

# 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. The highest concentration of cases is in Al-Hasakeh Governorate. Reports from the The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) indicate that one in four 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 Al-Hasakeh, along with lockdown measures in many areas being arbitrary. The risk of a large-scale outbreak in NES remains high, as risk perception varies amongst communities and potentially creates a false sense of security.<sup>1</sup> As a result, humanitarian actors continue to face uncertainty in terms of the effect 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.<sup>2</sup>

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 NES. 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 was observed as remaining high while attitudes and practices had shifted to less cautious in relation to COVID-19 among both female and male respondents.

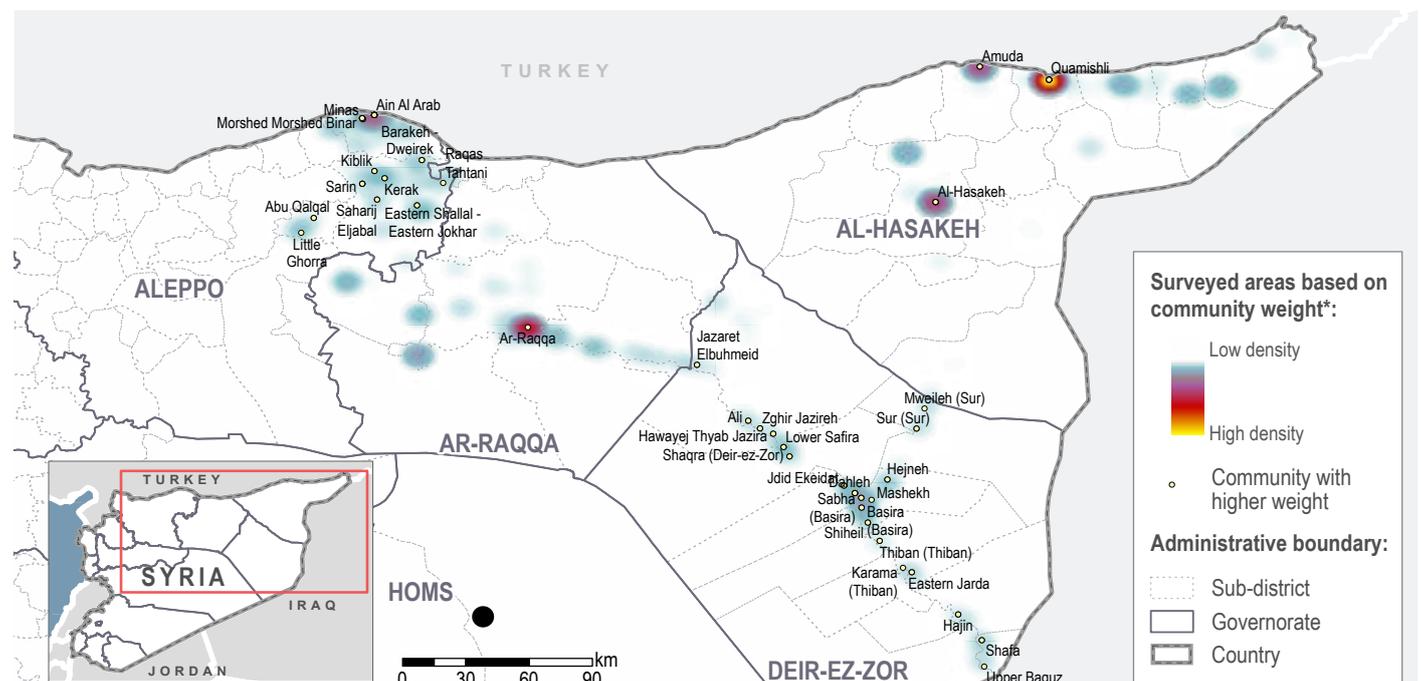
Descriptive statistics for all survey rounds are available [here](#), and include each specific KAP indicator, disaggregated by governorate, sex, and rural/urban population. The present factsheet is the second in-depth analysis of changes in knowledge, attitudes, and practices over time and among cohorts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

## METHODOLOGY

REACH conducted a second KAP survey in four governorates of NES from 17-22 May 2020. A total of 1,231 individual interviews were conducted in NES (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 individual 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 NES. 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.



### RESULTS BY RCCE ACTION PLAN MESSAGE<sup>4</sup>

#### Message: Wash your hands with increased frequency.

• **Recommendation: Target rural communities and communities in NE Aleppo for more efficient messaging on handwashing.**

- Knowledge and practice of handwashing are already high and have stayed high (over 75% of respondents). However, the proportion of respondents who said they washed hands more than normal decreased by 10%.
- The proportion of respondents from Ar-Raqqa reporting increased frequency of handwashing saw a significant decrease (round 2: 89%, round 3: 75%).
- There was no substantial difference between rounds 2 and 3 among people who mentioned that handwashing can be used as a measure to limit the spread of COVID-19. The proportions of respondents who know about handwashing practices were high in both rounds (82-86%).
- Respondents in Raqqa (75%) were less likely to mention handwashing as a measure for limiting the spread of COVID-19 than all cohorts.
- 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 between rounds of 26% (round 2: 83%, 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 58% 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 58% 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 24% to 16%.

## 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).

• Decreases in social distancing practices were mostly driven by changes in Deir-ez-Zor, but decreases were seen among all cohorts. In Deir-ez-Zor, the proportion of respondents who reported attending a social gathering increased by 47%.

#### 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.**

- The proportion of respondents reporting they would call a medical professional in the case of infection increased among all cohorts surveyed. However, these percentages still remain less than 50%.
- 23% of respondents indicated that they would stay home and isolate if they contracted COVID-19.<sup>3</sup>
- The proportion of respondents knowing about COVID-19 symptoms was high and did not substantially change between rounds. The majority of respondents identified cough (round 2: 90%; round 3: 94%) and fever (round 2: 97%; round 3: 96%) as symptoms.
- There was an overall increase (4%) between rounds in the proportion of respondents who said they would call a doctor if someone in their family contracted COVID-19.

• Women and urban community respondents were more likely to say they would self-isolate if they or someone in their family contracted COVID-19, in comparison to men or urban community respondents.

• 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 (still 29%, but down from 45%).**

• Less than 15% of respondents in cohorts other than Aleppo held the belief that COVID-19 can be transmitted through breastmilk (round 2: 13%, round 3: 10%)

• Belief in COVID-19 transmission via breastmilk in NES overall dropped by 3% 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 (79%), and women (78%).
- 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: 77%; round 3: 81%).
- In both urban men and urban women cohorts, the proportion who reported contact with a physical object as a method of contracting COVID-19 increased by 10% between rounds.
- Rural community respondents are more likely than urban community respondents to report an infected surface as a method of virus contraction. Deir-ez-Zor respondents 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 in the proportion of respondents who mentioned that wearing gloves is a possible prevention measure for reducing the risk of contracting COVID-19 (round 2: 60%; 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 commonly reported popular myths people had heard for preventing contracting COVID-19 were 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).<sup>4</sup>
- The proportion of people reporting hearing certain myths increased between rounds, while the reporting of other myths decreased. Aside from the belief that exposing oneself to sun or high temperatures can prevent COVID-19 (which decreased from 50% in round 2 to 27% in round 3), the overall changes were slight.
- 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 Non-Governmental Organisations (NGOs) to reinforce messaging.
- The percentage of respondents reporting social media as both a popular and trustworthy source of information decreased among all cohorts. However, social media still remains one of the most reported 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 by 9% from round 2) but is also among the least trusted sources of information.
- Word of mouth was the second most commonly mentioned means of receiving information about COVID-19 (84%). The most commonly mentioned means was television (92%). Television was also the most trusted source of information (63% of respondents).<sup>3</sup>
- Women were 11% less likely to say social media was a source of information than men, but were more likely to say social media was a trusted source of information, as were residents of Ar-Raqqa.
- The percentage of men reporting trust in social media decreased by 14%, while the proportion of men reporting use of social media as an information source decreased by 2%.

- The proportion of respondents mentioning that health workers were both a source of information and a trusted source increased overall, but only at health facilities. When contacted by health workers via door-to-door, percentages indicating source and trust drop very low.

### **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 change between rounds. Respondents from Al-Hasakeh were less likely to mention this transmission route.
- **Recommendation:** Target 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).

## ADDITIONAL ATTITUDES INFORMATION

### 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 10% between rounds 2 and 3. Degree of concern about the virus decreased across the board, however, and those reported the least concern are urban populations.
- Respondents were less worried about COVID-19 in each round of the survey, beginning from round 1. The proportion who said they were not personally worried increased by 10% in round 3, compared to round 2. Respondents 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.**
- Roughly half of respondents in both rounds (round 2: 51%; round 2: 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 described in Appendix B below.

### Key messages for risk and behavior change communication:

- A strict curfew (people are only to leave their house for essential reasons) deterred people from leaving their house much more than a flexible curfew (curfew is maintained but people are allowed to leave house) or no curfew. A flexible curfew deterred people from leaving their house more than no curfew.
- The type of messaging channel did not have a substantial effect on deterring people from leaving their house in the next week (from time of interview), but of the messaging channels a visit from an NGO had the strongest effect.
- Young men were the most likely to leave their house, regardless of the proposed scenario. Age and gender were both important determinants to social visits with friends and relatives.

### Scenario 1

Scenario 1 looked at the likelihood that individuals would leave their house in the next week based on varying age (23 / 25 / 27 years old vs. 54 / 58 / 64 years old), gender (male / female), and channel by which messages urging people not to leave their house for non-essential reasons were disseminated (message from public official on television / visited in house by NGO worker / WhatsApp message from NGO). A sample scenario went as follows: "Imagine that a woman, 25 years old, hears a message from a public official on the television urging people not to leave their houses for non-essential reasons. Within the space of a week, how likely is she to leave her house to visit family or friends?"

### Results

The model suggests that women are 3 percentage points more likely than men to leave the house in the next week, regardless of the messaging channel (information source: dependent variable) through which a message was disseminated.

Younger people were 17 percentage points more likely to leave the house in the next week, regardless of messaging channel.

Compared to a scenario in which a person had received a message discouraging movement from their house from an official on television, average marginal effects indicated that people were 7 percentage points less likely to leave their house if they received an in-person visit from an NGO (p value: 0.005; 95% CI: -0.17, -0.02). A WhatsApp message from an NGO was also more effective than an official on television, but not

as effective as an in-person visit.

Therefore, results from the experiment show that a visit or WhatsApp message from an NGO worker is more likely than a message from an official on television to be effective at influencing behavior of people considering whether or not to leave their house.

### Scenario 2

Scenario 2 looked at the likelihood that individuals would leave their house in the next week based on varying age (25 years old / 55 years old), gender (male / female), and curfew status implemented by local authorities in the individuals' area (strict curfew, people only to leave houses for essential reasons / maintained curfew, people encouraged not to leave house for non-essential reasons / no curfew). A sample scenario went as follows: "Imagine that the local authorities announce introduction of curfew but continue to allow people to leave their houses. Within the space of a week, how likely is a 55 yr. old woman to leave her house to visit family or friends?"

### Results

The model suggests that men are 14 percentage points more likely than women to leave the house in the next week, regardless of the curfew status.

The model suggests that younger people are 19 percentage points more likely than older people to leave the house in the next week, regardless of the curfew status.

A strict curfew deterred people from leaving their house by 20 percentage points more than no curfew. A flexible curfew was least effective in deterring people from leaving their house (33% less effective than a strict curfew, and 13% less effective than no curfew at all).

Under a strict curfew, the probability of people leaving their house in the next week is 44 percent. A flexible curfew increases the probability by 33 percent, and no curfew increases the probability by 20 percent.

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 NES Syria KAP dataset is available [here](#).

1. OCHA/WHO. [Syrian Arab Republic: COVID-19 Response Update No. 09](#). 21 August 2020.
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](#)
4. Respondents could select multiple answers so total may be greater than 100%.

## CONTACT

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# Appendix A - Results Tables

## Vignette 1

Table 1: Model Predicted Probabilities - Vignette 1

Gender	Age	Information source	Probability
Male020	Younger	WhatsApp message from NGO	.7296125
Male010	Younger	Visit from an NGO worker	.702818
Male021	Older	WhatsApp message from NGO	.5555756
Male000	Younger	Official on television	.7630328
Male011	Older	Visit from an NGO worker	.5228143
Male001	Older	Official on television	.5986748
Female120	Younger	WhatsApp message from NGO	.7100616
Female110	Younger	Visit from an NGO worker	.6821737
Female121	Older	WhatsApp message from NGO	.5315208
Female100	Younger	Official on television	.745054
Female111	Older	Visit from an NGO worker	.4985865
Female101	Older	Official on television	.5751689

Table 2: Average Marginal Effects - Vignette 1

Factor	AME	SE	z	p	Lower	Upper
Age - older vs. younger	-.1751207	.0200391	-8.74	0.000	-.2143967	-.1358448
Info source - NGO visit	-.0688645	.0244205	-2.82	0.005	-.1167278	-.0210012
Info source - NGO WhatsApp	-.0387753	.0244513	-1.59	0.113	-.0866989	.0091482
Gender - female vs. male	-.0216552	.0200479	-1.08	0.280	-.0609484	.017638

Table 3: Average Predicted Probabilities - Vignette 1

Factor	Probability
<i>Gender</i>	
Male	.6452158
Female	.6235606
<i>Age</i>	
Younger	.7219887
Older	.546868
<i>Information source</i>	
Official on television	.6710339
Visit from an NGO worker	.6021695
WhatsApp message from NGO	.6322586

## Vignette 2

Table 1: Model Predicted Probabilities - Vignette 2

Gender	Age	Information source	Probability
Male000	Younger	No curfew	.7923956
Male001	Older	No curfew	.6093623
Female100	Younger	No curfew	.6530555
Female101	Older	No curfew	.4347993
Male010	Younger	Flexible curfew	.886582
Male011	Older	Flexible curfew	.7616051
Female110	Younger	Flexible curfew	.7940257
Female111	Older	Flexible curfew	.6117254
Male020	Younger	Strict curfew	.6189741
Male021	Older	Strict curfew	.3990086
Female120	Younger	Strict curfew	.4447928
Female121	Older	Strict curfew	.2466561

Table 2: Average Marginal Effects - Vignette 2

Factor	AME	SE	z	p	Lower	Upper
Age - older vs. younger	-.1878049	.0192477	-9.76	0.000	-.2255297	-.1500801
Flexible curfew	.1376449	.0230726	5.97	0.000	.0924233	.1828664
Strict curfew	-.1939625	.0239529	-8.10	0.000	-.2409094	-.1470156
Gender - female vs. male	-.1483735	.0201741	-7.35	0.000	-.1879139	-.108833

Table 3: Average Predicted Probabilities - Vignette 2

Factor	Probability
<i>Gender</i>	
Male	.6747479
Female	.5263745
<i>Age</i>	
Younger	.7085801
Older	.5207752
<i>Type of curfew</i>	
No curfew	.6363338
Flexible curfew	.7739787
Strict curfew	.4423713

# 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 HNP’s February Mobility and Needs Monitoring, which is available upon request from HNP.

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 point of population estimates and proportions for chronic illness were within five percentage points. The code for the calibration is available upon request.<sup>1</sup>

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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.<sup>2</sup>

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), source of information telling people not to leave their houses (official on television vs. Whatsapp message from NGO vs. in-person visit from NGO worker), and age of the character in the vignette (older, i.e. 50+ years old in the vignette vs. younger, i.e. younger than 30 years old in the vignette). The independent variables for vignette 2 were gender of the character in the vignette (female vs. male), type of curfew in the vignette (no curfew vs. flexible curfew vs. strict curfew), and age of the character in the vignette (older, i.e. 55 years old in the vignette vs. younger, i.e. 25 yrs old in the vignette). The dependent variable in both vignettes 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 Northwest Syria 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.

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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.