatively low percentages of COVID-19 anxiety were established as well. In other literature, about 17% of the dental students had moderate and 4% severe Corona virus-related anxiety (Lingawi & Afifi, 2021). The comparatively low prevalence could be attributed to the low morbidity during the initial wave of COVID-19 in Uganda. Also, the death toll in the first wave was low and could not be a cause for alarm.

As regards to intention to pursue postgraduate qualifications, students without intention to pursue the qualifications had higher odds of COVID-19 anxiety than those with the intentions. Perhaps, the finalists who did not intend to obtain graduate qualifications were ready to start on the teaching career in schools where more chances of contracting the virus were envisaged. This result could trace its roots from the information regarding COVID-19 transmission in Uganda and the subsequent activities to curb transmission. It happened that the information aired on the different media predicted rapid transmission of the virus among pupils and teachers in the most often congested schools.

Moreover, students with knowledge of acquaintance who had tested positive for the virus were at higher odds of having COVID-19 anxiety. The possible explanation could be that social interaction among peers in college is usually high, and identifying a peer or friend with the infection could have signalled danger of possible infection. In cohorts with the present findings, literature shows that significantly higher anxiety levels were found among students who knew someone infected with COVID-19 (Browning et al., 2021). On the other hand, the study did not confirm literature that shows students whose relatives had contracted corona virus were at risk of anxiety (Aylie et al., 2020).

Regarding gender and other demographics, the present study contrasts previous research that found significant results. For instance, contrary to this study, women were more likely than men to attribute their anxiety to COVID-19 (Hamel & Salganicoff, 2020). Further contrasting findings regarding gender were reported by a conundrum of studies (e.g., Chen et al., 2020; Khoshaim et al., 2020; Patsali et al., 2020; Rahman et al., 2020). In such studies, female gender was associated with higher changes of COVID-19 anxiety (Browning et al., 2021; Rodríguez-Hidalgo et al., 2020; Tadesse et al., 2020; Wathelet et al., 2020). In further contrast to the present study findings, Hoque et al. (2021) found significant gender differences in COVID-19 anxiety among college students. In investigating other correlates of COVID-19 anxiety, Hoque and others further identified significance in a residential area, academic year, current accommodation, and access to high-speed internet. These or similar correlates were non-significant in the present study. The difference could be rooted in the larger and broad-based sample included in the former study.

5. Conclusions and Recommendations

The findings indicate that higher COVID-19 anxiety was associated with lower future academic aspirations. Furthermore, knowledge of diagnosis of acquaintance with COVID-19 was associated with an increased chance of developing COVID-19 anxiety. Career counselling could take account of the effect of COVID-19 on final students' aspirations. The social context in which students operate could form part of the emphasis regarding COVID-19 prevention procedures.

5.1 Limitations and Implications for Further Research

This study considered a small sample of only finalist pre-service teachers that had been permitted to resume studies at the point of data collection. Probably, the variations observed in the present study results could take another dimension if more students from different programs were included. So, future studies could consider rolling out to varied groups and numbers of students for possible superior observations. Moreover, this study employed only qualitative techniques in understanding the study subject. So, further studies could benefit from a multi-technique approach to this important subject of research. In addition, the problems of a cross-sectional design in its deficiency to estimate causality could not be overlooked. Further studies could consider better approaches that provide directional relationships among the variables.

5.2 Author Contributions and Disclosure of Conflict of Interest

Aloysius Rukundo coined the study idea, wrote the proposal and collected the data. He participated in data collection, coding, cleaning, analysis, and discussion of the findings. He edited the final paper for submission. David Santson Ayebare participated in data entry, analysis, and interpretation. He participated in drafting the manuscript. Therefore, the authors declare no potential conflict of interest.

References

- Arslan, G., Yıldırım, M., & Aytac, M. (2020). Subjective vitality and loneliness explain how coronavirus anxiety increases rumination among college students. *Death Studies*, 1-10. <https://doi.org/10.1080/07481187.2020.1824204>
- Aylie, N. S., Mekonen, M. A., & Mekuria, R. M. (2020). The Psychological Impacts of COVID-19 Pandemic Among University Students in Bench-Sheko Zone, South-west Ethiopia: A Community-based Cross-sectional Study. *Psychol Res Behav Manag*, 13, 813-821. <https://doi.org/10.2147/PRBM.S275593>
- Browning, M. H., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., et al. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *Plos One*, 16(1), e0245327. <https://doi.org/10.1371/journal.pone.0245327>
- Bursac, Z., Gauss, C. H., Williams, D. K., & Hosmer, D. W. (2008). Purposeful selection of variables in logistic regression. *Source Code for Biology and Medicine*, 3(17), 2008. <https://doi.org/10.1186/1751-0473-3-17>
- Camero, K. (2020). Mental health disorders surge among college students returning to campus, survey finds. Sacramento: The Sacramento. <https://www.sacbee.com/news/coronavirus/article245111930.html>
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, 112934. <https://doi.org/10.1016/j.psychres.2020.112934>
- Chen, S., Cheng, Z., & Wu, J. (2020). Risk factors for adolescents' mental health during the COVID-19 pandemic: a comparison between Wuhan and other urban areas in China. *Globalisation and Health*, 16(1), 1-11. <https://doi.org/10.1186/s12992-020-00627-7>
- Dhar, B. K., Ayithey, F. K., & Sarkar, S. M. (2020). Impact of COVID-19 on Psychology among the University Students. *Global Challenges*, 4(11), 2000038. <https://doi.org/10.1002/gch2.202000038>
- Gavin, H. (2008). Understanding research methods and statistics in psychology. SAGE.
- Grubic, N., Badovinac, S., & Johri, A. M. (2020). Student mental health in the midst of the COVID-19 pandemic: A call for further research and immediate solutions. *International Journal of Social Psychiatry*, 66(5), 517 - 518. <https://doi.org/10.1177/002076-4020925108>
- Hamel, L., & Salganicoff, A. (2020, April 6). Is There a Widening Gender Gap in Coronavirus Stress? Henry J Kaiser Family Foundation. <https://www.kff.org/policy-watch/is-there-widening-gender-gap-in-coronavirus-stress/>
- Hoque, N., Hannan, A., Imran, S., Alam, M. A., Matubber, B., & Saha, S. M. (2021). Anxiety and its determinants among undergraduate students during e-learning in Bangladesh amid Covid-19. *Journal of Affective Disorders Reports*, 6(2021), 100241. <https://doi.org/10.1016/j.jadr.2021.100241>
- Huckins, J. F., daSilva, A. W., Wang, W., Hedlund, E., Rogers, C., Nepal, S. K., . . . Campbell, A. T. (2020). Mental Health and Behavior of College Students During the Early Phases of the COVID-19 Pandemic: Longitudinal Smartphone and Ecological Momentary Assessment Study. *Journal of Medical Internet Research*, 22(6), e20185. <https://doi.org/10.2196/20185>
- Husky, M. M., Kovess-Masfety, V., & Swendsen, J. D. (2020). Stress and anxiety among university students in France during Covid-19 mandatory confinement. *Comprehensive Psychiatry*, 102(2020), 2020. <https://doi.org/10.1016/j.comppsy.2020.152191>
- Irfan, M., Shahudin, F., Hooper, V. J., Akram, W., & Ghani, R. B. (2020). The psychological impact of coronavirus on university students and its socio-economic determinants in Malaysia. *BMJ Yale*, <https://doi.org/10.1101/2020.10.27.20220723>
- Islam, A., Barna, S. D., Raihan, H., Khan, N. A., & Hossain, T. (2020). Depression and anxiety among university students during the COVID-19 pandemic in Bangladesh: A web-based cross-sectional survey. *PLoS ONE*, 15(8), e0238162. <https://doi.org/10.1371/journal.pone.0238162>
- Karlovitch, S. (2020, August 4). COVID-19 Pandemic Has Major Impact on Mental Health of College Students. *Pharmacy Times*. <https://www.pharmacytimes.com/news/covid-19-pandemic-has-major-impact-on-mental-health-of-college-students>

- Khoshaim, H. B., Al-Sukayt, A., Chinna, K., Nurunnabi, M., Sundarasan, S., Kamaludin, K., et al. (2020). Anxiety Level of University Students During COVID-19 in Saudi Arabia. *Frontiers in Psychiatry*, 11, 1-7. <https://doi.org/10.3389/fpsy.2020.579750>
- Koverova, M., Raczova, B., & Holevova, B. K. (2021). Predictors of Anxiety, Stress, and Concern of COVID-19 Infection in Older Adults During the First and the Second Waves of the COVID-19 Pandemic in Slovakia. *Gerontology & Geriatric Medicine*, 7, 1-12. <https://doi.org/10.1177/23337214211047642>
- Lee, S. A. (2020). Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. *Death Studies*, 44(7), 393-401. <https://doi.org/10.1080/07481187.2020.1748481>
- Lingawi, H. S., & Afifi, I. K. (2020). COVID-19 associated stress among dental students. *The Open Dentistry Journal*, 14(2020), 554-562. <https://doi.org/10.2174/1874210602014010554>
- Ma, H., & Miller, C. (2020). Trapped in a Double Bind: Chinese Overseas Student Anxiety During the COVID-19 Pandemic. *Health Communication*, 36(13), 1598-1605. <https://doi.org/10.1080/10410236.2020.1775439>
- Ma, Z., Zhao, J., Li, Y., Chen, D., Wang, T., Zhang, Z., et al. (2020). Mental health problems and correlates among 746 217 college students during the coronavirus disease 2019 outbreak in China. *Epidemiology and Psychiatric Sciences*, 29(e181), 1-10. <https://doi.org/10.1017/S2045796020000931>
- Nwachukwu, I., Nkire, N., Shalaby, R., Hrabok, M., Vuong, W., Gusnowski, A., . . . Agyapong, V. (2020). COVID-19 Pandemic: Age-Related Differences in Measures of Stress, Anxiety and Depression in Canada. *International Journal of Environmental Research and Public Health*, 17(17), 2020. <https://doi.org/10.3390/ijerph17176366>
- Omodan, B. I. (2020a). The Vindication of Decoloniality and the Reality of COVID-19 as an Emergency of Unknown in Rural Universities. *International Journal of Sociology of Education*. 20, 1-26. <http://doi.org/10.17583/rise.2020.5495>
- Omodan, B. I. (2020b). Managing the Psycho-Social Vacuum of COVID-19 among Rural Learners through Ubuntu. *Journal of Educational and Social Research*, 10(6), 266-278. <https://doi.org/10.36941/jesr-2020-0125>
- Patsali, M. E., Mousa, D., Papadopoulou, E. V., Konstantina, K. K., Kaparounaki, C. K., Diakogiannis, I., et al. (2020). University students' changes in mental health status and determinants of behavior during the COVID-19 lockdown in Greece. *Psychiatry Research*, 292, 113298. <https://doi.org/10.1016/j.psychres.2020.113298>
- Pearman, A., Hughes, M. L., Smith, E. L., & Neupert, S. D. (2020). Age Differences in Risk and Resilience Factors in COVID-19-Related Stress. *The Journals of Gerontology: Series B*, 36(2), e38-e44. <https://doi.org/10.1093/geronb/gbaa120>
- Rahman, M. A., Hoque, N., Alif, S. M., Salehin, M., Islam, S. M., Banik, B., . . . Cross, W. (2020). Factors associated with psychological distress, fear and coping strategies during the COVID-19 pandemic in Australia. *Globalisation and Health*, 16(95), 1.15.
- Rodríguez-Hidalgo, A. J., Pantaleón, Y., Dios, I., & Falla, D. (2020). Fear of COVID-19, stress, and anxiety in university undergraduate students: A predictive model for depression. *Frontiers in Psychology*, 11, 2020.
- Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *Journal of Medical Internet Research*, 22(9), e21279.
- Tadesse, A. W., Mihret, S. T., Biset, G., & Kassa, A. M. (2021). Psychological problems and the associated factors related to the COVID-19 pandemic lockdown among college students in Amhara Region, Ethiopia: a cross-sectional study. *BMJ Open*, 11, e045623. <https://doi.org/10.1136/bmjopen-2020-045623>
- Wang, C., & Zhao, H. (2020). The Impact of COVID-19 on Anxiety in Chinese University Students. *Frontiers in Psychology*, 11, 1168. <https://doi.org/10.3389/fpsyg.2020.01168>
- Wang, X., Hegde, S., Son, C., Keller, B., Smith, A., & Sasangohar, F. (2020). Investigating Mental Health of US College Students During the COVID-19 Pandemic: Cross-Sectional Survey Study. *Journal of Medical Internet Research*, 22(19), e22817.
- Wango, G., Wairire, G., & Kimamo, C. (2020). Anxiety and Emotions of COVID-19: The Emotional Underpinnings of Dealing with the Corona Virus Disease. *Journal of Psychology and Behavioral Science*, 8(2), 1-18. <https://doi.org/10.15640/jpbs.v8n2a1>
- Wathelet, M., Duhem, S., Vaiva, G., Baubet, T., Habran, E., Veerapa, E., . . . D'Hondt, F. (2020). Factors Associated with Mental Health Disorders Among University Students in France Confined During the COVID-19 Pandemic. *JAMA Network Open*, 3(10), e2025591. <https://doi.org/10.1001/jamanetworkopen.2020.25591>