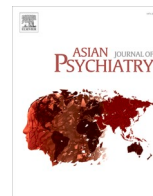




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## Letter to the editor

## Change of daily life and depression among adults under stringent lockdown restrictions during COVID-19 pandemic in Shanghai, China



## ARTICLE INFO

## Keywords

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Depression  
Panic shopping  
Lockdown  
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### 1. Introduction

The continuing global spread of COVID-19 has led to a global health crisis (Anon, 2022). The pandemic and efforts to contain it lead to abrupt and unpredictable changes to residents' daily lives, and could increase the risk of mental health problems (Moreno et al., 2020). Longitudinal analysis showed that more stringent policies and intense pandemics are both associated with worse mental health (Akin et al., 2022). In late February, 2022, a wave of COVID-19 infection rapidly spread throughout Shanghai, China. To limit the spread of and eliminate COVID-19, from March to May, Shanghai municipal implemented a "dynamic zero-COVID" policy, involving business closures, restrictions on domestic movements, and stay at home orders (Anon, 2022). The stringent and comprehensive pandemic control strategies are essential for China to achieve better outcomes compared to Europe and the America (Tandon, 2021), and exit from the pandemic (Zhang et al., 2022). However, its impact on the mental health of local residents have not been investigated yet.

### 2. Methods

A cross-sectional study was conducted through an online questionnaire platform called Wenjuanxing ([www.wjx.cn](http://www.wjx.cn)) from May 1–15, 2022 in Shanghai. Individuals were eligible to participate if they were resident in Shanghai from March 1st. The Patient Health Questionnaire-2 (PHQ-2) (Kroenke et al., 2003), COVID-19 Exposure and Family Impact Scales (CEFIS) (Kazak et al., 2021) and a self-designed questionnaire to evaluate the impact of COVID-19 on daily life were completed. Categorical variables were subjected to the Pearson  $\chi^2$  test or Fisher's exact test. To identify risk and protective factors for depression, multivariable logistic regression was performed.

### 3. Results

Totally 6154 adults were included in final analysis. The median age of the participants was 40 (33–49) years, and 63.41% were female. In total, 2370 (38.51%) participants had a PHQ-2 score  $\geq 3$ . Multivariate

logistic regression showed that high education level (postgraduate and above, aOR: 1.38(1.11,1.72)), more than 5 h for learning COVID-19 news per day (aOR: 1.38(1.11,1.72)), high distress scores (aOR: 1.44 (1.39–1.49)), long Time for online shopping per day ( $\geq 4$  h, aOR: 1.68 (1.30,2.16)), poor relationship with family members (much worse, aOR: 1.75(1.34,2.29)), poor exercise (much worse, aOR: 1.45(1.21,1.75)), poor dietary (much worse, aOR: 2.13(1.72,2.64)) and poor sleeping (much worse, aOR: 2.65(2.17,3.23)) were risk factors of depression. In addition, working outside as supporting personnel (aOR: 0.56 (0.47,0.67)) and having minor children (2 children, aOR: 0.74 (0.60,0.93)) were protective factors of depression development (see Fig. 1).

### 4. Discussion

This study examined the prevalence of depression and its risk factors in Shanghai residents during the COVID-19 pandemic and lockdown measures. The prevalence of depression was 38.5%, which is in line with existing literature (Santomauro et al., 2021). The pandemic and subsequent stringent measures taken in Shanghai caused inconvenience in everyday life, such as dietary, exercise, sleep and negatively impacted population mental health. In India and Bangladesh, suicide demographics was also impacted (Kar et al., 2021).

Self-reported distress score, spending a large amount of time on COVID-19 news or shopping online daily, having a considerably poorer relationship with family members, having considerably poorer exercise, dietary quality or sleep and more COVID-19 exposure are risk factors for depressive symptoms. Having minor children and continuously working outside the home during pandemic are protective factors for mental health. The most interesting finding is that individuals who spent more time engaged in online shopping for food and vegetables were inclined to experience depression. Because of the stringent lockdown measures, most adult residents of Shanghai bought supplies online via smartphone apps. 24.36% of the participants spent more than 2 h on online shopping. This behavior was called "Qiang cai" in Chinese, which became a buzzword in April and May. These irrational consumer behaviors are known as panic buying (Taylor, 2021). The possible explanation might

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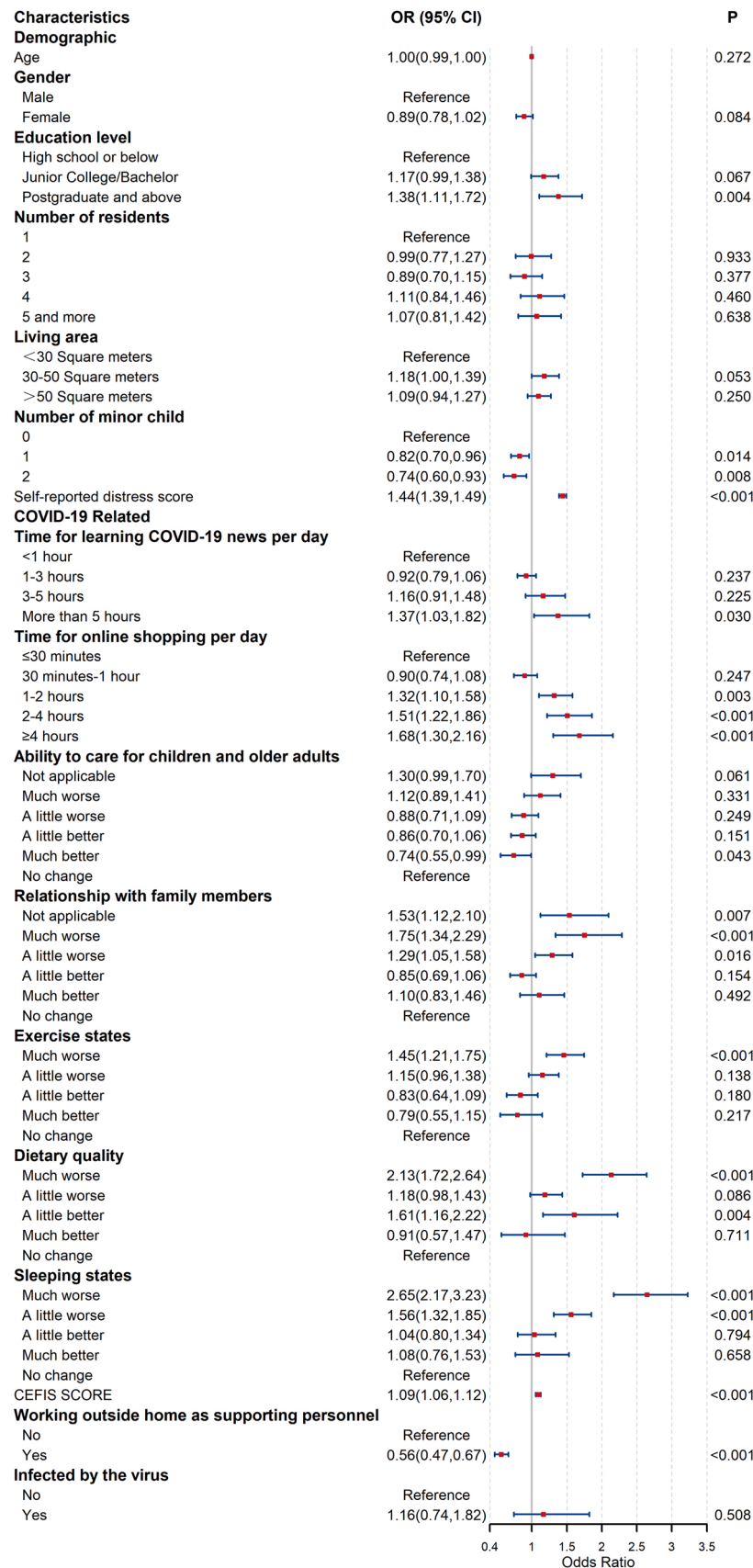


Fig. 1. Multivariate logistic regression analysis of characteristics associated with depression among participants.

be that during the early days of this wave of COVID-19, the public experienced fear, panic, anxiety, and uncertainty, in part as a response to a real and/or perceived shortage of basic supplies. Panic buying by an anxious minority of shoppers leads to fear among other shoppers, in a process amplified by widespread dissemination of images and videos of panic buying and empty shelves in stores via social media (Arafat et al., 2021). Populations with limited digital literacy, such as the elderly, experienced increased difficulty sourcing food, medication, and other necessities (Hall et al., 2022).

## 5. Conclusion

Our findings reveals that a significant proportion of residents in Shanghai experienced depression during the COVID-19 pandemic and highlight the widespread adverse impact of COVID-19 on the public. Efforts should be made to address these issues during the ongoing pandemic. Various methods should be adopted to expand the supply channels for daily necessities for all people, especially vulnerable groups, including planned, centralized government procurement, management and supply of materials from non-governmental organizations. In view of adverse effect of residents' excessive online shopping and media consumption on mental health, managing individuals' risk perceptions and establishing healthy social media use are important to prevent mental problems during the COVID-19 lockdown.

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## Conflict of Interest Disclosures

None reported.

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