

# REFUGEE CONNECTIVITY:

A SURVEY OF MOBILE PHONES, MENTAL HEALTH, AND PRIVACY  
AT A SYRIAN REFUGEE CAMP IN GREECE



HARVARD  
HUMANITARIAN  
INITIATIVE

Data&Society

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### CREDITS

This report is published by the Signal Program at the Harvard Humanitarian Initiative and the Data & Society Research Institute. This research is a result of a survey design that simultaneously employed two distinct methodologies. Danielle Poole created and led the survey methodology and investigation of mobile connectivity and mental health. Mark Latonero led the investigation of mobile connectivity and privacy.

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# ABOUT

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Dani Poole is a doctoral candidate in the Department of Global Health and Population at the Harvard University T.H. Chan School of Public Health. Her overall career goal is to leverage data to improve health in humanitarian crises. Dani uses epidemiological and statistical methods to quantify health outcomes and their predictors for intervention design and monitoring and evaluation in crises.

Dani works at the Signal Program on Human Security and Technology of the Harvard Humanitarian Initiative on evaluating the use and effectiveness, and associated inequalities, of information communication technologies in crises.

## JOS BERENS

Building on a degree in Philosophy and an LL.M in Public International Law, the work of Jos Berens focuses on the tensions that can arise around the processing of digital data for humanitarian response and international development. At the time of the research for this report, Jos was project officer for the International Data Responsibility Group at Leiden University's Centre for Innovation.

In July 2017, Jos joined the UN OCHA Centre for Humanitarian Data in The Hague, which mission is to increase the use and impact of data in the humanitarian sector. Jos leads the Data Policy work stream, through which the Centre supports the trust needed for responsible growth of the humanitarian data ecosystem.

## **DATA & SOCIETY**

Data & Society is an independent 501(c)(3) nonprofit research institute focused on the social and cultural issues arising from data-centric technological development. The institute's Data, Human Rights, and Human Security initiative investigates topics, such as data responsibility and digital identity in international human rights and humanitarian contexts. For more information visit [datasociety.net](https://datasociety.net).

## **HARVARD HUMANITARIAN INITIATIVE, SIGNAL PROGRAM ON HUMAN SECURITY AND TECHNOLOGY**

The Signal Program on Human Security and Technology (Signal Program) was founded by the Harvard Humanitarian Initiative in 2012. The program works to advance the safe, ethical, and effective use of information technologies by communities of practice during humanitarian and human rights emergencies.

The Harvard Humanitarian Initiative (HHI) is a university-wide center with the mission to advance the science and practice of humanitarian response worldwide through research and education. HHI is based at the Department of Global Health and Population at the Harvard T.H. Chan School of Public Health.

## **CENTRE FOR INNOVATION, LEIDEN UNIVERSITY**

The Centre for Innovation is Leiden University's innovation accelerator. The Centre identifies and explores technological trends as well as creates innovative learning experiences and tools that are relevant to society. One of the Centre's labs is HumanityX, which supports organisations in the peace, justice, and humanitarian sectors in developing data-driven innovations. The Centre for Innovation also heads the secretariat of the International Data Responsibility Group (IDRG), which brings together experts in the field of data responsibility to coordinate, curate, and conduct research. IDRG's aim is to maximize the value of data while preventing harm to vulnerable people.

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# EXECUTIVE SUMMARY & INTRODUCTION

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**T**he Syrian conflict has contributed to one of the largest refugee crises in recent history. According to the UN Refugee Agency (UNHCR), over 5.4 million Syrians have fled their country due to the ongoing war.<sup>1</sup> Since 2015, the International Organization on Migration (IOM) has observed that more than 1.5 million refugees and migrants have crossed the Mediterranean Sea to Europe, a dangerous route that has claimed nearly 15,000 lives since 2014.<sup>2</sup>

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- 1 "Syria Emergency," UNHCR, accessed January 25, 2018, <http://www.unhcr.org/en-us/syria-emergency.html>.
  - 2 "Latest Global Figures," IOM Missing Migrants, accessed January 25, 2018, <https://missingmigrants.iom.int/latest-global-figures>.

Yet the Syrian and other recent refugee crises are distinct from those in years past because of the central role of digital technologies in the experiences of refugees. Indeed, the image of digitally connected refugees has captured the public imagination. News headlines from the New York Times and the BBC proclaim that mobile phones are as necessary for refugees as shelter or food.<sup>3</sup> In fact, individuals and families making the journey from the Middle East and North Africa to Europe rely on an array of digital technology. Refugees connect to Google Maps to navigate land routes, Facebook to find missing loved ones, Western Union to transfer money, and use Vodafone SIM cards to call rescue officials from sinking boats.<sup>4</sup>

Perhaps related to this extensive media attention, numerous (mobile) technology-driven interventions have been designed to provide, or improve provision of, services to refugees. For example, interventions such as mobile apps have been launched to connect refugees with information and services related to health-care, language translation, education, and employment opportunities.<sup>5</sup>

However, there is a lack of empirical research on both the positive and negative impacts of information and communication technologies (ICTs) on refugees. This knowledge gap impairs those organizations that seek to use, develop, or leverage technology to address refugee issues. Any technological intervention in humanitarian or human rights contexts without an evidence base is cause for concern. Without research to ground design and implementation, these interventions risk being ineffective or even harmful for the populations they purport to serve.

*This report employs social science methods in the field to understand the role technology and connectivity play in refugees' lives, and addresses key information gaps for international organizations, NGOs, governments, academic researchers, and technologists.*

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- 3 "Migrant crisis: 'We would be lost without Google maps' - BBC News," BBC News, accessed Jan. 25, 2018, <https://www.youtube.com/watch?v=Zcr-GWv3Qbs&feature=youtu.be>; Matthew Brunwasser, "A 21st-Century Migrant's Essentials: Food, Shelter, Smartphone," The New York Times, August 25, 2015, <https://www.nytimes.com/2015/08/26/world/europe/a-21st-century-migrants-checklist-water-shelter-smartphone.html>; Roula Khalaf, "Technology comes to the rescue in migrant crisis," Financial Times, February 24, 2016, <https://www.ft.com/content/a731a50a-da29-11e5-a72f-1e7744c66818>.
- 4 Mark Latonero, "Refugees' New Infrastructure for Movement," Data & Society Points, February 1, 2016, <https://points.datasociety.net/refugees-new-infrastructure-for-movement-d31c3ab53b20>.
- 5 See, e.g., "EduApp4Syria," Norad, accessed January 25, 2018, <https://www.norad.no/eduapp4syria>; Refugee Aid App, accessed January 25, 2018, <http://refugeeaidapp.com/>; "About," Apps For Refugees, accessed January 25, 2018, <http://appsforrefugees.com/about/>; Amy Weiss-Meyer, "Apps for Refugees," The Atlantic, May 2017, <https://www.theatlantic.com/magazine/archive/2017/05/apps-for-refugees/521466/>; For a critique see, Mark Latonero, "An App to Save Syria's Lost Generation?," Foreign Affairs, May 23, 2016, <https://www.foreignaffairs.com/articles/syria/2016-05-23/app-save-syrias-lost-generation>.

***Information about these refugees is also vulnerable. Loss, theft, abuse, misuse, and unintended actions threaten the lives of these individuals. Putting it bluntly, getting privacy wrong will get people arrested, imprisoned, tortured, and may sometimes lead to death.***

***- Gus Hosein  
Privacy International***



Our team of four researchers spent two weeks conducting field research at a Syrian refugee camp in Greece in early 2017. Methods included a quantitative survey, qualitative interviews, and ethnographic observations. The study focuses on the central role of mobile phones in facilitating access to the digital ecosystem that refugees depend on for connectivity. Mobile phones connect refugees with family friends as well as humanitarian and government officials. Refugees also use their phones to connect to the broader information infrastructures accessible through the internet like electronic money transfers. In the words of one of the participants in this study “the mobile phone is like oxygen to me.”

It is clear that mobile technologies, such as smartphones, messaging apps, translation apps, online maps, and mobile banking all contribute to an unprecedented degree of connectivity for refugees. For a more robust and nuanced understanding, however, technology must always be situated within a specific social context. To

explore digital connectivity in the refugee context, this study employed a “teledemography” approach to conduct field assessments of the population characteristics and information environment in order to better inform humanitarian response. An understanding of the demographic patterns of mobile phone usage and the potential impact on gender dynamics, psychosocial well being, and privacy rights are critical in the current context of ICT-based humanitarian responses.

Building on the existing literature, this report provides both critical evidence and a methodology necessary to advance the effective use of digital connectivity while minimizing risk and harm. In particular, we fill important gaps in the understanding of access to ICTs, gender, mental health, and privacy.

A recent UNHCR report on refugee connectivity argues that mobile and internet technologies are transforming refugees’ lives and can be leveraged to improve security, protection, information access, and health services.<sup>6</sup> UNHCR states that

6 Alan Vernon, Kamel Deriche, and Samantha Eisenhauer, “Connecting Refugees: How Internet and Mobile Connectivity can Improve Refugee Well-Being and Transform Humanitarian Action,” UNHCR, September 2016, <http://www.unhcr.org/5770d43c4.pdf>.

population differences correlated with differences in independent access to mobile technologies can exacerbate refugee vulnerability. An individual's independence for mobile phone access is a critical variable for humanitarian interventions. For example, a mobile app designed to provide sensitive information about women's health or safety will likely fall short of the desired goal if women have to use the app on a phone borrowed from heads of household, who are predominantly men.

According to UNHCR (2015), the trauma of conflict and displacement have "profound" effects on Syrians' psychosocial health and well being, with depression being one of the most significant clinical problems.<sup>7</sup> For example, in their initial assessments of refugees in Lesbos, Médecins Sans Frontières (MSF) found that a third had symptoms of depression and the remainder had other serious mental health concerns.<sup>8</sup> Any humanitarian interventions using ICTs to assist with health service delivery would first need to conduct research on access.

According to Privacy International (2011), refugees are "vulnerable to the people they are fleeing, and the countries

from which they are fleeing. They are vulnerable in the countries within which they are hosted...their families and loved ones remain vulnerable in their country of origin. Information about these refugees is also vulnerable. Loss, theft, abuse, misuse, and unintended actions threaten the lives of these individuals. Putting it bluntly, getting privacy wrong will get people arrested, imprisoned, tortured, and may sometimes lead to death."<sup>9</sup>

Ensuring privacy rights during humanitarian events, such as securing refugees' personal information, is an important aspect of protection and trust.<sup>10</sup> Personally Identifiable Information (PII)—including one's real name, phone number, location, and religion—may be sensitive, particularly to those fleeing authoritarian and repressive regimes. Internews (2013) found that for Syrian refugees, trust is a barrier for engagement and that humanitarian aid workers and local government officials "ranked at the bottom in terms of trust."<sup>11</sup> Developing apps or deploying digital services that do not uphold the right to privacy and do not accommodate refugees' concerns over PII and distrust of surveillance may result in increased risk and harm. Or the app may simply remain unused.

7 "Culture, Context and the Mental Health and Psychosocial Wellbeing of Syrians," UNHCR, 2015, <http://www.unhcr.org/55f6b90f9.pdf>.

8 "A Dramatic Deterioration For Asylum Seekers on Lesbos," Medecins Sans Frontieres, July 2017, [http://www.msf.org/sites/msf.org/files/msf\\_lesbos\\_vulnerability\\_report1.pdf](http://www.msf.org/sites/msf.org/files/msf_lesbos_vulnerability_report1.pdf).

9 Gus Hosein, Privacy International, 2011, <https://www.privacyinternational.org>.

10 See also, Faine Greenwood et al., "The Signal Code: A Human Rights Approach to Information During Crisis," Harvard Humanitarian Initiative, accessed January 25, 2017, <https://signalcode.org/faq/>.

11 "Lost: Syrian Refugees and the Information Gap," Internews, accessed January 25, 2018, <https://www.internews.org/resource/lost-syrian-refugees-and-information-gap>.

## FIELD RESEARCH: KEY FINDINGS

The study reveals key aspects of digital connectivity in the lives of refugees at the Ritsona camp in Greece in January 2017. Of the approximately 750 residents of the camp, 135 adults were sampled and interviewed. The residents of the camp were in various stages of the asylum process. Some participants had just crossed the Mediterranean the week prior; others had been living in the camp for over a year. While this study is a snapshot of the lives of a selected group of adults, mostly from Syria, the findings and analysis represent and provide a number of salient observations:

*\* In this report, not all percentages add up to 100% due to rounding of figures or presenting the relevant figures only.*



### Mobile phones are essential for connectivity, yet access is uneven.

- Mobile phone access is “important” to over 80% of refugees in this study. Women are less likely to own a mobile phone than men - 94% of men own a phone, compared to 67% of women.
- Education was associated with current mobile phone ownership, with an increased probability of mobile phone ownership among those with any secondary (or more) education compared to those who had any primary (or less) education.
- Ninety-four percent (94%) use WhatsApp, 78% use Facebook, about 38% use Google Translate and Google Maps, and 9% use Skype.



## Refugees, and especially women, face a high burden for depression. Mobile usage may be associated with a decrease in the probability of depression.

- Approximately 2 of every 5 refugees participating in this study may be classified as moderately to severely depressed according to the validated depression scale used in the survey.
- Women have a higher probability of being moderately to severely depressed compared to men (58% v. 34%).
- A potentially significant finding emerged between phone usage and depression in the unadjusted analyses. Each additional day an individual used a phone in the past week was associated with a reduction in their probability of being depressed. More research and analysis are needed to understand the causes of this finding.



## Privacy, trust, and information security are important factors for refugees.

- Many refugees have a unique sense of the people and platforms they would or would not trust with their sensitive information. Thirty-three percent (33%) said they have been asked to provide information about themselves that they would rather not have given.
- Eighty-six percent (86%) said they would not be concerned about giving their personal information to a UN official. Yet for Facebook, 30% expressed concern about giving the social media site their personal information, 52% were unconcerned, and 15% were unsure.
- Respondents said that information like phone numbers, WhatsApp messages, and their real names were sensitive whereas location and date of birth were not.
- Results from our survey show that the refugees seem to have the same care about privacy as other groups. More than half of the refugees in this study voiced privacy concerns that were very similar to the concerns held among U.S. nationals in a survey by Pew Research.

## RECOMMENDATIONS

*This is one of the first empirical studies to investigate mobile phone usage and mental health among Syrian refugees.*



The study recommends that stakeholders currently considering or deploying technologies rigorously examine and rapidly assess the population demographics in specific contexts where they would operate. Gender disparities for mobile access and usage should be taken into account. Understanding mental health needs is an important variable – for example, education apps would need to take into account the learning challenges of people living with trauma. Refugees also have nuanced views on privacy and information sensitivity. Response organizations must protect the privacy rights of refugees and understand that different technologies receive different degrees of trust. These and other important social factors need to be understood for any technological intervention that involves refugee connectivity to be deployed effectively and responsibly by both the humanitarian and private

(tech) sector. Further, response organizations should provide more insight into the ways in which refugee information is collected and managed.

This report builds off the work of a number of organizations and colleagues. To our knowledge, this is one of the first empirical studies to investigate mobile phone usage and mental health among Syrian refugees. It is also one of the first surveys to measure the privacy concerns of refugees. Because this study was limited in scope, more research is clearly needed. We recommend future studies that measure population variables and concerns over time, focus on additional technologies, and involve other refugee populations in different regions or at other phases of their journey. Establishing this evidence base will better inform organizations responding to the refugee crisis, as well as other key stakeholders, about the people they serve.



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# RESEARCH BACKGROUND ON REFUGEE CONNECTIVITY

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**T**oday's refugee crises must be understood within the digital ecosystem that increasingly permeates our global society. A report from UNHCR in 2016 discussed the transformative impact of internet and mobile technologies for refugees in humanitarian contexts.<sup>12</sup> The report

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<sup>12</sup> UNHCR (2016). Connecting Refugees: How Internet and Mobile Connectivity can Improve Refugee Well-Being and Transform Humanitarian Action. <http://www.unhcr.org/5770d43c4.pdf>; See also, Linda Leung (2011). Taking refuge in technology: communication practices in refugee camps and immigration detention. New Issues in Refugee Research Paper No. 202. UNHCR. <http://www.unhcr.org/4d5b992b9.pdf>; <http://www.unhcr.org/innovation/new-report-innovation-at-unhcr-2015/>

## FROM THE UNHCR (2016) REPORT:

Insights from focus groups...show some specific issues that refugee women face with regard to connectivity: A single woman with several children and no income has a strong need to communicate with her children. In order to access the means to do so (e.g. procure a phone), she may be more willing to endure exploitation because she has no other way of affording it. In Jordan, families have “connectivity managers” who purchase phone plans for the household. While instances of connectivity managers being women were observed, men generally control who has access in the household and how much access they have.



argues that increased connectivity among a refugee population could enhance security, protection, health, livelihood, and self-reliance. Similarly, the mobile phone industry association, GSMA, found that refugees today have unprecedented access to mobile networks, and proposed that this could be leveraged by humanitarian organizations for education, livelihood, family reconnection, and mobile money.<sup>13</sup>

Yet, connectivity is not evenly distributed to all refugees. UNHCR found that a gender imbalance for mobile phone ownership “can exacerbate situations for the most vulnerable refugees.”

Displaced people frequently cite lack of information as a critical barrier to their ability to access aid (Internews, 2011; Hannides et al., 2016), maintain their health and wellbeing (Poole, 2017), and maintain social and economic capital (Wall, Otis Campbell, and Janbek, 2017). Internews found that refugees stranded in Greece were using their smartphone to access WhatsApp, Facebook, and a number of other tools to find information. Yet much of the information that was circulated on these sites was not accurate and facilitated rumors. According to Alison Campbell, Internews’ senior director for global initiatives, “Information is aid... when you tell people that you can get information in a place and they try to and they cannot, that is a disaster. That will just build more distrust and frustration.”<sup>14</sup>

13 “The Importance of Mobile for Refugees: A Landscape of New Services and Approaches,” GSMA, January 2017, [https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/02/The-Importance-of-mobile-for-refugees\\_a-landscape-of-new-services-and-approaches.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/02/The-Importance-of-mobile-for-refugees_a-landscape-of-new-services-and-approaches.pdf).

14 Miriam Berger, “For refugees in Greece, lots of rumors but little reliable news,” The Christian Science Monitor, MAY 17, 2016, <https://www.csmonitor.com/World/Europe/2016/0517/For-refugees-in-Greece-lots-of-rumors-but-little-reliable-news>; “Lost,” Internews, accessed January 25, 2018, [https://www.internews.org/sites/default/files/resources/Internews\\_Lost\\_Syria\\_Information\\_2014-01.pdf](https://www.internews.org/sites/default/files/resources/Internews_Lost_Syria_Information_2014-01.pdf).

In the academic literature,<sup>15</sup> Carleen Maitland and colleagues have produced groundbreaking research that exemplifies the importance of empirical methods and field research on the role of ICTs and mobile phone connectivity.<sup>16</sup> For example, Maitland et al.'s 2015 study of youth in the Za'atari refugee camp in Jordan found that mobile phones were the most common way to access the internet, that youth both own and borrow SIM cards to connect, and that men are more likely to use ICTs.

A report by MSF released in July 2017 found about 80% of the 154 residents they initially assessed in Lesbos met their criteria for severity to be taken into care.

MSF found that a third had symptoms of depression, a third had symptoms of post-traumatic stress disorder, and a third suffered from anxiety.<sup>17</sup> The growing field of mHealth seeks to leverage mobile technology to deliver healthcare and experimental apps are currently being developed to address refugees' mental health needs.<sup>18</sup> A BBC report (2016), that explored the information and communication needs of refugees, both in transit and at their destination found that refugees "expressed their need to be listened to and tell their stories, and participate in dialogue that provides them with physical, social and psychosocial support."<sup>19</sup> Yet in order to provide psychosocial support, understanding

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- 15 While this report is focused on the empirical and policy dimensions of refugee connectivity, pioneering theoretical work has explored the "connected migrant," mediatization and migration, global networked technologies and borders, digital passages, and digital crossings. See Dana Diminescu, "The connected migrant: an epistemological manifesto," *Social Science Information* Vol. 47(4), pp. 565-579, 2008; Mirca Madianou, "Polymedia communication and mediatized migration: an ethnographic approach," in *Mediatization of Communication*, ed. Knut Lundby (Berlin: De Gruyter, 2014), 323-348; Lillie Chouliaraki and Myria Georgiou, "Hospitality: The Communicative Network of Humanitarian Security in Europe's Borders," *Journal of Communication* 67, no. 2 (2017b); Lillie Chouliaraki, "Symbolic bordering: the self-representation of migrants and refugees in digital news," *Popular Communication* 15, no. 9 (2017); Sandra Ponzanesi & Kevin Leurs, "On Digital Crossings in Europe," *Crossings: Journal of Migration & Culture* 5, no. 1 (2014): 3-22; Kevin Leurs, "Digital Passages: Migrant Youth 2.0: Diaspora, Gender and Youth Cultural Intersections (Amsterdam: Amsterdam University Press, 2015).
- 16 Carleen Maitland, et al., "Youth Mobile Phone and Internet Use, January 2015, Za'atari Camp, Mafraq, Jordan," (November 2015), <https://cmaitland.ist.psu.edu/wp-content/uploads/sites/9/2015/01/ZaatariSurveyAnalysis2015November2.pdf>; Also see work by Karen Fisher and Arul Chib, "ICTD for Forced Migration & Refugees," ACM CHI International Conference on Information & Communication Technologies and Development (2016); Arul Chib et al., "International Migrant Workers' Use of Mobile Phones to Seek Social Support in Singapore," *Information Technologies & International Development* 9, no. 4 (2013): 19.
- 17 "Greece: A dramatic deterioration for asylum seekers on Lesbos," *Medecins Sans Frontieres*, July 24, 2017, <http://www.msf.org/en/article/greece-dramatic-deterioration-asylum-seekers-lesbos>; For background see "Culture Context and the Mental Health and Psychosocial Wellbeing of Syrians," UNHCR (2015), <http://www.unhcr.org/55f6b90f9.pdf>.
- 18 Carolyn Shapiro, "New app provides between-session therapy for refugees," *Medical Xpress*, March 16, 2016, <https://medicalxpress.com/news/2016-03-app-between-session-therapy-refugees.html>; "Digital games improve mental health, educational outcomes of Syrian refugee children," *ScienceDaily*, June 6, 2017, <https://www.sciencedaily.com/releases/2017/06/170606155740.htm>.
- 19 "Research Report: Voices of Refugees," BBC, July 2016, <http://www.bbc.co.uk/mediaaction/publications-and-resources/research/reports/voices-of-refugees>.

variables such as phone ownership would need to be taken into account. According to Kaplan, et al. (2006) “The developed world model of personal ownership of a phone may not be appropriate to the developing world in which shared mobile telephone use is important. Sharing may be a serious drawback to use of mobile telephones as a healthcare intervention in terms of stigma and privacy, but its magnitude is unknown.”

This study aimed to assess potential privacy considerations from the perspective of refugee populations. In light of intense debates around digital privacy, particularly in the European Union, it is remarkable how little attention has been paid to refugee privacy. Refugee movement is facilitated by a digital infrastructure comprised of mobile phones, social media, messaging apps, electronic money transfers, online maps, and digital translation services (Latonero & Kift).<sup>20</sup> All of these commercial technologies are simultaneously collecting, storing, and sharing data on refugees. In addition, aid organizations, governments, and researchers alike use technologies to collect data on refugees at various points along their journeys. All actors in this digital ecosystem should be attuned to refugee privacy, both from a regulatory and ethical perspective regarding data protection and responsible data principles.

Organizations like Internews have found that mobile phone use can lead to a number of risks to individual’s fundamental right to privacy.<sup>21</sup> Therefore, in this study it was paramount to understand privacy concerns from the refugee’s perspective. Any organization designing a technological intervention should address concerns over privacy and surveillance, first and foremost, to avoid any harm or infringement of rights on the side of the refugee, and also because these concerns, even when not justified, might seriously curtail refugees’ access and use. For example, Brayne (2014) found that marginalized and targeted populations living in fear of surveillance actively avoided institutional systems that might collect information from them; those who may have been stopped or arrested by the police would be less likely to interact with a hospital or a bank. Such “system avoidance” could undermine the aid organizations and governments working to effectively communicate with refugee and migrant communities. The Berlin-based NGO, Betterplace Labs released a report, ICT4Refugees (Mason & Buchmann, 2016) focusing on refugees in transit and the response by the civic tech community. They found key concerns for any civic tech project to include understanding tech access and literacy among refugees; the importance of trust; and the critical importance of data protection and responsible data practices.<sup>22</sup>

20 Mark Latonero & Paula Kift, “On Digital Passages and Borders: Refugees and the New Infrastructure for Movement and Control,” *Social Media + Society* (forthcoming).

21 “Compromised Connections: Overcoming Privacy Challenges of the Mobile Internet,” Internews & Vodafone Americas Foundation, last accessed Feb. 3, 2018, <https://www.internews.org/resource/compromised-connections-overcoming-privacy-challenges-mobile-internet>.

22 Ben Mason & Dennis Buchmann, “ICT4Refugees: A report on the emerging landscape of digital responses to the refugee crisis,” Betterplace Labs, May 2016, <http://www.betterplace-lab.org/wp-content/uploads/ICT4Refugees-Report.pdf>.

**Based on the existing literature, this study pursued three sets of research questions:**

- 1** What are the demographic factors related to phone ownership, access, and usage among refugees? What digital tools provide connectivity and information access? What gender-related differences are present in the population with regard to ICT access?
- 2** What are the mental health concerns for refugees - particularly regarding depression? Is there a relationship between mobile phone use and psychosocial well-being?
- 3** What are refugees' unique concerns around privacy, trust, information sensitivity, and information sharing?

## **Note on Terminology and Ethics**

This report acknowledges that the terms “refugee,” “migrant,” and “asylum seeker” have specific social, political, and legal definitions and connotations. Indeed, the terminology of identification has serious political implications for individuals. The difference between classifying someone as a migrant, asylum seeker, or refugee can affect one’s access to national borders and protection within the international system of human rights. Since the participants in this study self-identified as refugees, this report uses that term with full knowledge of these nuanced definitions. In addition, refugees are a highly diverse group from many different countries and backgrounds. By utilizing the term refugees, we do not intend to over-generalize or over-simplify the complexities inherent within this group.

This project endeavored to provide a higher duty of care to vulnerable populations in humanitarian settings and followed a number of ethics and data protection protocols. The quantitative component of the study received ethical approval from the Harvard T. H. Chan School of Public Health Institutional Review Board (protocol IRB16-2015-01). Verbal informed consent was obtained from each participant, including information about the voluntary nature of participation, and an explanation that no personal identifiers, such as name or birthdate, would be recorded. The qualitative component of the study received ethical approval from the Chesapeake Institutional Review Board, which included similar anonymity and privacy protocols.





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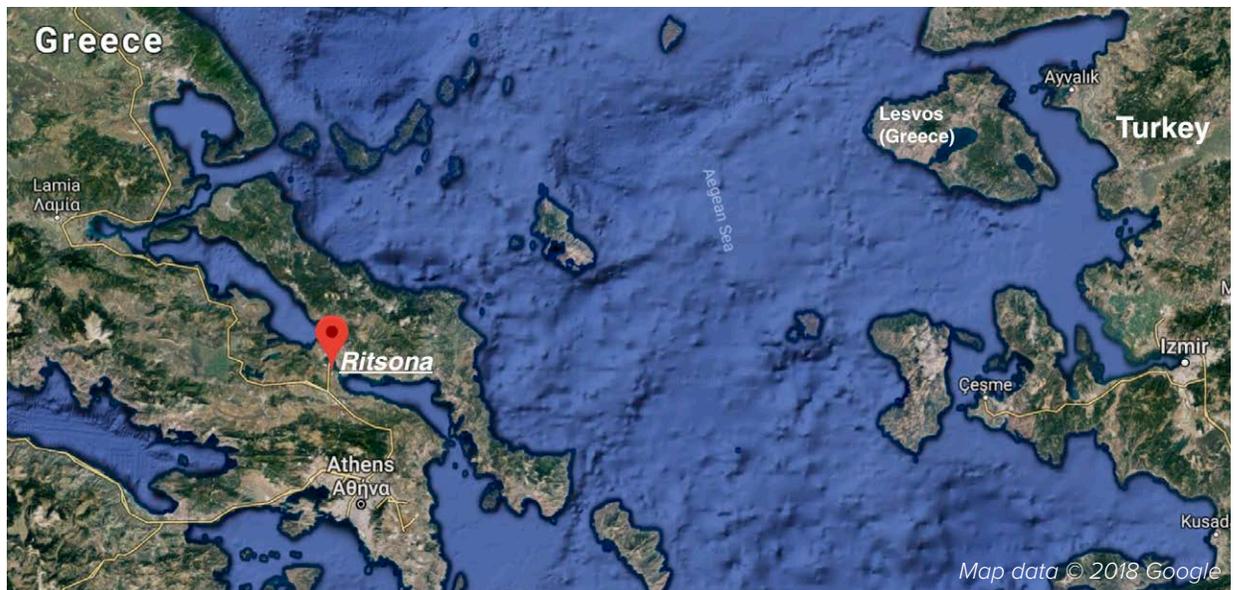
# SYRIAN REFUGEE CAMP AT RITSONA, GREECE

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**T**he field research for this study took place at the Ritsona refugee camp, which was selected in coordination with the Greek Ministry of Migration, UNHCR, and the International Organization for Migration (IOM).<sup>23</sup> Ritsona is built on a non-operational Air Force communications base located in the Attica region (about 80km from Athens). IOM manages the camp and a number of international humanitarian organizations, UN agencies, and NGOs are present providing services. Ritsona is primarily designated for Syrian

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<sup>23</sup> The camp name is identified in this report under the advisement of IOM regional authorities.



refugees and comprised of families and individuals. While total numbers varied, camp managers stated the camp had approximately 750 residents – about half of which were children (minors under 18 years old). The camp reported no unaccompanied minors.

When the camp opened in early 2016, residents lived in tents on the ground with limited public infrastructure like electricity and sanitation. However, in November 2016 a “winterization” project funded by a government aid agency outfitted the camp with metal containers containing bathrooms, running water, and electricity. These containers have stabilized the living conditions such that families of various sizes can reside in one container and individual adults share others. Since electricity was provided in each container, residents were able to charge their cell

phones inside their domiciles as needed - a drastic improvement from the limited communal charging stations. Anecdotal stories revealed that competition for the few electrical outlets available to charge mobile phones was a source of frustration and potential conflict. The research team was often invited into residents’ containers to conduct both the survey and more ethnographic research. While the containers greatly stabilized living conditions researchers observed that the communication infrastructure was still lacking. Residents could acquire a mobile network signal outside the containers for mobile telephony and internet services, yet WiFi was unavailable in the camp despite the network hardware that was available.<sup>24</sup> The lack of WiFi limited connectivity and lead those who had the financial means to purchase mobile and data plans from commercial vendors in Greece.

<sup>24</sup> After presenting these initial research findings to officials, it was reported that improved WiFi was provided within the camp at Ritsona.

## METHODS

The quantitative component of this study was comprised of a cross-sectional survey – designed to provide a snapshot of the lives of refugees at a particular moment in time. This cross-sectional approach contributes to developing a baseline understanding of ICT usage and privacy concerns for refugees.

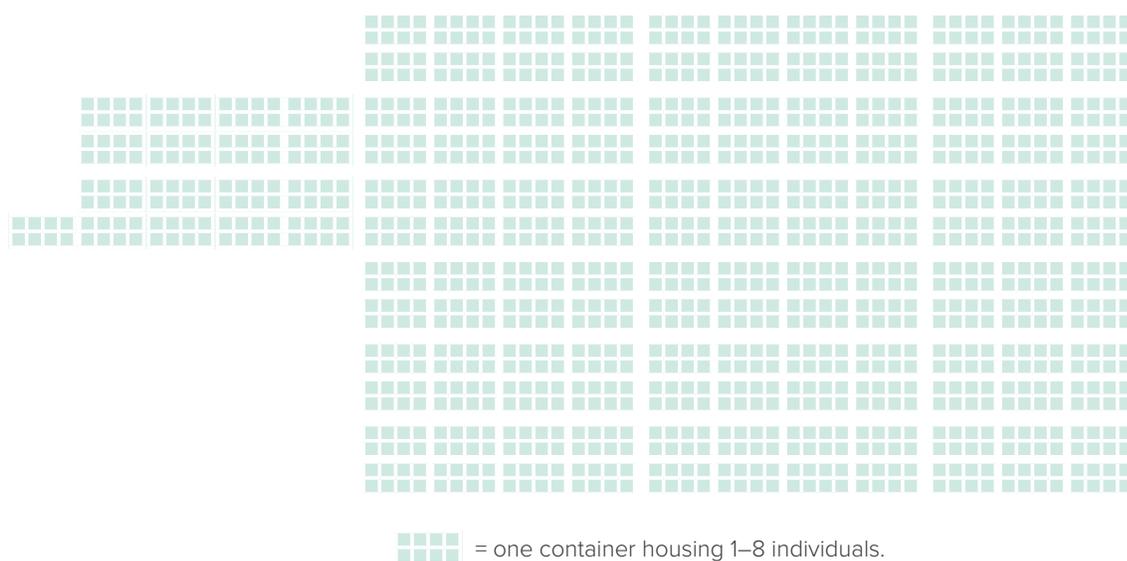
Individuals were eligible to participate in this study if they 1) were 18 years old or older, and 2) spoke Arabic or English. Both the questionnaire and informed consent form were translated into Arabic. The survey was administered verbally in face-to-face interviews by members of the research team who were paired with Arabic-speaking interpreters. The interviews ranged from approximately 40 minutes to over 90 minutes. Qualitative interviews and ethnographic observations were conducted in addition to the survey. Unstructured interviews and open-ended questions were asked to further probe the survey responses.

Because this study focused on gender dynamics, which are often exaggerated by crises, it was important to sample an appropriate number of women. The proportion of men and women included in assessments in crises often fail to reflect the gender ratio of the affected population. The research design incorporated an intersectional approach, allowing for explorations of the intersections of social difference – such as gender – and the identification of potential systemic disadvantages (Springer K, et al., 2012). For example, when conducting research with refugees, questions are

often solicited from one member of each family unit, typically a man designated as the head-of-household. Thus, the research design sought to specifically include women in proportion to men.

The study used mixed sampling methods in two different phases over the two-week field mission. In the first phase, upon arrival at the camp, the researchers used convenience sampling to meet and develop a rapport with the camp population. These interviews often took place in common areas around the camp. Researchers then created a map of the containers, which depicted a total of 147 containers, grouped in clusters of 6-8 containers. Each container housed between 1 and 8 individuals. In the second phase, researchers visited every camp cluster on the map and sampled all eligible adults in 50% of the containers within each cluster. These interviews often occurred within the containers. This systematic geographically-based sampling strategy resulted in a sample that may be considered as an approximate representation of the adult population at the Ritsona refugee camp.

A total of 139 individuals were invited to participate in the study. Four individuals refused, resulting in a high response rate: >95%. The final study sample included 135 adults, predominantly from Syria. The average age of the participants was approximately 30 years old. More than half (59%) of participants were men. A complete description of the study sample characteristics is presented in [Table 1](#).

**Figure 1. Ritsona refugee camp layout****Table 1. Study sample characteristics**

SEX	N	%	NATIONALITY	N	%	MARITAL STATUS	N	%
MEN	80	59	SYRIAN	120	89	SINGLE, NEVER MARRIED	34	26
WOMEN	55	41	OTHER*	15	11	EVER MARRIED	99	74
PERCEIVED FINANCIAL STATUS BEFORE MIGRATING				N	%	EDUCATION	N	%
EXTREMELY POOR				21	16	NONE	15	11
POOR				17	13	ANY PRIMARY	29	22
JUST GETTING BY				53	41	ANY SECONDARY	38	29
COMFORTABLE				25	20	ANY TERTIARY	50	38
VERY COMFORTABLE				12	9			

\* While the camp was designated as a “Syrian Refugee Camp” the researchers were unable to categorize 11% of respondents. For example, some respondents did not identify themselves as Syrian nationals for the survey and in follow up qualitative interviews, some respondents discussed complicated identity issues such as those who came from Syria but were not technically awarded nationality. This survey did not include options for other possible nationalities or ethnicities to which respondents may have identified. We note again that throughout this report, not all percentages (or absolute numbers) in the text or tables add up to 100% of those interviewed due to rounding or selecting the most salient responses to various questions.



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## TELEDEMOGRAPHY: MOBILE PHONE OWNERSHIP & USAGE PATTERNS

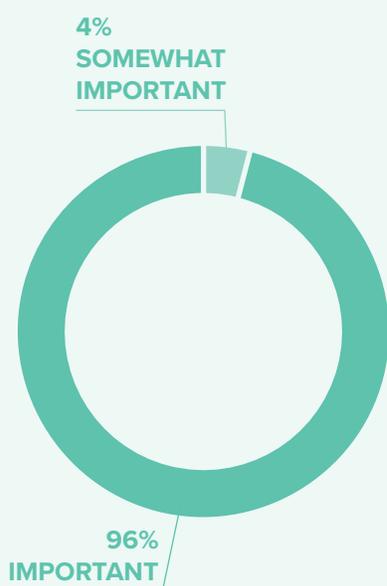
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**T**eledemography is an approach developed by the Harvard Humanitarian Initiative that situates research in the existing models and methods of the information needs, seeking, and behavior literature to better reform humanitarian response in a dynamic and modern information environment. Understanding the information access barriers and facilitators of displaced persons is critical to understanding how the behavior of displaced people may change to meet information needs, how these changes are altering crises, and how technological change is affecting the ability of migrants to find critical information.

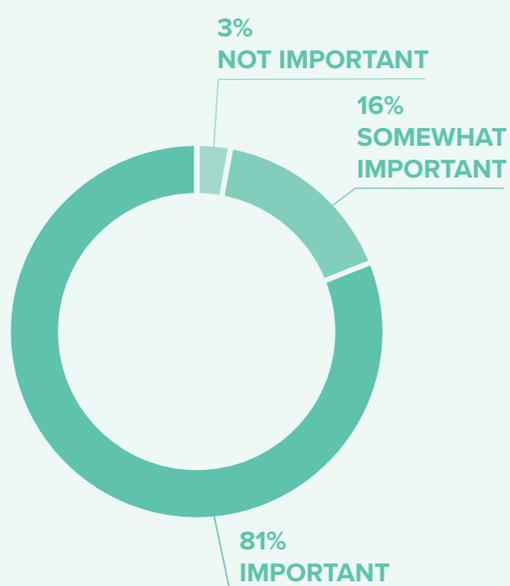
Of the subset of sampled refugees inhabiting the Ritsona refugee camp, over 80% described mobile phones as being “important or very important.” Interestingly, a larger percentage of participants who did not own a mobile phone rated mobile phones as “important or very important” than current mobile phone owners (Figure 2).

**Figure 2. Importance of mobile phones by ownership**

### CURRENTLY DO NOT OWN PHONE



### CURRENTLY OWN PHONE

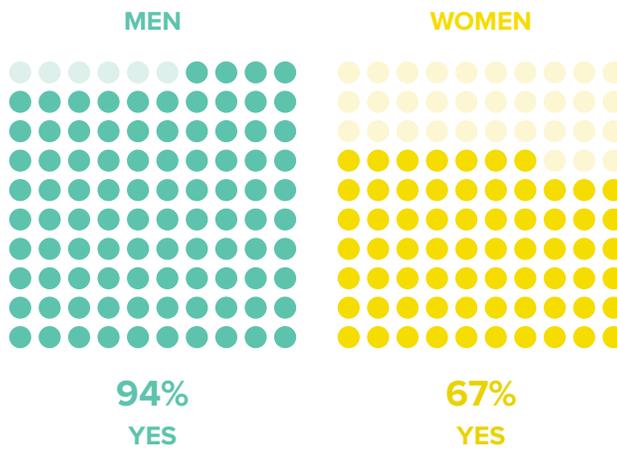


The relative importance of mobile phones to refugees is also inherent in the proportion of their expenditures dedicated to costs associated with mobile phone use. On average, refugees spent 8.5 Euros per month on mobile phone use (range: 0–50 Euros), representing nearly 10% of the monthly cash stipend distributed to residents in this camp.

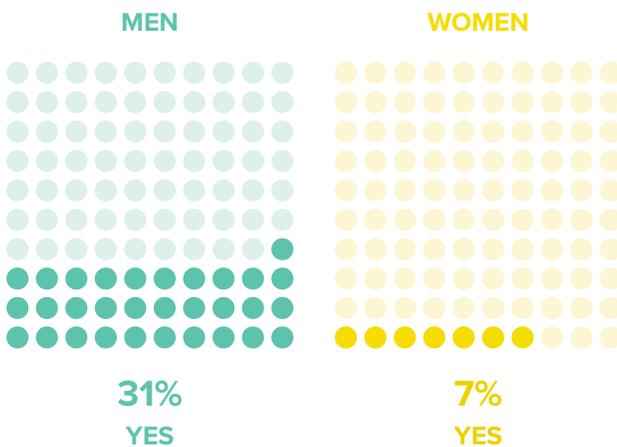
Mobile phones ownership was defined as an individual possessing their own mobile phone themselves as opposed to borrowing a phone from a spouse or a friend. Importantly, ownership is considered distinct from mere access, as ownership allows for personalization and unmediated, independent access. As mentioned above, this can make a great difference in the frequency of use, but also in the type and level of sensitivity of information sent over mobile ICTs.

Mobile phone ownership and usage patterns differed across several demographic characteristics. Gender is an important factor associated with both mobile phone ownership and usage, such as the use of mobile phone applications for transferring money: Women are less likely to own a mobile phone and to have ever used a mobile phone for money transfers (Figures 3–4).

**Figure 3. Mobile phone ownership**



**Figure 4. Used mobile phone for money transfers**

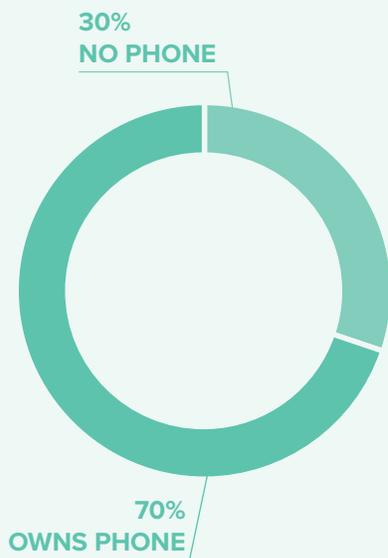




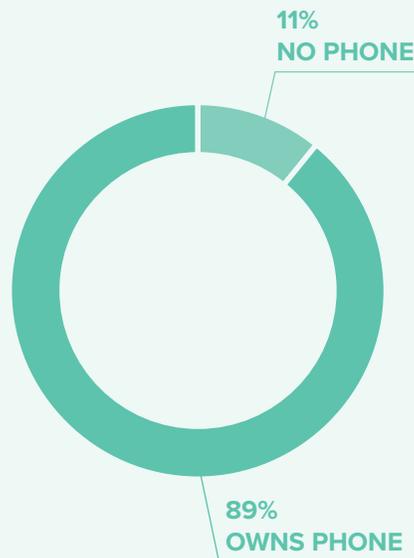
Education was also associated with current mobile phone ownership, with an increased probability of mobile phone ownership among those with any secondary (or more) education compared to those who had any primary (or less) education (Figure 5).

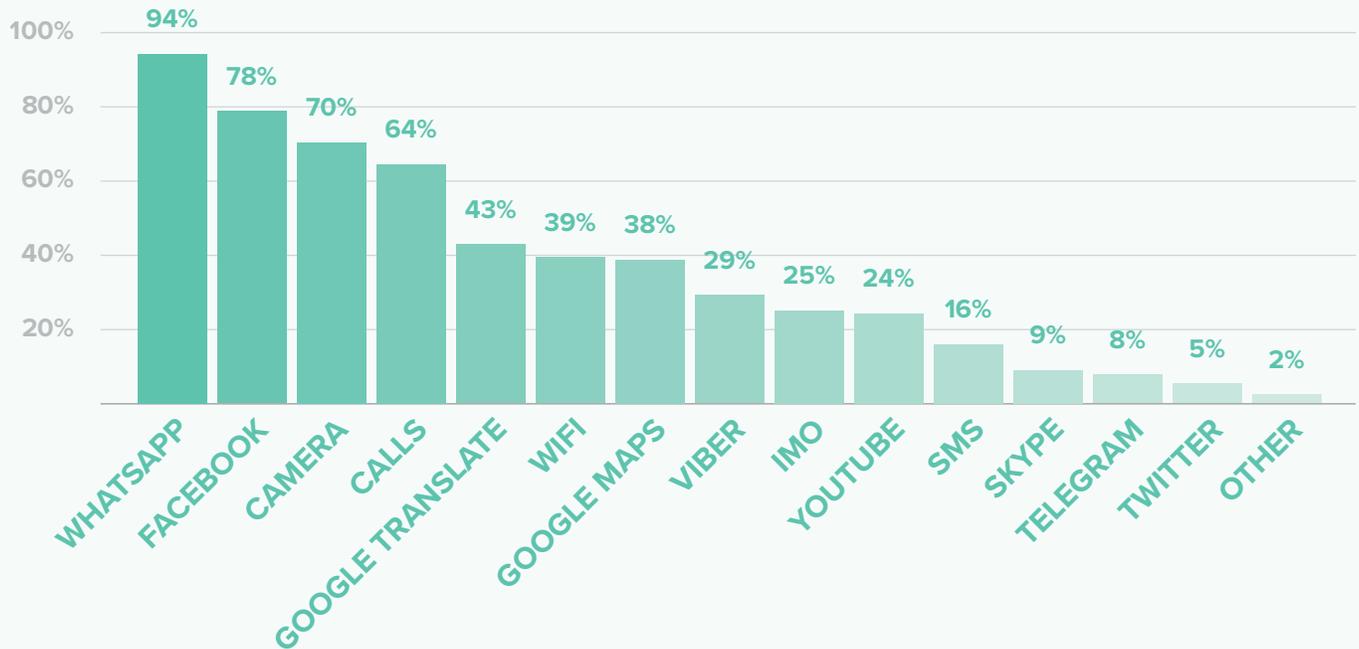
Figure 5. Mobile phone ownership by education

NO EDUCATION/PRIMARY EDUCATION



SECONDARY EDUCATION OR HIGHER

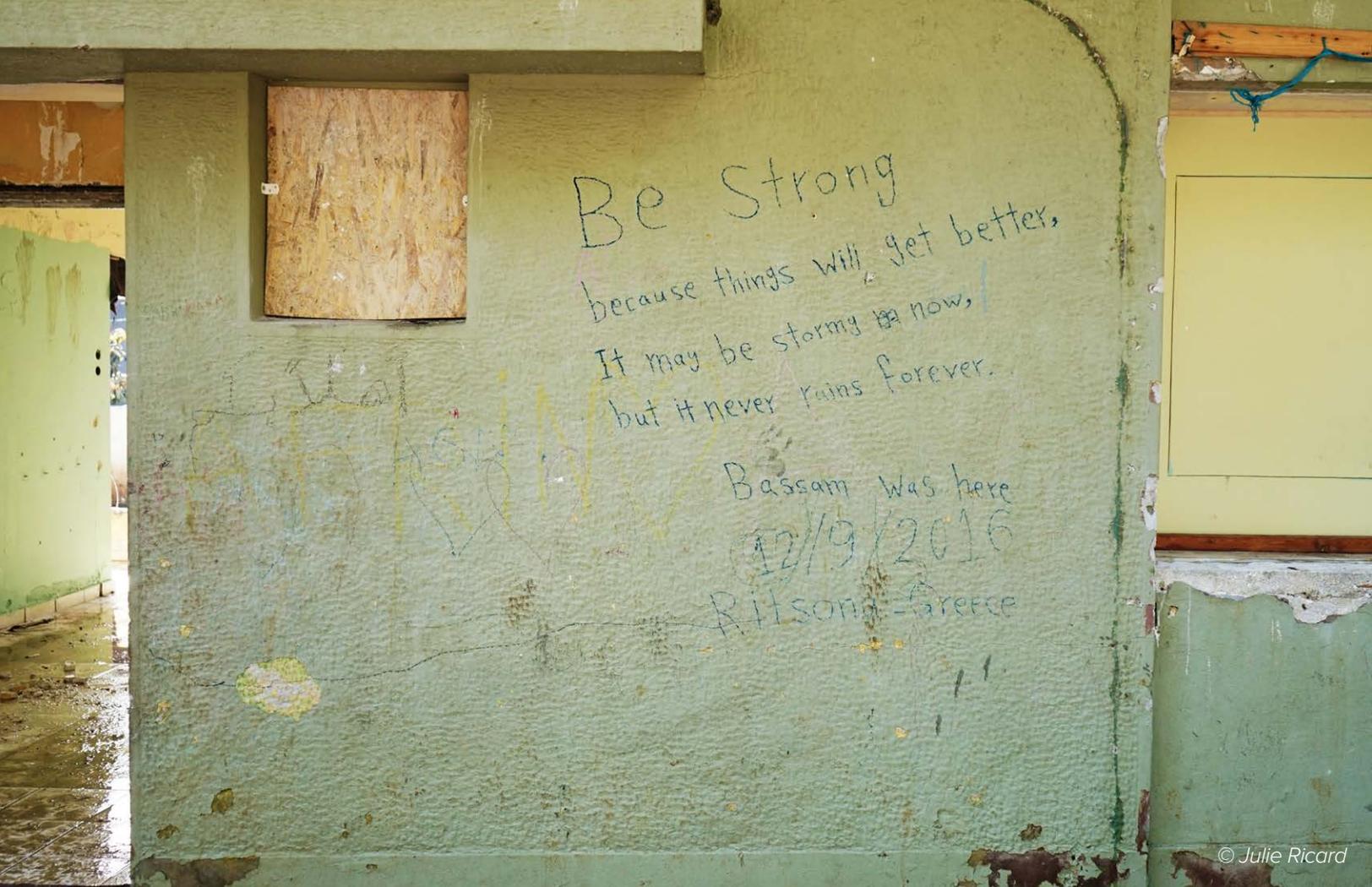


**Figure 6. Using mobile phone apps and functions**

Among respondents, 94% used WhatsApp, by far the most popular means of connectivity, followed by Facebook (78%). Apps such as Google Translate (43%) and Google Maps (38%) were also used. While using the mobile device to call someone was popular (64%), using SMS was not (16%). Skype was used by only 9% of respondents. It is interesting to note that around the time of the survey, it was reported that in Greece, Skype was the defacto official communication channel for asylum seekers for their interviews.<sup>25</sup>

<sup>25</sup> Josh Lowe, "Refugee Crisis: Asylum Seekers in Greece 'Must Use Skype,'" Newsweek, April 29, 2016, <http://www.newsweek.com/refugee-crisis-skype-greece-453908>.





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# TECHNOLOGY & REFUGEE MENTAL HEALTH

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**U**nderstanding the mental health needs of refugees is critical for the realization of the rights to dignity and health under the Universal Declaration of Human Rights. Mental health problems contribute to a significant proportion of the global burden of disease and may be exacerbated in vulnerable populations, such as refugees (Haden 2001).

*The findings suggest that levels of depression among the Syrian refugees included in this study are exceptionally high, approximately two-fifths of the study sample were classified as moderately to severely depressed by the PHQ-8.*



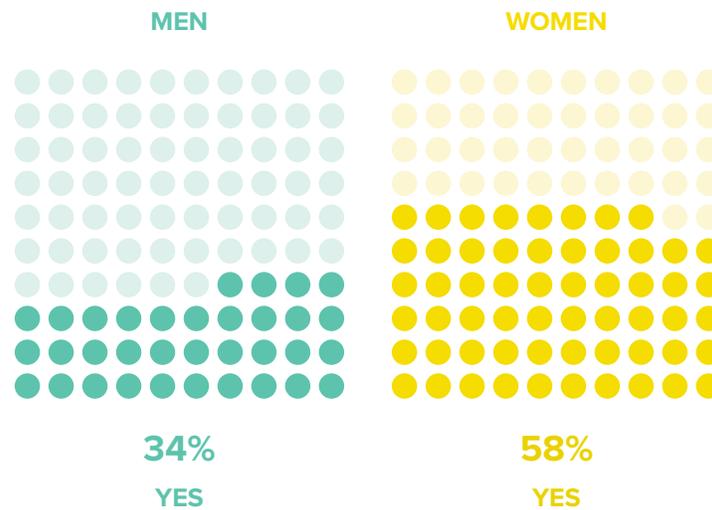
## DEPRESSION

Mental health was assessed as the presence of depressive symptoms using the Patient Health Questionnaire-8 (PHQ-8). The PHQ-8 is a set of eight questions designed to characterize depressive symptoms in a variety of populations, contexts, and languages. This set of questions has been validated for the assessment of depression in many cultures and contexts around the world, including among Arabic-speakers (Kroenke 2001, Sawaya 2016). The eight questions ask about the respondent's experience in the past two weeks and are scored from "0" (never) to "3" (nearly every day). PHQ-8 scores  $\geq 10$  have a sensitivity of 88% and specificity of 88% for major depression (designated as moderate and severe depression according to the PHQ)

(Kroenke 2001). This cut-off represents the threshold for clinical intervention, differentiating between minor and moderate/major depressive disorder.

The findings suggest that levels of depression among the Syrian refugees included in this study are exceptionally high, approximately two-fifths of the study sample were classified as moderately to severely depressed by the PHQ-8. For comparison, the prevalence of current major depression among refugees resettled in the US has been estimated to be 15% (Rasmusser, et al., 2012). Furthermore, women have a higher prevalence of depression compared to men (58% v. 34%) (Figure 7).

**Figure 7. Depression status among men and women**



Depression status<sup>26</sup> did not differ according to mobile phone ownership; however, a significant relationship emerged between phone usage and depression in the unadjusted analyses. Each additional day an individual used a phone in the past week was associated with a reduction in their probability of being depressed.<sup>27</sup> This finding is similar among both women and men. Furthermore, phone ownership was both associated with the number of days a phone was used in the past week and being a man. While the cross-sectional study design precludes conclusions about causality, these results suggest that lower levels of phone usage, moderated by phone ownership, represent a possible pathway for gender inequalities in the psychosocial well being of Syrian refugees.

26 Unadjusted logistic regression

27 Unadjusted ordinary least squares regression





*Photo Credit: Mark Latonero CC BY-NC-ND*

## **PRIVACY, TRUST & INFORMATION SHARING**

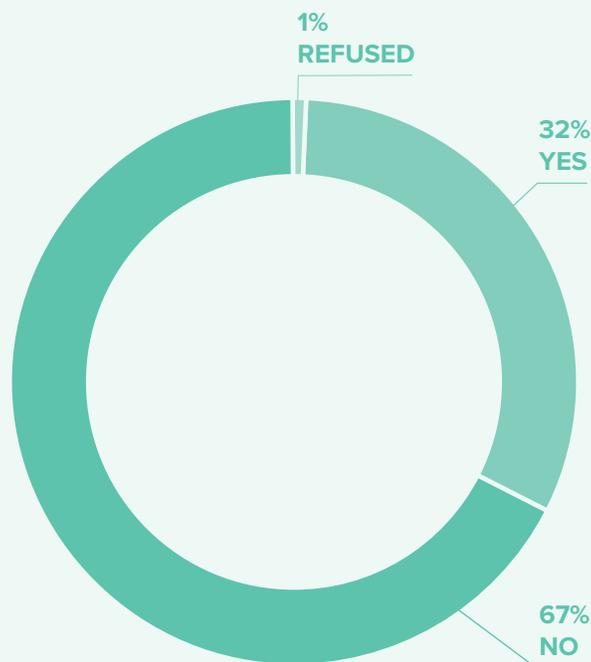
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In addition to questions about use of and access to mobile ICTs, our survey and qualitative interviews contained questions regarding refugees' privacy perceptions, their levels of trust in various digital services, as well as their level of comfort in information sharing.



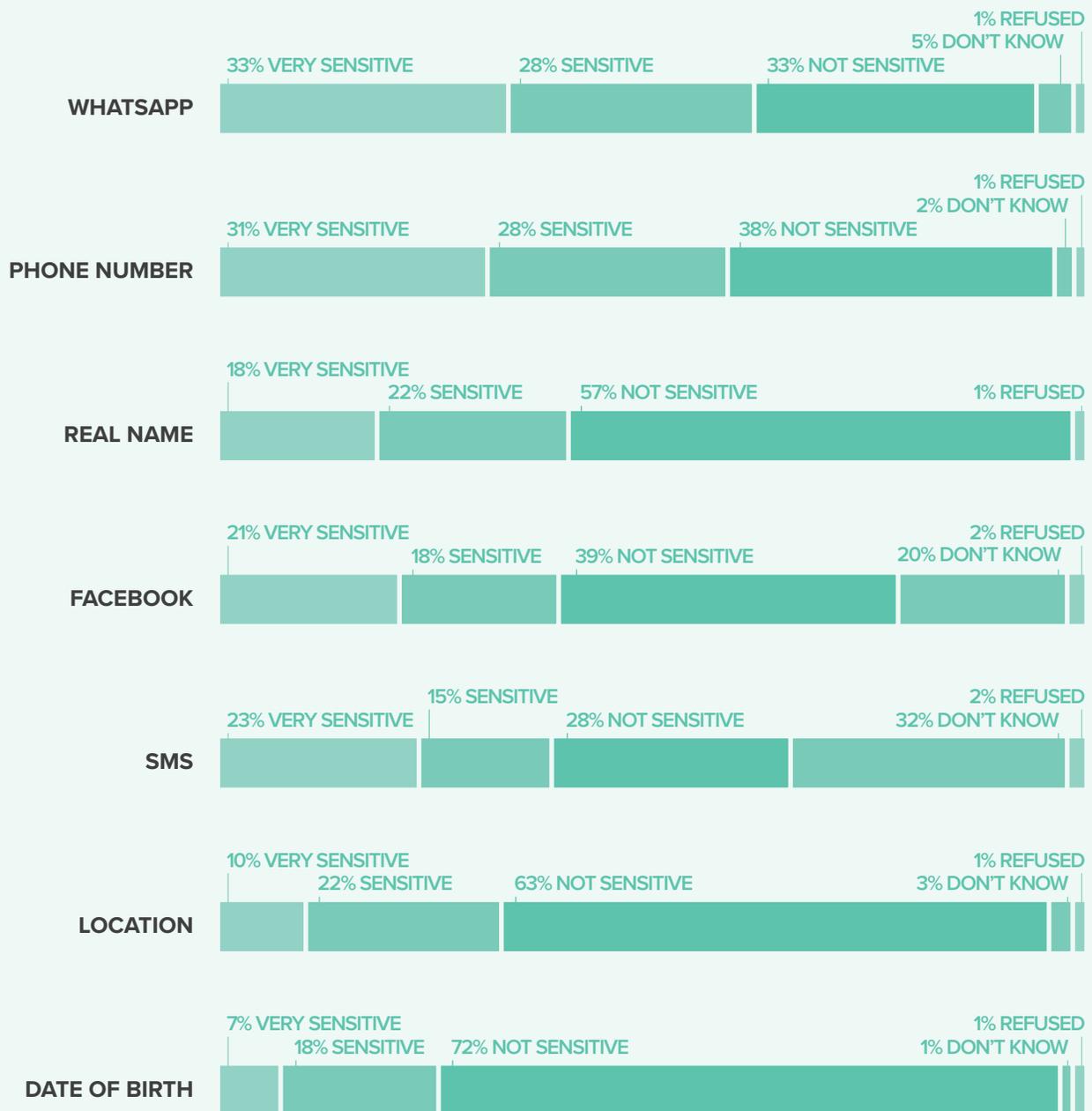
Preliminary findings suggest about a third of all respondents have been asked to provide information about themselves that they would have rather not given. Several of the qualitative interviews suggest that some respondents were uncertain about how their personal information would be used and were concerned about potential risks. One participant said they were worried that their personal information would fall into the hands of the Syrian regime and “would be used against my family back at home.” Another said that despite these concerns, they gave the information “because they had no choice.”

**Figure 8. Since you left your home country, have you been asked to provide information about yourself that you would have rather not given?**



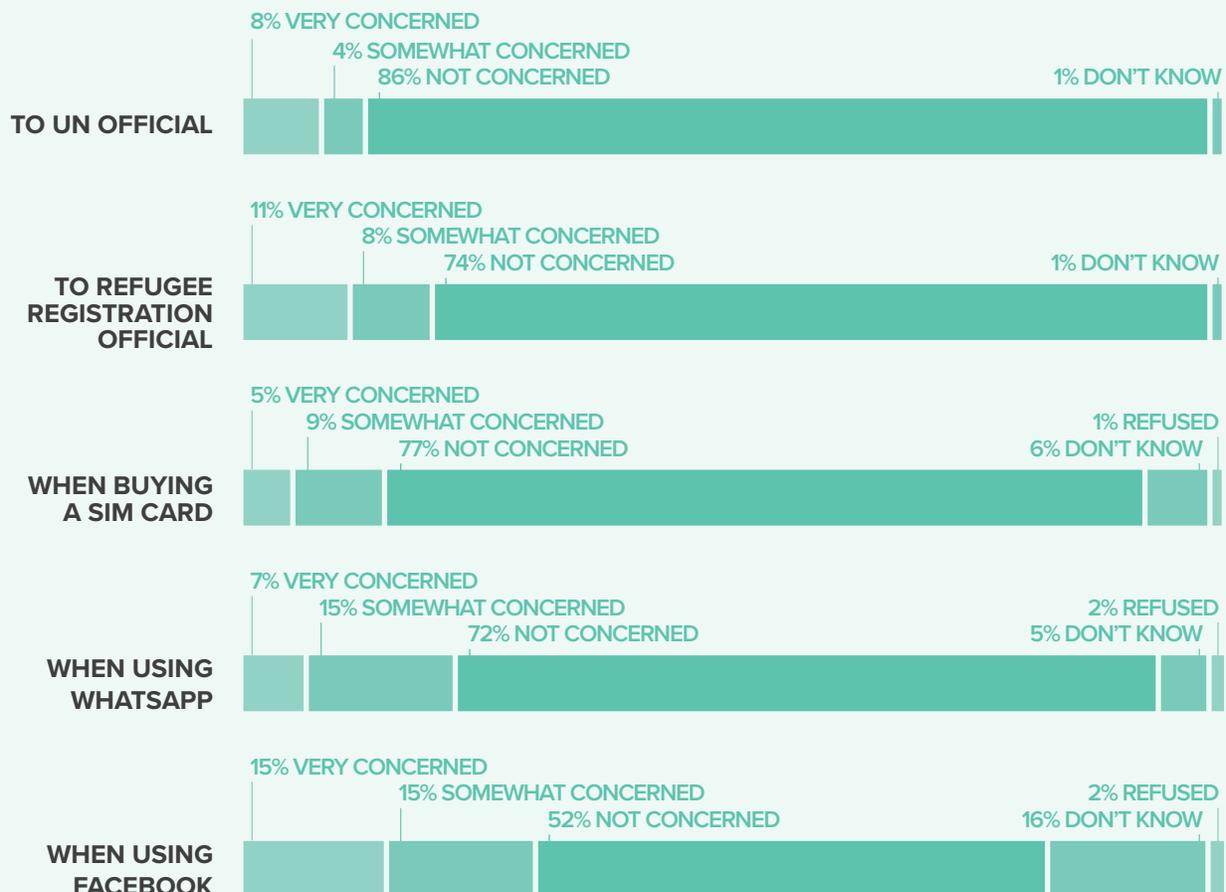
In addition, survey participants were asked about the sensitivity of hypothetically sharing personal information about themselves on various platforms. For example, 61% of respondents reported that information on the popular messaging platform WhatsApp was sensitive compared to information on Facebook (39%) or their birthdate (25%).

**Figure 9. Sensitivity of sharing types of personal information and sharing personal information on specific platforms**



In order to gauge trust, participants were asked if they would be concerned when giving their personal information to a number of individuals representing governments or international organizations (like the UN), during an activity like buying a SIM card or when using mobile services like WhatsApp and Facebook. Personal information was defined in terms of information that could identify an individual, like one’s real name, birthdate, location, etc. These series of questions were created to measure the sense of trust individuals might have in sharing their personal information with officials, service providers, and technological platforms. Given the importance of communication and information to vulnerable populations, trust is critical in developing information and communication strategies with refugee communities. For example, 86% of respondents said they were not concerned about giving their personal information to a UN official. Seventy-seven percent (77%) of respondents were not concerned about giving their personal information when buying a SIM card, which is slightly higher than giving their personal information to WhatsApp (72%). For Facebook, however, 30% were concerned about hypothetically giving their personal information to the social media site, 52% were unconcerned, and 16% did not know. This finding suggests both a concern and uncertainty about privacy of personal information on Facebook even though the site was among the most popular technologies used.

**Figure 10. Level of concern regarding sharing personal information**



## REFUGEE PRIVACY

*The mobile phone is like oxygen to me.*



Privacy is a fundamental human right. Yet during background interviews, a number of individuals working on refugee issues raised the question: How much do refugees care about privacy? On the one hand, privacy could be more important to refugees whose personal information can be used against them more easily as they are already in a vulnerable position. On the other hand, privacy could be less important to those struggling to meet basic survival needs. In order to measure the attitudes about privacy for the Syrian refugees at Ritsona the survey included questions drawn from a recent Pew Internet and American Life

survey.<sup>28</sup> With these questions researchers were able to ask about the importance of privacy in everyday life, unrelated to technology. In addition, the findings from this sample of refugees were compared to Pew's representative sample of adults in the United States in 2015.

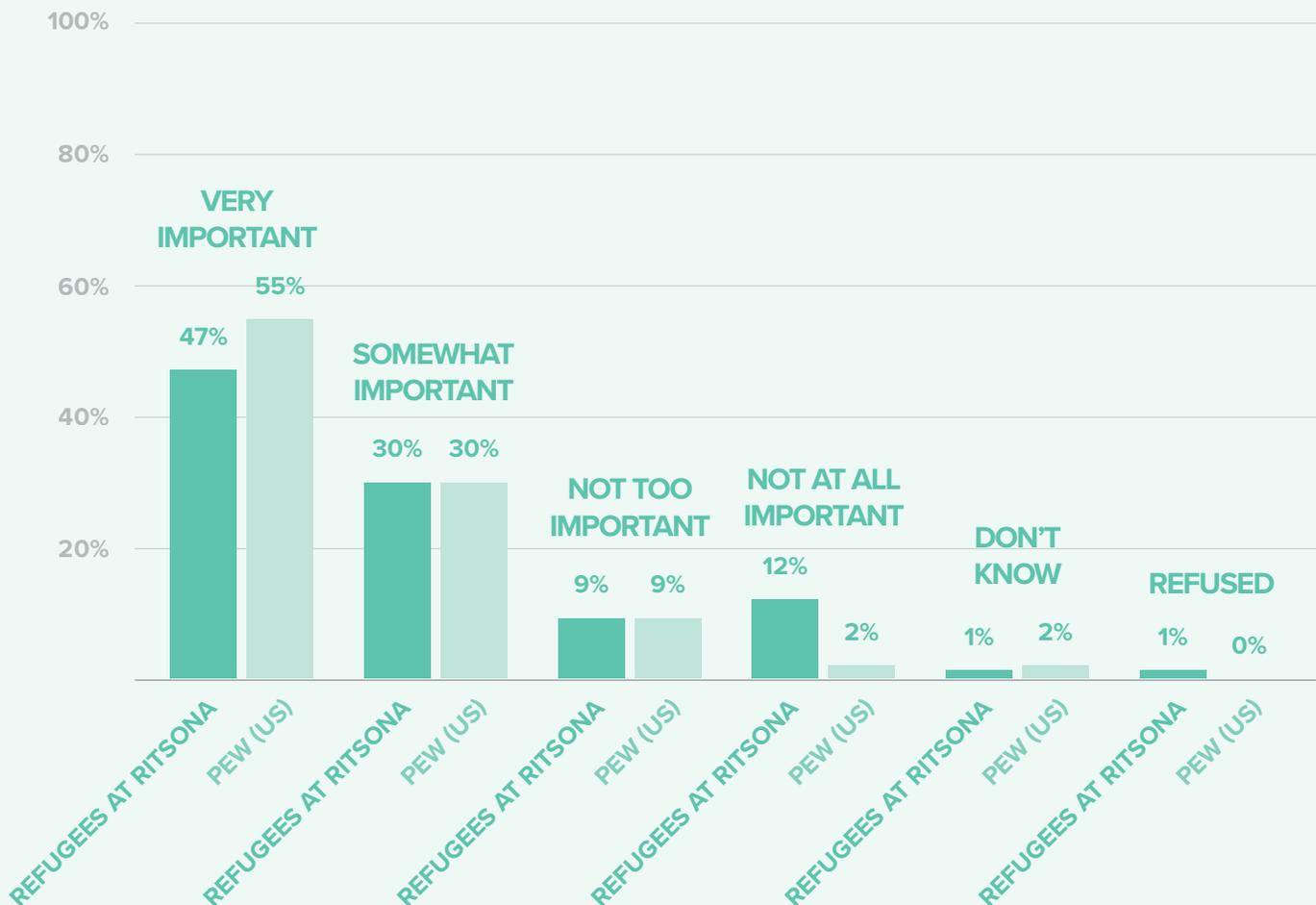
These privacy questions were formulated as "How important is the following [privacy issue] to you?" The figures below show the responses to these questions from respondents in Ritsona compared to the respondents to the Pew survey in the US.

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28 Mary Madden & Lee Rainie, "American's Attitudes About Privacy, Security and Surveillance," Pew Research Center, May 20, 2015, <http://www.pewinternet.org/2015/05/20/americans-attitudes-about-privacy-security-and-surveillance/>.

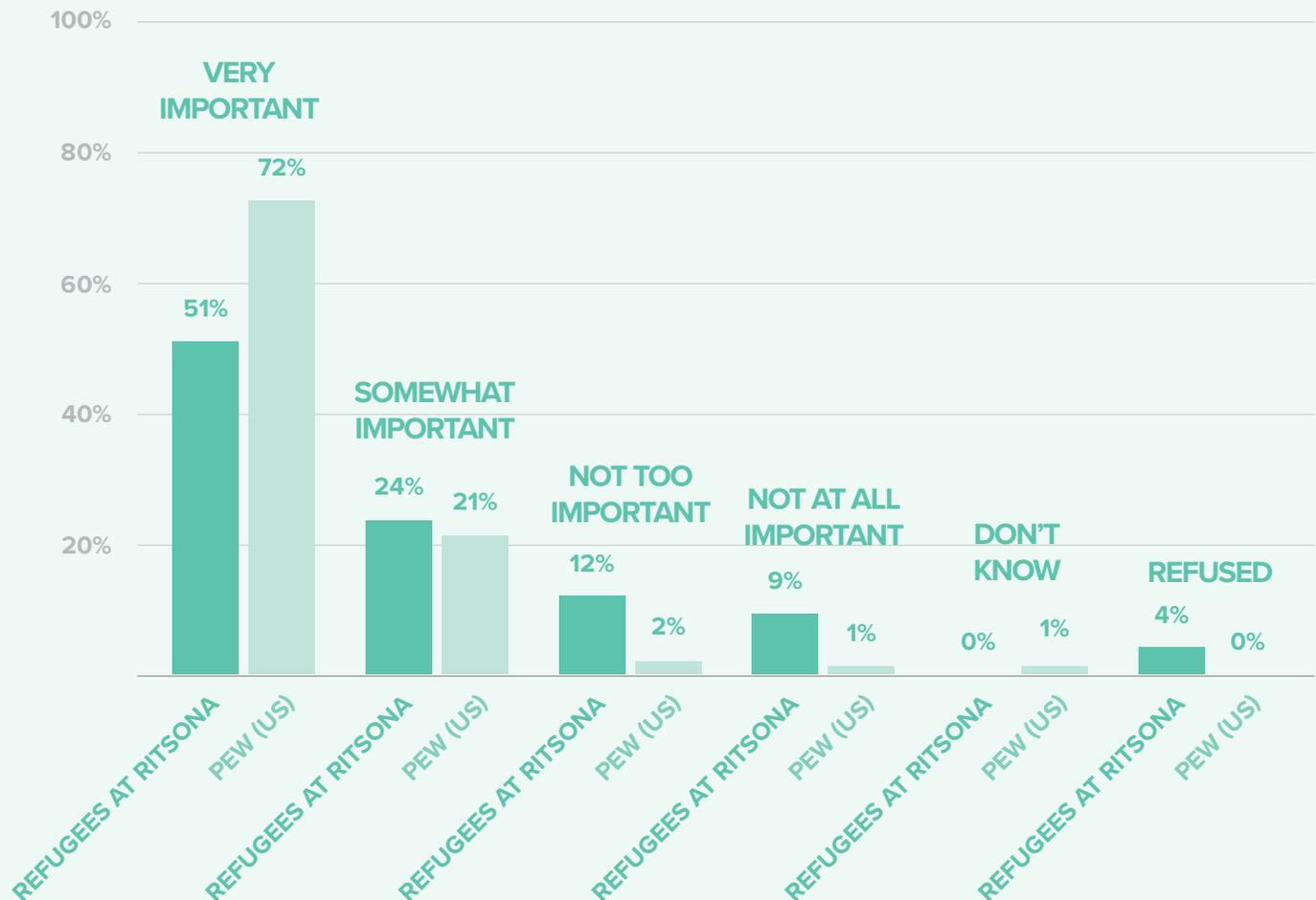
The first question about privacy in everyday life asked refugees how important is “being able to have times when you are completely alone, away from anyone else?” The answers from the refugees at Ritsona were remarkably similar to the U.S. population. For the residents at Ritsona, 47% answered “very important,” 30% “somewhat important,” 9% “not too important,” and 12% said “not important at all.” Comparatively, the Pew study found 55% of American adults answered “very important,” 30% “somewhat important,” 9% “not too important,” and 2% said “not important at all.”

**Figure 11. Importance of being able to have times when you are completely alone, away from anyone else**



The following question relates to the importance of being able to confide in a trusted person, without having to worry that the information will be shared with a third party. This question produced more of a comparative difference between populations. For the refugees at Ritsona, 51% answered “very important,” 24% “somewhat important,” 12% “not too important,” and 9% said “not important at all.” The Pew study found 72% of American adults answered “very important,” 21% “somewhat important,” 2% “not too important,” and 1% said “not important at all.”

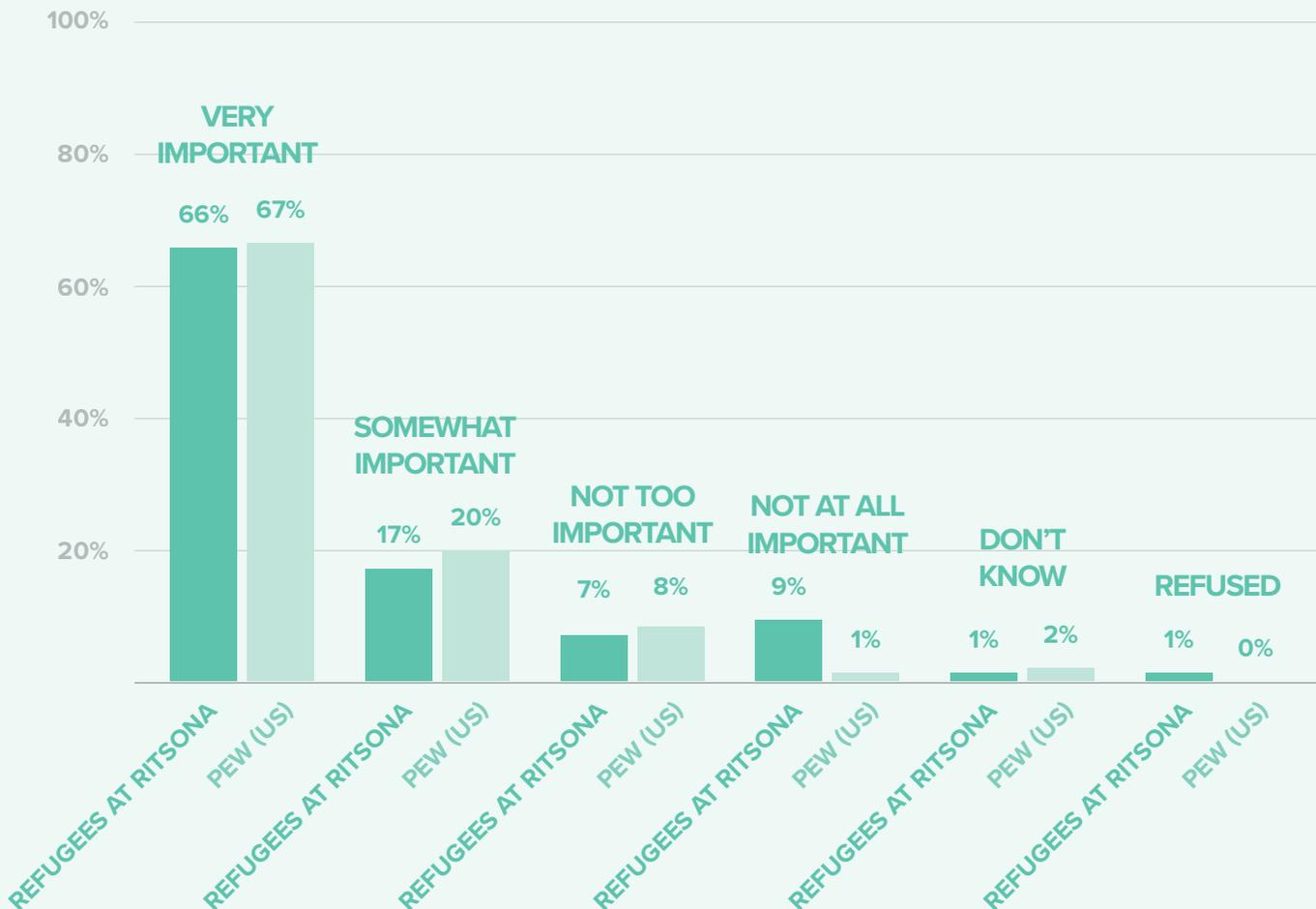
**Figure 12. Importance of being able to share confidential information with someone you trust**



The last question in this series addresses undue surveillance and asks how important it is “not having someone watch or listen to you with your permission.”

For the refugees at Ritsona, 66% answered “very important,” 17% “somewhat important,” 7% “not too important,” and 9% said “not important at all.” The Pew study found 67% of American adults answered “very important,” 20% “somewhat important,” 8% “not too important,” and 1% said “not important at all.”

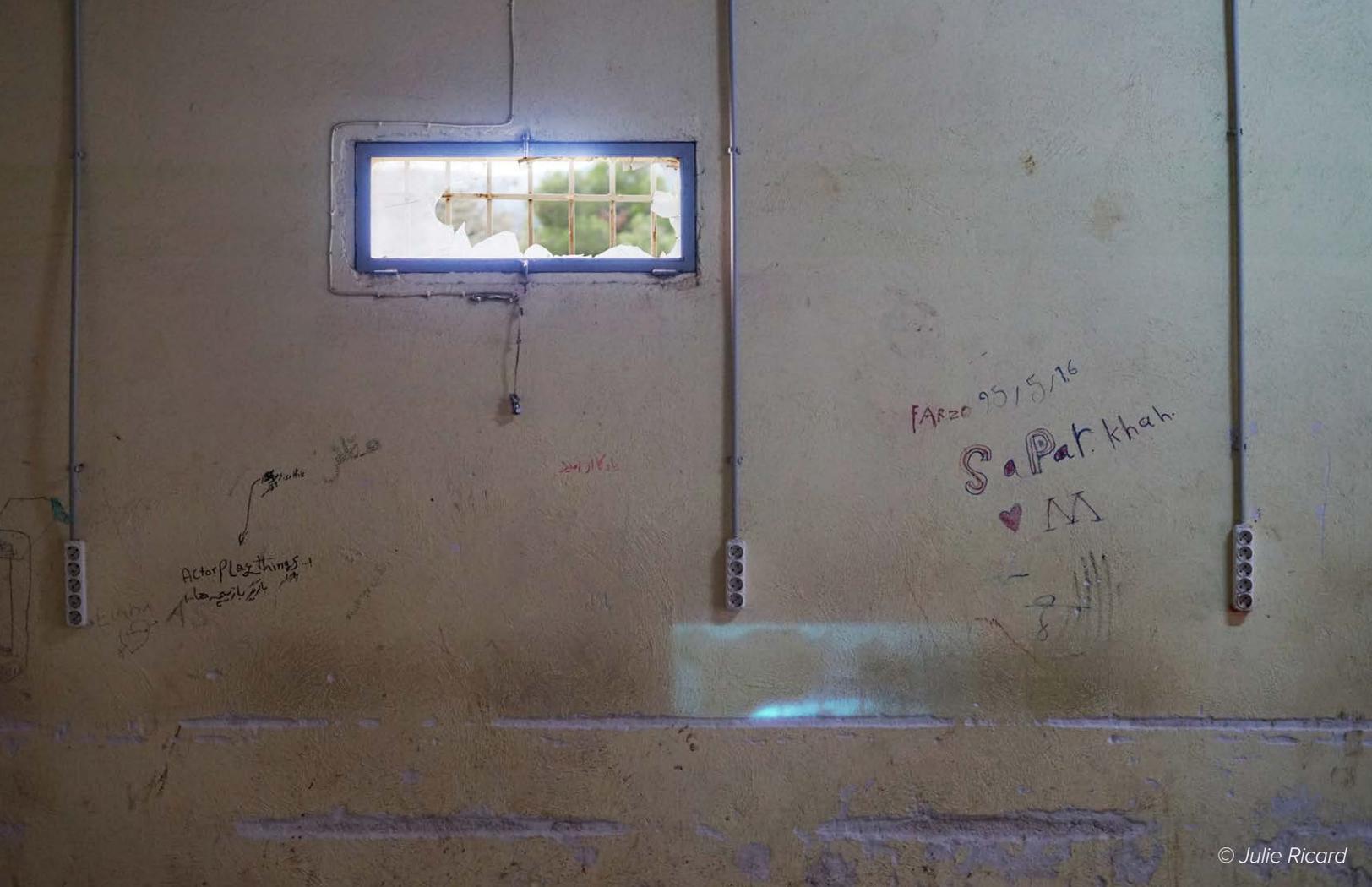
**Figure 13. Importance of not having someone watch or listen to you without your permission**





These findings indicate the high level of importance given to privacy by the refugees at Ritsona. This provides empirical evidence that these refugees still considered privacy to be important in their lives, despite being in transit in a host country and living in a precarious and highly vulnerable situation. In follow up interviews, some respondents stated their privacy concerns stemmed from living in an authoritative regime and were fearful that their information would be used against them or their families who remained in Syria. This outcome is significant because it warrants improved privacy provisions given to refugees regarding the data and information collected about them by various actors, including the international and national public sector and also the private tech sector. It also reinforces calls for improving institutional measures – including privacy policies and cybersecurity measures – to ensure that data and information about refugees are managed appropriately and with respect to their fundamental right to privacy.





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## LIMITATIONS & FURTHER RESEARCH

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**T**his study is limited because it remains a snapshot in the lives of a particular group of adults who had fled conflict in the Middle East and were living in a specific refugee camp in Greece at one point in time. Thus the findings cannot be generalized to other refugees in Greece let alone the diverse group of displaced people who are currently in source, transit, and host countries. Further, replicating this research in other contexts, countries, and languages will be important to identify any culturally specific interpretations of the survey questions. Additional survey and qualitative questions will also correct, refine, and recalibrate the findings, recommendations, and outcomes influenced by the study.

This study highlights a number of topics for further research and development. First, this study calls attention to the critical need for assessment methodologies in relation to the information and technological needs of populations in specific contexts. Population assessments based on rigorous research methods should be part of the design process that underpin digital interventions for refugees. Improved understanding allows organizations and developers to better tailor services to the specific community they aim to service. The authors of this report recommend the development of a rapid assessment cycle to be part of the design, implementation, and evaluation process for deploying ICTs.

Second, the findings demonstrate that humanitarian interventions delivered via mobile phones must account for the gender disparities in technology use and that gender differences may exacerbate vulnerabilities. Feasibility studies of mobile phone-based interventions are needed to address the impact of gender disparities in phone ownership.

Third, the mental health findings support MSF's report that there is an urgent need to address psychosocial concerns, like depression. The association of mobile phone use with a lower chance of having depression creates a potential for mobile phone based interventions; however, far more focused research is needed on the causal dimensions of depression and technology usage.

Finally, the findings also suggest that refugees have a nuanced view of privacy and information sensitivity. At the same time it is unclear why certain technologies are trusted or used more than others. Improved information provision on these topics, as well as ensuring privacy rights and protecting personal information, must be taken into account when developing or implementing any technology in the field. The findings from the privacy-focused component of the study presented in this report reaffirm the importance of including data privacy and data protection in principles and guidelines for the development of digital services for vulnerable populations more broadly as a key way to uphold human dignity and rights in humanitarian contexts.



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