Evaluating the mental impacts of the COVID-19 pandemic: Perceived COVID-19 risk and childhood trauma predict worse depressive symptoms in Soweto, South Africa

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Introduction

Global mental health and depression

- Depression is the leading cause of disability based on disability adjusted life years and the fourth leading contributor to the global burden of disease
- ~90% of research on mental health come from samples living in high income countries, reflects only 10% of global population
- One in three (30.3%) South Africans are expected to develop a mental illness but only 27% of patients with severe mental illnesses receive treatment

COVID-19 in South Africa

- National government imposed strict lockdown on 26 March 2020, prohibiting people from leaving homes except for food, medicine, and key labor
- Limited capacity of government public health initiatives and lack of research on disease burdens of COVID-19 and public mental health
- Studies on the mental health consequences of quarantine worldwide have reported marked increases in risk for depression, anxiety, post-traumatic stress disorder, and suicide

Purpose

- We investigates the mental health impacts of the COVID-19 pandemic among adults residing in Soweto (n=957), a major township southwest of Johannesburg, during the South African lockdown of 2020. We use a longitudinal, mixed-methods design to assess the impacts of COVID-19

Hypothesis

- Greater perceived stress and trauma from COVID-19 and lived experiences of quarantine will correspond with worse depressive outcomes
- Those with greater comorbidities and lower socioeconomic status will face greater risk

Results

Variables	n = 221 (SD)	Range
Sex (% female)	73.3	
Age	46.3 (12.9)	26-69
Household assets	8.0 (1.9)	3 - 12
Density (people/room)	2.2 (1.2)	
Diagnosis (≥1) (%)	93%	
Heard of COVID-19	99.5% (Yes)	
Depressive symptoms (CES-D-10) Risk of depression (≥10)	5.8 (4.3) 14.5%	0 - 12
Adverse childhood experiences	3.5 (2.2)	0 - 9
Quality of Life	3.1 (0.9)	1-5
Food insecurity (year)	59 (26.7%)	

Figure 1. Descriptive statistics

Question	# correct	%
Do you get COVID-19 from…		
Touching others	114	52
Being around others who cough	114	52
Being around others who sneeze	186	84
Sharing meals	10	4.5
What will help prevent COVID-19 transmission?		
Hand washing only with water	218	98.6
Hand washing with water and soap	209	94.6
Covering your mouth when coughing/sneezing	107	48.4
Staying home	147	66.5
Drinking water (Reverse coded)	186	84.2
Wearing a face mask	52	23.5
Disinfecting surfaces	59	26.7
Social distancing	75	33.9

Figure 2. Knowledge of COVID-19 prevention

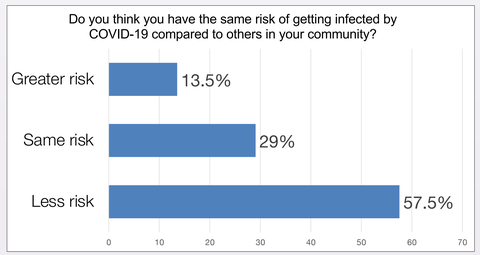

Figure 3. Relative risk of COVID-19 risk

Theme	% (n=221)	Quotes
No	74	No, I only think about it if I hear other people talking about it. I don't focus my mind on it.
Anxiety	20	Yes, now that my mother is not feeling well, I'm just worried as I don't know the signs and symptoms.
Infection	15	Yes, I'm very afraid, being HIV+ I am very afraid of contracting corona because it might kill me.
Thinking too much	10	Yes, I do think that coronavirus affects my mind because it is something that we are always thinking about. We are always scared, especially when we must go out of the house.

Figure 4. Do you think COVID-19 affects your mental health?

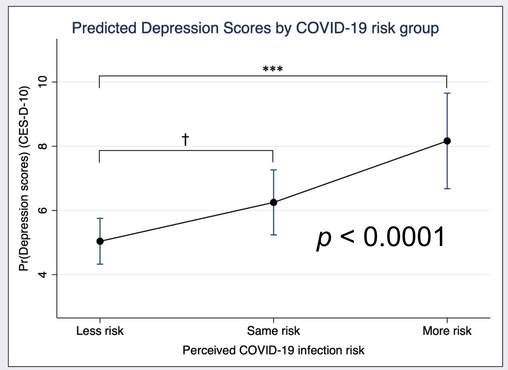

Figure 5. COVID-19 risk and Depressive symptoms

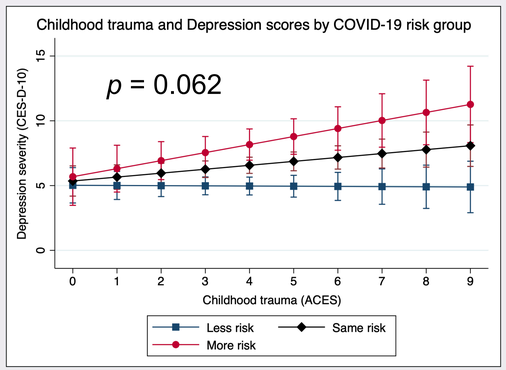

Figure 6. Childhood trauma, COVID-19 risk, CES-D-10

Methodology

1) Sample & Major variables
- *Sample*: Follow-up of comorbidity surveillance study sample, adults over 25 years living in Soweto, South Africa, urban, mixed-income city
- *Predictors*: Perceived COVID-19 risk
- *Outcome*: Center for Epidemiologic Studies Depression Scale, 10-questions (CES-D-10)

2) Mixed-methods data collection
- *Qualitative*: Questions about COVID-19 disease, origins, perceptions of risk and illness, explanations for disease, government response
- *Wave 1 Survey (April 2019-March 2020)*: disease history, demographics, stress, social support, psychiatric risk, household conditions, adverse childhood experiences
- *Wave 2 Survey (March – May 2020):* COVID-19 experiences and perceptions, depressive risk

3) Statistical analysis
- Multiple OLS regression models (Stata 13), qualitative analysis in Dedoose
- Longitudinal data from Wave 1 and cross-sectional analysis in Wave 2

Conclusions

- Greater perceived risk of COVID-19 infection is associated with worse depressive symptoms ($p < 0.0001$)
- Higher perceived risk of COVID-19 infection is associated with greater depressive symptoms among adults with childhood trauma ($p = 0.062$)
- Limited belief that COVID-19 experiences affects mental health but reports of anxiety, fear, and rumination amidst fewer economic and psychological resources and greater morbidity
- Greater emergency mental health resources and sustainable improvements in public healthcare systems needed
- *Limitations:* Only assessed exposures from the first six weeks of lockdown in Soweto – worse period of COVID-19 occurred in July-August 2020