Digital Communication at the Time of COVID-19: Relieve the Refugees’ Psychosocial Burden and Protect Their Wellbeing

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The study aims to evaluate the usefulness and effectiveness of digital communication tools implemented by an Italian NGO during the coronavirus disease 2019 (COVID-19) emergency period, considering their relations with perception of health-related risk, sense of belonging to host community, psychological distress, and wellbeing of the refugees taken in charge by the association. The study was conducted through an anonymous questionnaire proposed to a group of 102 refugees. The results confirmed that by increasing the sense of belonging to the Italian community, the time refugees spent on digital communication negatively associated with their psychological distress and positively associated with their wellbeing. Refugees’ access to digital communication also increased their health-related risk perception that in turn raised their psychological distress. It specifically occurred when digital communication has been perceived as less affordable, i.e. as less clear, easy and reassuring. The results will be used to improve digital communication for health, educational, and proximity services dedicated to refugees.

Keywords: COVID-19, digital communication, refugees, psychological distress, wellbeing, risk perception

Introduction

The new coronavirus (SARS-CoV-2) first emerged in Wuhan, China, at the beginning of December 2019 and rapidly spread all over the world (Shereen et al., 2020).
Within 3 months, the virus infected more than 118,000 people causing 4,291 deaths in 114 countries, leading the World Health Organization to declare a global pandemic on 11 March 2020. Between the end of February and the end of March 2020, Italy was the most affected country in Europe with 119,827 confirmed cases at 4 April 2020 (WHO, 2020). Since 24 February 2020, Italy has begun to implement isolation, quarantine, social distancing, and community containment as mitigation measures to contrast the spread of the virus (Wilder-Smith and Freedman, 2020) and now it is facing, like many other countries in the world, a second wave.

The study presented here was implemented in Italy between the end of May and the end of July 2020: a period in which Italian public health measures have gone from extreme (lockdown) to lighter measures. The health social distance and community containments measures Italian adopted in this phase still required the adoption of online communication tools in order to guarantee most of the educational and social services.

In the midst of the pandemic crisis and in the wake of digital migration studies (e.g. Leurs and Smets, 2018; Mancini et al., 2019), this study aims to focus on the relationship between digital communication (DC) and refugees’ experience of the pandemic crisis. Specifically, the study aims to assess the usefulness and effectiveness of DC tools implemented by an Italian NGO during the coronavirus disease 2019 (COVID-19) emergency period, considering their associations with perception of health-related risk, sense of belonging to host community, psychological distress, and wellbeing of refugees taken in charge by the association.

**Digital Communication and Refugees’ Sense of Belonging to the Host Community**

As it is well known, in the current pandemic crisis classical and new media have become essential tools to communicate coronavirus disease and related protection measures to the population of the whole world. Lancet Migration called for migrants and refugees to be urgently included in response to the COVID-19 pandemic (Orcutt et al., 2020a), and on 23 April (Orcutt et al., 2020b) it proposed three panels for: (a) an urgent universal and equitable access for migrants and refugee population to health systems, preparedness, and response; (b) the need of immediate responses for inclusion of migrant and refugee populations in health protection responses; (c) and a recommendation for a responsible, transparent, and migrant-inclusive public information strategies. As the call stated: ‘Strategies should include regular, accurate, and linguistically and culturally appropriate public communication and information sharing, alongside community mobilisation’ (Orcutt et al., 2020b: 1482). Despite this important appeal, to the best of our knowledge, no COVID-19 studies have, until now, focused on migrant and/or on refugee population, and no studies have analysed how migrants’ access to public communication associate with their physical and psychological health.

As a recent scoping review outlined (Mancini et al., 2019), communications through new media and mobile devices plays a central role in refugees’ experience, encouraging, among other things, new social relations in the host society.
Moreover, as Ager and Strang’s (2008) conceptual framework of integration suggested, to guarantee a successful migrants’ inclusion into the host society, social connections, and communication within and between groups within the community have to find a way to exist. In fact, migrants’ psychological wellbeing is strictly related to migrants’ integration into host society, as acculturation studies consistently showed (e.g. Sam and Berry, 2010; Schwartz et al., 2010). It is known that psychological wellbeing is a ‘focal’ issue in refugees’ studies (see Rossi and Mancini, 2016 for a review), literature often stress on how the non-voluntary nature of the migration process, the traumatic experiences and the loss of resources expose migrants to acculturative stress, generating psychological disease and poor socio-cultural adaptation (Sam and Berry, 2010). However, acculturative stress can also be reduced by social resources which force migrants to draw in the host context, specifically by culturally heterogeneous and emotionally close social relationships they established (e.g. Mancini and Rossi, 2020).

Under the conditions of social distancing as COVID-19 mitigation measures imposed by the Italian Government, it was therefore up to DC to guarantee social connections that could relieve refugees’ psychological disease, in particular when related to the COVID-19 pandemic crisis. As scientific community is stating, the outbreak of COVID-19 is placing significant psychological burdens on individuals around the world and is heavily impacting on both global and mental health. Torales et al. (2020) reviewed published articles on mental health related to the COVID-19 outbreak and other previous global infections and they concluded that although studies are still scarce, it is possible to predict that this pandemic is leading to additional mental health problems such as stress, anxiety, depressive symptoms, insomnia, denial, anger and fear, at least in healthcare workers (e.g. Kang et al., 2020; Mulfinger et al., 2020 for a review) and in the most vulnerable part of the population (e.g. Swainston et al., 2020). Brooks et al. (2020) systematic review confirmed these results and showed that stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Nevertheless, no studies have still been conducted on migrants and/or refugees population.

Moreover, van Bavel et al. (2020) and Jetten et al. (2020) discussed the consequences of COVID-19 pandemic crisis on intergroup relations and stressed how experiences of fear and perceived threats are associate with prejudice and intolerance towards groups. Still, the pandemic crisis has also created coordinated efforts across individuals, groups, and governments to fight the spread of the virus, ‘which could facilitate reorganization of previously considered out-groups and in-groups into a single community with a common destiny’ (van Bavel et al., 2020: 462). So, it is possible to speculate that the DC has increased the refugees’ sense of belonging to the Italian community.

Starting from these premises, in this study, we assumed that the extent of DC implemented by an Italian NGO to face COVID-19 mitigation measures applied in Italy has succeeded in increasing refugees’ sense of belonging to the Italian community, and it also may have buffered their psychological distress and increased their wellbeing. In other words, we hypothesized that the refugees’ sense
of belonging to host society mediated the relationship between access to DC and both refugees’ psychological distress (Hypothesis 1a) and wellbeing (Hypothesis 1b).

Digital Communication and Refugees’ Perception of Health-Related Risk

In order to be effective, DC must consider perceptions and emotional reactions of people to the COVID-19 pandemic crisis. Sang-Hwa et al. (2021) used data collected during the 2015 Middle East Respiratory Syndrome coronavirus (MERS-CoV) outbreak in South Korea and demonstrated that social media use has been positively associated with fear and anger, which in turn are also positively related to both risk perception and preventive behaviours. Coherently, van Bavel et al. (2020) identified risk perception as one of the main research topics relevant to COVID-19 pandemic and they suggested that the fear and the negative emotions generated by media wide coverage of stories of ‘panic buying’ (see also Jetten et al., 2020), could have led people to overestimate otherwise neglected risks for themselves or others, as risk literature suggests (Loewenstein et al., 2001; Slovic et al., 2004; Breakwell, 2014). Olagoke et al. (2020) examined the associations between exposure to coronavirus disease (COVID-19) related news on mainstream media, risk perceptions, and depressive symptoms, and they demonstrated that the perceived vulnerability to COVID-19 has mediated the relationship between news exposure and depressive symptoms. Siyue et al. (2020) studied the use of internet for receiving COVID-19 information, risk awareness and engagement in preventative behaviours came to the similar conclusions: participants who received more COVID-19-related health information through internet reported more frequent effort to engage in preventive behaviours, especially when their immediate family member or close friends and relatives tested positive from COVID-19. Liu (2020) tested mediation paths connecting four types of digital media used during the infectious disease outbreak and preventive behaviours, and showed that seeking COVID-19 information on social media, mobile social networking apps, and social live steaming services elicited intense worry that, in turn, increased preventive behaviours. Synthetizing, all these results confirm that the perception of risk and the feelings of threat and fear activated by the COVID-19 pandemic can mediate the impact of DC on people’s physical and mental health.

Based on these results, we assumed that to the extent that the DC implemented by an Italian NGO to face the Italian COVID-19 mitigation measures has succeeds in increasing refugees’ risk perception, it could not have buffered their psychological distress, not increased their wellbeing. In other words, we hypothesized that the refugees’ health-related risk perception mediated the relationship between access to DC and both refugees’ psychological distress (Hypothesis 2a) and wellbeing (Hypothesis 2b).

Digital Communication Aimed at Refugees

In order to be sensitive to the fears and threats generated by the COVID-19 pandemic, DC must adapt to the target of communication (Orcutt et al.,
2020a,b). Namely, to be effective, DC must be able to overcome cultural and language barriers, and differences in media literacy competences and in access to facilities and infrastructure (e.g. Mancini et al., 2019). Simply put, DC must be easy, clear and easily accessible. Moreover, DC must face the sudden and extreme danger of COVID-19 by reducing excessive levels of related worry or increasing excessive level of lack of risk awareness (Pidgeon et al., 2003). As a form of health crisis communication, DC can reassure or alert recipients, teach precautions and behaviours that can reduce the spread of the infection, facilitate the recognition of particular symptoms (Lundgren and McMakin, 2018). Nevertheless, as an unavoidable way to take charge of refugees in the COVID-19 pandemic crisis, DC must also inform and encourage groups to work together to reach decisions about how the risk will be efficaciously prevented or mitigated.

Taking these aspects into consideration, this study aimed to analyse how refugees’ use experience of DC implemented by the NGO—both in term of time spent on and in term of quality of information contained therein—were associated with their health-related risk perception, sense of belonging to the Italian community, psychological distress, and wellbeing.

The DC implemented by the NGO at the beginning of the lockdown in March 2020, responded to the need of guaranteeing what is well expressed by the slogan ‘isolate the virus but not people’: i.e. digital tools able of guaranteeing a continuous and articulated information and relational flow, even in lockdown regime. Thus, the digital tools implemented by the NGO responded two main purposes: (a) to inform refugees about the spreading of the virus and to guide them to restrictions at a time when main-stream communication, such as government provisions, prohibitions, rules of conduct, and updates on the evolving pandemic were expressed only in Italian, mostly through the TV news and institutional websites, spoken or written in technical terms which were hard to understand for natives themselves, and (b) of keeping social contact and to provide emotional, cognitive and behavioural support in condition of obliged physical distance.

To meet these emerging needs, the Italian Ngo created different levels of DC. Specifically, to reach the informative purpose, the NGO designed on their official website some pages dedicated to COVID-19 with illustrated information sheets and video tutorials in different languages and some link to relevant official websites (e.g. OIM, UNHCR) and a digital desk with services and procedures commonly provided by the association. Moreover, operators and refugees realized in different languages (English Somali, Pashtu, Arabic, French, Spanish, and others) video messages on procedures of prevention and compliance with rules and conduct that were shared and sent daily to a WhatsApp group and a Telegram broadcast profile addressed to the whole refugees and educators of the NGO. As to the aim of keeping social contact and providing support, the NGO’s voluntaries, operators and refugees were involved in interactions by chat, sharing videos, music, sports activities, kitchen recipes, virtual ‘meals’ with the aim of feeling closer and spend time together. Moreover, different interactive platforms such as Google Meet and Zoom were used to provide on-line labs on skills related to the use of digital tools and to deliver distance training and professionalization.
programmes. Finally, operators weekly video called through WhatsApp or Google Meet refugees taken in charge by the NGO to give each of them an individual space and time to express individual feelings such as hopes, fears, anxiety, uncertainty were evolving along the pandemic.

**Methods**

*Study Design and Procedures*

A questionnaire was proposed in Italian, English, French and Arabic to a group of about 100 refugees that were taken care of by an NGO in the North of Italy that collaborated in the study. This NGO has been working since the 90s for the refugees’ protection and integration, through reception services and legal protection. Today, it hosts more than 200 refugees and asylum seekers in a government reception programme. The NGO’s reception model is based on a community-based approach, where contacts with services and the local community are promoted. Their aim is to protect refugees and promote their citizenship paths.

The questionnaire was administered online by two researchers (one male and one female) and data was collected through an anonymous link to an online survey managed in Qualtrics platform (www.qualtrics.com). To be eligible to participate in the study, participants had to be of age and they had to be taken over by the NGO as a refugee. Complying with the Italian ethical standards, the first page of the online questionnaire contained an Informed Consent form with information about the aim of the survey, confidentiality, anonymity, and data protection.1

Participants gave their consent to participate in the study by clicking ‘yes, I agree to participate’ (or ‘no’) at the end of the informed consent form. Participants who did not give their consent were automatically directed to the acknowledgment page.

**Participants**

A sample of 102 adult refugees gave their consent to participate. Twenty-three participants (22.5%) did not complete the survey and were excluded from the data analyses due to more of 60% missing values on items related to study’s constructs. The final sample ($N=79$) was composed of 55 males (72.2%) and 21 females (27.6%, 3 missing) aged between 18 and 65 years ($M=33.84$, $SD=10.15$). About a third of the sample had average levels of education achieved in the country of origin (33, 41.8%) where 9 (11.4%) graduated. About a third has not obtained any qualifications neither in their country of origin (23, 29.1%) nor in Italy (20, 25.3%), while a similar proportion had completed a basic education in their country of origin (21, 26.6%) and/or in Italy (32, 40.5%). At the time, the survey was conducted, 30 participants (36%) were unemployed, 21 (26.6%) were students, and 28 (35.4%) were employees.

Eighteen refuges (22.8%) came from Nigeria; five came from Ivory Coast and five from Kurdistan; four came from Afghanistan and the same number come
from Eritrea, Gambia, Somalia, and Togo; three come from Palestine, India, Sudan, and Tunisia; two come from Cameroon, Iraq, Pakistan, Senegal, Syria, and Uganda; only was a refugee coming from Albania, another one from Burkina Faso, and one from El-Salvador. Regarding religion, the 40.5% (32) of sample were Muslims, 32.9% (26) Christian, and 6 declared to profess another religion (8 Atheists and 7 preferred to not reply).

Measures

Participants completed an anonymous questionnaire composed by different scales measuring the following constructs of: (a) use experience of DC activated by the NGO at the time of COVID-19 crisis; (b) perception of health-related risk, (c) sense of belonging to the host society; (d) psychological distress; (e) wellbeing; and (f) socio-demographic data.

Use Experience of DC  It was referred to the frequency of use and to the assessment of the quality of information contained into some digital tools activated by the NGO at the time of COVID-19 crisis: (a) COVID-19 related pages contained on the NGO’s official site and (b) communication with NGO operators via messages and video chats.

First, participants indicated how often (1 = Never, 5 = Every day several times a day) in the last month they have visited the website COVID-19 related pages ($M = 3.04, SD = 0.92$) and they have had digital communication with NGO operators ($M = 2.88, SD = 0.84$). The time dedicated to visit the website and/or to communicate with NGO’s operators positively and significantly correlated ($Rho = 0.45, p < 0.001$); thus, total time spent on DC in the last month has been considered for the analyses.

Second, participants assessed the quality of both the website COVID-19 related pages and the digital communication they had with NGO operators. That quality was measured through 5-point bi-polar adjectives indicating how clear (vs. confuse), useful (vs. not useful), important (vs. not important), easy (vs. difficult), extensive (vs. superficial), true (vs. false), and reassuring (vs. troubling) were the information/communication contained therein. We conducted two principal component analyses (PCAs) with varimax rotation and eigenvalues > 1. In both PCAs two dimensions emerged accounting for 60% and 61% of variance, respectively. The first-dimension aggregated adjectives that were referred to the reliability of the information/communication (useful, important, extensive, and true: NGO’s site $M = 4.22, SD = 0.92, \alpha = 0.75$; DC with operators $M = 4.45, SD = 0.86, \alpha = 0.77$). The second-dimension aggregated adjectives that were referred to the affordability of information/communication (clear, easy, and reassuring: NGO’s site $M = 3.84, SD = 1.14, \alpha = 0.63$; DC with operators $M = 4.00, SD = 1.12, \alpha = 0.70$). Reliability and affordability dimensions significantly correlated within ($Rho = 0.54, p < 0.001$; $Rho = 0.54, p < 0.001$) and between ($Rho = 0.40, p < 0.001$; $Rho = 0.50, p < 0.001$) the two DC tools: thus, total scores of DC reliability and affordability has been considered for the following analyses.
Perception of Health-Related Risk  It was measured through three items (α = 0.85) assessing on a 5-point Likert-type scale refugees’ perception of how much COVID-19 is risky for people’s health (1 = Not at all risky, 5 = Extremely risky), how serious is it to get COVID-19 (1 = In no way, 5 = Very much), and how exposed he/she is to the health risks of COVID-19 (1 = In no way, 5 = Very much).

Sense of Belonging to Host Society  It was measured through a scale adapted from the Italian version (Manzi et al., 2006) of Vignoles’s (2003) Identity Questionnaire. The scale was composed of five items on a 5-point Likert-type scale (1 = false, 5 = true) measuring the refugees’ sense of belonging to Italian community in the period of emergency from COVID-19. Based on the Identity Process Theory (Breakwell, 1986), the five items measured how much in that period of emergency being part of the Italian community was central to participants’ identity (centrality), gave them the strength to face life’s problems (self-efficacy), meaning to their life (meaning), how much they feel proud to be part of the Italian community (self-esteem), and close and part of the Italian community (belonging). The scale had a one-dimensional structure (α = 0.94).

Psychological Distress  It was measured through the adaptation of the Italian forced migrants (Davolo and Mancini, 2020) of the Brief Symptoms Inventory-18 (BSI-18; Derogatis, 2000). The BSI-18 is an abbreviated version of Brief Symptom Inventory (BSI; Derogatis, 1993) and consists of 18 items developed as a general screening tool to assess global level of psychological distress on most prevalent psychiatric syndromes, i.e. depression, anxiety and somatization. BSI-18 proved to be unidimensional cross-culturally (Asner-Self et al., 2006) and to be invariant across racial/ethnic group in US (Wiesner et al., 2010). BSI-18 was subjected to a rigorous process of adaptation to the Italian asylum seeker and refugee’s context (BSI-18r; Davolo and Mancini, 2020), which led to partial re-phrasing of some items and to a new measurement scale ranging from 0 = never in the last week to 2 = a lot of time in the last week. In previous Italian studies, the BSI-18r confirmed its unidimensional structure: total score ranges from 0 to 36, with values between 0 and 8 indicating low psychological distress, between 9 and 13 indicating medium psychological distress, and values between 14 and 36 indicating high psychological distress. The BSI-18r internal consistency found in this study was high (α = 0.90).

Wellbeing  It was measured through the five items World Health Organization Well-Being Index (WHO-5) that is among the most widely used questionnaires measuring global subjective psychological wellbeing. WHO-5 was originally presented at a WHO meeting in Stockholm in February 1998 (Staehr, 1998); it has been translated into over 30 languages and has been used in research projects all over the world (see Topp et al., 2015 for a review). The scale was composed of positively phrased items (e.g. I have felt cheerful and in good spirits, I have felt calm and relaxed) measured on a Likert-type scale ranging from 5 (all of time) to 0 (none of time). The participants are asked to evaluate how well each of the 5 statements applies to him or her when considering the last 14 days. The raw score
ranging from 0 to 25 is multiplied by 4 to give the final score from 0 representing the absence of wellbeing to 100 representing the maximal wellbeing. In this study, WHO-5 items (α = 0.91) referred to the last 7 days. Original Italian, English, French, and Arabian translation were proposed.

**Analytical Strategies** For all scales, the related items were averaged to create a composite score: higher scores indicate higher levels of the measured constructs. Preliminary analyses, including means and bivariate correlations among study measures, and among study measures and gender (female = 1) and age, are presented first. Two path analyses performed through MPLUS, are presented second. Then, two steps Hierarchic Multiple Regression Analyses followed.

**Results**

**Descriptive Statistics**

Means, standard deviations, Spearman correlations, and alpha scores (in diagonal) of the study variables are reported in Table 1.

On the average, refugees visited the NGO website dedicated to COVID-19 and digitally communicate with operators at least one time at week and they considered information/communication contained therein quite useful, important, expensive, and true (DC reliability) and clear, easy and reassuring enough (DC affordability). Moreover, participants perceived COVID-19 a bit risky for people’s and for their own health. In the period of the COVID-19 emergency, they felt on average part of the Italian community, while data showed that the refugees’ psychological burden was on average medium-low.

As to participants’ gender (female = 1) and age, being female moderately and positively related with DC reliability, health-related risk perception, psychological distress, and lower wellbeing; being older moderately and negatively correlates with sense of belonging to host society and with wellbeing.

As to the design variables, time spent on COVID-19 related DC tools highly and positively correlated with health-related risk perception, and moderately and positively correlated with belonging to host society, and psychological distress. DC reliability and affordability very highly correlated with each other and they both significantly correlated with belonging to the host society, while only DC affordability moderately correlated with refugees’ wellbeing. Sense of belonging to the host society highly and positively correlated with wellbeing and negatively correlated with refugees’ psychological distress, which coherently, very highly and negatively correlated with wellbeing.

**Testing the Mediation Hypotheses**

In order to test study’s hypotheses, we conducted a two path-analysis using M-PLUS, v. 8.1 statistical package (Muthén and Muthén, 2017), one for psychological distress (Figure 1 and Table 2) and one for wellbeing (Figure 2 and Table
| N | M | SD | Gender (1 = female) | Age | Time spent on DC | DC reliability | DC affordability | Health-related risk perception | Sense of belonging to host society | Psychological distress (0–36) | Wellbeing (0–100) |
|---|---|----|----------------------|-----|------------------|----------------|------------------|-----------------------------|-------------------------------|---------------------|----------------|
| 76 | 33.84 | 0.45 | 0.28 | 10.15 | -0.04 | | | | | | |
| 79 | 2.96 | 0.45 | 0.28 | 0.03 | | | | | | | |
| 72 | 4.27 | 0.45 | 0.06 | 0.13 | | | | | | | |
| 72 | 3.89 | 0.45 | -0.01 | 0.08 | | | | | | | |
| 74 | 3.66 | 0.45 | -0.01 | 0.08 | | | | | | | |
| 72 | 3.36 | 0.45 | -0.01 | 0.08 | | | | | | | |
| 79 | 8.81 | 0.45 | -0.01 | 0.08 | | | | | | | |
| 78 | 47.64 | 0.45 | -0.01 | 0.08 | | | | | | | |

Note: *p < 0.05, **p < 0.01.
A maximum likelihood estimation with robust standard errors (MLR) was performed. Data analyses satisfied the rules of at least 15 participants per each variable and of at least 5 participants for each free parameter, since number of participants were 77, the number of variables were 4, and the number of parameters were 11 (Kline, 2011).

As to hypotheses, the results have supported the expected mediation assumptions: sense of belonging to host society totally mediated the relationship between time spent on COVID-19 related DC tools in the last month and refugees’ psychological distress and wellbeing. Specifically, the net of the effects of the other variables, namely time refugees spent on DC tools positively associated with their sense of belonging to host society, which in turn negatively associated with psychological distress (H1a) and positively associate with wellbeing (H1b). The perception of health-related risk completely mediated the relationship between time spent on COVID-19-related DC tools in the last month and refugees’ psychological distress (H2a) and wellbeing (H2b). Specifically, time refugees spent on DC tools positively associated with health-related risk perception, that in turn positively associated with refugees’ psychological distress and negatively associate with refugees’ wellbeing. The first model (Figure 1) explained the 29.4% for psychological distress ($p < 0.001$) and it had a good fit (Byrne, 2012; Kenny, 2015): $\chi^2(1) = 1.18$, $p > 0.05$, CFI = 0.99, TLI = 0.97, RMSEA = 0.05, $p > 0.05$, 90% CI [0.00, 0.31], SRMR = 0.03. The second model (Figure 2) explained the 25.0% for wellbeing ($p = 0.01$) and it had a good fit (Byrne, 2012; Kenny, 2015): $\chi^2(1) = 1.30$,

![Figure 1. Mediation effect of sense of belonging to host society and perception of health-related risk in the relationship between time spent on COVID-19-related DC and psychological distress ($N = 77$). The reported coefficients are standardized ($p < 0.05$).](image)

*Note: DC, digital communication; DIS, Psychological distress; IDE, sense of belonging to the Italian community; RIS, perception of health-related risk.*
Table 2.

Standardized estimates of direct and indirect effects of study’ variables on psychological distress (n = 77)

|                      | B    | SE   | Z     | 95% CI          |
|----------------------|------|------|-------|-----------------|
| DIS on               |      |      |       |                 |
| IDE                  | -0.36| 0.11 | -3.15**| [-0.58, -0.14] |
| RIS                  | 0.41 | 0.11 | 3.67***|[0.19, 0.63]    |
| DC                   | 0.20 | 0.11 | 1.86† | [-0.01, 0.41]  |
| IDE on               |      |      |       |                 |
| DC                   | 0.41 | 0.10 | 4.01***|[0.21, 0.62]    |
| RIS on               |      |      |       |                 |
| DC                   | 0.39 | 0.11 | 5.51***|[0.17, 0.61]    |
| Indirect effects from DC to DIS |      |      |       |                 |
| IDE                  | -0.15| 0.06 | -2.34* | [-0.27, -0.02] |
| RIS                  | 0.16 | 0.06 | 2.52*  | [0.04, 0.28]   |

* p > 0.05; ** p < 0.01; *** p < 0.001; † p < 0.10.

Note: DC, digital communication; DIS, psychological distress; IDE, sense of belonging to the Italian community; RIS, perception of health-related risk.

Figure 2.

Mediation effect of sense of belonging to host society and perception of health-related risk in the relationship between time spent on COVID-19-related DC and wellbeing (N = 77). The reported coefficients are standardized (p < 0.05).

Note: DC, digital communication; IDE, sense of belonging to the Italian community; RIS, perception of health-related risk; WELL, wellbeing.
Exploring the Effects of DC Use Experience on Study’s Variables

A two-steps hierarchical multiple regression analyses was conducted considering sense of belonging to host society, perception of health-related risk, psychological distress, and wellbeing as dependent variables. In all sets, the independent variables were the three mean scores in COVID-19 related DC tools: DC use (frequency) was introduced at step one of the regressions, to control for its effects; the DC reliability and affordability (quality) entered at step two. The analyses met the assumption for this type of testing (Hair et al., 2010). The data satisfied the rule of at least 20 participants per each independent variable, since number of participants were 68 or 69 depending on the model and we had three independent variables. The data also met the assumption of independent errors (Durbin-Watson statistic between 1.35 and 2.23), and multicollinearity was not an issue (tolerance ranged from 0.72 to 1.00, and variance inflation factors ranged from 1.00 to 1.39). The analyses of standard residuals showed that data did not contain outliers since there were not values exceeding the $|3|$ limit. Table 4 present the results of these analyses.

Confirming previous results, time spent on COVID-19-related DC tools significantly and positively associated with the sense of belonging to the host society, health-related risk perception, and psychological distress, and negatively associated with wellbeing both at step 1 and at step 2. When it was controlled to measure the effects of time spent on DC tools, reliability of the information had no significant effects on sense of belonging to Italy, perception of risk, psychological

Table 3. Standardized estimates of direct and indirect effects of study’ variables on wellbeing ($n = 77$)

|                        | $B$   | $SE$ | $Z$     | 95% CI          |
|------------------------|-------|------|---------|-----------------|
| WELL on                |       |      |         |                 |
| IDE                    | 0.42  | 0.10 | 4.08*** | [0.22, 0.62]    |
| RIS                    | −0.32 | 0.13 | −2.39*  | [−0.57, −0.06]  |
| DC                     | −0.18 | 0.10 | −1.73†  | [−0.39, 0.02]   |
| IDE on                 |       |      |         |                 |
| DC                     | 0.40  | 0.10 | 3.88*** | [0.20, 0.61]    |
| RIS on                 |       |      |         |                 |
| DC                     | 0.42  | 0.11 | 3.89*** | [0.21, 0.63]    |
| Indirect effects from DC to DIS |       |      |         |                 |
| IDE                    | 0.17  | 0.06 | 2.79**  | [0.05, 0.29]    |
| RIS                    | −0.13 | 0.07 | −1.96*  | [−0.26, 0.00]   |

*p $> 0.05$; **$p < 0.01$; ***$p < 0.001$; †$p < 0.10$.

Note: DC, digital communication; IDE, sense of belonging to the Italian community; RIS, perception of health-related risk; WELL, wellbeing.

$p > 0.05$, CFI $= 0.99$, TLI $= 0.94$, RMSEA $= 0.06$, $p > 0.05$, 90% CI [0.00, 0.32], SRMR $= 0.03$. 
Table 4.

Effects of time spent on DCs and of DCs’ reliability and affordability on health-related risk perception, integration into host society, psychological distress, and wellbeing of refuge sample

| Health-related risk perception | Sense of belonging to host society | Psychological distress | Wellbeing |
|-------------------------------|-----------------------------------|------------------------|-----------|
| **Step 1 model summary**      | **F (1, 68) = 13.37,** p < 0.001; R² = 0.15 | **F (1, 66) = 10.25,** p < 0.01; R² = 0.12 | **F (1, 67) = 9.01,** p < 0.01; R² = 0.11 |
|                               |                                   |                        | **F (1, 66) = 3.68,** p = 0.06; R² = 0.04 |
| **Step 2 model summary**      | **F (3, 66) = 5.22,** p < 0.01; R² = 0.15 | **F (3, 64) = 8.99,** p < 0.001; R² = 0.26 | **Δp = 0.07** |
|                               |                                   |                        | **Δp < 0.01** |

| b    | SE b | β   | t   | p    | b    | SE b | β   | t   | p    | b    | SE b | β   | t   | p    |
|------|------|-----|-----|------|------|------|-----|-----|------|------|------|-----|-----|------|
| Step 1 Time spent on DCs 0.57 0.16 0.41 3.66 0.000 0.80 0.25 0.37 3.20 0.002 3.65 1.22 0.34 3.00 0.004 | 9.80 5.11 | 0.23 | 1.92 0.059 | 0.26 |
| Step 2 Time spent on DCs 0.49 0.17 0.35 2.87 0.005 0.61 0.25 0.28 2.46 0.017 3.27 1.29 0.31 2.54 0.014 | 10.99 5.23 | 0.04 | 0.32 0.747 | 2.30 0.025 |
| DCs’ reliability 0.23 0.16 0.19 1.45 0.151 0.17 0.20 0.11 0.87 0.389 1.46 1.04 0.18 1.40 0.166 | 1.98 0.86 | 0.37 | 3.04 0.003 | 3.49 0.37 |
| DCs’ affordability −0.110 0.12 −0.11 −0.910 0.367 0.52 0.17 0.36 3.12 0.003 | −1.980 0.82 −0.28 −2.300 0.025 | 10.61 3.49 | 0.37 3.04 0.003 |

Notes. b = unstandardized beta coefficients; SE B = standard errors for b; β = standardized error coefficients; t = t test statistic; p = probability value.
distress, and wellbeing. Instead, it is the affordance of the information that was significantly and positively associated with the sense of belonging to the Italian community and wellbeing and negatively associated with psychological distress.

**Discussion and Conclusion**

When the pandemic character assumed by the spread of COVID-19 was clear, Lancet Migration called for migrants and refugees to be urgently included in responses to the coronavirus disease 2019 (Orcutt et al., 2020a). A call for a responsible, transparent, and migrant-inclusive public information strategies was launched (Orcutt et al., 2020b). This study wanted to accept these recommendations, going to analyse the usefulness and effectiveness of digital communication tools implemented by an Italian NGO in the emergency period from COVID-19. A sample of refugees taken in charge by the NGO assessed their use experience of NGO’s digital communication and they answered some questions on their sense of belonging to host community, on their perception of health risk related to COVID-19, and on their psychological distress and wellbeing in that period.

The question that guided the study was that of exploring the extent to which digital communication alleviated refugees’ psychological burden related to pandemic crisis, looking at two mediational processes: one related to increase refugees’ sense of inclusion into host community and one related to increase the perception of health-related risk. The results confirmed the assumption made by demonstrating that the use of digital communication has increased both the sense of inclusion and the perception of risk. However, only by increasing the sense of inclusion has digital communication been able to contain the burden caused by the pandemic.

Specifically, results showed that refugees used digital communication as tools to cope with the psychological burden they felt at that time: in fact, the higher the psychological distress and the lower the perceived wellbeing, the greater was also the frequency with which refugees accessed to digital communication tools. Under the conditions of social distancing imposed by the Italian COVID-19 mitigation measures, digital communication was therefore able to both guarantee the informative purpose on the spreading of the virus and restrictions and the purpose of the continuity of support and social contacts, i.e. that NGO’s social services were able to relieve psychological disease, thus probably preventing addiction mental health problems caused by the outbreak of COVID-19 (Mulfinger et al., 2020; Torales et al., 2020) literature predicted first of all in the most vulnerable part of the population (Swainston et al., 2020).

Moreover, in line with authors that discussed consequences of COVID-19 outbreak on intergroup relations (Jetten et al., 2020; van Bavel et al., 2020), our results showed that digital communication tools implemented by the NGO significantly increased the refugees’ sense of inclusion into the host community. A wider literature stressed the association between migrant’s integration acculturation strategies and psychological wellbeing (Sam and Berry, 2010; Schwartz
et al., 2010; Rossi and Mancini, 2016; Mancini and Rossi, 2020). In line with these studies, our results confirmed that it was only by increasing the sense of inclusion that digital communication tools really succeeded in buffering refugees’ psychological distress and in increasing their wellbeing. Exactly the opposite of what happened when the digital communication increased among refugees the concern for their own health because of COVID-19. Coherently with Olagoke et al. (2020) study conducted on not migrant population, the results confirmed that the feelings of threat and fear activated by the COVID-19 pandemic mediated the relation between digital communication and refugees’ mental health. Creating a vicious circle between the search for information and the need to calm one’s fears, digital communication produced an iatrogenic effect on refugees’ psychological balance and thus on their wellbeing.

Unlike other studies (Liu, 2020; Siyue et al., 2020), our analyses did not consider the effects of an increasing risk perception on preventative behaviours. Rather, we wanted to focus on the quality of the information received through the analysed digital communication channels. As recommended by risk communication studies (Loewenstein et al., 2001; Pidgeon et al., 2003; Slovic et al., 2004; Breakwell, 2014; van Bavel et al., 2020), our findings showed that it was not the importance, the truthfulness, the usefulness and the depth of the digital information and communication that reduced the psychological burden of refugees during the COVID-19 pandemic crisis. Rather it was the ease, clarity and reassuring tone of the COVID-19-related digital communication that relieved their psychological distress and protected their wellbeing. Thus, these results suggest that in order to be useful and effective for refugees and migrant population digital communication should be able to calm fears fuelled by the catastrophic extent of the pandemic crisis, but also it should be able to be inclusive (Orcutt et al., 2020b), i.e. to overcome cultural and language barriers being within the reach of their interlocutors.

Limits and Practical Implications

The present study has some limitations. The first limit concerns the low number and the low heterogeneity of the sample, which do not allow a generalization of the results obtained. Furthermore, the data were collected through a cross-sectional study that does not admit to support the cause-and-effect relationships between the variables analysed. A further limitation is about the way in which the data were collected: the mediation of the researcher, despite having favoured the understanding of the questions, could have conditioned the answers of the participants. A new study will have to verify over time to what extent the DC tools activated by the NGO to deal with this emergency were able to promote peer relations between refugees and to stimulate their agency. Future studies should also prove the potentiality of communication through digital devices in social work, a topic that was very under-estimated before the COVID-19 lockdown in March 2020. Despite its limitations, the present study is currently the only one that has focused on refugee population experience of COVID-19 pandemic crisis, and the only one that has analysed how favouring the refugees’ access to public
communication can relieve their psychological wellbeing, first of all when digital communication is inclusive. Thus, even if digital communication cannot completely replace physical presence in social services, the data collected showed that it seems able to contribute on the improvement of the refugees’ sense of community and to relieve their psychological burden.

This study is a case study focused on the digital communication tools implemented by the NGO collaborating at the time of the first COVID-19 pandemic wave. The procedure used in this study could be applied to other associations or services that deal with the protection and inclusion of refugees. Further studies, including longitudinal ones, will therefore be able to extend the results of this study, which results may be of interest of different audiences.

The primary audience of the present study’s results will be NGO, social and health services, and professionals taken in charge refugees in western host societies. The outputs of the study will be useful to build guidelines for the implementation or amelioration of digital communication tools (social media, virtual rooms, smartphone Apps) that aimed to improve the health, educational, and proximity services dedicated to refugees. The use of digital tools to communicate with refugees and to support them in their everyday life can have important operational implications. For example, DC tools can improve the social services management: to have remote meetings and to conduct laboratories and any other type of remote activities, they can ameliorate the management of the worktime, also making it possible to contact a bigger number of people dislocated in different places. Moreover, through digital communication social workers may have the opportunity to implement new ways of relating and providing help and support to people: e.g. by promoting spaces for socialization among refugees and the local community, by organizing and realizing training courses, by overcoming language barriers through the use of videos, music, and pictures. In general, through digital communication, social workers can create personalized communication channels, able to express closeness and to encourage the participation and the expression of refugees. Finally, the use of digital tools can improve the bureaucracy and the procedures used by reception programmes to accommodate refugees in the asylum context. Digital tools can implement both the refugee’s ability to deal with bureaucracy and the administrative procedures related to their status, and also the NGOs’ and associations’ ability to manage refugees’ documents and appointments.

Secondary audience of our results will be academics, concerned with the analysis of the effects of digital communication on refugee population, i.e. researchers that identify themselves as digital migration scholars (e.g. Leurs and Smets, 2018), the present findings consisting in a new contribution to the recognized need to develop a thorough new understanding of digital migration as a specific research area.

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