COVID-19 Knowledge, Attitudes and Practices (KAP) Survey
April (Round 1) and May (Round 2) 2020
Northeast Syria Analysis

CONTEXT

As of 7 July 2020, northeast (NE) Syria had reported six cases of COVID-19 since the start of the outbreak in March, with one death reported on 2 April.[1] With no new cases since 29 April and a lower number of confirmed cases than expected, COVID-19 preventive measures were relaxed in the region. The risk of a COVID-19 outbreak continues to be a possibility, however, as cases in the rest of Syria continue to rise (as of 7 July 2020, 372 confirmed cases and 14 deaths[2]) and many experts predict a second wave of global infections in the fall/ winter of 2020/2021.[1]

The Humanitarian Needs Assessment Programme's (HNAP) 18 May 2020 COVID-19 Rapid Assessment showed that all community lockdowns and total curfews had ended in areas controlled by the Syrian Democratic Forces (SDF). Partial curfews were still in place in 43 sub-districts and public spaces were still closed in 43 sub-districts (out of 45). Awareness campaigns were in place in 24 sub-districts, while temperature checks and distribution of soap/disinfectant/masks were available in 10 sub-districts. When looking at services that were available in sub-districts prior to the emergence of COVID-19, most basic services were fully available in most sub-districts, although public health services were partially available in 9% of sub-districts.[3]

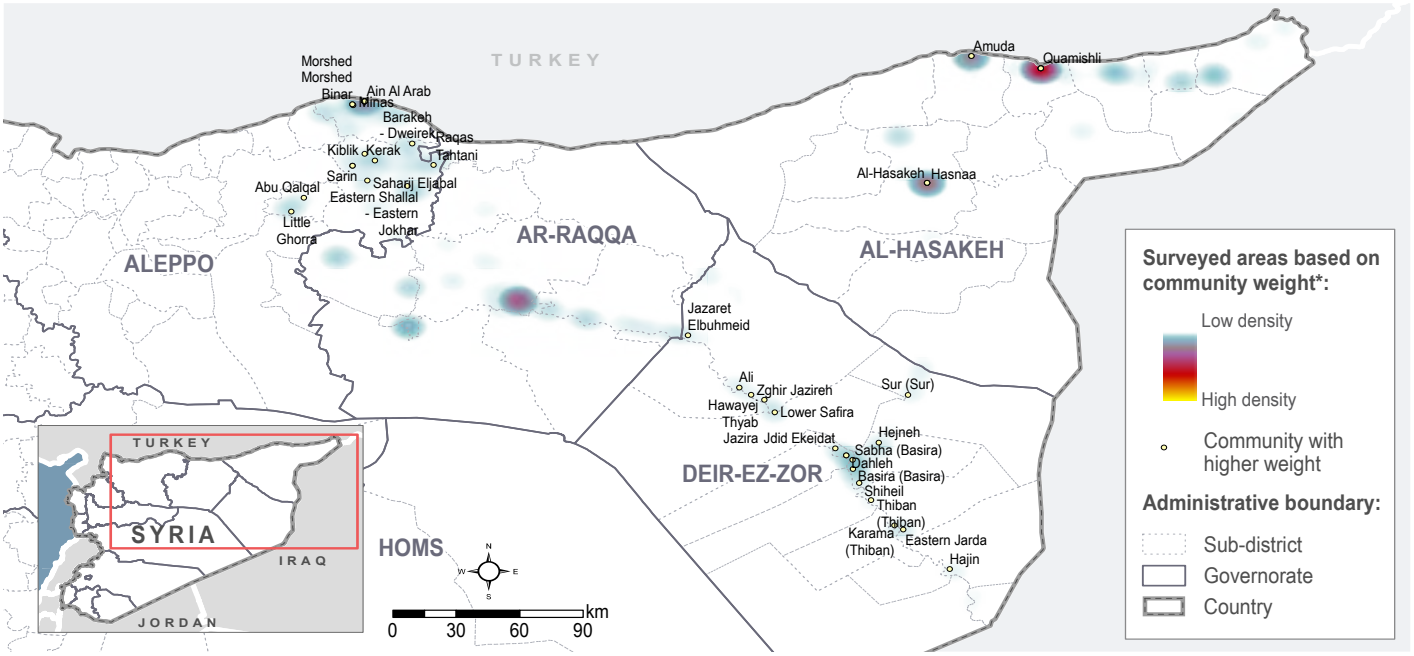
In April 2020, REACH began a series of monthly knowledge, attitudes, and practices (KAP) surveys with the goal of informing the communications response to the threat of COVID-19 in northeast Syria. REACH observed high levels of COVID-19 knowledge among survey respondents in the first round of data collection, 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 round of data collection, which was conducted in late May as restrictions lifted, knowledge remained high while attitudes and practices had shifted to less cautious in relation to COVID-19 among both female and male respondents.

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

METHODOLOGY

REACH conducted a KAP survey in four governorates of northeast Syria from 16-23 April 2020. A total of 2,038 individual interviews were collected using non-probability sampling (Al Hasakeh: 1,022; Aleppo: 241; Ar-Raqqa: 634; Deir-ez-Zor: 141). An in-depth explanation of the methodology of this survey can be found here. The second round of data collection was conducted from 17-22 May 2020 with the same individuals surveyed in the first round of data collection. Of the original 2,038 respondents, the sample reduced to 1,231 respondents included in the second 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: 735; Aleppo: 94; Ar-Raqqa: 345; Deir-ez-Zor: 57). As in the first 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.

The survey administered in round 2 was the same survey as that administered in round 1, with a few minor changes (one question on existing myths of COVID-19 was added, and categories were added to one question asking about sources of information). Similar to the survey in round 1, 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. While the format of this vignettes section remained the same between rounds of data collection, the content of vignettes was changed for round 2 and is described further in the vignettes section below.

For comparability, only respondents with complete surveys available for both rounds 1 and 2 were included in the analysis (total: 1,231). 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. A more detailed explanation of the analysis methodology can be found in Appendix B at the end of this factsheet.

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 (16 to 23 April 2020 for round 1; 17 to 22 May for round 2).

RESULTS BY RCCE MESSAGE

Message: Wash your hands frequently.

• Recommendation:[4] Knowledge and practice of hand washing is already high and has stayed high (over 75% of respondents). For more efficient messaging, rural communities and communities in NE Aleppo could be targeted.

• No substantial difference between rounds 1 and 2 among people who mentioned that hand washing can be used as a measure to limit the spread of COVID-19. The proportions of respondents knowing about hand washing practices were high in both rounds (82-83%).

• No substantial difference in hand washing practice between rounds 1 and 2. The proportion of respondents reporting they had washed their hands in the last week was 75% or more in both rounds.

• Rural community members (80%) were less likely to mention hand washing as a measure for limiting the spread of COVID-19 than urban community members (84%).

• Respondents from Aleppo were less likely to say that had washed their hands more than normal in the past week, compared to respondents from Al-Hasakeh, Raqqa, or Deir-ez-Zor.

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), and should target males and younger people. As expected given the easing of curfews and other administrative restrictions, social distancing practices have decreased among all age groups, gender groups, and community groups. Previous predictive work by REACH indicates it is unlikely that these practices will reverse unless there is a spike in COVID-19 cases.

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

- The proportion of respondents reporting they had greeted someone with a handshake in the past week increased from 51% to 64%;
- The proportion of respondents reporting they had left their house in the past week increased from 63% to 87%;
- The proportion of respondents reporting they had visited a friend in the past week increased from 62% to 79%;
- The proportion of respondents reporting they had gone to work in the past week increased from 38% to 58%;
- The proportion of respondents reporting they had attended a social gathering increased from 7% to 27%; and
- The proportion of respondents reporting they had maintained two meters between themselves and others when outside decreased from 37% to 24%.

• The decreases in social distancing practice were mostly driven by changes in women's practices. The proportion of women practicing social distancing decreased in several areas whereas for men it only decreased in some areas (the proportion of men reporting practicing social distancing was already low among men in round 1).

• The proportions of respondents reporting practicing social distancing decreased substantially in every age group and among both rural and urban communities, although less frequently among rural men.

• The results of the vignette experiment (see below) indicate that people are more likely to stay in their house when a strict curfew is in place, less likely to stay in their house when a flexible curfew is in place, and the least likely to stay in their house when no curfew is in place.

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

• Recommendation: Targeting for messaging about the importance of calling a medical professional could be in rural communities and/or Deir-ez-Zor. Messaging about behavior in response to COVID-19 symptoms could be a focus for all populations. Knowledge of key COVID-19 symptoms is high across all populations, and only increasing, but responses and predictive modeling indicate that people may not take symptoms seriously enough to engage in

strict social distancing. Current messaging suggests that people should immediately call a health provider if they experience COVID-19 symptoms, but only 31% of respondents in round 2 said they would call a medical professional in response to experiencing symptoms (not significantly different from round 1).

• 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 1: 89%; round 2: 90%) and fever (round 1: 96%; round 2: 97%) as symptoms. Although the proportion of respondents knowing about symptoms was already high, it increased substantially among older women and urban women and men.

• There was no overall difference between rounds in the proportion of respondents who said they would call a doctor if someone in their family contracted COVID-19.

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

• Women and respondents from Deir-ez-Zor were less likely to say they would go to a clinic if they or someone in their family contracted COVID-19 than men or respondents from other governorates, while respondents from Raqqa were more likely to say they would go to a clinic.

• Respondents from Aleppo 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.

• Previous experimental models from round 1 of data collection (see here) suggest that while feeling ill significantly reduces the chances of visiting friends or family in the next week, the likelihood of visiting someone even if a person feels ill is still 49%.

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: Few respondents (less than 15% in either round of data collection) think that COVID-19 can be transmitted through breastmilk. Cohorts that could benefit from targeted messaging about breastmilk include rural men, women under the age of 30, and NE Aleppo residents.

• There was no difference overall between rounds in the proportion of respondents who thought that COVID-19 could be contracted through breastmilk (round 1: 9%; round 2: 13%).

• Within individual cohorts, however, the proportion of rural men and women under the age of 30 who think COVID-19 can be transmitted through breastmilk increased by 5% and 9%, respectively. Additionally, respondents from Aleppo were 25 times more likely to say that COVID-19 can be transmitted through breastmilk.

Message: Coronavirus can survive on assistive devices.

• Recommendation: To help keep persons with disabilities safe from viral contamination, it is important that all people understand messaging around transmission via contact with infected surfaces. The proportion of respondents reporting that COVID-19 can be contracted from an infected object is high, but is less understood among rural communities, younger people, and residents of Al-Hasakeh, who should be targeted with this message.

• There was no difference overall between the proportion of respondents reporting that COVID-19 can be contracted from physical contact with a contaminated object (round 1: 76%; round 2: 77%).

• 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 were less likely than urban community respondents to report an infected surface as a method of virus contraction, as were younger respondents (compared to older respondents) and Al-Hasakeh respondents (compared to other governorates).

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

• Recommendation: Wearing gloves as a preventive measure was mentioned by 60% of respondents and knowledge did not change between rounds of data collection. This is a message that could be promoted as a safety alternative to strict social distancing measures, which we know are decreasing. Messaging strategies for older men could be explored as they seem to be effective.

• No substantial difference was observed between rounds 1 and 2 among respondents who mentioned that wearing gloves is a possible prevention measure for reducing the risk of contracting COVID-19 (round 1: 54%; round 2: 60%).

• Among cohort groups, the proportion of men over the age of 50 who mentioned gloves as a prevention measure increased by 21% between rounds.

Message for leaders: Address fears and rumors.

• Recommendation: Messaging campaigns debunking the myths around drinking boiled herbs and exposing oneself to the sun could be focused on for greater efficiency, particularly among women (drinking boiled herbs) and in Aleppo, Deir-ez-Zor, and Raqqa.

• Myths related to COVID-19 were not surveyed in the first round of data collection so no data is available about change over time.

• The most popular myth people had heard for preventing contracting COVID-19 was to drink boiled herbs such as anise (reported by 63% of respondents), followed by exposing oneself to sun or high temperatures (reported by 50% of respondents).[5]

• Respondents in Aleppo were more likely to have heard that avoiding houseflies or mosquito bites, exposing oneself to sun or high temperatures, and eating garlic prevented contracting COVID-19, compared to other governorates. Respondents from Deir-ez-Zor were more likely to have heard the myth about exposure to high temperatures.

• Respondents from rural communities were more likely to have heard that taking a hot bath or shower prevented contracting COVID-19.

• Respondents from Deir-ez-Zor were more likely to have heard that taking certain medicines would prevent contracting COVID-19 than other governorates. Younger people were also more likely to have heard this myth.

• Women were more likely to have heard that drinking boiled herbs such as anise prevented contracting COVID-19 than men, as were respondents from Aleppo, Raqqa, and Deir-ez-Zor when compared to Al-Hasakeh.

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

• Recommendation: Social media is increasing in popularity among older cohorts, but decreasing in trustworthiness among some younger cohorts. If possible given resource constraints, messaging through television is most widely seen and trusted among most age and gender groups. Interaction with health workers also seems to be increasing trust, and should be continued as much as possible given these people may be better at reaching women.

• Social media was the second most mentioned means of receiving information about COVID-19 (77%). The most mentioned means was television (89%). Television was also the most trusted means of information (62% of respondents).[5]

• Health facility workers were the most trusted source of information among respondents who also mentioned these people were a source of information (74% of respondents).

• Regardless of age or location, women and older people were less likely to say social media was a source of information than men and younger people. Women were also less likely to say social media was a trusted source of information, as were older people.

• Older respondents were more likely to report the radio as source of information, and were more likely than younger respondents to trust information coming from their family/friends.

• Trust in social media decreased among men under the age of 30 but increased among men and women over the age of 50.

• The proportion of respondents mentioning health workers were both a source of information and a trusted source increased among most gender and age groups.

• Results from a vignette experiment (see below), indicate no substantial difference in the likelihood of a person leaving their house based on three different types of messaging received: from an official on television, from a visit from an NGO worker, from a Whatsapp message from an NGO. A visit from an NGO worker did slightly decrease the likelihood that individuals would leave their house.

Message: Stigma can be heightened by insufficient knowledge about how the new coronavirus disease (COVID-19) is transmitted and treated, and how to prevent infection.

• Recommendation: Targeted messaging on the airborne nature of COVID-19 could focus on Al-Hasakeh and younger populations. Women could be targeted with messaging about COVID-19 as particularly dangerous for the elderly.

• Most respondents reported that COVID-19 can be transmitted through the air (round 1: 87%; round 2: 88%), and this did not change significantly between rounds. Respondents from Al-Hasakeh and younger persons were less likely to mention this transmission route.

• The proportion of respondents who knew that elderly persons are the most at-risk of getting seriously ill from COVID-19 increased between rounds, from 67% in round 1 to 73% in round 2. Women were less likely to mention the elderly as being particularly at risk than men, as the increase in knowledge was mostly due to changes among young, rural men.

Additional attitudes information (not in messaging matrix): Respondents are less worried about COVID-19.

• Recommendation: People did not perceive a change in the likelihood of contracting COVID-19 between data collection rounds, but they were less worried than they were when surveyed in round 1.

• Respondents were less worried about COVID-19 in round 2 as opposed to round 1. The proportion who said they were not personally worried increased by 4% and the proportion who said they were only a little worried increased by 15%, while the proportion who said they were very worried decreased by 16%.

• There was little change in perceptions of the likelihood of contracting COVID-19 (within the month following data collection) between the two rounds.

Additional knowledge information (not in messaging matrix): 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.

• About half of respondents in both rounds (round 1: 49%; round 2: 51%) thought that all carriers of COVID-19 show symptoms, with no significant difference in knowledge between rounds. Respondents from Raqqa and Deir-ez-Zor were 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 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, 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.

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 men are 6 percentage points more likely than women to leave the house in the next week, regardless of the channel through which a message was disseminated.

Younger people were 30 percentage points more likely to leave the house in the next week, regardless of messaging channel.

Younger males are the most likely to leave the house and older females are the least likely to leave the house.

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 6 percentage points less likely to leave their house if they received an in-person visit from an NGO (p value: 0.059; 95% CI: -0.13, 0.00). The effect of a WhatsApp message was not substantially different from the effect of a message from an official on television.

Therefore, results from the experiment show that a visit from an NGO worker is more likely than a message from an official on television or a WhatsApp message from an NGO 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 12 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 11 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 52 percentage points more than no curfew. A flexible curfew deterred people from leaving their house by 33 percentage points more than no curfew.

Under a strict curfew, the probability of a person leaving their house in the next week is still 31 percent. A flexible curfew increases the probability to 50 percent. A flexible curfew may still encourage social distancing in a way that slows the spread of a potential COVID-19 outbreak while mitigating some of the devastating economic effects of a strict curfew.[6]

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 northwest Syria KAP dataset is available here.

1. OCHA/WHO. Syrian Arab Republic: COVID-19 Response Update No. 06. 19 June 2020.
2. COVID-19 Dashboard by the Center for Systems Science and Engineering at Johns Hopkins University.
3. Humanitarian Needs Assessment Programme. COVID-19 Rapid Assessment: Syrian Democratic Forces Controlled Areas. 8 June 2020.
4. Recommendations were framed by REACH based on the results from the data collected. However, more in-depth assessment would be needed to understand the impact and efficiency of messaging as well as the type of intervention needed.
5. Respondents could select multiple answers so total may be greater than 100%.
6. Impact of COVID-19 on Markets in Northern Syria. Snapshot: 6-9 April 2020.

CONTACT

Laura Thisted,

REACH Syria Country Coordinator

Email: laura.thisted@reach-initiative.org

Appendix A - Results Tables

Vignette 1

Table 1: Model Predicted Probabilities - Vignette 1

Gender	Age	Information source	Probability
Male	Younger	WhatsApp message from NGO	0.7235241
Male	Younger	Visit from an NGO worker	0.7047599
Male	Older	WhatsApp message from NGO	0.6680099
Male	Younger	Official on television	0.6652728
Male	Older	Visit from an NGO worker	0.6473147
Male	Older	Official on television	0.6044566
Female	Younger	WhatsApp message from NGO	0.4333072
Female	Younger	Visit from an NGO worker	0.4108841
Female	Older	WhatsApp message from NGO	0.3702412
Female	Younger	Official on television	0.367374
Female	Older	Visit from an NGO worker	0.3490713
Female	Older	Official on television	0.30866772

Table 2: Average Marginal Effects - Vignette 1

Factor	AME	SE	z	p	Lower	Upper
Age - older vs. younger	-0.05946	0.027272	-2.18	0.029	-0.11291	-0.006
Info source - NGO visit	-0.06249	0.033064	-1.89	0.059	-0.1273	0.002313
Info source - NGO WhatsApp	-0.02081	0.033884	-0.61	0.539	-0.08723	0.045598
Gender - female vs. male	-0.29568	0.027338	-10.82	0	-0.34926	-0.24209

Table 3: Average Predicted Probabilities - Vignette 1

Factor	Probability
Gender	
Male	0.550581
Female	0.4911257
Age	
Younger	0.6691775
Older	0.3735022
Information source	
Official on television	0.5500706
Visit from an NGO worker	0.4875788
WhatsApp message from NGO	0.5292566

Vignette 2

Table 1: Model Predicted Probabilities - Vignette 2

Gender	Age	Information source	Probability
Male	Younger	No curfew	0.9003821
Male	Older	No curfew	0.8407043
Female	Younger	No curfew	0.8350302
Female	Older	No curfew	0.7471946
Male	Younger	Flexible curfew	0.6420892
Male	Older	Flexible curfew	0.5116088
Female	Younger	Flexible curfew	0.5011679
Male	Younger	Strict curfew	0.4343473
Female	Older	Flexible curfew	0.3697410
Male	Older	Strict curfew	0.3095688
Female	Younger	Strict curfew	0.3007124
Female	Older	Strict curfew	0.2007028

Table 2: Average Marginal Effects - Vignette 2

Factor	AME	SE	z	p	Lower	Upper
Age - older vs. younger	-0.1064	0.025477	-4.18	0.0	-0.15633	-0.05646
Flexible curfew	-0.32534	0.031183	-10.43	0.0	-0.38646	-0.26422
Strict curfew	-0.51963	0.029587	-17.56	0.0	-0.57762	-0.46164
Gender - female vs. male	-0.11521	0.025711	-4.48	0.0	-0.1656	-0.06481

Table 3: Average Predicted Probabilities - Vignette 2

Factor	Probability
Gender	
Male	0.5924834
Female	0.4772775
Age	
Younger	0.5853436
Older	0.4789463
Type of curfew	
No curfew	0.8294066
Flexible curfew	0.5040656
Strict curfew	0.3097745

Appendix B - Methodology

Calibration Methodology

Northeast Syria

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 available 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 one percentage point of population estimates and proportions for chronic illness were within approximately three percentage points.

The code for the calibration is available upon request. 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 non-probability samples see Carina Cornesse et al., "A Review of Conceptual Approaches and Empirical Evidence on Probability and Non-probability 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

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. 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.

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 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.