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SELF-REPORTED ANXIETY AND DEPRESSION SYMPTOMS UNDER COVID-19 LOCKDOWN: AN ALBANIAN EXPERIENCE

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ABSTRACT

COVID-19 pandemic, a mostly similar public health issue from country to country represents social, economic and political specific conditions. We attempt through a questionnaire published in the social media Facebook during pandemic lockdown to give a scenery of anxiety and depression symptoms in an Albanian population segment. The questionnaire was constructed following the guidelines of an Islamic sacred text (hadith) known as "five before five". The sample is considered a virtual snowball sample because some promoters served as seeds making possible to reach parts of the population otherwise impossible to reach making it a sequential experiment ended based on risk of questionnaire misuse. The number or responders (N=1,376) were female 66.6%, age (M=34.9; SD=10.2) and males, age, (M=38.2; SD=10.8). Increase in self-reported anxiety and depression symptoms was common, 851 (61.8%) of responders. Linear logistic regression model shows the relationship of each dimension (health, wealth and free time) to other dimensions' questions making a presumption to use the present model while retrieving data from other sources for future evaluation of anxiety and depression in a population. For a cut-off value for all dimensions change from baseline of 0.425, Sensitivity (S) was 0.749 and specificity (Sp) was 0.429, raising the problem of missing false negatives with increasing symptoms of anxiety and depression. While television and social media are helpful during a pandemic, the risk of misuse for political and other gains is present too. The citizen in need of recommendations is expected to collaborate but attentive not to abuse his/her trust.

Keywords: *Pandemic, Albania, social media, television, hadith*

INTRODUCTION

The Covid-19 pandemic has brought more panic to an already troubled world. Albania is hit by this situation following the November 26, 2019 Mw6.4 earthquake, which left 51 deaths, collapsed buildings and widespread fear for the future (Ormeni et al., 2020; Papadopoulos et al., 2020). Freedom of media in Albania regressed from year 2019, ranking 103th of 180 countries, year 2022, on World Press Freedom Index, following the November 2019 'anti-defamatory' government package with justification of fighting fake news (Albania, 2022). The health care professions face historical hardship to fulfill needs. The

healthcare budged is the lowest in Europe. Out of pocket and under the table payments are widespread. The definition of corruption as abuse to entrusted power for personal profit needs a redefinition before judging Albanian data reported through government portals of citizens self-reporting (Vian, 2020).

We were unable to find exact data on doctors and nurses migration from Albania, although the problem is of public concern. The earthquake, pandemic, followed by lockdown and uncertain future developments induced the reexamination of the data belonging to a previous online questionnaire from 4-5 April 2020, which contains the responses of 1,376 Facebook responders analyzed in the perspective of self-reported anxiety and depression symptoms under pandemic lockdown. Anxiety and depression symptoms are expected to happen during these situations and it is impossible to exactly quantify how much comes from the real threat although the question remains important.

The challenge to build a friendly to the responder but exhaustive questionnaire was handled through elaboration of an Islamic prophetic tradition. The reference guaranties the soundness of the transmission (Guler, 2019). Ibn Abbas reported: The Messenger of Allah, peace and blessings be upon him, said**, "**Take advantage of five before five: your youth before your old age, your health before your illness, your riches before your poverty, your free time before your work, and your life before your death." Categories '**your youth before your old age'** and **'**your life before your death**'** were not included because were considered not applicable to this study. This is a cross-sectional study which exclude the variable *age change* from analysis.

Possible health representative reachable variables were sleep, food, sex, quantitatively and qualitatively, wealth (economic situation, work from home, changing spending habits and being afraid of financial health) and free time usage measured through television, social media, reading, spiritual exercises, alcohol consumption, smoking and electronic games. Many results are of local importance but in the whole they tend to comply with the global picture, thus none can't be considered unimportant. For example, all cause male to female death ratio of a COVID-19 hospital in Tirana was 2.17, which can be a specific local finding or compliant with other hospital outcomes.

We construct our study hypothesis on the question if COVID-19 pandemic self-reported anxiety and depression symptoms are measurable when deconstructing them through the lenses of an Islamic sacred text (*hadith*). The main fields of analysis are the cross-distribution of self-reported anxiety and depression with topics of health, wealth and free time.

METHODS

Data gathered from the questionnaire are goal oriented to understand population perception over the situation specifically the main focus of the study is the self-reported presence of symptoms of anxiety and depression. As the questionnaire is strictly followed online during the online period (April 4-5, 2020), the voluntary moderators serve as seeds and the increase and drop after they share was visible to the author through electronic counting of new filled forms. Thus, it can be considered as a sequential experiment and ended based on two presumptions. (Drăgan, I. M., & Isaic-Maniu, A., 2012). Firs the consummation of seeds (moderators), seen as seeds because the cases reached by them would be missed or 'hidden' from the author, and second, the risk of a pro-party (pro-government driven subjects) intervention biased result based on the interest the questionnaire raised in public accompanied by messages and phone calls to the author. Although the majority of manipulations happen through 'political-boots', fake social media accounts happen to be managed through teams who coordinate human operators.

A study of 48 countries found fake human social media accounts in 32 of them. (Bradshaw, S., & Howard, P. N., 2018) Thus the combination of sequential and snowball sampling makes our non-probabilistic sample a good one considering the limited choices we had (Etikan, 2016). VIPs as are considered the participating professors, architects, advocates, teachers and economists who shared and marketed the questionnaire on their social media playing in the same time the role of the moderator and the seed, while the continuous management of the contacts and results made the stopping time an intuitively and practical end of the online questionnaire which stayed online 28 hours.

In times of pandemic isolation, quarantine and lockdown, all the population becomes hard to reach in terms of a survey realization. Thus the individual participating through the suggestion of a moderator (seed) would otherwise impossible to be contacted and becomes a lost responder. One of the conditions to make successful an online tool to gather data are the guaranties from the author as a collaborator, to other than the declared objectives (Dusek et al., 2015). The sample has to be judged between its impossibility to represent the whole Albanian population and the consideration as excellent in number when reaches over 1,000 subjects (Comrey & Lee, 2009). Results were considered important if there was change from baseline behavior regardless it was initially reported as less/more or worse/better, coding 0 = no change and 1 = change.

RESULTS AND DISCUSSION

The majority of responders were female 66.6% of the total 1,376 of responders, years (M=34.9; SD=10.2) and males, years, (M=38.2; SD=10.8). The majority were from urban areas 1,277 (92.8%). The majority of responders were healthcare workers 335 (24.3%). Students were 148 (10.8%) and unemployed 109 (7.9%) which are groups of high interest during a quarantine period.

Mean of individual values, behavioral change for all questions (Figure 1) represent mean individual values for all responders individually. Results widely range from 0 to 1, were 1 is the complete change for each asked question. The main study variable 'self-reported anxiety and depression' (Figure 2) shows the breakdown of its presence or not, for all questions dimensions.

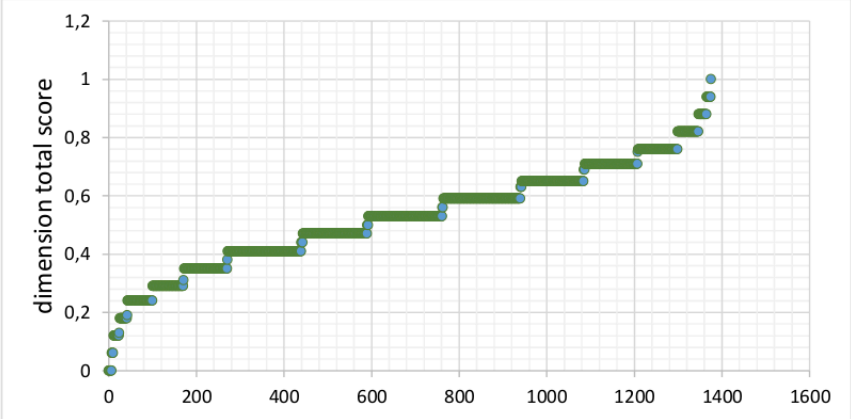

Figure 1. Mean of individual values behavioral change for all questions

Table 1. Dimensional categorization of the question: 'In your judgment, do you see an increase in anxiety and depression symptoms?'.

	Anxiety and Depression	**no**		**yes**		
	question change	**no (%)**	**yes (%)**	**no (%)**	**yes (%)**	**p**
health	sleep quality	314 (22.8)	210 (15.3)	290 (21.1)	561 (40.8)	< 0.001
	sleep quantity	245 (17.8)	279 (20.3)	259 (18.8)	592 (43.1)	< 0.001
	food quality	288 (20.9)	236 (17.2)	426 (31.0)	425 (30.9)	0.077
	food quantity	258 (18.8)	266 (19.3)	341 (24.8)	510 (37.1)	0.001
	sex quality	340 (24.7)	184 (13.4)	468 (34.0)	383 (27.9)	< 0.001
	sex quantity	315 (22.9)	209 (15.2)	453 (32.9)	398 (28.9)	0.013
wealth	economic situation	263 (19.1)	261 (19.0)	294 (21.4)	557 (40.5)	< 0.001
	work from home	287 (20.9)	236 (17.2)	501 (36.5)	349 (25.4)	0.139
	spending habits	113 (8.2)	410 (29.8)	126 (9.2)	725 (52.8)	0.001
	afraid of your finances	135 (9.8)	388 (28.3)	85 (6.2)	764 (55.7)	< 0.001
free time	television	207 (15.1)	317 (23.1)	247 (18.0)	604 (43.9)	< 0.001
	social media	142 (10.3)	381 (27.1)	134 (9.8)	716 (52.1)	< 0.001

reading	220 (16.0)	303 (22.1)	323 (23.5)	527 (38.4)	0.135
spiritual exercises	327 (23.9)	194 (14.2)	459 (33.6)	388 (28.4)	0.002
alcohol consumption	388 (28.2)	136 (9.9)	611 (44.5)	239 (17.4)	0.382
smoking	453 (33.0)	71 (5.2)	718 (52.3)	132 (9.6)	0.315
electronic games	376 (27.4)	148 (10.8)	617 (44.9)	232 (16.9)	0.712

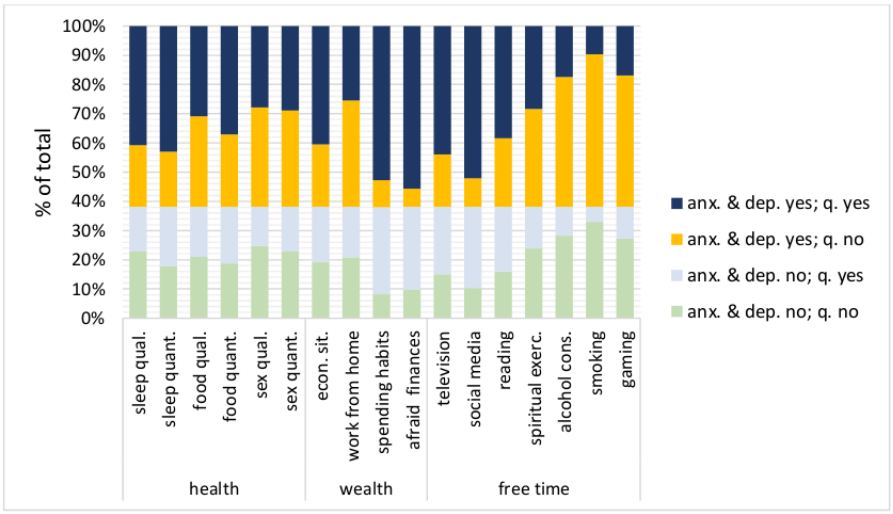

Figure 2. Distribution of self-reported anxiety and depression symptoms according to dimensions

Following (Table 2) the multiple linear regression results show only statistically significant ($p<0,05$) prediction of responders values of the dimension 'health', as mean individual change from baseline, from the remaining variables on categories 'wealth' and 'free time' adding to the model age, sex and profession. The procedure is repeated for dimensions 'wealth' and 'free time'. Linear logistic regression results for dependent variable; 'health' $F(14,1341)=12,801$, $p<0.001$, $R^2 = 0.118$, 'free time' $F(13,1356)=13,434$, $p<0.001$, $R^2 = 0.114$ and 'wealth' $F(16,1344)=3,662$, $p<0.001$, $R^2 = 0.042$.

Table 2. Linear logistic regression significant model contributors by other dimensions to a specific dimension total score

	health	**wealth**	**free time**

	Sex			.001
	Age (years)	.000		.004
	Profession		.014	
health	sleep quality			
	sleep quantity			.001
	food quality			
	food quantity		.014	.002
	sex quality			.004
	sex quantity			
wealth	economic situation	.039		
	work from home			
	spending habits	.003		.001
	future of finances			.025
free time	television	.000		
	social media	.020		
	reading	.002		
	spiritual exercises	.001	.008	
	alcohol consumption			
	smoking	.012	.034	
	electronic games			

Prediction of anxiety and depression in time of constraints can be expected to be influenced from other variables which change from those at present time. Our dimensional schema is considered as exhaustive, thus change in its dimensional components can be expected to be a predictor of the anxiety and depression caused from mutual causal factors. We used a ROC curve estimation to find possible valuable cut-offs of dimensions' health, wealth, free time and all three dimensions (Table 3) to predict the presence of changing anxiety and depression symptoms (Figure 3) as changes from no change score = 0 to complete change, score = 1.

Table 3**.** Cutoffs for anxiety and depression symptoms change for respective sensitivity and specificity

	Positive if Greater Than or Equal To*	**Sensitivity**	**Specificity**
health	0.417	0.656	0.506
wealth	0.417	0.785	0.372
free time	0.310	0.733	0.403
all dimensions	0.425	0.749	0.429

*All p values are less than 0.001.

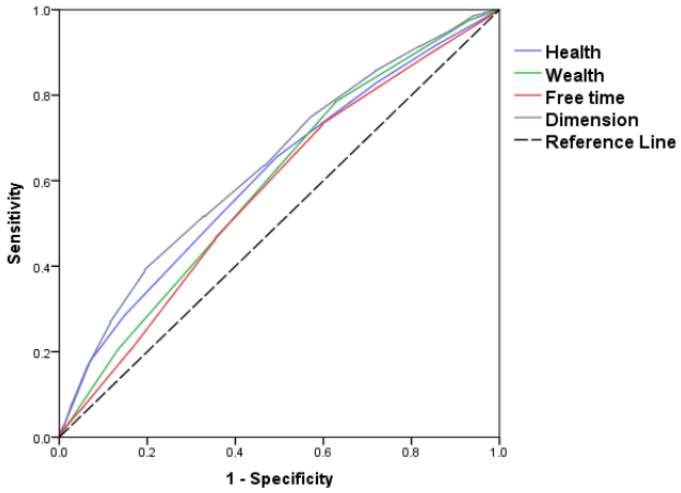

Figure 3. ROC curve representing each and 'all dimensions´ behavioral changes for anxiety and depression symptoms.

On November 1, 2020, a 52 years old male admitted with diagnosis of Covid-19 committed suicide by jumping from the third floor of a hospital facility. This is the third case of the same style suicide in three months at the same Covid-19 hospital, the others were both males, 65 and 29 years old. These are the extreme effects and many others are expected to be found in the Albanian population suffering under pandemic lockdown, quarantine and isolation. Behavioral changes are expected and take the form of a spectrum through no change at all to changing all. A new case of suicide by jumping, November 10, 2020, male, 69 years old. Back to the questionnaire, one of the generalizing outputs was the mean change of each individual calculated for all questions (Figure 1), shows extreme variation which can be expected to have a relationship with age but not only. The relative risk of dying from Covid-19 can be layered as low for young people, increasing for people on their 60s and highest for people in their 80s. (Stein, 2020) Heighten anxiety is common in situation of social distancing and more, choices are part of stakeholders interests (Faherty et al., 2019). The primary stakeholder is the society at risk under lockdown, other stakeholders, like government and media, are stakeholders that the society has outsourced competencies through election or free market mechanisms. What we find is that (Table 1) behavior changes are not uniform with change of baseline self-reported anxiety and depression symptoms.

Sleep quality changed in 771 (56.1%) of respondents while change in symptoms of anxiety and depression are found in 851 (61.9%) of subjects, of which 290 (21.1%) didn't encounter sleep quality changes, the differences are statistically significant ($p<0.001$). The graphical presentation (Figure 2) recapitulates each question according to the dimension it belongs. To find the reason why some people are more vulnerable to expression of anxiety and depression symptoms while their respective variables of principals' dimensions, health, wealth and free time may have or may have not changed we represented each individuals' score as a mean of change from the baseline behavior. Linear logistic regression model (Table 2) studies each dimension's association to other dimensions' questions adding as demographic covariates, age, sex and profession. The table shows only the significant associations ($p<0.05$).

Results on sex, age and profession seem reasonable on terms of dimensions, health, wealth and free time. The significant relationship of wealth to profession makes sense, as age is significantly related to health and free time but not wealth, even because the differences on age are not to representative of the population in our sample, concluding with significant differences of free time in relation to sex, which can or can't be caused by characteristics of the Albanian population. Other relationships are harder to explain, as is the example of no relationship between alcohol consumption and the dimension of health, maybe the subject are still young enough to not show statistically measurable health deterioration effects. Television is a promoter of alcohol even beyond legal limits, especially for young adults (Barker et al., 2018). Free time has a tool on quantitative elements of health but on none of the qualitative elements except sex.

There are accepted of outputs of negative correlation between hours spent to watch television and health outputs (Cuthbertson et al., 2019). It is normal for leisure time inside home to positively correlate with quantity of sleep and food quantity, but the fact of no correlation to qualitative elements talks of a passive change, considering the situation on the worst side of the spectrum. Among profession, spiritual exercises and smoking, the significant link of wealth to food consumption is disturbing, as it can be seen as an expression of fear and/or modulation regarding the economic situation. This must be studied in relation to macroeconomic indicators as it is shown the effects of pandemic in petroleum and electricity demand (Norouzi et al., 2020).

Findings look sporadic and difficult to generalize because of the difficult task of the questionnaire to encompass too many aspects of life under pandemic pressure. The most valuable outcome is the dimension's mean of change from baseline for all dimension questions. This can be further analyzed as an indicator of depression and anxiety to be used on the same population on anxiety and depression symptoms. Changes in health, wealth and free time choices are expected to act as a whole barrage on mental health of a population. Our sample is age, gender and geographically biased, but the responses are a valuable source for further projections. Other studies, age biased find patterns of sexual behavior changes under quarantine in terms of time together, no recreational options and fewer obligations

(Arafat et al., 2020). The Albanian sample is unique in terms of socio-cultural patterns with results presented elsewhere (Akshija, 2014).

An attempt to continuously evaluate emotional health of the population through measurable indicators as wealth status, health indicators and leisure time usage is done through ROC analysis. Change of predictive indicators ranges from 0 to 1 from previous status. Results (Table 3) show much better results on sensitivity than specificity. When our testing for anxiety and depression symptoms is compared with a theoretical standard summing up sensitivity and specificity to equal 1.5, considered theoretically useful, the respective results don't reach the objective because of the low specificity values (Power et al., 2012). One major flaw of our study about this projection may be the source of information quite different from a formal one. The emotional component is the major component added to the results from a technical information collection (Wilson et al., 2020). All dimensions are significant ($p<0.001$) and cut-offs represent the change from baseline above whichever anxiety and depression results positive. The test fails to catch false negatives or persons resulting from the questionnaire without increase on anxiety and depression symptoms but in reality the condition (anxiety and/or depression) has incremented, while we are more successful on detecting the true positives. This shows a brake on our measurement tool. Except free time the other dimensions tend to evaluate quantitatively and qualitatively the question. Failing to catch persons with increased anxiety and depression symptoms can be expected from the dimension's questions formulation.

All health's dimension questions are composed of both qualitative and quantitative questions, wealth has one question measured quantitatively and qualitatively and free time has none (Table 1). More television and social media habits change, more anxiety and depression we encounter, ore the reverse, or both ways influencing each other are the possible. This can be responsible for the unexplained anxiety and depression (false positives) due to television, social media and spiritual exercise content quality evaluation. From the questions of free time dimension, only three from the seven questions had a significant relationship with increasing symptoms of anxiety and depression, television ($p<0.001$), social media ($p<0.001$) and spiritual exercise ($p=0.002$). Television viewing change was accompanied with increasing symptoms of anxiety and depression in 604 (43.9%) of responders of which 488 (35.5%) watching more, social media 716 (52.1%) of which 657 (47.9%) using more and spiritual exercise 388 (28.4%) which 164 (12.0%) practicing more. The increase is associated with television and social media while the moderate increase of spiritual exercises is accompanied with a more prominent 303 (16.4%) practicing less spiritual exercises in the increased anxiety and depression symptoms group. Clearly, television and social media compete and win on time consumption against spiritual exercises. The equilibrium television and social media must preserve stands between healthy information and a goal driven panic, at least for audience gain, thus creation negative emotions instead of promoting awareness.

While the recommendation to use health, wealth and free time to evaluate the condition of mental health can be accepted, but used with caution due to their change under epidemics conditions. The more exposed areas find themselves more economically affected although economic collapse seems to dissipate a few years later (Correia et al., 2020; Carillo & Jappelli, 2021). The economic effects have to be seen as global as the pandemic in itself was. A country may develop a certain phase of epidemic later than another country with which he has economic relationships making the two altered economies forcibly modify the trade and labor relations (Antràs et al., 2020). An example were the economic relationships between Italy and Albania which technically was expected to build barriers towards Italy, which was first affected from the pandemic, but remained opened to it risking the health of its own population. In individuals' terms just social distancing is associated with changing spending habits especially in restaurants and retail products (Baker et al., 2020).

Health is another well documented field where cause and effect models are widely studied. Good sleep quality is a guarantor against anxiety and depression while the prolonged deterioration increases cardiovascular risk (Al-Khani et al., 2019; Covassin & Singh, 2016). Diet and sexual life also are well documented. To mention is the importance of a diet that respect not just the human body but its microbial residents also (Gentile & Weir, 2018). They come back with symbiotic actions and health benefits.

Policies and recommendations must take account of local specifics and the individual himself. For example, WHO recommends the updating through a reputable news broadcast, which is confounding for a citizen, speaker of a native language, having access just to politically distorted media (Király et al., 2020). Other recommendation are selective to special economic classes as the promotion of psychobiotics in inflammation inhibition resulting on decreased symptoms of anxiety and depression (Cheng et al., 2019). Good experiences on managing the epidemics and mental health issues under its effect are proved to be techniques as telemedicine or involvement of 'physician e-leadership' to evaluate media and social media health content (Santos et al., 2013; Keijser et al., 2016). Political media, social media or telemedicine platforms are quite different on message content.

Islamic sacred texts bring already meaningful classification which if properly interpreted can be practically used as powerful tools in practical life situations like the case of COVID-19 pandemic situation. The method and the interpretation of the results from this study can be successfully used in similar epidemic or pandemic situation, or further improved if considered reasonable.

CONCLUSION

The individual has to face his/er situation to local and global political decisions in the difficult ground first to save his/er life and guaranty its quality. Anxiety and depression are a

coping mechanism that risks converting into mental health issues if not addressed correctly. The citizen is expecting recommendations that he/she accepts, as a collaborating agency, accepting advice from trusted and competent fonts. Some of those advices content is associated with more harm than good because some recommendations tend to be hidden to the public, because doubt could risk implementation, can have political costs, are conceived on corruptive goals or it is hard to continuously evaluate their cost-effective endpoints.

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