**Predictors of Social Distancing and Hand Washing among Adults in Five Countries
during COVID-19**

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Abstract

Proper hand washing and social distancing measures have been promoted as mitigating strategies to slow the spread of COVID-19 across the world. However, no study to date has investigated the risk and protective characteristics associated with practicing proper hand washing or social distancing. The present study examined the effects of such characteristics among 2,509 adults from the United States, Italy, Spain, the Kingdom of Saudi Arabia, and India. In the overall sample, age was significantly associated with social distancing ($b = 0.07$, $\beta = 0.36$, $p = .001$) but not hand washing. Lesbian women and gay men were less likely to engage in social distancing ($b = -0.92$, $\beta = -0.07$, $p = .001$) and hand washing ($b = -0.39$, $\beta = -0.08$, $p < .001$) relative to their heterosexual peers. No significant differences were found in the overall sample with regard to education level or employment status, but rural ($b = -0.45$, $\beta = -0.07$, $p = .003$) respondents were significantly less likely to practice social distancing compared to their urban counterparts. Furthermore, both suburban ($b = -0.12$, $\beta = -0.06$, $p = .014$) and rural ($b = -0.13$, $\beta = -0.05$, $p = .022$) respondents were significantly less likely to practice appropriate hand washing compared to their urban peers. Taken together, the results suggest multiple nuanced disparities exist regarding social distancing and hand washing among adults internationally. As such, more tailored and culturally-responsive clinical and community-based interventions may be needed to promote preventive measures to mitigate existing COVID-related disparities.

Key words: COVID-19; social distancing; hand washing; sexual minority; social determinants; international

Introduction

To date, almost 100 million individuals have acquired COVID-19 globally; of those, more than 2 million have succumbed to the disease (1). Although initial cases were confirmed at different times across countries, there exists striking differential impacts across continental regions (1). International responses have been broadly consistent in underscoring the serious risks of acquiring COVID-19; however, disparities in disease morbidity and mortality remain. For example, scholars have found that sexual minority (i.e., lesbian, gay, bisexual, pansexual, etc.) adults may have an elevated risk for infection compared to heterosexual peers (2). Part of the COVID-related health disparities exist for sexual minorities due to intersectional identities (3, 4) related to minority stress (5, 6) and stigma, which place sexual minorities at a substantial disadvantage regarding COVID-19 acquisition and mortality.

COVID-related disparities have also been established between rural and urban populations, although the findings have been inconsistent. While Liu and (7) found that urban Chinese patients reported a higher prevalence of mental health concerns than their rural counterparts, scholars from the United States have found that rural adults endorsed greater COVID-related mental health concerns than their rural peers (8). Moreover, rural states have performed COVID-19 testing at lower rates than their urban counterparts. Given the burgeoning literature on the psychosocial and behavioral implications of COVID-19, more systematic investigations are needed to understand and address such disparities and mitigate the pandemic's negative effects across multiple populations.

Both hand washing and social distancing have been identified as non-pharmaceutical public health interventions to combat the spread of COVID-19. International studies have long shown that proper and frequent hand washing is a simple, effective health behavior that can mitigate the risk of acquiring several viral and bacterial infections transmitted through skin-to-skin contact, respiration, or food (9, 10). Godoy and colleagues (11) found that frequent hand washing and the use of alcohol-based hand sanitizers were protective factors against influenza acquisition requiring hospitalization, and other scholars noted the utility of frequent hand washing with soap and water to protect against cholera in Nigeria (12). Although prior research has demonstrated notable increases in perceived efficacy of hand washing to prevent communicable diseases (13), compliance with proper hand washing remains low (14-16). As such, more investigations are needed to identify mechanisms that contribute to disparities of proper hand hygiene in local and cross-cultural contexts.

Like effective hand washing, social distancing (i.e., maintaining a distance of at least six feet, or two meters, from individuals with whom one does not live) has been shown to be effective against the spread against certain respiratory viral conditions. Recent studies in international contexts confirm that social distancing may be effective in mitigating COVID-19 risk (17-19). In the Kingdom of Saudi Arabia, for example, researchers found that taking a multi-faceted and systemic approach to facilitating social distancing measures may potentially mitigate the spread of COVID-19, especially in communities and cultures that highly value interconnectedness as social norms (17). To be sure, successful implementation of widespread social-distancing measures require coordinated, multicomponent efforts across multiple ecological levels and

community sectors. Nevertheless, the extant literature provides consensus on the potentially mitigative effects of proper social distancing on attenuating the spread of COVID-19.

Despite the utility of hand washing and social distancing measures in addressing COVID-19, no study to date has examine risk and protective factors of hand washing or social distancing in an international context. Furthermore, the literature remains limited in examining the differential risks of subpopulations within and across multiple countries. To that end, we examine associations with hand washing and social distancing across five countries affected by the COVID pandemic. Based on prior literature, we hypothesize the following: (a) older age will be positively associated with greater hand washing and social distancing; (b) living in a non-urban setting (i.e., suburban or rural/village) will be associated with lower levels of hand washing and social distancing compared to living in an urban setting; and (c) identifying as a sexual minority (i.e., lesbian, gay, bisexual, and pansexual) will be associated with lower levels of hand washing and social distancing compared to identifying as heterosexual.

Materials and Methods

Participants comprised adults who resided in the United States, Italy, Spain, the Kingdom of Saudi Arabia, or India during the COVID pandemic in 2020. Participants completed structured questionnaires in a survey from July-August 2020, which represented the peak incidence and prevalence in many countries. The 20-minute survey was administered through Qualtrics, and all questionnaires within the survey were anonymous to ensure confidentiality and reliability of data. The final analysis comprised individuals who identified as cisgender men or cisgender women (i.e., those

who identify with the gender or sex assigned at birth) due to small subsamples of adults who were gender diverse.

Instruments and Measures

Social distancing was defined as engaging in socially distancing at least 6 feet (2 meters) from others, and adequate hand washing was defined as washing hands with soap and water for at least 20 seconds each time. The outcome variable was measured using a COVID Protective Measures Scale developed by the author. The scale comprised four items ("I avoid large groups," "I stay at least 2 meters (6 feet) away from others," "I do not hug people or shake people's hands," "I wash my hands with soap and water for 20 seconds or more") and was measured using Likert scaling (i.e., 1 = "strongly disagree" and 5 = "strongly agree"). In the full scale, all items showed good internal consistency in the overall sample (Cronbach's $\alpha = .83$), and social distancing questions showed similar internal consistency (Cronbach's $\alpha = .82$). All items were translated and back-translated into Italian, Spanish, Arabic, and Hindi for participants residing in Italy, Spain, the Kingdom of Saudi Arabia, and India, respectively.

Sexual orientation was a categorical variable measured with the item "Which of the following best describes your sexual orientation?" Response options included heterosexual, lesbian, gay, bisexual, and pansexual. Respondents were also given the option to select "I don't know," to fill in their gender identity, or decline to answer. Other predictor variables included education, employment status, age in years, and age-squared. Locality was a categorical variable measured using the item "What type of community best describes where you live?" Response options included: (a) "I live in a

large (or major) city," (b) "I live near a large (or major) city," (c) "I live in a rural town or village," and (d) "I decline to answer."

Data Analysis

The full data set is available through the Open Science Foundation (<https://osf.io/gdy3z/>). Data were analyzed using Stata/SE version 15.1 (StataCorp, College Station, TX). Demographic statistics were used to show sociodemographic characteristics of respondents overall and stratified by gender. Chi-square tests were used to examine differences by gender, and an independent samples *t*-test was used to identify whether significant age differences existed between men and women in the sample. Statistically significant variables were screened and included in the multivariable linear regression analysis. Strengths of associations were assessed using both standardized and unstandardized estimates as well as standard errors, which are presented in the Results. Statistical significance was assessed at $p < .05$.

Ethical Considerations

The Institutional Review Board at [redacted for review] determined the study was exempt from review. Prior to agreeing to participate, all respondents were provided with detailed informed consent forms regarding the purpose of the study, their responsibilities, risks and benefits of participating, and the privacy and protection of their data. All procedures for this study complied with university, local, state, federal, and international regulations on research with human participants. Each participant had the option of downloading a PDF version of the detailed informed consent form in their language for their records.

Results

Sociodemographic Characteristics

Table 1 displays descriptive statistics of demographic data for the overall sample and stratified by gender. The mean age was 37.1 years ($SD = 0.26$), with a statistically significant difference between genders ($M_{\text{men}} = 38.5$, $SD_{\text{men}} = 0.37$; $M_{\text{women}} = 35.6$, $SD_{\text{women}} = 0.36$; $p < .001$). Women represented a greater proportion of respondents than men from the United States, Italy, and Spain; the opposite was true for respondents in the Kingdom of Saudi Arabia and India ($p < .001$). Significant differences were also found between genders in relation to sexual orientation, education, employment status, and location (all $p < .001$). An overwhelming majority of participants across countries was heterosexual (84.8%), with the remaining percentage representing lesbian or gay (3.6%), bisexual (6.3%), or pansexual or other sexual orientation (5.4%).

Table 1

Sample sociodemographic characteristics stratified by gender ($N = 2,509$)

Sociodemographic characteristic	Men, n (%)	Women, n (%)	Total, n (%)	Sig.
Age (M , SD)	38.5 (0.37)	35.6 (0.36)	37.1 (0.26)	<.001
Country				<.001
United States	174 (13.9)	323 (26.4)	497 (20.0)	
Italy	184 (14.7)	311 (25.3)	495 (19.9)	
Spain	209 (16.7)	286 (23.2)	495 (19.9)	
Saudi Arabia	340 (27.2)	155 (12.6)	495 (19.9)	
India	344 (27.5)	156 (12.7)	500 (20.2)	
Sexual orientation				<.001
Heterosexual	985 (83.5)	1,021 (86.1)	2,006 (84.8)	
Lesbian or gay	62 (5.3)	23 (1.9)	85 (3.6)	
Bisexual	62 (5.3)	86 (7.3)	148 (6.3)	
Pansexual or other	71 (6.0)	56 (4.7)	127 (5.4)	
Education				<.001
High school or less	242 (19.5)	363 (29.6)	605 (24.5)	
Some college	168 (13.6)	224 (18.3)	392 (15.6)	
College graduate	420 (33.9)	361 (29.5)	781 (31.7)	
Graduate or professional school	410 (33.1)	277 (22.6)	687 (27.9)	
Employment status				<.001
Full-time	869 (70.4)	521 (43.3)	1,390 (57.0)	

Part-time	153 (12.4)	284 (23.6)	437 (17.9)
Unemployed	121 (9.8)	265 (22.0)	386 (15.8)
Retired	63 (5.1)	47 (3.9)	110 (4.5)
Other	29 (2.4)	87 (7.2)	116 (4.8)
Location			<.001
Urban	793 (63.8)	608 (49.8)	1,401 (56.8)
Suburban	245 (19.7)	336 (27.5)	581 (23.6)
Rural	206 (16.6)	278 (22.8)	484 (19.6)

Note. Percentages may not add to 100% due to rounding.

Approximately 27.9% of the participants obtained more than a college education; subsample analysis showed that 33.1% of men and 22.6% of women attended graduate or professional school. Conversely, almost one-quarter (24.5%) of respondents reported having a high school education or less. Gender-stratified analysis revealed that 19.5% of men and 29.6% of women endorsed having such education levels. There were also significant differences with respect to employment status ($p < .001$). For example, substantially more men (70.4%) than women (43.3%) endorsed full-time employment, whereas more women (22.0%) than men (9.8%) were unemployed. Finally, significant differences were found regarding one's residential location by gender ($p < .001$). Although overall statistics showed a majority of respondents (56.8%) lived in urban areas, gender-stratified analyses demonstrated that women were more distributed across location types than men.

Social Distancing

Table 2 shows the unstandardized and standardized effects of sociodemographic factors on practicing COVID-related social distancing in the overall sample and stratified by gender. In the overall sample, age was significantly and linearly associated with social distancing ($b = 0.07$, $\beta = 0.36$, $p = .001$). Comparisons by country revealed that compared to United States respondents, those in Italy, were significantly less likely to socially distance ($b = -1.04$, $\beta = -0.16$, $p < .001$). Differences by sexual orientation were also found; lesbian and gay adults were less likely to engage in social distancing relative to their heterosexual peers ($b = -0.92$, $\beta = -0.07$, $p = .001$). No significant differences were found in the overall sample with regard to education level or employment status, but rural ($b = -0.45$, $\beta = -0.07$, $p = .003$) respondents were significantly less likely to practice social distancing compared to their urban counterparts.

Table 2

Unstandardized and standardized multiple linear regression weights for social distancing, stratified by gender

Predictor	Men			Women			Total		
	B	SE	β	B	SE	β	B	SE	β
Age	0.06	0.03	0.31	0.08**	0.03	0.40	0.07**	0.02	0.36
Age-squared	-0.0003	0.0004	-0.12	-0.001	0.0004	-0.24	-0.001	0.0003	-0.18
Country									
United States	--	--	--	--	--	--	--	--	--
Italy	-1.18***	0.29	-0.16	-0.90***	0.22	-0.16	-1.04***	0.17	-0.16
Spain	-0.19	0.28	-0.03	0.06	0.22	0.01	-0.14	0.17	-0.02
Saudi Arabia	0.09	0.26	0.01	0.23	0.28	0.03	0.02	0.18	0.003
India	0.47	0.26	0.08	0.62*	0.29	0.08	0.34	0.18	0.05
Sexual orientation									
Heterosexual	--	--	--	--	--	--	--	--	--
Lesbian or gay	-0.79*	0.35	-0.06	-1.06*	0.53	-0.06	-0.92**	0.28	-0.07
Bisexual	-0.44	0.35	-0.04	-0.34	0.29	-0.03	-0.35	0.22	-0.03
Pansexual or other	-0.47	0.34	-0.04	-0.20	0.36	-0.02	-0.32	0.24	-0.03

Education

Graduate school	--	--	--	--	--	--	--	--	--
College graduate	-0.18	0.19	-0.03	0.48	0.23	0.01	-0.02	0.14	-0.004
Some college	-0.17	0.26	-0.02	-0.34	0.24	-0.05	-0.22	-0.18	-0.03
High school or less	-0.43	0.25	-0.06	-0.05	0.21	-0.01	-0.19	0.17	-0.03

Employment status

Full-time	--	--	--	--	--	--	--	--	--
Part-time	-0.58*	0.25	-0.07	-0.01	0.19	-0.001	-0.10	0.15	-0.01
Unemployed	0.13	0.29	0.01	-0.05	0.20	-0.01	0.11	0.16	0.02
Retired	-0.52	0.43	-0.04	0.28	0.48	0.02	-0.20	0.32	-0.02
Other	-0.50	0.55	-0.03	0.48	0.30	0.05	0.40	0.26	0.03

Location

Urban	--	--	--	--	--	--	--	--	--
Suburban	-0.47*	0.21	-0.07	-0.06	0.18	-0.01	-0.26	0.14	-0.04
Rural	-0.82***	0.23	-0.11	-0.19	0.20	-0.03	-0.45**	0.15	-0.07

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Although age was not a significant predictor of practicing social distancing for men, it was significant for women ($b = .08$, $\beta = .40$, $p = .008$). Both Italian men ($b = -1.18$, $\beta = -0.16$, $p < .001$) and women ($b = -0.90$, $\beta = -0.16$, $p < .001$) were significantly less likely to practice social distancing relative to their American counterparts. Conversely, women in India were significantly more likely to practice social distancing ($b = 0.62$, $\beta = 0.08$, $p = .031$). There was also evidence that gay men ($b = -0.79$, $\beta = -0.06$, $p = .025$) and lesbian women ($b = -1.06$, $\beta = -0.06$, $p = .047$) were less likely to practice social distancing than their heterosexual peers. Education, employment status, and location had no effect on social distancing among women in the sample. However, men who worked part-time practiced less social distancing than men working full-time ($b = -0.58$, $\beta = -0.06$, $p = .022$). Compared to men living in urban areas, those in suburban ($b = -0.47$, $\beta = -0.07$, $p = .025$) and rural ($b = -0.82$, $\beta = -0.11$, $p < .001$) areas were significantly less likely to report practicing social distancing than their urban counterparts, and standardized coefficients suggest that the effect grew slightly stronger as men lived farther away from urban settings.

Hand Washing

Table 3 displays the unstandardized and standardized effects of social cofactors on practicing hand washing during COVID in the overall sample and stratified by gender. In the overall sample, Adults in Italy ($b = -0.27$, $\beta = -0.11$, $p < .001$) and Spain ($b = -0.24$, $\beta = -0.10$, $p < .001$) were less likely to practice hand washing than their American counterparts, with standardized effects slightly stronger in Italy than in Spain. Differences by sexual orientation were also found; lesbian and gay adults were less likely to engage in hand washing relative to their heterosexual peers ($b = -0.39$, $\beta = -$

0.08, $p < .001$). Additionally, adults working part-time were less likely to engage in hand washing relative to adults working full-time ($b = -0.11$, $\beta = -0.04$, $p = .047$). Finally, suburban ($b = -0.12$, $\beta = -0.06$, $p = .014$) and rural ($b = -0.13$, $\beta = -0.05$, $p = .022$) respondents were significantly less likely to practice appropriate hand washing compared to their urban peers.

Table 3

Unstandardized and standardized multiple linear regression weights for hand washing behavior, stratified by gender

Predictor	Men			Women			Total		
	B	SE	β	B	SE	β	B	SE	β
Age	0.01	0.01	0.07	0.01	0.01	0.26	0.01	0.01	0.17
Age-squared	0.00001	0.0001	0.01	-0.0002	0.0001	-0.21	-0.0001	0.0001	-0.11
Country									
United States	--	--	--	--	--	--	--	--	--
Italy	-0.17	0.11	-0.06	-0.29***	0.08	-0.14	-0.27***	0.06	-0.11
Spain	-0.19	0.10	-0.07	-0.22**	0.08	-0.10	-0.24***	0.06	-0.10
Saudi Arabia	-0.01	0.10	-0.01	-0.01	0.10	-0.002	-0.06	0.07	-0.02
India	0.004	0.10	0.002	0.10	0.10	0.04	-0.03	0.07	-0.01
Sexual orientation									
Heterosexual	--	--	--	--	--	--	--	--	--
Lesbian or gay	-0.36**	-0.36	-0.08	-0.37	0.19	-0.06	-0.39***	0.10	-0.08
Bisexual	-0.17	-0.17	-0.04	0.04	0.11	0.01	-0.05	0.08	-0.01
Pansexual or other	-0.04	-0.04	-0.01	-0.22	0.13	-0.05	-0.14	0.09	-0.03

Education

Graduate school	--	--	--	--	--	--	--	--	--
College graduate	-0.01	0.07	-0.01	0.08	0.08	0.04	0.04	0.05	0.02
Some college	-0.01	0.10	-0.002	-0.09	0.09	-0.04	-0.04	0.06	-0.01
High school or less	-0.20*	0.09	-0.08	0.01	0.08	0.003	-0.07	0.06	-0.03

Employment status

Full-time	--	--	--	--	--	--	--	--	--
Part-time	-0.25**	0.09	-0.08	-0.06	0.07	-0.02	-0.11*	0.05	-0.04
Unemployed	-0.11	0.11	-0.03	-0.0004	0.07	-0.0001	-0.01	0.06	-0.005
Retired	-0.26	0.16	-0.06	0.10	0.18	0.02	-0.11	0.12	-0.02
Other	-0.14	0.20	-0.02	0.08	0.11	0.02	0.04	0.01	0.01

Location

Urban	--	--	--	--	--	--	--	--	--
Suburban	-0.16*	0.08	-0.07	-0.08	0.07	-0.04	-0.12*	0.05	-0.06
Rural	-0.27**	0.09	-0.10	-0.009	0.07	-0.004	-0.13*	0.05	-0.05

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Gender-stratified analyses revealed differential effects of social cofactors on hand washing behavior. Although country of residence was not a significant predictor for men, it was significant for women. More specifically, women in Italy ($b = -0.29$, $\beta = -0.14$, $p < .001$) and Spain ($b = -0.22$, $\beta = -0.10$, $p = .005$) were significantly less likely to practice adequate hand washing compared to women in the United States, although the effects were small. There was also evidence that gay men were less likely to practice sufficient hand washing, regardless of other social cofactors ($b = -0.36$, $\beta = -0.08$, $p = .006$). Men who attained a high school education or less also reported lower levels of adequate hand washing compared to men with graduate or professional education ($b = -0.20$, $\beta = -0.08$, $p = .029$). Likewise, men employed part-time were less likely to practice adequate hand washing compared to those employed full-time ($b = -0.25$, $\beta = -0.08$, $p = .009$). Compared to men living in urban areas, those in suburban ($b = -0.16$, $\beta = -0.07$, $p = .033$) and rural ($b = -0.27$, $\beta = -0.10$, $p = .002$) areas were significantly less likely to endorse adequate hand washing than their urban counterparts, and standardized coefficients suggest that the effect grew stronger as men lived farther away from urban settings. Among women, neither education, employment status, nor location were significantly associated with hand washing behavior (all $p > .05$).

Discussion

To our knowledge, this study is the first to systematically examine predictors of COVID-related social distancing and hand washing behaviors in an international context. In the overall sample, older age was associated with greater adherence to social distancing measures. However, it was not associated with hand washing behavior overall or by gender. These findings may be because older adults are at greater risk of

presenting with pre-existing conditions that exacerbate the effects of COVID, such as hypertension, type 2 diabetes, cardiovascular disease, and asthma—thus, serving as a motivating factor for maintaining proper social distancing. These results were especially present among women, who experience differential risks for certain pre-existing conditions. These pre-existing conditions are often due to disparities in social determinants of health (20-22). Hand washing behavior, however, may be driven by other factors that are not age-related. Although such factors are outside the scope of the present study, future research should systematically examine such factors in light of COVID-19, particularly in international contexts.

Identifying as lesbian or gay—but not as bisexual—was associated with significantly lower levels of both social distancing and hand washing compared to heterosexuals, regardless of one's country of residence. This finding may be rooted in minority stress in that sexual minorities experience stressors such as discrimination and stigma due to their identity. In this case, cultivating community connections in-person may serve as a mitigating strategy to minimize the harmful effects of stressors on sexual minority adults. Although research suggests that a sense of community may suppress the deleterious effects of minority stress on health-related outcomes (23), the COVID-19 pandemic presents public health limitations on social gatherings that may run counter to the protective nature of close gatherings among sexual minority populations. Furthermore, public health messaging in global contexts often neglect to develop behavioral interventions that are sensitive to the discrimination, stigma, and other stressors that disproportionately affect sexual minorities globally. Thus, more strategic

and culturally responsive means of encouraging social distancing are needed in global public health messaging.

There was also an effect of urbanicity on social distancing and hand washing, but gendered analyses showed the effect held only for men. Specifically, men who lived in suburban and rural areas endorsed lower levels of social distancing relative to their urban peers. This result may be due to several reasons. For example, some men may live in areas in which the nearest neighbor is not next door. Moreover, men living in rural areas may not have the same access to public health information, and the information may not be culturally relevant for rural dwellers. It may also be the case that men living in rural areas may provide the only household income and may not be able to socially distance at work. In some cultures, men may have familial roles that do not traditionally require frequent and proper hand washing (e.g., food preparation). Although the research in this area is new, there is a critical need for additional research and empirically-informed public health practices to further support rural men's efforts to practice social distancing and proper hand washing in light of COVID-19.

The results in this study may be due, at least in part, to cultural differences. Compared to the United States subsample, Italian adults reported significantly lower levels of social distancing and hand washing. Yet, Indian women were more likely to practice social distancing compared to American women. Although the extant literature has not systematically examined international differences in social distancing practices, the differential findings in this study suggest that cultural norms may play a role. As Marchesi (24) noted, the COVID-related stay-at-home order across Italy inverted the cultural philosophy cultivated over the course of decades of social reform that

emphasized the importance of local community engagement to effect social change. Other scholars (25) have noted multifaceted implications of social distancing measures in Italy, which may have also contributed to lower social distancing practices among Italian adults compared to their American counterparts. As vaccines have been developed and made available, it remains critical to identify subpopulations that may benefit even more from culturally tailored, social distancing public health measures.

Limitations and Conclusions

Interpreting this study's results comes with extreme caution due to its limitations. First, the cross-sectional nature of the study prohibits causal inference. Second, the self-report nature of the study increases the risk of both social desirability and recall biases. To address recall bias, future research should consider and integrate behavior-analytic technology, which has been shown to be effective at increasing COVID-related protective behaviors in other populations and settings (26-28). Third, despite the study drawing from a large sample of adults across five countries, Internet-based recruiting may have limited efforts to recruit from geographic locations that lack high-speed Internet access. Finally, given the stigma of being lesbian, gay, or bisexual that remains in many countries, participants in this study may have been reluctant to identify as a sexual minority and therefore indicated a heterosexual sexual orientation for the study.

Limitations notwithstanding, this study demonstrates multiple nuanced disparities exist regarding social distancing and hand washing among adults globally. Although the literature supports such public health strategies, the results from this study suggest that blanket, one-size-fits-all approaches may result in disproportionate adherence, thus widening existing disparities. Thus, future investigations should further examine

disparities in COVID-related protective behaviors in international contexts as well as refine existing approaches to be more sensitive and responsive to local community contexts.

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