



Clinical Practice & Epidemiology in Mental Health

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Supplementary Material



Changes in Mental Health Needs during COVID-19 in the Republic of Georgia: A Longitudinal Follow-up Study

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SUPPLEMENTARY FILE 1: Summary of Key Public Health Measures to Limit Spread of COVID-19 in Georgia

The Republic of Georgia took early public health measures to limit the spread of the virus from early 2020 onwards.(1, 2) This led to suppression of the virus when case numbers were

still manageable. At the end of our first survey in June 2020, Georgia reported around 1000 cases of COVID-19, and 15 deaths.(3) However, there was a rapid rise in cases in late 2021/early 2021. At the end of the follow-up survey in March 2021, around 281,145 cases were recorded (around 616 daily new cases on average), and 3,773 deaths.(4)

2020	
January 28	Establishment of the Interagency Coordination Board
January 29	Suspension of flights with China
February 6	Activation of risk communication; dissemination of educational material and video classes
February 12	Methodological recommendations and protocols developed
February 24	Suspension of air and land traffic with Iran
February 26	First confirmed case in Georgia
March 2	Termination of educational process
March 4	Suspension of air traffic with Italy; Quarantine Zones prepared and personnel trained
March 10	Decentralization of lab diagnostics; social media campaign
March 14	Distant working and educational processes started
March 15	Winter resorts locked down
March 18	Minimization of crossing at the borders; closure of cafe-bars, restaurants, fitness clubs, and pools
March 21	State Emergency declared; inter-city travel suspended
March 31	Total quarantine declared
April 3	Additional restriction imposed under the State of emergency: curfew from 21:00 – 06:00; banned gathering of more than 3 people; suspended travel within and between cities and municipalities.
April 8	Promotion of “Stay Home” campaign
April 13	Lockdown of a village at Khashuri municipality
April 14	State Emergency prolonged until May 22
April 15	Suspension of road traffic between Tbilisi, Batumi, Kutaisi and Rustavi
May 5	Intercity driving between Kutaisi and Batumi reopened
May 8	Stringent quarantine measures cancelled in Kobuleti

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2020	
May 11	Tbilisi reopened; all retail and wholesale stores opened
May 18	Beauty salons re-opened
May 23	State of Emergency ended and the curfew cancelled; cancellation of restrictions of limit of 3 persons per vehicle
June 15	Reopening of domestic tourism
June 19	Trainings and seminars in open spaces permitted.
July 2	Regulations on conducting unified national examinations were clarified
July 7	Trainings and seminars in closed spaces permitted considering the limited number of participants
July 8	Borders opened for those coming from Germany, France, Latvia, Lithuania, Estonia
July 9	Swimming pools and gyms reopened
July 12	COVID-10 risk communication and public engagement action plan developed
July 20	Social events permitted (<100 persons)
August	Testing of international truck drivers at the borders
End of August	Internal spread of infection started in Adjara
August	Social events were forbidden
August	Quarantine period for persons arriving from abroad were reduced to 8 days
September	The COVID-19 plan on strengthening and preparedness of healthcare sector developed and presented
September	Social campaign was intensified
September	Supervision algorithm of mild cases in patients was elaborated (home care)
	The List of Priority Persons Subject to Mandatory Testing for Coronavirus (SARS-CoV-2) Infection (COVID - 19) and Testing Procedure was approved
October 15	The restaurants and entertainment places closed in Tbilisi and Imereti region
October 19	Launching of seasonal flu vaccination in risk groups
October 21	Self-isolation designated for Georgian citizens arriving from abroad and having negative PCR
October 23	Wearing face masks in public areas obligatory
October 24	Launching of campaign on social distancing
October 30	Increase number of COVID hotels
November 3	Prolongation of distance learning at schools
November 4	Restaurants open only until 10pm
November 5	Municipal kindergartens closed in Tbilisi, Kutaisi, Batumi, Rustavi, Zugdidi, Gori, Poti
November 9	Municipal transportation and pedestrians banned in big cities: Tbilisi, Kutaisi, Batumi, Rustavi, Zugdidi, Gori and Poti from 10pm until 5am
November 10	Limited number of passengers in municipal transport was defined
November 28 (till Jan 31)	Moving and being in public places restricted from 9pm to 5am (except Dec 31 and Jan 6)
November 29	Ski slopes and cabin cars stopped operating; schools and educational facilities transformed to online format; commercial setting performed to online services Suspension of municipal transportation; all kind of social events transformed to online format; complete transformation to food delivery services
November 30	Expansion of PCR and Anti-gen testing country-wide
December	A special task force was established to work on COVID-19 vaccine deployment. Stores opened from 07am till 07pm. Shopping malls resumed operations (through Jan 2). Increase number of policlinics involved in to the COVID-19 management program. Therapeutic components were enhanced; ICU bed resources mobilised. Vaccination campaign was prepared
2021	
January 3 (to January 15)	Official nation-wide closures announced. Only banks and strategic facilities and services operational.
January 16 (to January 31)	Municipal and intercity transportation, shops and open/closed markets re-opened (except weekends). Essential activities in construction, banking, food provision, and repair services remained open.
February 1	Georgian citizens allowed to return to Georgia with a negative PCR test result and either have 8-day self-isolation, or on the third day demonstrate another negative PCR test result. Citizens of foreign countries can enter Georgia if can prove receiving 2 doses of vaccine.
February 25	Hotels in mountain resorts re-opened. Intercity transportation re-opened. Municipal transport re-opened at weekends.
March 1	Restaurants resumed functioning indoors (except on weekends) in Batumi. Conferences and trainings resumed. Preschools re-opened, with fortnightly mandatory testing of 20% of staff. Higher and vocational schools resumed clinical, practical, laboratory activities and conduct examinations in non-distance format. Museums and libraries resumed operations.
March 8	Restaurants resumed functioning indoors (except on weekends) in the rest of Georgia.

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2020	
March 8	Non-food retail trade resumes, including weekends.
March 15	Teaching resumed in the auditoriums of higher and vocational schools. Gyms, sports clubs, theaters, professional ensembles re-opened.
March 17	Quarantine restrictions lifted for foreigners (regardless of nationality) who can prove full vaccination status.
April 19	Quarantine regime for those leaving the occupied territories in Georgia lifted.
June 1	Restaurants / cafes / bars throughout Georgia allowed to open at weekends. Entry from a foreign country requires either proof of vaccine status or negative PCR test result or agreement to submit PCR test results within 72 hours of entering Georgia (those aged under 10 years are exempt from requirements).

Supplementary File 2: Details on the Recruitment Strategy for 2021 Survey

The second round of the survey ran during January to March 2021. This initially focused on the follow-up individual level respondents – cohort members. For this, we contacted the 1335 respondents from the 2020 survey who had provided consent to be included in the next round of the study. The survey weblink was sent to the 1335 people by email or telephone. During the next two months after the start of the second round, up to three reminders were sent to these respondents.

The next stage took place in February 2021 for the population-level and ended on 31 March 2021. The questionnaire link was disseminated by Facebook and investigators’ networks to a wider population groups, broadly following the procedures used in the first study from 2020.(5) The change from the 2020 study was that in order to strengthen the representativeness of the sample, research assistants from regions were recruited who then shared the survey links with targeted underrepresented groups of: persons living in regions, men, persons over 65 years of age, persons without high education.

Supplementary File 3: Full linear mixed model results (outcome: COVID concern score) related to Table 2 for factors independently associated with change in concern about COVID-19 score from 2020 to 2021.

	Coefficient (95% CI)	p-value
Fixed-effects parameters		
2021 vs 2020	5.17 (3.23, 7.11)	<0.0001
Internally displaced persons	-0.50 (-2.05, 1.06)	0.5307
Anxiety	5.15 (4.04, 6.27)	<0.0001
PTSD	1.96 (0.61, 3.31)	0.0044
Interaction: 2021 vs 2020 * internally displaced person	2.99 (1.01, 4.97)	0.0031
Interaction: 2021 vs 2020 * anxiety	-3.00 (-4.50, -1.51)	<0.0001
Interaction: 2021 vs 2020 * PTSD	1.88 (0.08, 3.68)	0.0412
Working outside home	-0.46 (-1.16, 0.23)	0.1927
Education:		
Completed secondary	0.15 (-1.78, 2.08)	0.8800
Non-finished higher education	-1.12 (-3.03, 0.79)	0.2495
Finished higher education	1.06 (-0.73, 2.84)	0.2449
High risk occupation	-1.93 (-2.78, -1.09)	<0.0001
Health status:		
Good	2.54 (1.45, 3.63)	<0.0001
Average	4.14 (2.97, 5.31)	<0.0001
Bad	3.36 (1.64, 5.08)	0.0001
Very bad	3.45 (-0.43, 7.33)	0.0812
Depression	1.51 (0.64, 2.38)	0.0007
Household economic situation:		
Good	-1.43 (-3.69, 0.83)	0.2143
Average	-0.68 (-2.90, 1.53)	0.5465
Bad	1.64 (-0.70, 3.98)	0.1690
Very bad	1.39 (-1.45, 4.22)	0.3376
Previous diagnosis of mental disorder	-1.44 (-2.38, -0.49)	0.0029
Any NCD	0.83 (-0.08, 1.74)	0.0729
Age group:		
40-49	-1.00 (-1.82, -0.19)	0.0158
50-59	-3.03 (-3.99, -2.07)	<0.0001

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	Coefficient (95% CI)	p-value
60-69	-4.03 (-5.32, -2.74)	<0.0001
70 and over	-3.58 (-6.03, -1.13)	0.0042
Living location:		
Regional centre	0.05 (-0.74, 0.83)	0.9043
Village	-0.65 (-1.74, 0.43)	0.2380
Household size:		
2 persons	1.96 (0.56, 3.36)	0.0060
3 persons	3.69 (2.36, 5.02)	<0.0001
4 persons	3.78 (2.48, 5.09)	<0.0001
5 or more persons	4.93 (3.63, 6.22)	<0.0001
Female	0.61 (-0.25, 1.46)	0.1640
Adjustment disorder	3.98 (3.23, 4.74)	<0.0001
Intercept	34.00 (30.89, 37.11)	<0.0001
Random-effects parameters		
Var(slope)	2.96	
Var(intercept)	38.58	
Cov(slope, intercept)	0.60	
Residual variance		
Residual variance	35.11	

Notes: Data in bold are significant at $P < 0.05$. Reference categories: Not displaced, no/mild anxiety, no PTSD, working from home, incomplete secondary education or less, low-risk occupation, very good health status, no previous mental health diagnosis, no/mild depression, very good household economic situation, no NCD, aged 18-39, living in Tbilisi, household size of 1 person, being male, no adjustment disorder.

REFERENCES FOR SUPPLEMENTARY FILES

- [1] National Center for Disease Control and Public Health. Novel Coronavirus Situation in Georgia: Analysis of the National Center for Disease Control and Public Health (Second Report). Tbilisi: NCDCPH 2020.
- [2] RUSI. An Unusual Suspect: Georgia as a Success Case in Addressing the Coronavirus Challenge: Royal United Services Institute. 2020. <https://rusi.org/commentary/unusual-suspect-georgia-success-case-addressing-coronavirus-challenge>
- [3] WHO. Coronavirus disease (COVID-19) Situation report - 170 8 July 2020. Geneva: World Health Organization 2020. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200708-covid-19-sitrep-170.pdf?sfvrsn=bca86036_2
- [4] Worldometer. Georgia data: Worldometer 2021. <https://www.worldometers.info/coronavirus/country/georgia/>
- [5] Makhashvili N, Javakhishvili JD, Sturua L, Pilauri K, Fuhr DC, Roberts B. The influence of concern about COVID-19 on mental health in the Republic of Georgia: a cross-sectional study. *Global Health* 2020; 16(1): 111.

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