

## ABSTRACT

**Title:** Association of biological sex and gender-related factors with public engagement in protective health behaviours during the COVID-19 pandemic

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**Background:** Public behaviour plays an important role during public health emergencies. Understanding what drives people to engage in or refrain from health behaviours during a pandemic is vital to planning tailored public health interventions.

**Objective:** To examine whether sex and gender-related factors were associated with the public's adherence to COVID-19 recommended protective health behaviours.

**Methods:** We used data from the International COVID-19 Awareness and Responses Evaluation survey collected between March 2020 to February 2021. The role of sex and gender-related factors in relation to adherence of protective health behaviors (hand washing, mask wearing, and physical distancing) were examined using logistic regression.

**Results:** Among 48,668 respondents (mean age: 43 years; 71% female), 98.3% adopted hand washing, 68.5% mask wearing, and 76.9% physical distancing. Compared with males, females were more likely to adopt hand washing (OR=1.97, 95%CI: 1.71-2.28) and maintain physical distancing (OR=1.28, 95%CI: 1.22-1.34). However, in multivariable sex-stratified models, females in countries with higher gender inequality indexes (GII) were less likely to report hand washing (aOR=0.47, 95%CI: 0.21-1.05). Females who reported being employed (aOR=0.22, 95%CI: 0.10-0.48) and in countries with low/medium GIIs (aOR=0.18, 95%CI: 0.06-0.51) were less likely to report mask wearing.

**Conclusion:** While females showed greater adherence to COVID-19 protective health behaviours, gender-related factors, including employment status and high-country wide gender inequality were independently associated with non-adherence. These findings may inform public health and vaccination policies in current as well as future pandemic.