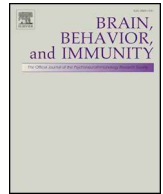




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Psychopathological responses and face mask restrictions during the COVID-19 outbreak: Results from a nationwide survey



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Dear Editor,

The declaration of the novel coronavirus disease (COVID-19) as a Public Health Emergency of International Concern on 30th January 2020 was followed by a considerable number of prohibitions and restrictions implemented globally to optimize epidemiological security (WHO, 2020). Recommendations on the face mask use varied greatly between countries and dynamically changed over time causing confusion in the general public (Feng et al., 2020). Lin et al. (2020) pointed out that Google searches for “face mask” reached an all-time high interest since February, which could be a sign of anxiety appearing in the society. The reasoning behind wearing masks has been widely discussed in relation to accessibility, utilization and blocking human-to-human transmission when worn by symptomatic patients and healthcare providers (Feng et al., 2020). However, the effect of such restriction on mental wellbeing remains unknown. Nevertheless, it seems that it may be an important topic of current research as it is the visual consequence of a pandemic that is present in the everyday lives of most people. Therefore, in this study, we aimed to examine the association between implementation of face mask restrictions in Poland (on 16th April 2020) and psychopathological manifestation.

Data were collected through the anonymous online survey administered between 16th March and 26th April in Poland. We obtained general sociodemographic characteristics that included age, sex, employment status and place of residence. Psychopathological manifestation was assessed using the General Health Questionnaire-28 (GHQ-28) that consists of 28 questions scored on a 4-point Likert scale illustrating the frequency of specific symptoms experiences over preceding 4 weeks (Makowska and Merecz, 2001). Scores of specific items are grouped into four subscales: somatic symptoms, anxiety and insomnia, social dysfunction, and depression. After data collection, participants were divided into two subgroups, i.e. those participating in the survey before and after implementation of face mask restrictions in Poland. The Ethics Committee at Wrocław Medical University, Poland approved the study protocol. The categorical variables were compared using the chi-squared test. In turn, continuous variables were analyzed using the Mann-Whitney *U* test due to non-normal distribution. The analysis of co-variance (ANCOVA) was performed to test for the association

between face mask restrictions and psychopathological symptoms after adjustment for the effects of age, sex, working time and place of residence. Results of all analyses were considered significant if the *p*-value was less than 0.05. Statistical analysis was performed using the Statistical Package for Social Sciences, version 20 (SPSS Inc., Chicago, Illinois, USA).

Participants assessed after implementation of face mask restrictions had significantly lower scores of all GHQ-28 subscales (Table 1). This group of participants had also younger age, more males, higher unemployment rate, shorter weekly working time and lower rates of urban residence. The ANCOVA revealed that differences in the scores of specific GHQ-28 subscales remained significant after co-varying for the effects of age, sex, place of residence and weekly working time.

The results can be considered from various perspectives. Our study emphasized the overall decrease in psychopathological symptoms after the obligation to wear face coverings in a public space. These findings are consistent with another study from China, which was focused on the relationship between the immediate psychological effects and psychoneuroimmunity prevention measures of people returning to work during the pandemic (Tan et al., 2020). The researchers concluded that several factors might significantly reduce the likelihood of the psychiatric symptoms and one of which was wearing the face masks in a workplace. On one hand, such behaviour might reinforce people's sense of personal control and, while being a certain stage of adaptation, mitigate helplessness (Folkman and Greer, 2000) and moderate anxiety, which includes strengthening individual coping resources. On the other hand, this measure is seen as a symbol of social cohesion in the global response to the pandemic (Cheng et al., 2020) that shifts the focus from self to the other and improve the collective responsibility (Shen, 2020). It may also affect the improvement of wellbeing and reduction of negative emotional consequences (Reger et al., 2020; Misiak et al., 2020).

Nevertheless, researchers highlighting the controversy around this obligation point out that there are concerns that mask wearing could engender a false sense of security. This, in turn, could neglect other means of risk reduction such as social distancing and hand washing (Cheng et al., 2020), but reduce the psychological response to stress.

In summary, our findings imply that face mask restrictions may not only protect against the COVID-19 but also increase the level of

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Table 1
Sociodemographic characteristics and psychopathological symptoms with respect to face mask restrictions.

	Before face mask restrictions, n = 564	After face mask restrictions, n = 1476	p
Age, years	46.7 ± 14.6	41.2 ± 12.7	< 0.001
Sex, males (%)	98 (17.4%)	356 (24.2%)	0.001
Employed, n (%)	545 (96.6%)	1287 (87.2%)	< 0.001
Place of residence, urban (%)	464 (82.3%)	545 (36.9%)	< 0.001
Workingtime, hours/week	46.7 ± 14.6	41.2 ± 12.7	< 0.001
Somaticsymptoms ^a	8.9 ± 4.6	6.6 ± 4.4	< 0.001
Anxiety and insomnia ^b	11.3 ± 5.3	8.5 ± 5.3	< 0.001
Socialdysfunction ^c	8.8 ± 3.4	8.2 ± 3.5	< 0.001
Depression ^d	4.1 ± 4.0	3.1 ± 3.9	< 0.001

^a ANCOVA: group (F = 50.33, p < 0.001), age (F = 0.03, p = 0.866), sex (F = 109.26, p < 0.001), place of residence (F = 3.33, p = 0.068) and working time (F = 6.71, p = 0.010).

^b ANCOVA: group (F = 56.53, p < 0.001), age (F = 0.13, p = 0.719), sex (F = 114.69, p < 0.001), place of residence (F = 0.34, p = 0.561) and working time (F = 12.42, p < 0.001).

^c ANCOVA: group (F = 6.76, p = 0.009), age (F = 4.69, p = 0.030), sex (F = 37.69, p < 0.001), place of residence (F = 1.28, p = 0.258) and working time (F = 2.03, p = 0.154).

^d ANCOVA: group (F = 6.20, p = 0.013), age (F = 15.16, p < 0.001), sex (F = 23.73, p < 0.001), place of residence (F = 6.28, p = 0.012) and working time (F = 4.11, p = 0.043).

perceived self-protection as well as the level of social solidarity and thereby improve mental health wellbeing. However, longitudinal studies performed in representative cohorts are required to address limitations of our study and disentangle causal associations.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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