COVID-19, economic problems, and family relationships in eight Middle East and North African countries

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Abstract

Objective: The aim was to assess the reported family relationships during the COVID-19 pandemic and the association between these relationships and individual, interpersonal, and country-level income in eight Middle East and North Africa (MENA) countries.

Background: COVID-19 causes fear of infection, loss of loved ones, and economic problems that may affect family relationships.

Methods: Data were collected from eight MENA countries using an online survey (July–August 2020). The dependent variable was change in family relationship during COVID-19, and the independent variables were individual, interpersonal, and country-level factors represented by sociodemographic factors, COVID-19 status, financial impact (whether participants lost or had reduced wages) and country income. Multi-level logistic regression analysis was conducted.

Results: There were 1854 responses, mean (SD) age of 30.6 (9.9) years, 65.8% were female, 3.4% tested COVID-19 positive, and 20.8% reported lost/reduced wages. Family relationships were more likely to improve or remain unchanged (84.3%) for participants who had a history of COVID-19 (adjusted odds ratio [AOR] = 3.54, 95% confidence interval [CI]: [1.25, 10.01]). However, family relationships were more likely to not improve for those who knew someone who died of COVID-19 (AOR = 0.76, 95% CI [0.58, 0.99]) and those with lost/reduced wages (AOR = 0.69, 95% CI [0.52, 0.94]).
Conclusion: Family relationship improved or remained unchanged for those who tested positive for COVID-19 and did not improve for those who lost wages or lost someone due to COVID-19.

Implications: Policy makers should develop strategies to provide social and financial support to employees to reduce the losses and adverse social impact caused by the pandemic.

KEYWORDS
COVID-19, economic level, family, MENA

INTRODUCTION

The COVID-19 pandemic has an impact on all aspects of life at the individual and country levels. The pandemic impacts the economy and social relationships of affected individuals (Karamouzian & Madani, 2020; Nicola et al., 2020). Lockdown measures, physical distancing, and travel restrictions resulted in a downturn of the economic sectors in countries that undertook COVID-19 containment measures, resulting in reductions in the workforce, reduced wages, and layoffs (Nicola et al., 2020). Economic growth decreased with reduction in global trade and unclear forecasts for recovery (Jackson et al., 2020). For individuals, the COVID-19 pandemic led to major financial constraints resulting in many people not being able to pay for house rent, food, and medications. These consequences vary with different income levels and occupational backgrounds (Coller & Webber, 2020).

The negative financial impact caused stress and anxiety. Fear of contracting or transmitting infection to family members and losing loved ones to COVID-19 also increased the stress and anxiety levels for many individuals (Mertens et al., 2020). Self-isolation; social distancing; cancellation or postponement of large-scale sports and tournaments, religious, and cultural events; and restriction of travel within and between countries severely affected relationships among family members and peers (Vaidya et al., 2020). Reports of domestic violence increased dramatically (Nicola et al., 2020; Palmer et al., 2020) and sexual intimacy and emotional bonding were negatively affected (Banerjee & Rao, 2020).

Family has traditionally been regarded as the building block of society in the Middle East and North Africa (MENA) region (Joseph & Slyomovics, 2001), with members from the same or different generations living together and providing physical, financial, and psychological support in nuclear and extended families (Kronfol et al., 2016). Many countries in the MENA region are experiencing political unrest and armed conflicts, which are great sources of stress and psychological distress (Jaspal et al., 2020; Valand et al., 2020). Also, the traditional family structure and role in the MENA countries are facing challenges due to globalization, economic crises, and population mobility (Kronfol et al., 2016).

Social and physical distancing, quarantine, and isolation to limit the spread of COVID-19 might have reduced the availability of social and psychological support and increased stress and anxiety (Coller & Webber, 2020). The pandemic disrupted basic social services and impacted access to health services, food, housing, and social interaction thereby laying stress on family life (UNICEF Eastern Caribbean Area Office, 2020). Previous research (Chin et al., 2020) indicated that reduced household income during the COVID-19 pandemic was associated with stressed family relations between spouses and that the pandemic affected all family members (Fong & Iarocci, 2020). In addition, studies conducted before the COVID-19 pandemic at the
times of previous epidemics showed a negative impact on families because of restricted visiting to their relatives during the SARS outbreak (McCleary et al., 2006) and need for psychological support to families of patients suspected of the H1N1 influenza (Elizarrarás-Rivas et al., 2010).

The ecological model offers a theoretical framework that may explain the factors associated with changes in reported family relationships during the pandemic. The model posits that behaviors are affected by influences operating at individual, interpersonal, and community levels (Rimer & Glanz, 2005). Applied to family relationships, individual-level factors include age, gender, and socioeconomic conditions assessed by education and loss of wages because of the pandemic in addition to history of COVID-19 infection. Interpersonal factors include living arrangement and whether the person lives alone or with others and COVID-19 history in others. Community factors include differences among countries in income level, which affect policies and health care systems addressing the COVID-19 crisis. It is important to assess the interaction of stress inducing and stress ameliorating factors during the COVID-19 pandemic to help governments prepare support packages that can improve pandemic preparedness and reduce its negative impact on the well-being of families.

The aim of the study was to assess the association between self-reported quality of family relationships among adults in the MENA region during the COVID-19 pandemic and COVID-19 infection status and economic status. The null hypothesis of the study was that there would be no association between reported quality of family relationships and individual, interpersonal, as well as country-level factors.

**METHODS**

**Design and participants**

A multicountry, cross-sectional study using an online survey was conducted from 29th June to 7th August 2020. The study assessed the impact of COVID-19 on the family relationships of adults in different countries. Ethical approval was obtained from the Human Research Ethics Committee at the Institute of Public Health of the Obafemi Awolowo University Ile-Ife, Nigeria (HREC No: IPHOAU/12/1557). Participants were invited to participate if they were adults above 18 years of age, able to read, had access to the internet, and consented to participate. The current study used a subset of the collected responses for participants from the MENA region and focused on reported quality of family relationships during the COVID-19 pandemic. The required sample size—based on assuming that 4% of adults would report non-improved family relations during the COVID-19 pandemic (Benzeval et al., 2020), 95% confidence level and 5% margin of error—was calculated to be 60 persons. We aimed to ensure that there were at least 60 responses per country included in the study.

**Study variables**

The data for factors at the individual and interpersonal level of the ecological model were obtained using a questionnaire directed at the participants, while information about the country-level factor, income level, was obtained from publicly available data of the World Bank Data Bank (World Bank, 2020). Based on income level, countries were classified into low-income countries (LICs) with a gross national income (GNI) per capita ≤1035 USD in 2019, lower middle-income countries (LMICs) with GNI between 1036 and 4045 USD, upper middle-income countries (UMICs) with GNI between 4046 and 12,535 USD, and high-income countries (HICs) with GNI ≥12,536 USD.
Data collection tool

The questionnaire was initially developed for a study that targeted a specific population in the United States and was consequently adapted for a global audience (Nguyen et al., 2020). The questionnaire assessed participants’ sociodemographic characteristics including country of residence, age, sex, level of education, and whether the participant lived alone or with other people. Another section of the survey assessed variables related to COVID-19 information such as whether the participant had ever tested positive for COVID-19, was suspected of infection but not tested, had a close friend infected with COVID-19, or knew someone who died because of COVID-19. The economic impact of the pandemic was assessed by inquiring whether the participant lost or had reduced wages. Family relationships were assessed by a question asking whether the quality of the participant’s relationship with family members changed during the pandemic with responses ranging from becoming a lot worse, a little worse, remained the same, became a little better, or a lot better. Because some categories included ≤2.5% of the number of participants, the responses on family relationships were dichotomized for analysis into improved/remained unchanged by combining three responses (remained the same, became a little better, or became a lot better) and not improved (combining became a lot worse and became a little worse). Family included parents, siblings, spouse, partner, children, and other members in the family.

The survey was preceded by an introduction about the study team, study objectives, and time needed to complete the questionnaire. This was followed by a consent form assuring participants of the confidentiality of their responses and emphasizing that their participation was voluntary. Only participants who consented could proceed to the survey.

The content validity of the questions was assessed by 17 experts in public health and medicine (Yusoff, 2019). The overall content validity index of the survey was 0.83. The responses collected for content validation were excluded from the final analysis. The questionnaire was originally created in English and translated to Arabic by native professionals with back translation to English to ensure validity.

Data collection

Because of the extent of coverage of the survey, an online survey platform—SurveyMonkey—was used for data collection. Web-based modalities for data collection have increased during the COVID-19 pandemic (De Boni, 2020). Restrictions were applied to the settings so that each participant could only take the survey once. Participants could edit their answers until before submission. Emails were not collected to ensure anonymity.

The core team sent an invitation to collaborate using ResearchGate and personal emails to researchers from the MENA region in their network. These researchers were invited to manage the distribution of the survey in their countries to ensure maximum representation and geographic spread. The core team aimed to include participants from all MENA countries through repeated invitations to researchers, and those who agreed were included. Interested collaborators received links to the survey in Arabic and English to accommodate participants’ preferences. These links were posted on social media groups (Facebook, Twitter, and Instagram) and sent via WhatsApp or email to eligible participants in the collaborators’ networks. These participants were further asked to disseminate the links to those in their own networks using snowball sampling.

Analysis method

Descriptive statistics were calculated as means and standard deviations or frequencies and percentages. The independent variables were individual and interpersonal factors. Individual factors
included sociodemographic level (age, sex, education, and the economic impact of the pandemic assessed by whether participants had lost or reduced wages) and COVID-19 status (testing positive, suspected but not tested). Interpersonal factors included whether the participant lived alone and COVID-19 history in others (having a close friend with COVID-19 or knowing someone who died because of COVID-19). The independent variables also included country-level income. The dependent variable was self-reported improvement in family relationships.

Multilevel logistic regression analysis with robust estimation was used to assess the association between dependent and independent variables one at a time, then simultaneously in an adjusted model. Sociodemographic factors, COVID-19 status, and the economic impact status of respondents were included as fixed effect factors. Country of residence was set as a random effect variable. The country income level was introduced as a random effect variable to calculate the change in random variance among countries by accounting for their income level. Adjusted odds ratio (AOR) and 95% confidence intervals (CI) were calculated. IBM SPSS for Windows (Version 22.0) was used for statistical analysis. Significance was set at 5%.

RESULTS

Table 1 shows that there were 1854 complete responses from eight MENA countries with the greatest number of participants from Egypt (33.8%) and Syria (19.3%). Most participants (90.8%) were from Arab States (Table 1). Most participants were from LMICs (42.9%) and LICs (29.0%). Almost two thirds of participants were female (65.8%) and the majority (89.3%) had university education. Their mean (SD) age was 30.6 (9.9) years. Also, 5.8% of participants reported living alone. Regarding the COVID-19 status, 3.4% tested positive, 13.7% had symptoms but did not test, 41% had a close friend who tested positive, and 54.7% knew someone who died from COVID-19. Also, 20.8% had lost or reduced wages due to COVID-19 and 84.3% reported that their relationship with family remained the same or improved.

Table 1 shows that the percentage of participants reporting improved/unchanged family relationships did not significantly differ by country ($p = .10$). A greater percentage of participants reporting non-improved family relationships were from LICs (15.6%) and LMICs (17.7%) than from UMICs (10.2%) and HICs (14.2%), although this difference was not statistically significant ($p = .06$). There were no associations between improved/unchanged family relationships and sex ($p = .25$), age ($p = .94$), university education ($p = .69$), living alone ($p = .74$), having COVID-19 symptoms but not testing ($p = .19$) or having a close friend who tested positive for COVID-19 ($p = .08$).

A significantly greater percentage of those who tested positive for COVID-19 than those who did not test positive reported improved/unchanged family relationships (93.7% vs 84.0%; $p = .04$); and a significantly greater percentage of those who knew someone who died from COVID-19 than those who did not know someone who died from COVID-19 reported non-improved relationships (17.8% and 13.2%, $p = .008$). A significantly greater percentage of those who had lost or reduced wages than those without loss of wages reported non-improved family relationships (19.5% and 14.7%, $p = .02$).

Table 2 shows the association of independent factors with reported family relationships. In the unadjusted analysis, testing positive for COVID-19, knowing someone who died of COVID-19, and loss/reduction of wages were significantly associated with reported family relations. In the adjusted analysis, improved/unchanged family relationship was significantly higher among participants who tested positive for COVID-19 than participants who did not test positive for COVID-19 (AOR = 3.54, 95% CI [1.25, 10.01]); and lower among those who knew someone who died because of COVID-19 (AOR = 0.76, 95% CI [0.58, 0.99]) and among those who lost/had reduced wages (AOR = 0.69, 95% CI [0.52, 0.94]). When only country of residence was included as random effect variable, the covariance was 0.017 (95% CI [0.001, 0.346]).
### TABLE 1  Background variables, COVID-19 information, family relationship, and economic impact of the study participants (N = 1854)

| Variable                        | Non-improved family relationships n (%) | Improved or unchanged family relationships n (%) | p value | n (%)   |
|--------------------------------|----------------------------------------|-------------------------------------------------|---------|---------|
|                                | 291 (15.7)                             | 1563 (84.3)                                     |         | 1854 (100) |
| **Country of residence**       |                                        |                                                 |         |         |
| Egypt                          | 114 (18.2)                             | 512 (81.8)                                      | .10     | 626 (33.8) |
| Jordan                         | 20 (10.2)                              | 177 (89.8)                                      |         | 197 (10.6) |
| Kuwait                         | 7 (15.2)                               | 39 (84.8)                                       |         | 46 (2.5)   |
| Pakistan                       | 27 (15.9)                              | 143 (84.1)                                      |         | 170 (9.2)   |
| Saudi Arabia                   | 29 (13.0)                              | 194 (87.0)                                      |         | 223 (12)   |
| Syria                          | 49 (13.7)                              | 308 (86.3)                                      |         | 357 (19.3) |
| United Arab Emirates           | 10 (18.2)                              | 45 (81.8)                                       |         | 55 (3)     |
| Yemen                          | 35 (19.4)                              | 145 (80.6)                                      |         | 180 (9.7)   |
| **Income level**               |                                        |                                                 |         |         |
| LICs                           | 84 (15.6)                              | 453 (84.4)                                      | .06     | 537 (29.0) |
| LMICs                          | 141 (17.7)                             | 655 (82.3)                                      |         | 796 (42.9) |
| UMICs                          | 20 (10.2)                              | 177 (89.8)                                      |         | 197 (10.6) |
| HICs                           | 46 (14.2)                              | 278 (85.8)                                      |         | 324 (17.5) |
| **Gender**                     |                                        |                                                 |         |         |
| Male                           | 91 (14.4)                              | 543 (85.6)                                      | .25     | 634 (34.2) |
| Female                         | 200 (16.4)                             | 1020 (83.6)                                     |         | 1220 (65.8) |
| **Age: Mean (SD)**            | 30.6 (9.7)                             | 30.6 (9.9)                                      | .94     | 30.6 (9.9) |
| **Level of education**         |                                        |                                                 |         |         |
| University educated            | 258 (15.6)                             | 1398 (84.4)                                     | .69     | 1656 (89.3) |
| Non-university educated        | 33 (16.7)                              | 165 (83.3)                                      |         | 198 (10.7) |
| **Living arrangements**        |                                        |                                                 |         |         |
| Living alone                   | 18 (16.8)                              | 89 (83.2)                                       | .74     | 107 (5.8)   |
| Not living alone               | 273 (15.6)                             | 1474 (84.4)                                     |         | 1747 (94.2) |
| **COVID-19 related variables**|                                        |                                                 |         |         |
| Tested COVID-19 positive       |                                        |                                                 |         |         |
| Yes                            | 4 (6.3)                                | 59 (93.7)                                       | .04*    | 63 (3.4)   |
| No                             | 287 (16.0)                             | 1504 (84.0)                                     |         | 1791 (96.6) |
| Had COVID-19 symptoms, but did not test | |                                      |         |         |
| Yes                            | 47 (18.5)                              | 207 (81.5)                                      | .19     | 254 (13.7) |
| No                             | 244 (15.3)                             | 1356 (84.8)                                     |         | 1600 (86.3) |
| Had a close friend who tested positive for COVID-19 | |                                      |         |         |
| Yes                            | 133 (17.5)                             | 628 (82.5)                                      | .08     | 761 (41)   |
| No                             | 158 (14.5)                             | 935 (85.5)                                      |         | 1093 (59)  |
| Knew someone who died from COVID-19 | |                                      |         |         |
| Yes                            | 180 (17.8)                             | 834 (82.2)                                      | .008*   | 1014 (54.7) |
| No                             | 111 (13.2)                             | 729 (86.8)                                      |         | 840 (45.3) |
| Economic condition             |                                        |                                                 |         |         |
| Had lost or reduced wages      | 75 (19.5)                              | 310 (80.5)                                      | .02*    | 385 (20.8%) |
| No lost or reduced wages       | 216 (14.7)                             | 1253 (85.3)                                     |         | 1469 (79.2) |

*Note: HICs = high-income countries; LICs = low-income countries; LMICs = lower middle-income countries; UMICs = upper middle-income countries.
*Statistically significant at p < .05.
When country-level income was further added as random effect, the covariance was reduced to 0.008 (95% CI [0.00002, 3.58]) representing a reduction of 52.9% in unexplained random variation in reporting improved/unchanged family relationships.

**DISCUSSION**

The study showed that testing positive for COVID-19 infection was significantly associated with reported improvement in family relationships, while knowing someone who died of COVID-19 or having lost/reduced wages was associated with lower odds of reporting improved or unchanged family relationships. Differences in country-level income accounted for most of the random variation in reporting family relationships with more improved or unchanged relationships reported among those from countries with higher income. The null hypothesis can thus be rejected.

The study has few limitations. One is the bias resulting from self-selection since the survey was distributed through social media. This is reflected by the high response rate from persons with university education. However, we could only conduct a web-based survey due to the physical distancing recommended by health authorities in all countries. The study is also limited by its cross-sectional design, which may support association but cannot prove causation. The pandemic passed through various stages with different effects on family relationships, but this cannot be studied using the cross-sectional design of the study. In addition, the perception of family relationships has several dimensions and future studies are needed to comprehensively assess its complex nature beyond the simple screening question we used in the present study. This simple screening question, however, may be suitable for studies similar to ours that compare responses from different settings and backgrounds. Lastly, only four COVID-19 positive participants reported non-improved family relationships and it is important to note that this significant association is based on a small number, which may affect the precision of the estimate as reflected in the relatively large confidence interval. However, the prevalence of confirmed COVID-19 cases in the present study is similar to that reported globally with 383.5

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**TABLE 2** Multilevel logistic regression analysis for the effect of sociodemographic factors, COVID-19 status, and economic impact of the pandemic on reported status of family relationships

| Factor                                      | COR (95% CI) | AOR (95% CI) |
|---------------------------------------------|--------------|--------------|
| Gender: Male vs. female                     | 1.16 [0.89, 1.52] | 1.24 [0.94, 1.65] |
| Age in years                                | 1.00 [0.99, 1.01] | 1.00 [0.99, 1.01] |
| Education: University educated vs not educated | 1.12 [0.75, 1.67] | 1.18 [0.78, 1.77] |
| Living arrangements: Living alone vs not living alone | 0.89 [0.53, 1.51] | 0.78 [0.46, 1.34] |
| Tested COVID-19 positive vs did not test     | 2.89 [1.04, 8.05]* | 3.54 [1.25, 10.01]*)* |
| Had COVID-19 symptoms but did not test vs did not have symptoms | 0.80 [0.57, 1.14] | 0.77 [0.54, 1.10] |
| Close friend was COVID-19 positive vs close friend not positive | 0.82 [0.64, 1.06] | 0.86 [0.66, 1.12] |
| Knew someone who died of COVID-19 vs did not know someone who died of COVID-19 | 0.72 [0.56, 0.94]* | 0.76 [0.58, 0.99]* |
| Lost or reduced wages vs did not lose wages  | 0.71 [0.53, 0.94]* | 0.69 [0.52, 0.94]* |

*Note: Country of residence and country income level were set as random effect variables. AOR = adjusted odds ratio, CI = confidence interval; COR = crude odds ratio. *Statistically significant at p < .05.
million confirmed cases (World Health Organization, n.d.) relative to the 7.9 billion global population (Worldometer, n.d.).

The MENA region includes 20 countries and is home to about 6% of the global population. The region has a high population growth rate and high prevalence of chronic diseases that varies markedly from one country to another (Nair et al., 2013). In addition, income levels vary greatly among the MENA countries (World Bank, n.d.). The findings of the present study apply to countries in the MENA region that share geographic and cultural backgrounds. We included only literate persons with access to the internet in the study. Statistics show that adults represent 69% of the MENA population (UNICEF, 2019), that 75% of adults are literate (The Borgen Project, 2021), and that 66% of people in Arab states used the internet in 2020 (Nabeel, 2022). Thus, despite excluding some groups, our findings are applicable to the majority of adults in the MENA region. Generalization of the present study conclusions to other regions and countries should be made with caution.

The study finding that a history of having COVID-19 was associated with improved or unchanged family relationships may be attributed to empathy for the affected individual who will need support during the isolation period. Most participants in the present study were women and they may be more likely to show empathy and report improved family relationships in this situation. In most MENA countries, women are expected to care for vulnerable family members including young, old, and ill members, although this pattern is changing as more women join the workforce (Carmichael, 2011). Similarly, mothers were more likely than fathers to report improvement of the relationship with their children after the COVID-19 lockdown in the United Kingdom (Benzeval et al., 2020). In addition, a history of COVID-19 and the potential perception of vulnerability associated with it may lead affected persons to be more likely to seek and develop good and supportive family relationships.

The present study suggests that death due to COVID-19 may have negative effects on family relationships. Research indicated that health care workers and persons who survived COVID-19 may face stigma (Bagcchi, 2020). The findings of the present study suggest that the families of persons who died from COVID-19 may also suffer from stigma, isolation, and rejection with its negative impact. The literature also documents the strenuous impact of the death of a family member on family relationships (Afolabi, 2014; Bowlby-West, 1983; Glatt, 2018). The association observed in the present study may also apply to the loss of non-family members because of COVID-19. Previous studies showed that after losing someone because of COVID-19, some people may suffer from prolonged grief (Tang & Xiang, 2021) leading to functional impairment and posttraumatic stress (Breen et al., 2021), which may reflect on their performance and consequently family relations. On the other hand, a Chinese study (Hu et al., 2013) reported no difference in family cohesion between families with and without bereavement after the Wenchuan earthquake. Family relationships may improve after experiencing death of close ones. Families can offer consolation by helping members grieve and engage in death rituals and ceremonies, which provide time to process death and face its reality (Klass, 2014). Bereavement practices and the coming together of family members may improve family relationships (Marshall & Sutherland, 2008). Further studies are required to understand the present findings with questions specifically tailored to assess the death of a family member in addition to death of participants’ acquaintances.

The percentage of participants reporting loss or reduction of wages because of COVID-19 in this study agrees with that reported in other countries (International Labour Organization, 2020). Loss or reduction in wages were negatively associated with family relationships. This is an issue of concern as persons with less wages are more likely to need family support during this critical time. Job and wage loss result in economic insecurity and decline in the mental health of affected persons (Bubonya et al., 2017). Economic insecurity also results in psychological stress for parents, which may lead to inhibition of emotional warmth and an increase in erratic or disengaged behaviors (Kalil, 2005). Unemployment is associated with lower self-esteem and well-being,
negative family relationships, marginalization, and social exclusion (Helliwell et al., 2020). In addition, unemployment may have a negative emotional impact, exacerbating marital conflicts and gender-based violence (Zhang, 2020). The finding of the present study agrees with previous research showing that more low-income parents from the United Kingdom reported poorer family relationships because of COVID-19 (Benzeval et al., 2020). This emphasizes the need for government intervention to cushion the possible negative economic impact of the COVID-19 pandemic for families whose members have lost income.

Countries and their income level accounted for a large part of the variation in reported family relationships. This suggests that already existing differences in structural and financial conditions among the MENA countries may have affected the resilience of individuals and families to deal with the pandemic and subsequently, the quality of family relationships. In addition, limited packages are likely to be offered by governments in lower than higher income countries to support those affected by the economic crisis imposed by the pandemic (International Monetary Fund, 2020; Organisation for Economic Co-operation and Development, 2020), reflected in more participants from lower than higher income countries reporting poorer family relationships. This finding needs to be studied further.

**IMPLICATIONS**

The pandemic caused financial constraints and deaths, which may be negatively associated with family relationships; and these relationships may be poorer in lower than higher income MENA countries. Social and psychological care may be needed to support individuals suffering from COVID-19 deaths in addition to financial support packages. Lower income MENA countries, which have the greatest need for these types of support services, may need to be aided by more affluent countries to help address the societal and economic impact of the pandemic and build back better. The percentage of persons reporting COVID-19 symptoms but not getting tested draws attention to a problem in the region that leads to underreporting of health conditions, including COVID-19. This may occur to avoid stigmatization or because the manifestations were perceived to be too mild to warrant reporting. More studies are needed to understand how macro-level factors at country level negatively affects family relationships; how the COVID-19 pandemic—and possibly other pandemics—may impact family relationships negatively; and how to mitigate the possible negative effects of job loss and reduced wages on family relationships as well as address issues of disease underreporting and stigmatization.

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