COVID-19 Knowledge, Attitudes and Practices (KAP) Survey
April (Round 2) and May (Round 3) 2020
Northeast Syria Analysis

CONTEXT

As of 21 August, 280 people have tested positive for COVID-19 in Northeast Syria (NES), including 36 recoveries and 16 fatalities.[1] The highest concentration of cases is in Hassakeh Governorate. Reports from the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) indicate that one in five confirmed cases are amongst health workers in NES with the greatest concentration in Hassakeh city. The report indicated that the actual number of COVID-19 cases in NES is likely much higher due to significant under-testing, particularly in areas outside Hassakeh, along with lockdown measures in many areas being lax. The risk of a large-scale outbreak in NES remains high, especially as risk perception amongst authorities remains skewed, creating a false sense of secuity.[1] As a result, humanitarian actors continue to face uncertainty in terms of the affect that new preventive measures will have on humanitarian operations.

The Humanitarian Needs Assessment Programme's (HNAP) 26 August 2020 COVID-19 Rapid Assessment showed that community lockdowns and total curfews were in place in a majority of communities in Al-Hasakeh Governorate, but are absent in Aleppo, Ar-Raqqa, and Deir-ez-Zor. Awareness campaigns were in place mostly in Al-Hasakeh, while temperature checks and distribution of soap/disinfectant/masks were available in very few sub-districts, with most available in Al-Hasakeh only. Most basic services are fully available in most sub-districts, although 59% of sub-districts report that they are in need of soap or water, 80% of sub-districts report that a majority of the population are in need of masks, and 89% report that a majority of the population are in need of disinfectants.[2]

In April 2020, REACH began a series of monthly knowledge, attitudes, and practices (KAP) surveys with the goal of informing the communications response to the threat of COVID-19 in northeast Syria. REACH observed high levels of COVID-19 knowledge among survey respondents in the first round of data collection, which was conducted in late April as communication efforts and curfews were well under way. Greater wariness of COVID-19 was seen among attitudes and practices responses, especially among female respondents. In the second and third rounds of data collection, which were conducted in late May and late June respectively, knowledge remained high while attitudes and practices had shifted to less cautious in relation to COVID-19 among both female and male respondents.[3]

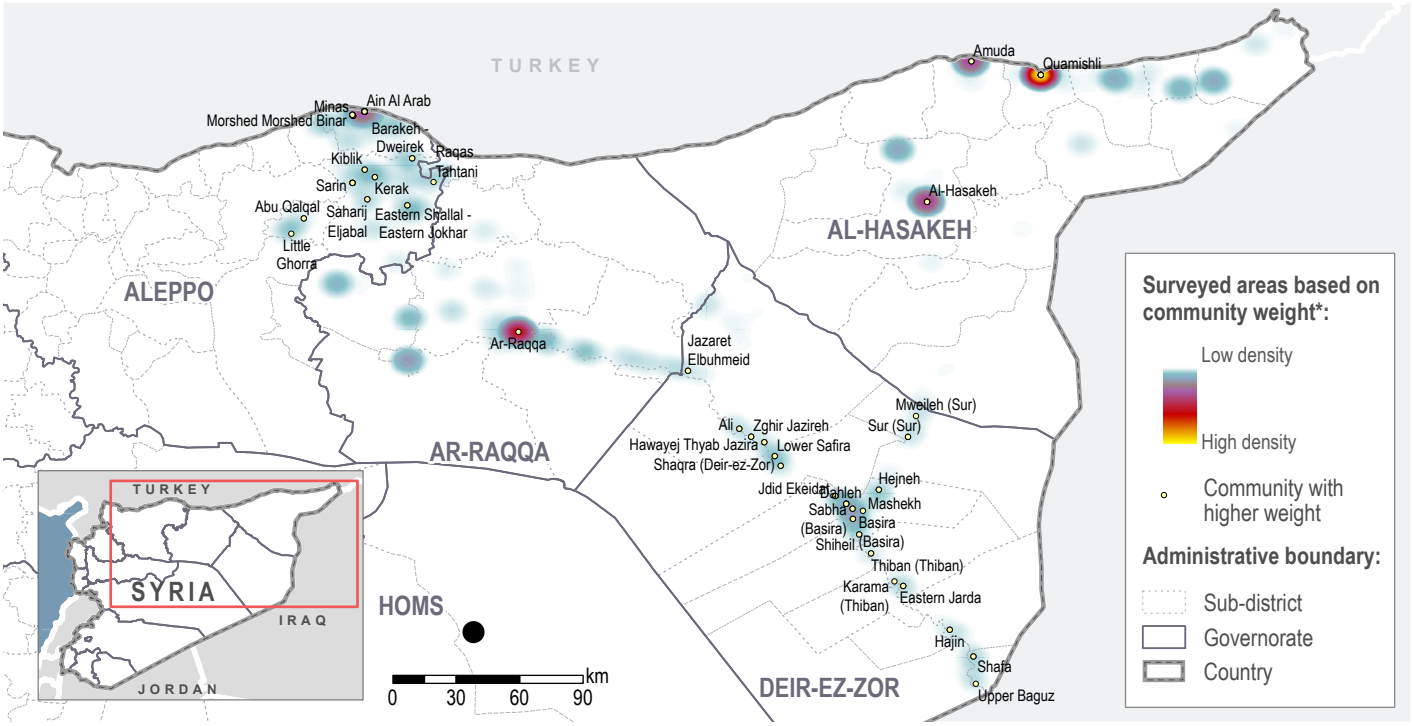
Descriptive statistics for all survey rounds are available here, and include each specific KAP indicator, disaggregated by governorate, sex, and rural/urban population. The present factsheet is the second in-depth analysis of changes in knowledge, attitudes, and practices over time and among cohorts of respondents in northeast Syria.

METHODOLOGY

REACH conducted a second KAP survey in four governorates of northeast Syria from 17-22 May 2020. A total of 1,231 individual interviews were conducted in northeast Syria (Aleppo: 94 ; Al-Hasakeh 735 ; Ar-Raqqa: 345 ; Deir-ez-Zor: 57). An in-depth explanation of the methodology of this survey can be found here.

The third round of data collection was conducted from 21-26 June 2020 with the same individuals surveyed in the second round of data collection. Of the 1,231 respondents from round 2, the sample reduced to 908 individuals interviews in the third round due to loss to follow up and data quality issues related to uncertainty that the same respondents were interviewed for each round (Al Hasakeh: 452; Aleppo: 88; Ar-Raqqa: 313; Deir-ez-Zor: 55). As in the second round of data collection, the sample was calibrated against an existing household survey to increase its representativeness. More information about the particulars of this calibration can be found in Appendix B at the end of this factsheet.

HEAT MAP OF WEIGHTED SURVEY AREAS



* This heat map displays the relative density of surveys, using a color scheme ranging from cool (low density) to hot (high density). For this heat map, a weight generated from a generalized regression estimator was applied, and densities represent the weighted survey population. Applying a weight means that survey responses were adjusted to match the proportions of a pre-existing, representative dataset so that the survey more accurately represents the population of interest.

METHODOLOGY (cont.)

Results are framed through the messaging matrix of the Risk Communication and Community Engagement (RCCE) Working Group of northeast Syria. The messaging matrix is a document compiled by the RCCE working group which organizes messages by source, message, and target audience to guide actors in their messaging campaigns. This matrix was examined to see where KAP survey data could inform messaging efforts, and as such, messages are presented with corresponding analysis results.

LIMITATIONS

Due to the methodology used, findings are not statistically representative and should only be considered as indicative of the situation in assessed areas. The rapidly evolving context in the assessed areas, especially with regards to the COVID-19 situation, also means that findings are only indicative of the situation at the time the data was collected (17 to 22 May 2020 for round 2; 21 to 26 June for round 3).

RESULTS BY RCCE ACTION PLAN MESSAGE[4]

Message: Wash your hands with increased frequency.

• Recommendation: Target rural communities and communities in Deir-ez-Zor for more efficient messaging on handwashing.

• Knowledge and practice of hand washing is already high and has stayed high (over 85% of respondents). However, the proportion of respondents who said they washed hands more than normal decreased by 11 percentage points.

• Between rounds 2 and 3, the proportion of people who mentioned that hand washing can be used as a measure to limit the spread of COVID-19 increased by 8%. The proportions of respondents who know about hand washing practices were high in both rounds (round 2: 84%, round 3: 92%).

• Respondents from Deir-ez-Zor were less likely to say that they had washed their hands more than normal in the past week, indicating a decrease of 14 percentage points between rounds (round 2, 71%, round 3: 57%).

Message: Maintain social distancing.

• Recommendation: Messaging should focus on preventive measures even as people move about (e.g. wear a mask when you leave, maintain distance with other people even when out), with emphasis in Deir-ez-Zor.

• The proportions of respondents reporting practicing social distancing decreased in every age group and among both rural and urban communities.

• Similar to rounds 1 and 2, all social distancing practices surveyed between rounds 2 and 3 significantly decreased. Between rounds:

- The proportion of respondents reporting they had greeted someone with a handshake in the past week increased from 64% to 72%;
- The proportion of respondents reporting they had left their house in the past week increased from 87% to 93%;
- The proportion of respondents reporting they had visited a friend in the past week increased from 79% to 85%;
- The proportion of respondents reporting they had gone to work in the past week increased from 61% to 63%;
- The proportion of respondents reporting they had attended a social gathering increased from 27% to 48%; and
- The proportion of respondents reporting they had maintained two meters between themselves and others when outside decreased from 22% to 16%.
- Decreases in social distancing practices were mostly driven by changes in Deir-ez-Zor, but all cohorts reported decreased overall. In Deir-ez-Zor, respondents who reported attending a social gathering increased by 45 percentage points.

Message: If you have fever, cough, and difficulty breathing, seek medical care early.

• Recommendation: Messaging should emphasize the importance of speaking to a medical professional.

• All cohorts surveyed reported increased percentages of those who would call a medical professional in case of infection, but percentages remain low (all cohorts reported <50%).

• Only 23% of respondents indicated that they would stay home and isolate if they contracted COVID-19.

• The proportion of respondents with knowledge about COVID-19 symptoms was high and did not substantially change between rounds. The majority of respondents identified cough (round 2: 91%; round 3: 94%) and fever (round 2: 97%; round 3: 96%) as symptoms.

• There was an overall increase (2 percentage points) between rounds in the proportion of respondents who said they would call a doctor if someone in their family contracted COVID-19.

• Respondents from Deir-ez-Zor (10%) were much less likely to say they would go to a clinic if they or someone in their family contracted COVID-19 than respondents from other governorates, while respondents from Raqqa (56%) were more likely to say they would go to a clinic.

• Respondents from Aleppo (88%) were much more likely to say they would go to a hospital if they or someone in their family contracted COVID-19 than respondents from any other governorate.

Message: Can women with suspected COVID-19 breastfeed? A: Yes, there is no evidence that COVID-19 can be transmitted from mothers to babies through breastmilk.

• Recommendation: Cohorts that could benefit from targeted messaging about breastmilk include Aleppo residents.

• Less than 16% of respondents in other cohorts hold the belief.

• Few respondents (round 2: 13%, round 3: 10%) think that COVID-19 can be transmitted through breastmilk.

• Belief in COVID-19 transmission via breastmilk dropped 3 percentage points between rounds 2 and 3

Message: Coronavirus can survive on assistive devices.

• Recommendation: Emphasize the possibility of COVID-19 transmission through infected surfaces to keep persons with disabilities safe from viral contamination.

• The proportion of respondents reporting that COVID-19 can be contracted from an infected object is high, but is less understood among

residents of Deir-ez-Zor (93%), and (79%).

• There was a slight increase in the proportion of respondents reporting that COVID-19 can be contracted from physical contact with a contaminated object (round 2: 78%; round 3: 81%).

• Rural community respondents were less likely than urban community respondents to report an infected surface as a method of virus transmission. Respondents in Al-Hasakeh were least likely to report the same (compared to other governorates).

Message: If leaving the house, you should use gloves to keep your hands clean.

• Recommendation: Messaging about wearing gloves should be promoted as a possible safety alternative (or addition) to strict social distancing measures, which are decreasing overall. Messaging strategies for Deir-ez-Zor residents should be prioritized.

• No substantial difference was observed between rounds 2 and 3 among respondents who mentioned that wearing gloves is a possible prevention measure for reducing the risk of contracting COVID-19 (round 2: 59%; round 3: 61%). However, the overall percentage is still relatively low, especially in Deir-ez-Zor.

Message for leaders: Address fears and rumors.

• Recommendation: Messaging campaigns debunking the myths around drinking boiled herbs, exposing oneself to the sun, and eating garlic should be emphasized for greater efficiency, particularly among women (re: drinking boiled herbs) across communities.

• The most popular myth people had heard for preventing contracting COVID-19 was to drink boiled herbs such as anise (reported by 68% of respondents), followed by exposing oneself to sun or high temperatures (reported by 37% of respondents) and eating garlic (reported by 36% of respondents).

• The proportions of respondents reporting on certain myths increased or decreased between rounds. Aside from the belief that exposing oneself to sun or high temperatures can prevent COVID-19 (which decreased from 48% in round 2 to 37% in round 3), the overall changes were slight.

• The proportion of respondents in Aleppo were more likely to have heard that taking garlic prevented COVID-19.

• The proportion of respondents from Deir-ez-Zor who reported that taking certain medicines would prevent contracting COVID-19 decreased between rounds.

Message for communications teams: Social media is useful for reaching a large number of people with health information at relatively low cost.

• Recommendation: Continue using social media messaging, but also use direct follow-up by NGOs to reinforce messaging.

• Social media slightly decreased in both popularity and trust among all cohorts, but remains one of the most popular sources of information about COVID-19.

• Television is the most widely used and trusted source of information overall. Interactions with health workers, whether at a health facility or via door-to-door campaign, did not change between rounds. Word of mouth was the second most commonly reported means of receiving information about COVID-19 (increasing to 84%) but is also among the least trusted sources of information.

• The most mentioned means was television (90%), and was also the most trusted means of information (63% of respondents).

Message: Stigma can be heightened by insufficient knowledge about how COVID-19 is transmitted and treated, and how to prevent infection.

• Recommendation: Target messaging through health workers on COVID-19, focusing on Aleppo and rural populations specifically.

• Most respondents (88%) reported that COVID-19 can be transmitted through the air and this did not significantly change between rounds. Respondents from Al-Hasakeh were less likely to mention this transmission route.

• Recommendation: Traget rural populations with messaging about COVID-19 as particularly dangerous for the elderly.

• The proportion of respondents who knew that elderly persons are more at risk is dramatically lower among rural populations (29% among rural respondents compared with 78% overall).

Respondents reported being less worried about COVID-19, compared to the previous round.

• Recommendation: Target messaging towards urban populations

• Overall, the proportion of respondents who reported they are not worried about COVID-19 increased by 8 percentage points between rounds 2 and 3. Degree of concern about the virus decreased across the board, however, and Deir-ez-Zor respondents reported the lowest levels of concern.

• Respondents were less worried about COVID-19 in each round of the survey, beginning from round 1. Respondent estimations of the likelihood of contracting COVID-19 remained split, however, with majorities of respondents indicating it is either unlikely (33%) likely (30%) or don't know (33%).

Many people do not understand that COVID-19 can be transmitted even if a person is asymptomatic.

• Recommendation: Raqqa and Deir-ez-Zor could be targeted with messaging about asymptomatic carriers of COVID-19.

• Respondents in both rounds (round 2: 50%; round 3: 49%) thought that all carriers of COVID-19 show symptoms, with no significant difference in knowledge between rounds. Respondents from Aleppo (70%) were much more likely to think all carriers of COVID-19 show symptoms than respondents from other governorates.

FACTORS INFLUENCING SOCIAL DISTANCING - VIGNETTE EXPERIMENT

Scenarios measure perceptions of respondents in response to different hypothetical situations. As such, they should be interpreted as perceptions only, and not as certain outcomes. The following messages are based on the results of the vignette scenarios, which are hypothetical situations introduced in the methodology section above and further described in Appendix B below.

Key findings for risk and behavior change communication:

• Encouraging everyone to wear their masks increases the likelihood that more people will abide by mask-wearing regulations. When people see their neighbours wearing masks, they are more likely to wear a mask themselves. Mandating mask wearing through a fine and at business premises also encourages people to wear mask.

• People are less likely to leave the house if they think they are getting a cold or falling sick.

• Young people were the most likely to wear masks and leave their house, regardless of the proposed scenario. Overall, age was a more important determinant of movement than gender.

Scenario 1

Scenario 1 asked respondents about the likelihood that individuals would wear a mask based on different contexts in the next week, varying age (24 years old vs. 58 years old) and gender (male / female). The contexts were: required by authorities under a fine, worn by the majority of neighbours, and required by business owners upon entering their premises. A sample scenario went as follows: "Imagine that a woman is 24 years old and owns a mask, how likely is she to wear it next time she leaves the house if it was required by authorities under a fine? Within the space of a week, how likely is she to leave her house to visit family or friends?"

Results

The model suggests that there was no significant difference between younger people and older people wearing a mask regardless of the context. When looking at gender however, women were more likely than men by five percentage points to wear a mask across contexts.

Compared to a scenario in which masks were worn by the majority of neighbours, a person was 19 percentage points more likely to wear a mask if required by authorities under a fine. People were 15 percentage points more likely to wear a mask if required by business owners than if worn by neighbours and four percentage points more likely to wear a mask if required by authorities than if it was required by businesses on their premises.

Average marginal effects (AME) indicated that people were 19 percentage points more likely to wear a mask if worn by neighbours (p value: 0.00; 95% CI: -0.26, -0.13). The effect of other contexts (required to wear a mask under a fine and required by business owners on their premises) was not substantially different when comparing one context to the other.

In addition, similar to the average predicted proabilities model, AME indicated that women were five percentage points more likely than men to wear a mask across contexts (p value: 0.037; 95% CI: 0.00, 0.10).

Therefore, results from the experiment show that a context in which neighbours are wearing a mask is more likely than other contexts in influencing the behavior of people considering whether or not to wear a mask. Women are also more likely to wear masks than men.

Scenario 2

Scenario 2 looked at the likelihood that individuals would leave their house in the next week based on the status of their health (healthy, or feel like they are getting a cold), age (22 years old / 47 years old), and gender (male / female). A sample scenario went as follows: "Imagine that A man is 47. He feels like he might be getting a cold. During the week, how likely is he to leave the house to visit family or friends?"

Results

The model suggests that younger people are six percentage points more likely than older people to leave the house in the next week, regardless of the status of their health. Average marginal effects also indicated younger people were 6 percentage points more likely to leave their house overall when compared to older people (p value: 0.025; CI: -0.12, -0.01).

The feeling of catching a cold deterred people from leaving their house by 31 percentage points more than if they were healthy. Further, average marginal effects indicated that the likelihood that someone would leave their house if they had a cold was 31 percentage points less than if they were healthy (p value: 0.00; CI: -0.08, -0.31).

More information on modeling methodology is available in Appendix B; summary probability and average marginal effect tables for both vignettes can be found in Appendix A.

Endnotes

The complete northeast Syria KAP dataset is available here.

1. OCHA/WHO. Syrian Arab Republic: COVID-19 Response Update No. 09. 21 August 2020. https://reliefweb.int/sites/reliefweb.int/files/resources/final_draft_covid-19_update_no._9.pdf
2. Humanitarian Needs Assessment Programme. COVID-19 Rapid Assessment: Syrian Democratic Forces Controlled Areas. 26 August 2020.
3. REACH, COVID-19 Knowledge, Attitudes and Practices (KAP) Survey Northeast Syria Descriptive Statistics - Rounds 2 and 3 Factsheet. https://www.reachresourcecentre.info/country/syria/cycle/28886/%23cycle-28886/
4. Respondents could select multiple answers so total may be greater than 100%.

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Appendix A - Results Tables

Vignette 1

Table 1: Model Predicted Probabilities - Vignette 1

Gender	Age	Context	Probability
Male	Younger	Required by authorities under a fine	.8838954
Female	Younger	Required by authorities under a fine	.9161046
Male	Younger	Worn by the majority of neighbours	.6431159
Female	Younger	Worn by the majority of neighbours	.7210401
Male	Younger	Required by business owners upon entering their premises	.8069284
Female	Younger	Required by business owners upon entering their premises	.8570359
Male	Older	Required by authorities under a fine	.8452601
Female	Older	Required by authorities under a fine	.8868149
Male	Older	Worn by the majority of neighbours	.6581241
Female	Older	Worn by the majority of neighbours	.734126
Male	Older	Required by business owners upon entering their premises	.831788
Female	Older	Required by business owners upon entering their premises	.8764317

Table 2: Average Marginal Effects - Vignette 1

Factor	AME	SE	z	p	Lower	Upper
Age -older vs. younger	-.0012409	.0257286	-0.05	0.962	-.051668	.049186
Context -Worn by neighbours	-.193868	.0316034	-6.13	0.000	-.2558094	-.131926
Context -Required by businesses	-.03944	.0286194	-1.38	0.168	-.0955329	.016652
Gender - female vs. male	.0537273	.0257076	2.09	0.037	.0033413	.104113

Table 3: Average Predicted Probabilities - Vignette 1

Factor	Probability
Gender	
Male	.7778639
Female	.8315912
Age	
Younger	.8045344
Older	.8032935
Context	
Required by authorities under a fine	.8821229
Worn by the majority of neighbours	.6882549
Required by business owners upon entering their premises	.8426829

Vignette 2

Table 1: Model Predicted Probabilities - Vignette 2

Gender	Age	Condition	Probability
Male	Younger	Good health	.8905076
Male	Older	Good health	.8833154
Male	Younger	Cold	.6424851
Male	Older	Cold	.5269615
Female	Younger	Good health	.8767347
Female	Older	Good health	.8687712
Female	Younger	Cold	.6111374
Female	Older	Cold	.4934703

Table 2: Average Marginal Effects - Vignette 2

Factor	AME	SE	z	p	Lower	Upper
Age - older vs. younger	-.0623374	.0277207	-2.25	0.025	-.1166689	-.008005
Condition- good health vs. cold	-.3107381	.0277133	-11.21	0.000	-.3650552	-.256420
Gender - female vs. male	-.0233176	.0277637	-0.84	0.401	-.0777335	.031098

Table 3: Predicted Probabilities - Vignette 2

Factor	Probability
Gender	
Male	.7358397
Female	.7125221
Age	
Younger	.754541
Older	.6922036
Condition	
Perfect Health	.879943
Cold	.5692049

Appendix B - Methodology

Calibration Methodology

Respondents for the survey were recruited through a non probability sample. The survey was then calibrated using a generalized regression estimator. Calibration increases the weight of some respondents and decreases the weight of other respondents in reference to a pre-existing, representative dataset so that the survey more accurately represents the population of interest.

The survey was calibrated on four variables: gender, age, governorate, and community size. Several other variables, namely shelter status and number of household members working, were considered but the survey proportions for these variables were judged acceptable.

Three categories for age were utilized: 18 – 34, 35 – 59, and 60 and older. Communities were categorized as large (> 20,000 inhabitants), medium (20,000 – 2,000 inhabitants), and small (<2,000 inhabitants). Estimates for gender and age were taken from an unpublished representative survey for NES. Population estimates were taken from HNAP's February Mobility and Needs Monitoring, which is availble upon request from HNAP.

After calibration, the survey proportions for the calibration variables (gender, age, governorate, and community size) exactly matched the estimated population proportions. Proportions were also compared to several benchmark variables: proportions for marital status and displacement status (internally displaced person (IDP) vs. host community) were within three percentage points of population estimates and proportions for chronic illness were within five percentage points. The code for the calibration is available upon request.[1]

1. For background information on using generalized regression estimators to calibrate survey data see Thomas Lumley, Complex Surveys: A Guide to Analysis Using R, p. 135 – 65. For an overview of approaches to weighing nonprobability samples see Carina Cornesse et.al., "A Review of Conceptual Approaches and Empirical Evidence on Probability and Nonprobability Sample Survey Research," Journal of Survey Statistics and Methodology, February 2020, p. 4–36. For a less technical introduction see Andrew Mercer, Arnold Lau, and Courtney Kennedy, "For Weighing Online Opt-in Samples, What Matters Most?" Pew Research Center, January 2018.

Analysis Methodology

Similar to the survey in round 2, an experimental section of vignettes was also included. Vignettes are very short, hypothetical scenarios which were presented to respondents to gauge their responses to various COVID-19 situations. Each respondent was randomly assigned to answer one scenario for two different types of vignettes.

For comparability, only respondents with complete surveys available for both rounds 2 and 3 were included in the analysis (total: 908). Analysis was conducted using proportion tests of significance between weighted samples for each round. Regressions were also run looking at significant predictors for outcomes. These statistical tests were considered exploratory and contextual; while the results informed the factsheet, they are not presented numerically. Because the vignettes section of the survey was a randomized experiment, these results are presented as a series of regressions and average marginal effects. Factorial survey experiments (vignette experiments) are a well-established method of inferring causal relationships between factors (expressed as variations in vignettes) and respondents perceptions or judgments. In a context where respondents' answers are likely to be influenced by social desirability bias (i.e. respondents might be tempted to over-report their likelihood of practicing social distancing), factorial experiments minimize bias by inquiring about the action of a hypothetical individual instead of the action of the respondent.[2]

The results of the factorial survey experiments were estimated with logistic regression models. The independent variables for vignette 1 were gender of the character in the vignette (female vs. male), context in which people were required to wear a mask (required by authorities under a fine, worn by the majority of neighbours, required by business owners upon entering their premises), and age of the character in the vignette (older, i.e. 58 years old in the vignette vs. younger, i.e. younger than 24 years old in the vignette). The independent variables for vignette 2 were gender of the character in the vignette (female vs. male), type of health in the vignette (good health vs. feeling like they have a cold), and age of the character in the vignette (older, i.e. 47 years old in the vignette vs. younger, i.e. 22 years old in the vignette). The dependent variable in vignette 1 was the respondent's response as to how likely the character was to wear a mask, while in vignette 2 it was the respondent's response as to how likely the character was to leave the house to visit family/friends within the space of a week. Responses were binned into very likely/likely vs. neutral/unlikely/very unlikely. Logistic regressions represent the log odds that the respondent selected very likely/likely as their response compared to the log odds that the respondent selected neutral, unlikely, or very unlikely as their response, controlling for each independent variable.

The average marginal effects (AME) were then estimated for all independent variables. For a binary, independent variable such as gender, the AME approximates the difference between the average predicted probability for all combinations of independent variables that include female (e.g. predicted probability for 25 yr. old female in a scenario where there is no curfew, predicted probability for 55 yr. old female in a scenario where there is a flexible curfew, etc.) and the average predicted probability for all combinations of independent variables that include male.

Logistic regressions fitted for data collected by two separate data collection teams working on NES and one data collection team in NWS to ensure that results were comparable. Receiver operating characteristic (ROC) curves were examined for all logistic regressions and area under the curve (AUC) was calculated. Goodness-of-fit testing was also conducted, and logistic regressions with interactions for all independent variables were examined, but the inclusion of interactions had no significant effect on AME.

2. Ulf Liebe et. al provide an overview of the use of factorial experiments in development contexts in "Using Factorial Survey Experiments to Measure Attitudes, Social Norms, and Fairness Concerns in Developing Countries," Sociological Methods & Research, October 2017. For an example from the Syrian context, see The World Bank's "The Mobility of Displaced Syrians: An Economic and Social Analysis" pages 221 – 225.