



Research article

COVID-19: socio-economic impacts and challenges in the working group

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ABSTRACT

The COVID-19 pandemic has influenced the lives of the global community, consequently, many parts of people's lives have been jeopardized. Therefore, there is a need to curb the spread of coronavirus. Accordingly, countries are enforcing partial or full-fledged lockdown to restrict all sorts of socialization. However, studies reported that people have despised the ordinances. The study assessed the economic, societal, and psychological impacts of the pandemic and the practice of abiding by curfews by staying and working from home. One hundred thirty-three government, private, and self-employed workers have anonymously and voluntarily completed an online survey. The change in lifestyle associated with the pandemic influenced the working group economically, socially, emotionally, and spiritually. In addition to inflation in the prices of food and commodity, workers have spent unintended costs for the prevention of the COVID-19 such as hand sanitizer and facemask. Furthermore, staying home was unbearable for the majority of the respondents and led to stress, boredom, and confined feelings which forced them to leave their homes to liberate themselves. Nevertheless, flexibility in time management, reduced commuting, and being safe from COVID-19 made the lockdown advantageous for some of the respondents. Telecommuting is influenced by factors such as home suitability to work, availability of supplies, and the behavior of the workers. Home suitability to work and access to vital working facilities varied between government, private, and self-employed individuals. Government employees exceptionally lack appropriate homes and resources to work. Therefore, to minimize the impact of COVID-19 on people's life it is important to make timely adjustments to the enforced orders to make them more productive.

1. Introduction

The causative agent of coronavirus disease 2019 (COVID-19) — the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) first case was detected with pneumonia of unknown etiology in China in late December 2019 [1]. The virus might be originated from Wuhan, Hubei Province, wholesale seafood street market where live animals are sold [2]. The virus spread out rapidly from its putative center of origin [2, 3]. The WHO declared the COVID-19 a “pandemic” on 11 March 2020 [4]. Subsequently, according to Worldometer's data as of 04 November 2020, the number of confirmed coronavirus cases exceeded 47.8 million and it has claimed the lives of more than 1.2 million patients [5].

Though vaccine has been developed for the virus, nations still use preventive guidelines that have been developed to contain the spread of SARS-CoV-2. The key containment strategies are non-pharmaceutical interventions (NPIs) such as social distancing, shutting down of educational establishments, canceling of events and social gatherings, hand

hygiene, body temperature scan, the use of antiseptics and personal protective equipment, travel restrictions, contact tracing, and testing for SARS-CoV-2 [6]. Moreover, several nations declared a state-of-emergency and imposed a partial lockdown making billions of people including the less-needed employees to stay and work from home using telecommunication technologies [7], whenever possible and except to execute tasks deemed essential [8]. However, the extended lockdown has introduced discomfort, anxiety, depression, and a growing fear [9, 10], and consequently, people under partial lockdown have been increasingly violating curfews [11]. Besides, the socio-economic life of peoples has been significantly affected by the pandemic [10].

Like other countries in Sub-Saharan Africa, Ethiopia has faced multifaceted problems due to COVID-19 particularly those workers who have been employed in micro, small and medium-sized enterprises, manufacturing, construction, trading, retailing outlets, hospitality, and tourism [12]. The Ethiopian government ordered most of the federal government employees to work remotely. In developing countries like

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Ethiopia, the challenge during the curfew is not only limited to the scarcity of resources and access to the internet but also limited remote working experience, working culture, and sheer misunderstanding of telecommuting [13]. Moreover, communal societies of the Global South including Ethiopians have strong social integrity and they are usually used to live with multi-generational and extended families, which makes them feel uncomfortable at times of curfews [14]. Understanding the practices, opportunities, and challenges of staying and working from home is badly needed to make an informed decision. Therefore, this study aimed to assess the socio-economic and psychological impacts of the COVID-19 on different groups of employees ordered to stay at home and telecommute.

2. Methods

2.1. The study site

The study site, Addis Ababa is the capital city and political center of Ethiopia. It is also the seat of international organizations such as the African Union, United Nations Economic Commission for Africa, East Africa Regional Office for Food and Agriculture Organization of the United Nations, Africa CDC (Center for Disease Control and Prevention), and several embassies and diplomatic communities. It is among the main hubs of international flights in Africa. Addis Ababa has more than 4.6 million inhabitants and it hosts the majority of Ethiopia's urban-based task force [15]. Addis Ababa is the most congested city and by Ethiopia's standard; it is the epicenter of COVID-19.

2.2. The study populations and the study variables

The study involved government and private companies employees, and self-employed respondents who are working in Addis Ababa amidst the COVID-19 crisis. The explanatory variables were age, sex, Sub-city of residence, profession, marital status, occupation, responsibility within the family, employer, the type of company or institution, and educational status. The response variables were the part of life affected by the lockdown and COVID-19, unintended expenses associated with COVID-19, observed domestic violence, tolerance to stay at home, the challenges of staying at home, the intensity of violating the curfew, the driving forces behind leaving home during curfews, type of work-aids available at home, and home's suitability to work.

2.3. The study design and data collection methods

Employees working for the government and private institutions or companies and self-employed individuals who have been advised to stay and work from home were involved in this cross-sectional study. The respondents were reached via the internet to complete an online semi-structured questionnaire created using google forms. The questionnaire was pretested and amended accordingly. The survey was channeled using different platforms of social media and email and remained active for one month (from mid of May to mid of June 2020). Virtually, the response rate was low which might be associated with unacquaintedness of the online survey delivery system, poor internet access, and demotivation provoked by the pandemic. One hundred thirty-three completely filled-out questionnaires, all the questions answered, were received online and they were found valid for downstream analysis.

2.4. Ethics approval and consent to participate

The online survey was strictly anonymous and was completely voluntary. The data is used for research purposes only. The study was approved by the management of Kotebe Metropolitan University.

2.5. Data analysis

The responses were organized and coded for analysis. The data were analyzed using frequency counts and the chi-square test was used to check for disparities between expected and observed proportions of the responses. The association between the response variables and the explanatory variables was analyzed using multivariate logistic regression and the likelihood ratio of the chi-square test was used to identify determinant factors significantly explaining the variation observed in response variables and statistically significant results were reported. The statistical analysis was performed using JMP Pro 13 [16].

3. Results

3.1. Demographic characteristics of the respondents

The demographic characteristics of the respondents are presented in Table 1. The data shows a significant variation in the demographic characteristics of the respondents. Responses were received from 8 out of 10 Sub-cities of Addis Ababa. The average family size of the respondents was 3.5.

3.2. Economic impacts of the pandemic

Stay and work from home order has significantly affected many aspects of the respondents' life. Workers life affected by the pandemic was significantly associated with the majority of the explanatory variables (Table 2).

Accordingly, a larger proportion of the respondents were affected socio-economically (Table 3). The lockdown caused unintended expenses such as inflation in the price of merchandise and transportation and unplanned expenses of hand sanitizer, face masks, and other detergents. For those who have children, staying at home incurred additional expenses because children couldn't go anywhere hence they require additional investment for indoor games and even they eat more food. The respondents who otherwise have access to broadband and Wi-Fi internet at their office used their cell phone during the stay and work from home orders which have increased their expense. There was additional airtime expense to call families and friends whom they otherwise used to contact physically.

3.3. Pitfalls associated with staying at home

The respondents significantly varied in their preferences to stay at home ($\chi^2 = 44.6$, $p < 0.0001$). The majority of the respondents faced difficulties while staying at home (79%, 105/133). The challenges encountered by the respondents while they are at home were significantly associated with most of the explanatory variables (Table 2). Among those respondents who found it difficult to stay at home 31% (33/105) were bored, 22% (23/105) were stressed, 13% (14/105) felt a sense of confinement and 12% (11/105) felt uncomfortable. In contrast, the respondents who were okay to stay home ($n = 28$) reported being safe from COVID-19 (57%, 16/28) as the positive side of the curfew. Furthermore, staying at home enabled these respondents to spend time with their family, take rest, and manage their time efficiently (each of the responses equally represents 14%, 4/28).

A significantly higher number of respondents (90%, 120/133) have left home after the stay and work from home order was announced by the government ($\chi^2 = 86.08$, $p < 0.001$). Surprisingly, 96% (27/28) of the respondents who have had a good time while staying home left their homes for some reason. Forty-seven percent (56/120) of the respondents left their homes the day they took the survey (Figure 1). Only 6% of the respondents (7/120) stayed home straight for two months. Similarly, only 3% (3/120) stayed at home for almost a month and another 3% (3/120) for two weeks in a row. One week and ten days were the time 12% (14/120) and 4% (5/120) of the respondents stayed at home,

Table 1. The demographic characteristics of the respondents (n = 133).

Explanatory variables	N (%)
Age	
>45	2 (2)
18–30	62 (47)
30–45	69 (52)
$\chi^2 = 61.2$ DF = 2 p < 0.0001	
Gender	
Male	104 (79)
Female	29 (21)
$\chi^2 = 42.3$ DF = 1 p < 0.0001	
Sub-city of residence	
Akaki Kaliti	3 (2)
Arada	13 (10)
Bole	27 (20)
Gulelle	11 (8)
Kirkos	12 (9)
Kolfe Keraniyo	8 (6)
Nefassilk Lafto	4 (3)
Yeka	55 (41)
$\chi^2 = 124.3$ DF = 7 p < 0.0001	
Marital status	
Married	62 (47)
Single	68 (51)
Widowed	1 (1)
Divorced	2 (2)
$\chi^2 = 121.2$ DF = 3 p < 0.0001	
Professional occupation	
Administrator	7 (5)
Architect	3 (2)
Archive officer	1 (1)
Consultant	2 (2)
Customer officer	2 (2)
Engineer	10 (8)
ICT	5 (4)
Maintenance	1 (1)
Pharmacist	2 (2)
Researcher	5 (4)
Sales	1 (1)
Secretary	1 (1)
Teacher	91 (68)
Training officer (train service providing employees)	1 (1)
$\chi^2 = 826$ DF = 14 p = 0.0001	
Responsibility within the family	
Breadwinner	98 (74)
Others	35 (26)
$\chi^2 = 29.8$ DF = 1 p < 0.0001	
Employer	
Government	58 (44)
Private companies	72 (54)
Self-employed	3 (2)
$\chi^2 = 60$ DF = 2 p < 0.0001	
The type of employer	
Industry	2 (2)
Private firm	5 (4)
School	71 (53)
University	28 (21)
Research center	8 (6)
Service provider	12 (9)
Supplier	2 (2)

Table 1 (continued)

Explanatory variables	N (%)
Non-governmental Organization	5 (4)
$\chi^2 = 233.4$ DF = 7 p < 0.0001	
The higher level of education attained	
Bachelor degree	83 (62)
College Diploma	5 (4)
Master's degree	39 (29)
Ph.D.	6 (5)
$\chi^2 = 122$ DF = 3 p = 0.0001	

respectively. The remaining 27% (32/120) of the respondents left home between 1 to 5 days ago as of the day they took the survey.

The key reason that forced the respondents to leave their homes after the stay and work from home order was announced is presented in Table 4. The most commonly reported reason was shopping for food and other necessities (53%, 63/120). Some of the respondents (9%, 11/120) were also needed by their employers to execute urgent tasks. Although less frequent social abuses were also reported by the respondents (Table 3).

3.4. COVID-19 and working from home

Working from home was difficult for varying reasons and it is significantly associated with the level of education and profession (Table 2). The home was found to be unsuitable to work for 47% (63/133) of the respondents whereas it was suitable for 53% (70/133) of them ($\chi^2 = 1.44$, $p > 0.05$). There was a statistically significant difference in the suitability of the home to work among government, private, and self-employees (Fisher's exact test, $p = 0.038$). The majority of government employees' residences were not suitable to work at home (Figure 2). In contrast, all self-employed respondents had suitable homes to perform their tasks. There is a statistically significant association between the tolerance to stay at home and the ability to work at home. Those who have no difficulties while staying at home were more likely comfortable to work at home (OR = 3.02, 95% CI 1.29 to 7.23; $p = 0.011$ (Wald test).

Fifty-one percent (68/133) of the respondents lack basic resources they needed to work at home; while 49% (65/133) possessed them (Figure 3). The working resources owned ranged from none to complete basic office facilities (Table 5). An independent analysis of respondents who found their home suitable for work (n = 70) shows that 30% (21/70) did not have the resources they needed to work at home ($\chi^2 = 11.84$, $p = 0.0006$). Conversely, although 24% (15/63) of the respondents found their home unsuitable (n = 63) for work, they had the necessary resources to work at home ($\chi^2 = 16.5$, $p < 0.0001$).

Multivariate logistic regression analysis showed that the ability to work at home was significantly associated with the employer of the respondents (government, private, or self-employed). Respondents who work for private employers have 4.5 times the odds (OR = 4.5) to work at home compared to the government employees (95% CI: 1.84 to 11.07, $p = 0.0009$). Self-employed respondents were 2.4 times (OR = 2.4) likely to work at home (95% CI: 0.2 to 29.9). Similarly, access to basic resources required to work at home was significantly associated with for whom the employees were working. Subsequently, private employees were more likely to have the resources needed to work at home than government employees (OR) = 2.88, 95% CI: 1.36 to 6.08, $p = 0.0056$). Self-employed respondents were also more likely to own resources needed to work at home (OR = 0.61) (95% CI: 0.04 to 3.4, $p < 0.05$) than the government workers.

A significantly higher number of respondents found it very difficult to work at home ($\chi^2 = 15.2$, $p = 0.0001$) (Figure 4). The main difficulties

Table 2. The independent variables which significantly explained the variation observed in the response variables.

Response variables	Explanatory variables	DF	LR Chi-square value	P-value
What part of your life has been affected by the pandemic?	Age	18	369	<0.0001
	Sub-city	62	276	<0.0001
	Sex	9	18	0.04
	Profession	117	27	<0.0001
	Employer	10	91	<0.0001
	Distance	27	77	<0.0001
Why is it a challenge to stay at home?	Age	20	149	<0.0001
	Sub-city	83	130	0.0008
	sex	12	160	<0.0001
	Profession	90	414	<0.0001
	Level of education	36	132	<0.0001
	Marital status	20	62	<0.0001
	Distance	6	114	<0.0001
Why did you leave your home?	Age	14	611	<0.0001
	Sub-city	80	170	<0.0001
	Marital status	16	69	<0.0001
Why is it difficult to work at home?	Profession	55	78	0.02
	Level of education	15	47	<0.0001
	Distance	15	25	0.04
What types of work-related resources you have at home?	Age	14	143	<0.0001
	Sub-city	49	280	<0.0001
	Profession	98	287	<0.0001
	Level of education	21	186	<0.0001
	Marital status	21	97	<0.0001
	Employer	14	34	0.0018
	Distance	21	6	<0.0001

Table 3. The socio-economic impacts associated with the stay and work at home order.

Question	N (%)
The part of life affected by the lockdown	
Economy	21 (16)
Economy and social	64 (48)
Emotional	4 (3)
Everything	11 (8)
Health	9 (7)
Love life	3 (2)
Nothing	5 (4)
Social and emotional	1 (1)
Spiritual	7 (5)
Work-life	8 (6)
$\chi^2 = 235$ $DF = 9$ $p = 0.0001$	
The unintended expenses associated with the COVID-19 pandemic	
Increased use of internet	14 (11)
Increased use of the internet and voice calls	13 (10)
Home-based recreational costs	5 (4)
Increased consumption of food by the household	1 (1)
Children cost more while staying at home	3 (2)
Cost of face mask and sanitizer	26 (20)
Merchandises are becoming expensive	16 (12)
Merchandises are getting expensive and transportation cost increased	51 (38)
The increased cost of antiseptics and detergents	4 (3)
$\chi^2 = 134$ $DF = 8$ $p < 0.0001$	
Observed domestic violence	
Physical assault	5 (24)
Rape	3 (14)
Sexual harassment	13 (62)
$\chi^2 = 8$ $DF = 2$ $p = 0.018$	

facied while working at home (n = 89) were inadequate internet access (25%, 22/89) followed by COVID-19 induced loss of concentration (21%, 19/89) and both lack of basic materials and access to the internet (28%, 25/89) (Figure 4A). The nature of the job itself (e.g. pharmacist/sales) also made working at home an impossible task for 16% (14/89) of the respondents. Even for those who have the necessary materials, such as the internet, a weak internet connection has made working from home challenging (2%, 2/89). Working from home was hard due to the lack of adequate space for the rest of the respondents (8%, 7/89), although they had some of the basic resources.

Home suitability for working was significantly associated with the possession of resources needed to work at home. Respondents who do have working resources at home had 7.5 times the odds (OR = 7.5) to work at home than those who lacked the necessary resources (95% CI: 3.44 to 16.16; p < 0.0001). Similarly, respondents whose home was suitable to work were more likely to work at home (OR = 10.7; 95% CI: 4.1 to 28, p < 0.0001). For those who were conformable while working at home (n = 44) effective time management and access to working materials were the key enablers. Safety, no commuting, and relaxation were also capacitated to work from home (Figure 4B).

4. Discussion

This study assessed the socio-economic impacts of COVID-19 on different groups of employees and identified the opportunities and challenges of staying and working from home. Globally, a wider range of workers' lives has been severely affected by the pandemic [17]. For example, inflation on the price of goods, food, and services (e.g., cost of transportation) was found to be high following the COVID-19 pandemic [18]. Unintended costs of personal protective equipment (face masks) [19], antiseptics (hand sanitizers), and internet and voice calls attracted additional expenses. The pandemic *per se* caused an economic shock due to the unprecedented nature of the impacts it has caused in various sectors of the global economy [20].

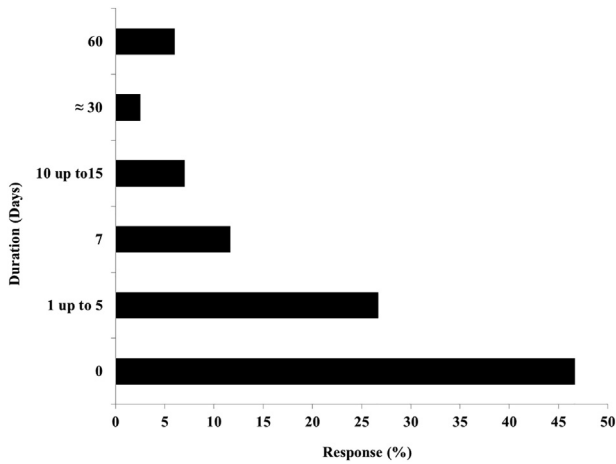


Figure 1. The maximum number of days tolerated by the respondents after the stay home order was announced.

Being in a confined state is not bearable to humans and the COVID-19 is against the mingling characteristics of mankind. The declared curfews and lockdowns to contain the spread of the pandemic have imposed a great challenge although there is no better alternative to curb the spread of SARS-CoV-2. According to the current finding, most of the respondents found it very difficult to stay and work from home. However, the respondents still accept the advantage of staying and working from home for the sake of their wellbeing regardless of the emotional impact they are bearing. For example, the lockdown is causing anxiety and stress to the workers [21]. Thus, the mental health issue which might cause irreparable damage needs thoughtful consideration. To get rid of the stress, peoples continuously violated the stay and work from home ordinance which has been evidenced across the world even after a fine and jailing have been imposed [22].

This study identified the unsuitability of staying and working at home especially for public employees. This might be associated with the low living standard of government employees. As the higher proportions of the respondents are school or university teachers, they get difficulties preparing lecture notes and assignments because of the unsuitability of the working environment they have at home. This may impede the provision of reading materials and deteriorates the teaching and learning quality. Staying and working from home imposes distraction, for example, home chores such as cooking, arranging stuff, cleaning, and suburbs noise are the key distractions while staying and working at home [23, 24]. While addressing how to become effective while staying and

Table 4. The key reasons for leaving home after the stay at home order was announced.

Why did you leave your home?	N (%)
To visit bank	6 (5)
To attend church	2 (2)
To visit family	4 (3)
To attend funeral services	2 (2)
To get access to the internet for personal use	2 (2)
To get access to the internet for work	9 (8)
To meet with friends	4 (3)
No one can stop me from leaving my home	1 (1)
For refreshment	6 (6)
To get relief from depression	6 (5)
To shop for food and other necessities	63 (53)
To walkout	1 (1)
To execute an urgent task	11 (9)
To visit the healthcare center	3 (3)
Total	120 (100)

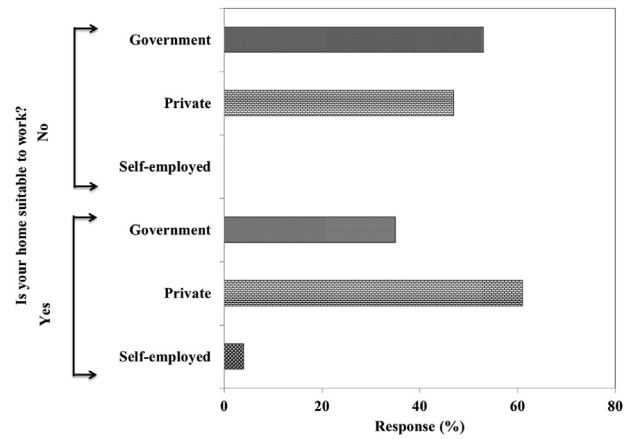


Figure 2. The suitability of residential units to stay and work at home for the less-needed government and private companies employees and self-employed individuals.

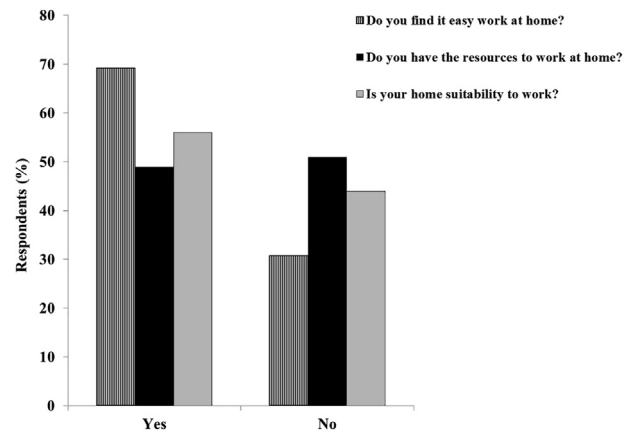


Figure 3. Home suitability, ease of working from home, and working resources availability among less-needed government and private companies and self-employed employees.

working from home during the pandemic the respondents have recommended separating the working room from the living one because the two situations require different settings. However, this is largely impossible in the less developed world context.

Home suitability for work can be also affected by the availability of working materials. The majority of the respondents lack most of the basic resources and even those who had a suitable home environment sometimes failed to fulfill the basic facilities. Surprisingly, some of the respondents had no resources to work at home making the lockdown strategy unbearable. The respondents who had access to the internet struggled with the

Table 5. Basic office resources possessed by the respondents to perform their activities during the stay and work at home order.

Question	N (%)
Work-aid office resources available at home	
Books and stationary	9 (7)
Books, computer and stationary	17 (13)
Books, computer, stationery, and furniture	39 (29)
Books, computer, stationery, and internet service	3 (2)
Books, computer, stationery, furniture, and internet service	13 (10)
Books, furniture, stationery, and internet service	13 (10)
Books, stationary, and furniture	26 (20)
None	13 (10)
$\chi^2 = 52.4$ DF = 7 p = 0.0001	

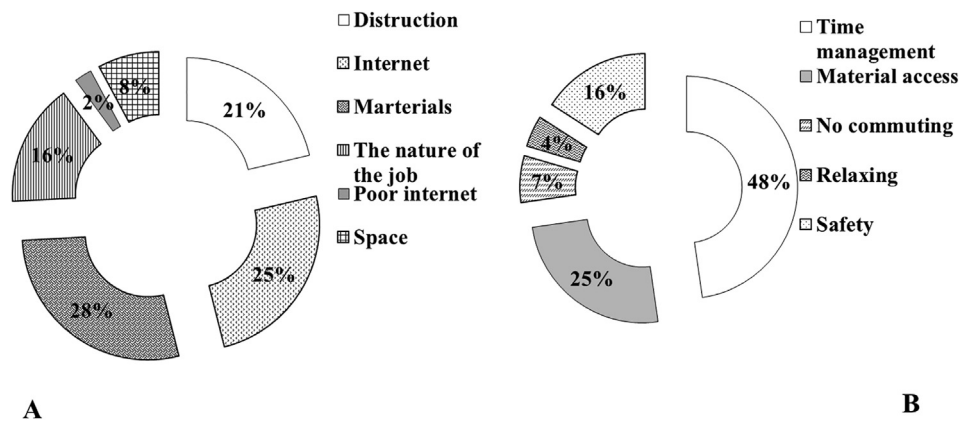


Figure 4. The main reasons why working from home was a difficult (A) or an easy (B) task among less-needed government, private companies, and self-employed employees.

weak connectivity. In contrast, some respondents may find working from home productive [24], for example, the study discovered that effective time management from enhanced working efficiency, no commuting hence no transportation cost from cost reduction, and being safe from the pandemic by staying at home from health and wellness perspectives were the comparative advantages reported by the respondents.

This study revealed social abuse and violence, here it is important to note that 80% of the participants were male which may affect their response rate to domestic violence. Currently, the number of raped children in Addis Ababa is continuously growing. Some of the reported cases indicated that children were raped even by their parents [25]. Similarly, domestic violence against women and children is being increasingly reported since the start of the lockdown in the Middle East, Africa, Asia, Europe, and the United States [26]. The observed violence is thought to be associated with movement restrictions, loss of income, isolation, overcrowding, and stress and anxiety [27].

5. Conclusion

COVID-19 is widely affecting the livelihoods of the global community. Restricting social gatherings and promoting staying and working from home is an important strategy to contain the spread of SARS-CoV-2. However, extended lockdown is aggravating the negative impacts of the pandemic. Therefore, to minimize the negative impacts of the pandemic, governments should have to work to reduce the associated socio-economic crisis. Staying and working from home has become less effective due to the scarcity of resources and unbecomingness of workspaces at home. It becomes effective if basic services such as the internet are provided at affordable costs. There should also be training on how to make staying and working at home a productive venture. This work enlightens as to what type of lockdown strategies needs to be implemented at times of an unprecedented crisis and it is of great practical relevance to make informed decisions as to what type of curfews need to be adopted.

Declarations

Author contribution statement

Tewodros Mulugeta: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Elazar Tadesse, Tewodros Shegute: Performed the experiments; Wrote the paper.

Takele Taye Desta: Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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