Children's social connections, internet usage and mental health during the COVID-19 pandemic in the Global South: evidence from *Disrupting Harm*

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Introduction

A large international body of scientific evidence has reported deleterious mental health associations with the COVID-19 pandemic. Among children and adolescents, the incidences of depression and anxiety appeared to be elevated worldwide during the pandemic compared to the period before [1]. In the face of the potential harm to mental health from social isolation during the pandemic, it was hypothesised that adolescents turned to online activities and methods of communication to mitigate this isolation [2]. However, at the same time there is some controversy over purported negative mental health consequences arising from heavy social media use, and by extension internet use in general. To date, there is a lack of consistent longitudinal evidence that such negative consequences exist at the population level, and there is some evidence that online social connection through social media may be associated with higher well-being as well as higher 'ill-being' [3].

The existing literature has a notable lack of studies investigating the wellbeing implications of the COVID-19 pandemic in the Global South, and this becomes more pronounced in certain regions, most notably Africa [1]. It has also, for example, been noted that there exists no model of excess suicidality in low- and middle-income countries during the pandemic, in spite of the vast majority of suicides occurring in these countries (as a product of their greater share of the global population) [4]. This lack of investigation presents an urgent need for evidence.

This study analyses data from *Disrupting Harm*, a survey of nearly 12,000 internet-using adolescents aged 12–17 in 12 countries in Africa and Asia conducted in 2020–2021. The survey was conducted as soon as possible after lockdowns were lifted in the countries involved. The primary aim of the survey was to investigate online child sexual exploitation and abuse in these countries, but here we cross-sectionally relate questionnaire measures collected of social connection and internet use during the pandemic with indicators of mental health. In so doing, we aim to determine whether becoming disconnected from family and friends, and increased internet use, might variously be plausible risk or protective factors for adolescent mental health (including self-harm tendency and suicidality) during the pandemic.

Methods

The *Disrupting Harm* survey was designed by UNICEF Innocenti – Global Office of Research and Foresight and conducted in collaboration with IPSOS between November 2020 and November 2021. Data were collected in 6 countries in sub-Saharan Africa (Ethiopia, Kenya, Mozambique, Namibia, Tanzania and Uganda) and 6 countries in southeast Asia (Cambodia, Indonesia, Malaysia, Philippines, Thailand and

Vietnam). The target population comprised 12–17-year-old children living in private households who had used the internet in the three months before interview. Participants were recruited via a clustered random sampling method. The sampling frames in some countries were constrained by security considerations and the geographical isolation of certain regions, but each sampling frame had a minimum of 94% population coverage except for those of Indonesia (76%) and Ethiopia (82%).

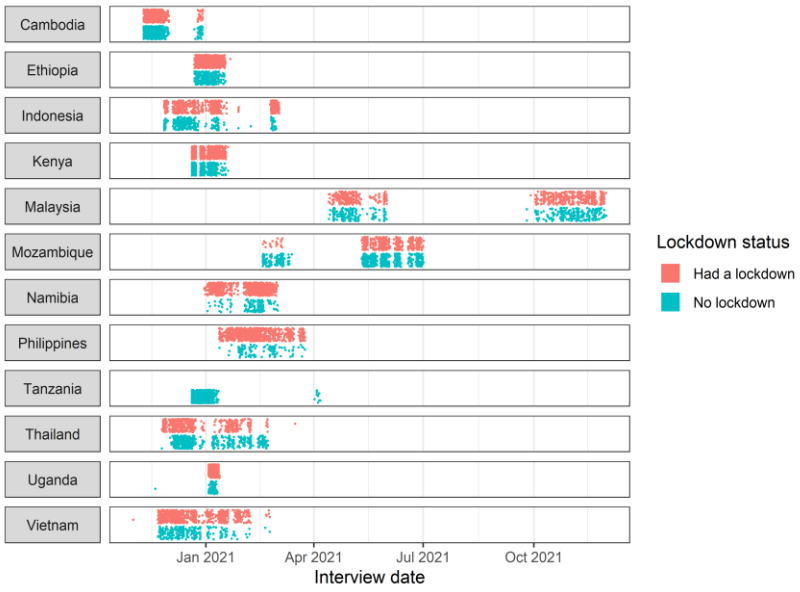

Figure 1. Plot showing interview dates for each participant in each country, alongside whether or not they reported having experienced a lockdown in their community.

We analysed six outcome measures relating to the mental health and wellbeing of participants, namely the Cantril life satisfaction ladder, modified Children's Worlds Psychological Well-Being Scale (CW-PWBS), abridged UNICEF Youth Empowerment Project anxiety scale, abridged Center for Epidemiologic Studies Depression Scale Revised (CESD-R), self-reported self-harm within the last 12 months and the Paykel Suicide Scale. We assessed each for metric and scalar invariance across countries by multigroup confirmatory factor analysis. To quantify the association between social connection or internet use and mental health, we fitted logistic and robust linear regression models as appropriate to the outcome variable type. All regression models were adjusted for socioeconomic and demographic covariates alongside caregiver's mental health status. We also re-estimated all models separately by gender and by rural-urban status, and by each combination thereof. All models were estimated separately by country, along with a pooled model which includes all participants, with country as a covariate. We did not correct for multiple comparisons, as our analyses are descriptive in nature and not intended to confirm any association in particular.

Results

Lockdown and social connection

Considering first the models quantifying the associations between social connection during lockdown and mental health indicators across all countries, there were no significant associations applicable to the entire population. However, there was evidence for some associations applying to subgroups of the population across countries (e.g. among boys or among children living in rural areas). Associations at the country level are summarised in Figure 2.

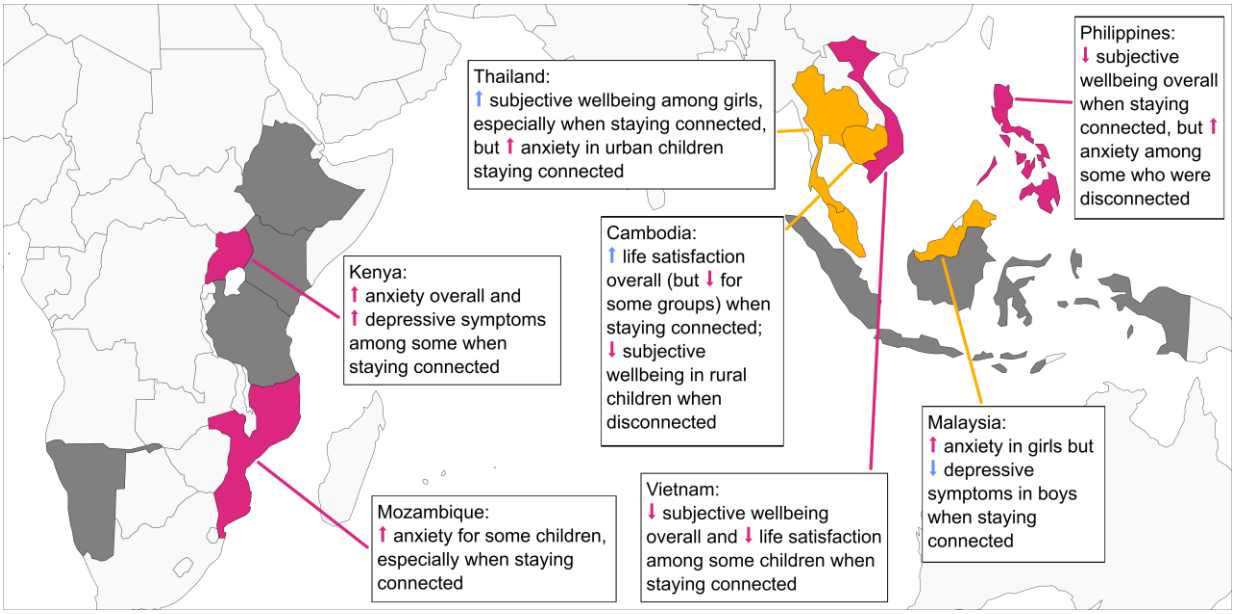

Figure 2. Summary of country-wise associations between lockdown (either **staying connected** to friends and family or being **disconnected**) and mental health indicators, compared to experiencing no lockdown at all. The colour of each country represents the overall direction of the significant associations we found (with yellow indicating mixed findings), but note that in all cases most of the associations were null.

Please note that the boundaries shown on the above map do not imply the expression of any opinion whatsoever on the part of the authors, their funders or UNICEF concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

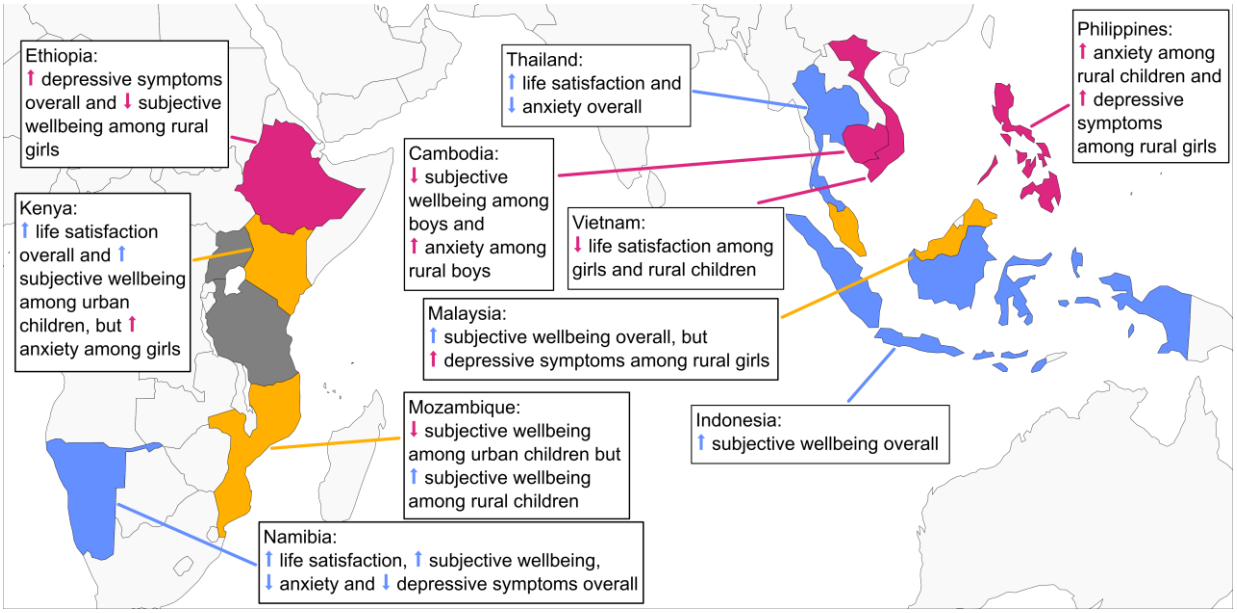

Figure 3. Summary of country-wise associations between internet use during the COVID-19 pandemic and mental health indicators. The colour of each country represents the overall direction of the significant associations we found (with yellow indicating mixed findings), but note that in all cases most of the associations were null.

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Internet use

Among all participants, higher frequencies of internet use were associated with higher life satisfaction, and this was pronounced among girls and in particular girls living in urban areas. In the latter group, internet use was also negatively associated with anxiety. However, in both cases among girls living in urban areas the interaction term between internet use and lockdown was statistically significant in the opposite direction, meaning the positive association of internet use with wellbeing was negated by experiencing a lockdown. We did not find any associations of internet use with self-harm or suicidality. Associations at the country level are summarised in Figure 3.

Discussion

In this study, we demonstrate the lack of clear cross-sectional associations between either social connection during lockdown or internet use during the pandemic and mental health indicators among adolescents in 12 countries in the Global South. While there are a number of associations that meet the threshold for significance (without correction for multiple testing), there are also a much larger number of tests that returned null findings. Nonetheless, those associations that we have highlighted in our results can serve to generate hypotheses for future research in these countries, ideally involving longitudinal study designs and more detailed questions about the nature of children's internet use, outside of the online child sexual exploitation focus of the *Disrupting Harm* survey.

Many concerns have been raised in both mainstream media and academic circles about the possible effects of digital technologies on mental health. In spite of the implications that this would have for global mental health, there is a chronic lack of diversity in samples used to investigate these concerns [5]. As such, marked developments in digital wellbeing research outside the Global North are needed to facilitate equitable care in the mental health sphere globally.

References

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