

# Time Investment of Medical Students during COVID19 Pandemic lockdown

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## Research Article

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# Abstract

**Background:** As the world is fighting against the COVID19 outbreak most of the countries closed universities nationwide, impacting nearly 80% of students globally. In order to obtain information and to identify differences between medical students the study has been asset. The primary objective of this survey is to better understand the motivations and obstacles for medical students investing their time during COVID 19 obligatory home stay.

**Methods:** Descriptive cross-sectional survey-based study in 333 medical students in medical college of Alzaeim al Azhari university in Sudan. Data from students was collected by using an online self-design questionnaire. The participants approached by the lead investigator through their social media groups by link enabling the individual willing to participate to access a google form containing the study questionnaire. Analyses was carried out using SPSS statistics package version 24 (IBM).

**Results:** (57.1%) of the participants were females and (42.9%) were males. (37.8%) of medical students who participated in the study think that they make use of their time, while (38.1%) don't think that and (24.1%) don't know if they make use of their time or not during staying home due to COVID19 outbreak.

**Conclusion:** There is a considerable variation in time investment (making use of time) during staying home due to COVID 19 outbreak according to medical student's insight. The research results indicate that medical students need more encouragement and facilities to get benefits from their time during the quarantines and such situation in the future.

## Introduction

COVID-19 has become a worldwide pandemic of epic proportions<sup>[1]</sup> It was first reported in Wuhan City, Hubei Province, China reference and since then has spread all over the world.<sup>[2]</sup> As of February 28, 2020, the World Health Organization (WHO) declared that the outbreak of COVID-2019 as a Public Health Emergency of International Concern (PHEIC).<sup>[3]</sup>

The global spread of COVID19 has put governments and universities in severe pressure. As the situation develops, person can keep track of the latest developments with the virus information.<sup>[6]</sup> Medical students have already been affected with entire population advised to stay home and universities suspending all in person activities from lectures to graduation.<sup>[7]</sup> In Sudan, government imposed a strict and militarized "national lockdown" policy on March13, 2020 that prohibited medical students from leaving quarantine and obligate them to stay at home that result in a huge negative impact on the education sector. The emerge situation during COVID 19 outbreak force medical students to stay at home so it is an opportunity to make use of the time and discover new activities. This situation put faculties in urgent need to online teaching environment which considered a fundamental method for time investing. Online teaching is the process of the educating others via the internet.<sup>[8]</sup> Various methods can be used to facilitate online teaching such as one-on-one video call, group video calls, and webinars. Most of the school and universities around the world are currently hosting online education for their students this movement into online education raises questions about the workload and time demands required for faculty engaged in online teaching. While it is commonly known that online instruction requires a significant investment of time to prepare, design, and review course structure as well as to implement alternative teaching techniques and assessments.<sup>[9]</sup>

The COVID19 pandemic sweeps, the world toward many academic's programs of course dealing with greater concern, such as the family, friends or themselves, in spite of critical situation that world has being suffering from

Students often fail to devote sufficient time to schoolwork even though they value school success.

so medical students those free of illness and related burdens, stuck at home need probably to invest the time<sup>[10]</sup>

There are little researches to indicate how much time a medical student must invest to facilitate learning process during emergent situation such as outbreak of COVID-2019.

Further investigation was completed through Google Scholar resulting in no additional studies related to the research topic. So more Researches are needed to examine time investments according to different situation.

## **Materials Or Patients And Methods**

A descriptive cross sectional survey-based study

study area:

medical collage of Alzaeim ALazhari university, Sudan

sample technique:

Probability sampling: simple Random sampling, the total sample size for the study is taking  $p=.5$  with a 95% confidence level and  $\pm 5$ , We used the online software from Creative Research systems (available at <https://www.surveysystem.com/sscalce.htm#one>)

Sample size:

the sample size for the study according to creative research system.

)Table 0To this sample we added 20% to gain credible sample so the final sample come up to 333 participants (

Study population

medical students in medical college of ALzaiem ALazhari university in, Sudan

Inclusion criteria;

Medical students at ALzaiem alazhzri university

Adult above 18

Students from all nationality

Exclusion criteria:

Medical students of others Sudan universities

Medical students those with illness

Not approved to participate in the study

Data collection:

Tool: an online self-design questionnaire. The participants approached by the lead investigator through their social media groups. The site leads done by sending an invitation to the study accompanied by a link enabling the individual willing to participate to access a google form containing the study questionnaire.

#### study variables

Age

Sex

Residence

Level

Marital status

Nationality

#### Data analysis:

Data have been entered and encoded, a P-value of  $\leq 0.05$  was considered statistically significant. Analyses were carried out using SPSS statistics package version 24 (IBM).

#### Ethical consideration:

An ethical approval obtained from research ethical committee faculty of medicine Alzaeim al Azhari university and consent required from all participants. Participation in the survey is voluntary, and no incentives was being given to the participants. Participants was being briefed about the questionnaire before administration.

## **Results**

333 medical student's enrolled in the study after informed consent. We analyzed the results of 333 enrolled medical students, by using the Statistical Package for Social Science (SPSS, Version 24). A p-value of less than 0.05 was used to determine the level of significance. Results were expressed as tables.

The number of medical students who completed each questionnaire was given in each case (Tables 1 to7).

The most common age group between (21-25) (70.3%) (Table 1).and (57.1%) of them were female. The respondents were predominantly Sudanese (94.0%) and (94.0%) were single. a total of 333; 61 (18.3 %), 60 (18%), 58 (17.4%), 67 (20.1%), 87 (26.1%), students were from first, second, third, fourth and fifth year respectively.

(37.8%) of medical students who participated in the study think that they make use of their time, while (38.1%) don't think that and (24.1%) don't know if they make use of their time not.

Respondents of most medical students during the lockdown spend 1-2 hours to study (27.6%) and less than an hour (27.3%) and we found an interesting finding is that (20.1%) of the students during the lockdown do not study at all.

We found that most of participants do not feel satisfied with the time management that they have done through the lockdown period (63.1%). (70.3%) didn't participate in any volunteer work during Covid-19 outbreak. Most of the participants think Coronavirus Has Affected Medical Students (95. 2%) and see that medical Students can help out

during the Coronavirus Crisis (88%). (95.2%) think that Quarantine is a great opportunity they to 'Improve themselves'.

(Tables 2 to 8). show the results of the rest questions survey those examine by the questionnaire.

## Discussion

This study is designed to obtain information and to identify differences between medical students as well as to understand the motivations and obstacles for medical students investing their time during COVID 19 obligatory home stay.

Time Investment of Medical Students during COVID19 Pandemic is highly crucial and because of the impact of Covid19 on medical students especially on time management, so it is important to examine time investments for facilitating the ongoing instruction during the period of lock down.

There is a lack of data and information about this subject in Sudan and there is a need to conduct such studies and we hope that the information from our study helping in the control of The global spread of COVID19.

The results of this survey shown considerable variation of medical students in investing their time (Table 2), These findings are rather disappointing. Most of students during lockdown spend 1-2 hours to study (27.6%) and less than an hour (27.3%), One unanticipated finding was that (20.1%) of the medical students during the lockdown do not study at all, a possible explanation for this might be due lack of motivation in the medical students to study during the lockdown which might be caused by closure of universities during Covid19 pandemic and most of these universities didn't start online learning. [8] To make a good use of time for medical Students it is necessary to organize the time and we found the suitable way to do that for students by developing a work plan beside staying focus which can be done by Choose a suitable location, avoid distraction, avoid pressure and set realistic goal and those are important factor to invest the time (Table 3). The current study found that most of participants don't feel satisfied with the time management that they have done during lockdown (63.1%) These result is in agreement with those obtained by (Gagne and Shepherd (2001),) [11] "students in the online course indicated that they were less satisfied with instructor availability than the in class students.

During the period of the lockdown there were a lot of Productive work that medical students able to do with the Social Distancing and we found that learning new language is the most common thing in the mind of medical students more than conducting researches (Table 4). we think that medical students and universities should give more care for research.

Being mindful is the best way to look for mental health (Table 5). with reading books like Medicine text books, Religious books, Novels and cultural books during the lock down, the most common books have been read by the medical students are medical textbooks which is not surprising for us. Also they seen that adequate sleep and eat a healthy food are the most suitable way to be physically healthy (Table 6).

Most of participants think Coronavirus has affected Medical Students (95.2%) as we expected and think that they can help out during the Coronavirus Crisis (88%) we didn't expect this finding on the other hand most of the participant's did not participate in any volunteer work during Covid-19 outbreak (70.3%) which strongly confirm with suggest that medical students should not be involved in any direct patient care activities [12] due to higher susceptibility of getting infection with Covid19.

Medical students at ALzaiem ALazhari university were found to be use meeting apps to facilitate learning in the virtual classroom rather than of university's website and others for online studding, most of the participants (whom start online learning) see that it is better than conversation teaching because they see that online learning adds more flexibility and give self-based learning process (Table 7). so it prefers more than others for medical students learning these results reflect those of (B. Jean Mandernach, Amber Dailey-Hebert, and Emily Donnelly-Sallee at Park University in 2007) [13] who also found that interaction time in the online class as an approximate equivalent to scheduled class time in the face-to-face classroom, although most of them do not like online learning during the quarantine period, it may be because their Internet is unstable and requires a strong Internet signal to learn online. Other studies have shown that online learning requires more time and effort because Personal face-face-to-face training (Berge, Muilenburg, & Haneghan, 2002; [14]Cavanaugh, 2005; [15]Hartman, Dziuban, & Moskal, 2000; [16]O'Quinn & Corry 2002; [17]Pattillo, 2005; [18]) online instruction requires more deliberate planning of learning outcomes, activities, and support (DeVries & Lim, 2003) [19], A case study report found that teaching the online version of one sample course required more than twice the amount of time than the same course in class (Pattillo, 2005) [18]. We found that during the lockdown most common medical student's activities is participate in online courses (Table 8). In part, this may be due to the fact that that an online course does not have similar requirements as course materials are preprepared and available to students [11] during the Covid19 pandemic and most of the online course became free.

online instruction requires a significant investment of time to prepare, design, and review course structure as well as to implement alternative teaching techniques and assessments (Lim, 2001) [19], all this can be the reasons that prevent some faculty departments in the college from starting online learning during lock down.

#### **Limitations of the study:**

We acknowledge several limitations of this study; the sample size in this study is small that is because the data were collected from one medical college and that is make us unable to make a compression between different medical college in the Sudan about time investments. also the response rate in data collection was very poor through online google form which prevent us to reach a represented sample.

There is no relevant literature related to our topic that make us unable to make compression with previous studies in our dissection.

#### **Conclusion:**

There is a considerable variation in time investment during staying home due to COVID 19 outbreak according to medical student's insight. The research result indicate that medical students need more encouragement and facilities to make use from their time as possible during the quarantines and such situation in the future.

#### **Recommendation:**

More researches is required to capture the continually changing environment, and how these affect medical students time. Government and universities should offer all the requirements and materials that are needed to facilities online teaching and remove time obstacles for medical students to make of their time. The electronic learning situation during Covid-19 pandemic in Sudan was dealt with badly with no alternative plans to continue the educational process on online bases and with delay in resuming the educational process in the universities and

resulted in the delay of many students from their graduation and their respective years, so that increasing the preparedness and putting plans ahead for managing such situations is crucial to avoid such dilemma.

## Declarations

### Ethics approval and consent to participate

An ethical approval obtained from research ethical committee faculty of medicine Alzaeim al Azhari university and consent required from all participants. Participation in the survey is voluntary, and no incentives was being given to the participants. Participants was being briefed about the questionnaire before administration.

### Consent for publication

We confirm that this manuscript has not been published elsewhere and is not under consideration by another journal. All authors have approved the final version of the manuscript, accepted responsibility and agree with its submission to BMC Medical Education.

### Availability of data and material

The datasets generated and/or analysed during the current study are not publicly available but are available from the corresponding author on reasonable request.

### Competing interests

The authors declare that they have no competing interests.

### Funding

Not Applicable

### Authors' contributions

Conceptualization, data curation, formal analysis Methodology, writing original draft M.I. , M.F. , Methodology, M.S. , Investigation R.T. , M.S. , A.K. , M.H. , Visulaization, Validation and writing - Review and editing, K.A. and M.E.

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## Tables

**Table 0: Sample size for the study according to creative research system.**

Level	Approximate total number	Sample size
1	202	61
2	217	60
3	220	58
4	191	67
5	188	87
TOTAL	1218	333

**Table 1.** Show Age Distribution of the Participants.

		Frequency	Percent
Valid	18-20	96	28.8
	21-25	234	70.3
	26-30	3	.9
	Total	333	100.0

**Table 2.** shows answers of question if medical students make use of their time during the lockdown or not.

		Frequency	Percent
Valid	I don't know	80	24.1
	No	127	38.1
	Yes	126	37.8
	Total	333	100.0

**Table 3** Show the Answer of Question How Do You Organize Your Routine When Working from Home.

	Frequency	Percent
Develop a work plan	178	53
Designate a workspace	103	30
, Set a schedule	12	3.6
Seize the day	40	12.4
Total	333	100.0

**Table 4.** Show the Productive Things that Medical Students Were Do with Social Distance

	Frequency	Percent
Learning a new language	118	35.4
Learn a new skill	70	21
Conducing medical researches	56	16.8
Help people	66	19.8
Review medical knowledge	23	7
Total	333	100.0

**Table 5.** Show Answer of the Question What Do You to Look After Your Mental Health in Lockdown? (You can select as many answers as you want)

	Frequency	Percent
Being mindful	141	42.3
Staying in connect to relative and friends	122	36.4
, Limit news consumption and conversations	54	16.3
Doing exercise	20	6
Total	333	100.0

**Table 6.** Show What Medical Students Do to Stay Healthy at Home.

	Frequency	Percent
Eat a healthy food	171	51.4
Have a timely meal	52	15.6
Get adequate sleep	70	21
Practice sport at home	40	12
Total	333	100.0

**Table 7.** Shows the Benefits of Online studies, According to Medical students.

	Frequency	Percent
Add flexibility and self-based learning	250	75
Better time management	30	9
Cost effective	22	6.6
Demonstrate self-motivation	31	9.4
Total	333	100.0

**Table 8.** Show The Online Activities that Medical Students Engage in During the Period of Lockdown

	Frequency	Percent
Online workshops	89	26.7
Online courses	130	39.3
Online conferences	15	4.5
Medical research	22	6.5
Online self-learning	77	23
Total	333	100.0