CARE DELIVERY

Electronic Medical Record–Assisted Telephone Follow-Up of Breast Cancer Survivors During the COVID-19 Pandemic: A Single Institution Experience

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PURPOSE The COVID-19 outbreak rapidly became a public health emergency and led to radical changes in patient management. From the start of the pandemic, we used electronic medical record–assisted telephone follow-up (E-TFU) of cancer survivors (CS) to minimize hospital exposure. The aim of this prospective study was to assess how breast cancer survivors (bCSs) perceived E-TFU.

MATERIALS AND METHODS A 15-item survey was e-mailed to bCSs who had been managed with E-TFU. The responses were measured using Likert-like scales and were correlated with the main characteristics of the bCS using Pearson's test.

RESULTS One hundred thirty-seven of 343 bCSs (40%) completed the survey between March 9 and June 2, 2020. Their median age was 59 years. Although 80.3% of bCSs were satisfied with E-TFU, only 43.8% would like to have E-TFU in the future. A low educational level was correlated with higher COVID-19–related anxiety (P = .025). An older age (P = .002) and a low educational level (P < .0001) were correlated with the need to be accompanied to reach the hospital. A personal history of second cancer was inversely correlated with understanding medical advice (P = .015) and the expectation of feeling relief after a follow-up visit (P = .0027). Furthermore, pandemic phase II was correlated with satisfaction with E-TFU (P = .010).

CONCLUSION E-TFU was an important means of avoiding hospital contacts during the COVID-19 pandemic, and the majority of bCSs in the survey were satisfied with this procedure. Further studies are needed to investigate the implementation of telemedicine even outside an emergency situation.

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INTRODUCTION

The outbreak of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was a public health emergency before the WHO declared it to be a pandemic on March 11, 2020.[1] First China and then (by the end of February 2020) Italy experienced the rapid and uncontrolled spread of the virus and a steep increase in the number of new cases and deaths,[2] with recorded lethality being higher in Italy than in China (9% v 4.3%).[3,4] Although the severity of the illness and the risk of death seem to be associated with old age and pre-existing comorbidities such as cardiopulmonary disease, diabetes, and immunodepression, patients with cancer and cancer survivors (CS) may be additional high-risk categories.[5,6] A cohort study of 928 patients from the United States, Canada, and Spain with active or previous cancer (45% of the total population) and confirmed SARS-CoV-2 infection entered in the database of the COVID-19 and Cancer Consortium (CCC19) revealed a high 30-day all-cause mortality rate of 13%.[7]

The Italian lockdown comprised two consecutive phases. Phase I started on March 9, 2020, and consisted of absolute prohibition of leaving home except for going to work or other valid reasons (eg, buy essential goods and go to the hospital).[8] Phase II lasted from May 4 to June 1, 2020, and opened up the chance to visit relatives within the own region and do physical activity outdoor. In both the phases, almost all stores, cafes, and restaurants were closed.

Given that hospitals were considered places at risk of spreading the infection, there was a strong desire to minimize the presence of patients with cancer by introducing new telemedicine strategies for follow-up

(FU) examinations. This clearly requires robust information technology support to allow clinicians to retrieve a record of a patient's clinical history easily and rapidly. Since June 2000, our oncology unit has been using a web-based electronic medical record (EMR) to collect all the clinical data, laboratory test results, and the findings of imaging examinations and pathology reports relating to each of our patients.[9] This proved to be invaluable when we decided to replace standard FU visits with electronic medical record–assisted telephone follow-up (E-TFU) interviews for all CS at the beginning of the COVID-19 pandemic.

The aim of this prospective study was to assess how E-TFU is perceived by breast cancer survivors (bCSs), who represent the large majority of patients followed up at our unit.

MATERIALS AND METHODS

From March 9, 2020 (the start of the Italian government's phase I of the COVID-19 pandemic), we switched our in-person FU visits to E-TFU, exploiting our web-based EMR that collects the entire medical history of patients and enables us to look at the laboratory test results, imaging and pathology reports, and all medical consultations performed in our region. For the purpose of the present study, we identified all the consecutive bCSs who underwent E-TFU until June 2, 2020 (the end of phase II), with no evidence of active disease. Previous chemotherapy or biological therapy and previous or ongoing endocrine therapy were permitted.

We collected data of bCSs related to their age, sex, and educational level; their personal history of a second cancer (previous breast cancer or other tumor types) and family history of cancer; the dates of diagnosis and surgery; the molecular subtype of tumor; exposure to chemotherapy in a neoadjuvant or adjuvant setting; exposure to endocrine therapy; the duration of FU; and pre-existing comorbidities.

All bCSs providing an e-mail address received a 15-item survey covering demographic information, COVID-19–related anxiety or breast cancer–related anxiety, satisfaction with the E-TFU, and willingness to accept E-TFU in the future for nonemergency situations. The survey was prepared by E.M.P. and A.Z., and an English-translated version is given in the Data Supplement, online only. Five-point ordinal Likert-like scales were used to rate the extent of agreement or disagreement with the multiple statements.[10] A score from 1 to 5, corresponding to the five possible answer options, describes an increasing level of agreement. Older or less tech-savvy patients were encouraged to ask for support of other family members who, if necessary, have been directly contacted.

The respondents gave their informed consent to completing the survey, the answers to which were analyzed by V.M. and C.M. and matched with the clinical data retrieved from the web-based EMR.

The primary aim of this prospective study was to assess the acceptance of the E-TFU. The secondary aims were to assess the respondents' perception of their understanding of the medical advice received during the E-TFU, their satisfaction with the possibility of asking for clarifications, and their reaction to the possible future use of the system in a nonemergency setting.

The continuous variables are expressed as median values and ranges and the categorical variables as absolute numbers and percentages. The differences in the baseline characteristics of the respondents and nonrespondents to the survey were analyzed using Fisher's exact test and the Mann-Whitney U test. The distribution of the responses evaluated with Likert-like scales and possible correlations with the bCS demographic and clinical characteristics were compared at uni- and multivariate analyses using Pearson's two-sided test and chi-square test.[11] The statistical analyses were performed using SPSS, version 25.0 (IBM Corporation, Chicago, IL).

RESULTS

Three hundred forty-three bCSs underwent E-TFU between March 9 and June 2, 2020, among whom 78 patients declared to not have an e-mail address for the survey. The survey was completed by 137 (51.6% of surveyed). Table 1 **T1** shows the characteristics of the respondents and nonrespondents. The median age of the respondents was 59 years (range, 34-86 years). A majority of respondents (66%) completed the survey during phase I of the COVID-19 pandemic. The median duration of FU from the date of diagnosis was 46 months (range, 2-134 months). About two thirds of the respondents had a high-school diploma or university degree. Ninety-six (70%) had a positive family history of cancer, and 27 (20%) a personal history of a second cancer: 20 had a previous breast cancer and the other seven had different types of cancers (eg, colon or renal cancer). Forty-three percent had pre-existing comorbidities. Sixty-five (47%) received chemotherapy in a neoadjuvant or adjuvant setting. The majority (83%) had received adjuvant endocrine therapy, which was ongoing in 64%. The median time from the end of chemotherapy and the PFU was 42 months (range, 5-208 months).

Most of the bCSs (80%) were capable of reaching the hospital autonomously for standard FU visits. About 60% lived in the suburbs, and 40% in the city center. The median time from the last standard FU visit to the E-TFU was 6 months (range, 1-42 months).

Nearly 64% of the respondents suffered from COVID-19–related anxiety about their health, the majority of whom (83%) were looking forward to the FU visit to feel relief (Data Supplement). Before the E-TFU, 68% thought that it would have been easy to undergo E-TFU instead of standard FU. Almost all the respondents (97.1%) believed that they had understood the medical advice received during the E-TFU, and 93.4% agreed that the E-TFU doctors had understood their needs, 89.8% were satisfied with the duration of the

Q:5 **TABLE 1.** Baseline Clinical Characteristics of the Respondents and Nonrespondents

Characteristic	Respondents n = 137	Nonrespondents n = 206	P
Sex			.454
Female	136 (99.2%)	204 (99.0%)	
Male	1 (0.7%)	2 (1.0%)	
Median age (y)	59 (34-86)	63 (34-89)	.028*
Family history of cancer	96 (70.1%)	122 (58.9%)	.028*
Personal history of a second cancer	27 (19.7%)	19 (9.2)	.009*
Residence			.577
City center	55 (40.1%)	90 (43.5%)	
Suburbs	82 (59.9%)	116 (56%)	
Stage			.380
0	2 (1.5%)	2 (1%)	
I	71 (51.8%)	102 (49.3%)	
II	45 (32.8%)	82 (39.6%)	
III	14 (10.2%)	20 (9.7%)	
IV	2 (1.5%)	0	
Molecular subtype			.623
Luminal A	74 (54%)	124 (59.6%)	
Luminal B/HER2−	27 (19.7%)	38 (18.3%)	
Luminal B/HER2+	15 (10.9%)	21 (10.1%)	
HER2+	6 (4.4%)	9 (4.3%)	
Triple negative	13 (9.5%)	12 (5.8%)	
Previous surgery	137 (100%)	206 (100%)	—
Previous chemotherapy	65 (47.4%)	59 (28.4%)	.000*
Previous endocrine therapy	113 (82.5%)	174 (83.7%)	.656
Ongoing endocrine therapy	88 (64.2%)	131 (63.3%)	1.000
Pandemic phase			.010*
I	91 (66.5%)	108 (52.5%)	
II	46 (33.5%)	98 (47.6%)	

*Statistically significant.

phone call, and 90.5% agreed that they had had an opportunity to ask for clarifications. Ninety-two percent agreed with the medical decision to replace the standard FU visit with E-TFU in the absence of a real sign of emergency to minimize hospital exposure, but only 43.8% said that they would like to have a future E-TFU in a nonemergency situation. The latter subgroup of patients had a median age of 62 years; among them 10% had a previous cancer, the majority (68.3%) had an early-stage breast cancer (0 or I stage), 40% had received chemotherapy, and 80% had received or was receiving endocrine therapy. Overall, 80.3% of the respondents were satisfied when comparing E-TFU with a standard FU visit.

T2 Table 2 and the Data Supplement show the correlations between the patients' clinical characteristics and their answers to the survey.

At the univariate analysis, a low educational level was correlated with higher COVID-19–related anxiety ($P = .025$). An older age ($P = .002$) and a low educational level ($P < .0001$) were correlated with the need to be accompanied to reach the hospital. A personal history of second cancer was inversely correlated with understanding medical advice ($P = .015$) and the expectation of feeling relief after a FU visit ($P = .0027$). Furthermore, pandemic phase II was correlated with satisfaction with E-TFU ($P = .010$). No clinical characteristics were correlated with the willing to undergo E-TFU in the future.

DISCUSSION

Italy was the first European country to be hit by the COVID-19 outbreak, which, as of June 1, 2020, had 233,607 confirmed cases and 32,235 deaths.[12,13] The unexpected Q:2

and rapid spread of SARS-CoV-2 left many oncologists facing unprecedented challenges.

Liang et al[6] first showed that patients with cancer were at increased risk of SARS-CoV-2 infection and the severe consequences that often require admission to an intensive care unit. This led Italian Association of Medical Oncology (AIOM) and the Boards of Academic Oncologists (COMU) and Oncology Unit Directors (CIPOMO) to make specific recommendations concerning patients with cancer receiving active treatments during the outbreak, CS undergoing FU, and the hospital visits of patients and their caregivers.[14] Oncologists were invited to consider delaying active treatment administration in responders or administering different schedules to minimize hospital visits, and the outpatients scheduled for treatment who had respiratory symptoms or fever were to be triaged by nurses before hospital admission to prevent contact with other patients. The admission of family members or patients' caregivers was to be prohibited, except in the case of patients who seriously needed assistance.

A number of hospitals adopted E-TFU or the online exchange of clinical documentation instead of standard consultancy to reassure CS by avoiding hospital exposure except in the case of an emergency or laboratory and/or imaging signs of recurrent cancer.[15] In this context, it is worth noting that a recent Cochrane review has shown the effectiveness of telephone symptom management and highlighted the need for further research.[16]

Accordingly, during the pandemic, we switched all our FU visits to telemedicine exploiting the availability of a web-based EMR, which we used since June 2000 to manage our patients with cancer and which was previously described.[9] Clearly, the availability of a robust EMR is crucial in supporting telemedicine activities allowing clinicians full retrieval of patients' clinical data.

All our CS were managed by means of E-TFU during the pandemic, but this study only considers bCSs because they represent the majority of CS undergoing FU at our unit. This allows us to analyze a homogeneous population but clearly limits the applicability of our results to different cancer populations, since the cancer type diagnosis could affect preference for surveillance modalities.[17]

Cancer-related fatigue and cognitive disorders are distressing and highly prevalent long-term side effects among bCSs, especially those who have received chemotherapy,[18,19] and so it was important to assess whether COVID-19 was a further cause of anxiety and whether E-TFU was a sufficiently good means of offering them reassurance and relief from the distress caused by the risk of infection because of hospital exposure and the risk of cancer recurrence.

Most of the respondents to our survey agreed with the use of E-TFU instead of a standard FU visit, but 48.9% disagreed with the future use of E-TFU in nonemergency situations.

The majority believed that they had understood the doctors' advice received during E-TFU and were satisfied with the time and the opportunity to ask for clarifications. These findings indicate that E-TFU was a useful strategy during the COVID-19 outbreak and that it will probably be well-accepted by bCSs in the event of further waves of the pandemic. Although the majority of patients would prefer standard consultations in nonemergency situations, 43.8% agreed that they would be willing to undergo E-TFU in the future. The difference between these two aspects might suggest that many patients only need to get used to this novel visit modality.

It is clear that the acceptance and compliance about an innovative approach, which switches the traditional in-person visits into a telephone-based contact, might be not so immediate and a non-negligible number of patients consider this change unacceptable outside of an emergency scenario. Thus, in our opinion, the rate of patients Q:3 indicating an interest in maintaining such an approach in the future is not so trivial, and conversely, it could be surprising to find significantly higher rates after only one first experience.

Anyway, patients who would accept to be visited remotely in a nonemergency situation represent a significant subgroup and deserve further evaluations.

It is difficult to explain the relatively low level of overall satisfaction with E-TFU. Although all the dimensions related to satisfaction indicated a much higher approval rate (89.8% approved of the duration of E-TFU, 90.5% were satisfied with the opportunity to ask for clarifications, 97% understood the medical advice received, and 93.4% felt that the doctors understood their needs), only 80.3% declared that they were satisfied in general. More research is required to investigate whether there are other relevant dimensions not addressed by the survey or whether there are some needs that are not met by the present form of E-TFU.

Interestingly, E-TFU has not only prevented patient access to the hospital during the pandemic but also allowed physicians with risky conditions working from home.

Almost all respondents affirmed that they had understood medical information during the E-TFU. Several studies report that the patient self-assessment of comprehension during a medical visit differs from a more objective assessment.[20] Obviously, this is a limitation intrinsic to the verbal communication, not confined to telephone-based visits. However, the absence of the nonverbal communication in E-TFU could increase the gap between medical communication and patient comprehension, which could be filled with video visits.[21]

This study has a number of limitations related to the heterogeneity of the patients' characteristics, the duration of FU, and the differences in the exposure to chemotherapy or endocrine therapy. The two groups of respondents and

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TABLE 2. Correlation Between Clinical and Biological Breast Cancer Survivor (bCS) Characteristics At the Univariate Analysis

Question	Age	Educational Level	Pandemic Phase	Residence	Family History of Cancer	Personal History of Second Cancer	Time from Diagnosis	Stage	Previous Chemotherapy	Time from the End of Chemotherapy or Anti-HER2 Therapy	Previous Endocrine Therapy	Ongoing Endocrine Therapy	Time from Last Physical Follow-Up
Do you usually need to be accompanied when you attend the clinic?	**0.002 (0.256)**	**< 0.001 (− 0.416)**	0.628 (− 0.042)	0.123 (0.132)	0.911 (− 0.010)	0.178 (0.116)	0.646 (− 0.040)	0.660 (0.038)	0.112 (− 0.136)	0.666 (− 0.055)	0.684 (0.042)	0.874 (0.053)	0.518 (− 0.017)
Are you anxious about your health in this emergency situation because of COV-SARS-2?	0.447 (0.065)	**0.025 (− 0.191)**	0.659 (− 0.038)	0.750 (− 0.027)	0.479 (− 0.061)	0.208 (− 0.108)	0.832 (− 0.018)	0.663 (− 0.008)	0.306 (− 0.088)	0.770 (0.037)	0.158 (− 0.121)	0.465 (− 0.063)	0.931 (− 0.007)
Do you look forward to the periodic follow-up visits to feel relief?	0.641 (− 0.016)	0.295 (− 0.128)	0.808 (− 0.007)	0.294 (0.104)	0.855 (0.020)	**0.027 (− 0.189)**	0.276 (− 0.094)	0.476 (− 0.084)	0.649 (0.039)	0.796 (− 0.033)	0.834 (− 0.014)	0.275 (0.052)	0.103 (− 0.070)
Before the interview, did you think it would be easy to have a phone follow-up consultation?	0.658 (− 0.038)	0.056 (0.158)	0.877 (0.013)	0.355 (− 0.088)	0.151 (− 0.102)	0.147 (− 0.115)	0.946 (− 0.006)	0.772 (− 0.060)	0.369 (− 0.083)	0.286 (0.135)	0.310 (0.087)	0.875 (0.014)	0.682 (0.030)
During the follow-up phone call, could you clearly understand the doctor's advice or recommendation?	0.063 (− 0.159)	0.055 (0.164)	0.115 (0.135)	0.526 (− 0.055)	0.363 (− 0.078)	**0.015 (− 0.207)**	0.569 (0.049)	0.979 (0.002)	0.924 (0.008)	0.728 (0.044)	0.266 (0.096)	0.333 (0.083)	0.208 (0.108)
During the follow-up phone call, did you feel that the doctor understood your needs?	0.463 (− 0.070)	0.545 (0.052)	0.062 (0.160)	0.309 (− 0.088)	0.572 (− 0.049)	0.424 (− 0.069)	0.745 (− 0.028)	0.798 (− 0.022)	0.263 (− 0.096)	0.946 (− 0.009)	0.222 (0.105)	0.477 (0.061)	0.611 (− 0.044)
Did the follow-up phone call allow you enough time to clarify everything useful to your situation at the moment?	0.305 (− 0.088)	0.315 (0.087)	0.063 (0.159)	0.094 (− 0.143)	0.723 (0.031)	0.668 (− 0.037)	0.699 (0.033)	0.525 (− 0.055)	0.581 (− 0.048)	0.510 (0.084)	0.413 (0.071)	0.555 (0.051)	0.390 (0.074)
During the phone call, did you have an opportunity to ask questions and ask for clarifications related to your condition?	0.173 (− 0.117)	0.280 (0.093)	0.141 (0.127)	0.155 (− 0.122)	0.546 (0.052)	0.106 (− 0.139)	0.173 (− 0.117)	0.324 (− 0.086)	0.748 (0.028)	0.531 (− 0.080)	0.133 (0.129)	0.107 (0.138)	0.721 (− 0.031)

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TABLE 2. Correlation Between Clinical and Biological Breast Cancer Survivor (bCS) Characteristics At the Univariate Analysis (continued)

Question	Age	Educational Level	Pandemic Phase	Residence	Family History of Cancer	Personal History of Second Cancer	Time from Diagnosis	Stage	Previous Chemotherapy	Time from the End of Chemotherapy or Anti-HER2 Therapy	Previous Endocrine Therapy	Ongoing Endocrine Therapy	Time from Last Physical Follow-Up
In the absence of a clear clinical need, were you pleased to be able to avoid going to the hospital for a standard follow-up visit?	0.759 (0.026)	0.374 (− 0.077)	0.956 (− 0.005)	0.985 (− 0.002)	0.170 (− 0.118)	0.201 (− 0.110)	0.508 (− 0.057)	0.370 (− 0.078)	0.517 (− 0.056)	0.811 (− 0.030)	0.572 (− 0.049)	0.976 (0.003)	0.305 (0.088)
In the absence of an urgent clinical need, would you like phone follow-ups in the future instead of going to the hospital?	0.477 (0.061)	0.271 (− 0.095)	0.159 (0.121)	0.827 (− 0.019)	0.639 (− 0.040)	0.0112 (− 0.136)	0.852 (− 0.016)	0.059 (− 0.164)	0.082 (− 0.149)	0.530 (0.080)	0.795 (0.022)	0.479 (− 0.061)	0.304 (0.088)
Overall, in comparison with a standard follow-up visit, how satisfied were you with the phone call?	0.968 (0.003)	0.567 (− 0.049)	**0.010 (0.219)**	0.818 (− 0.020)	0.311 (− 0.087)	0.133 (− 0.129)	0.856 (0.016)	0.840 (− 0.018)	0.111 (− 0.137)	0.280 (− 0.137)	0.095 (0.143)	0.284 (0.092)	0.525 (0.055)

NOTE. *P* values are reported. *P* values < 0.05 were considered statistically significant. Correlation coefficients are reported in brackets. Significant values are bold.

nonrespondents had a similar number of patients by stage and endocrine treatment, but the respondents were characterized by greater exposure to chemotherapy (47.4% *v* 28.4%, *P* < .001) and a larger proportion of subjects with a positive family and personal history of cancer (70% *v* 58%, *P* = .028 and 19.7% *v* 9.2%, *P* = .009, respectively).

Another critical issue was the poor response rate (51.6%), which was partially because of age and the fact that not all our CS have an e-mail address. Although failure to respond to a satisfaction survey might itself represent a signal of poor satisfaction with the offered type of FU, we cannot exclude that, by contrast, the most unsatisfied patients answered our survey. In fact, in presenting the survey to the patients, we emphasized the importance of giving their own opinion through the completion of the survey, even more in the case of concerns regarding the E-TFU.

Moreover, we decided not to reach out the nonrespondents by a new phone contact to avoid possible evaluation biases.

Furthermore, we only considered bCSs, and further studies are needed before generalizing our findings to all CS. Several studies reported that telematic visits could replace in-person visits in different chronic pathologies, demonstrating a similar efficacy.[22-25] Few studies investigated the use of telemedicine for cancer surveillance. A previous study reported a good acceptance of telephone FU by patients with cured breast cancer without physical or psychological disadvantage compared with hospital FU.[26] A recent survey on patients with cancer in surveillance after curative surgery showed that roughly 50% patients preferred to receive news about normal results electronically (through an electronic tool or by e-mail), whereas the majority of them preferred a direct conversation by in-office appointments or phone calls in the case of abnormal results.[17]

Another important limitation of our study is that psychometric properties of the scales used in the survey were not previously validated. Finally, since the analysis included a small number of patients, our results and the interpretation of uni- and multivariable analyses should be cautiously considered.

Nevertheless, to the best of our knowledge, this is the first report of the use of the EMR-based E-TFU of bCSs during the COVID-19 pandemic, and the findings suggest a need for further investigations into the reasons behind the preference for standard face-to-face FU visits to identify strategies that would increase the willingness of bCSs to undergo E-TFU. For example, studies of different clinical conditions have shown that patients prefer FU video calls over phone calls,[27,28] which suggests that a small investment in the integration of existing technologies could provide significant benefits. A review of studies of patients with chronic diseases (who have much in common with bCSs) has found that video consultations can be considered an appropriate means of confronting the emergency because of COVID-19.[29]

Moreover, the idea of emergency requires further investigation to evaluate whether it is only strictly applicable to life-threatening situations such as a pandemic or could also apply to less serious events (eg, avoiding the hospital during the influenza season) or personal limitations such as the impossibility of attending a hospital appointment because of a broken leg or a malfunctioning car.

In conclusion, E-TFU proved to be an important means of avoiding hospital contacts during the COVID-19 pandemic, and the majority of our responding bCSs were satisfied with the procedure. However, the number of bCSs willing to have E-TFU in nonemergency situations suggests that routine E-TFU needs further investigation, at least in a subset of CS. Prospective randomized trials are warranted to assess the clinical reliability of E-TFU in comparison with standard FU visit before implementing telemedicine in everyday clinical practice. Furthermore, we only considered bCSs, and further studies are needed before our findings can be generalized to all CS.

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AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Electronic Medical Record–Assisted Telephone Follow-Up of Breast Cancer Survivors During the COVID-19 Pandemic: A Single Institution Experience

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Open Payments is a public database containing information reported by companies about payments made to US-licensed physicians (Open Payments).

Antonella Ferro
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Consulting or Advisory Role: Astellas Medivation, Janssen
Speakers' Bureau: Astellas Pharma

No other potential conflicts of interest were reported.

Data Supplement

Web-based electronic medical record-assisted phone follow-up during the COVID-19 pandemic: a survey.

Dear Sir/Madam,

As you know, the coronavirus epidemic forced us to use the phone to carry out our periodic follow-up evaluations for the first time.

It is important for us to know what you think of this experience, and whether you found it positive and satisfactory in terms of the various aspects covered by your interview with the doctor.
For this reason, we are sending you a short survey in order to evaluate your agreement with this method of contact.
None of the questions relate to sensitive information. Your answers will be anonymised and then analysed in aggregate form in such a way as to make it impossible to trace them back to you.
If you are willing to respond to the survey, please click on the link at the bottom of this e-mail.
In the case of any difficulty, do not hesitate to contact us at the following e-mail addresses: valeria.merz@apss.tn.it or carlo.messina@apss.tn.it.
Thank you once again for your contribution.

The doctors of the Oncology Unit, Santa Chiara Hospital, Trento, Italy.

Section 1

Thank you very much for agreeing to participate in this survey. Completing the survey only takes a few minutes, but it will allow us to evaluate the phone follow-up visit. The data will only be used for research purposes, and will be processed in aggregate form in order to guarantee the privacy of the respondents.

- Date of birth (dd-mm-yyyy):

- Sex
  ☐ Male

☐Female

- Education
  ☐ Primary school
  ☐ Middle school
  ☐ High school
  ☐ Bachelor's degree
  ☐ Master's degree
  ☐ Other educational degrees

- Do you usually need to be accompanied when you attend the clinic?
  ☐ No
  ☐ Yes, by a family member that lives in your household
  ☐ Yes, by a caregiver who does not live in your household

Section 2

Evaluation of phone follow- up visit

Please answer the short multiple-choice questions below by tick only one box for each question.

Please indicate the extent to which you agree / disagree with the following statements.

1. I am very anxious about my health in this emergency situation due to COV-SARS-2.
☐I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

2. I look forward to the periodic follow-up visits to feel relief.

☐ I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

3. Before the interview, I thought it would be easy to have a phone follow-up consultation.

☐ I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

4. During the follow-up phone call, I could clearly understand the doctor's advice/recommendations.

☐ I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

5. During the follow-up phone call, I felt that the doctor understood my needs.

☐ I strongly agree

☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

6. The follow-up phone call allowed me enough time to clarify everything useful to my situation at the moment.

☐I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

7. During the phone call, I had an opportunity to ask questions and ask for clarifications related to my condition.

☐I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

8. In the absence of a clear clinical need, I was pleased to be able to avoid going to the hospital for a standard follow-up visit.

☐ I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

8. In the absence of an urgent clinical need, I would like phone follow-ups in the future instead of going to the hospital.

☐ I strongly agree
☐ I agree
☐ I strongly disagree
☐ I disagree
☐ I neither agree nor disagree

9. Overall, in comparison with a standard follow-up visit, how satisfied were with the phone call?

☐ Very satisfied
☐ Satisfied
☐ Very disappointed
☐ Disappointed
☐ Neither satisfied nor disappointed

Figure S1. Distribution of responses.

Do you usually need to be accompanied when you attend the clinic?
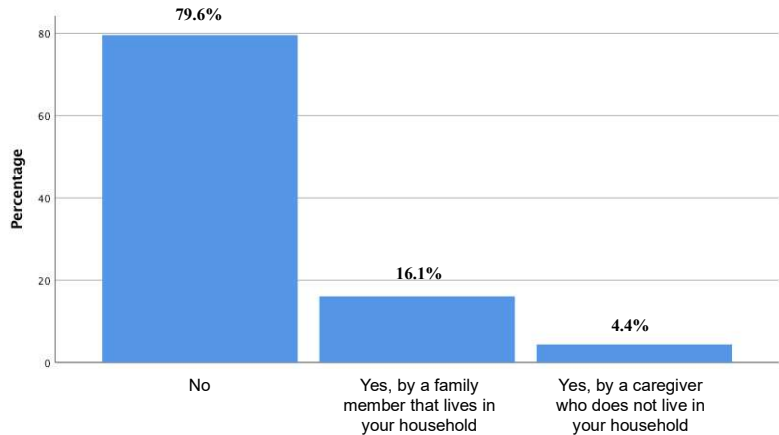
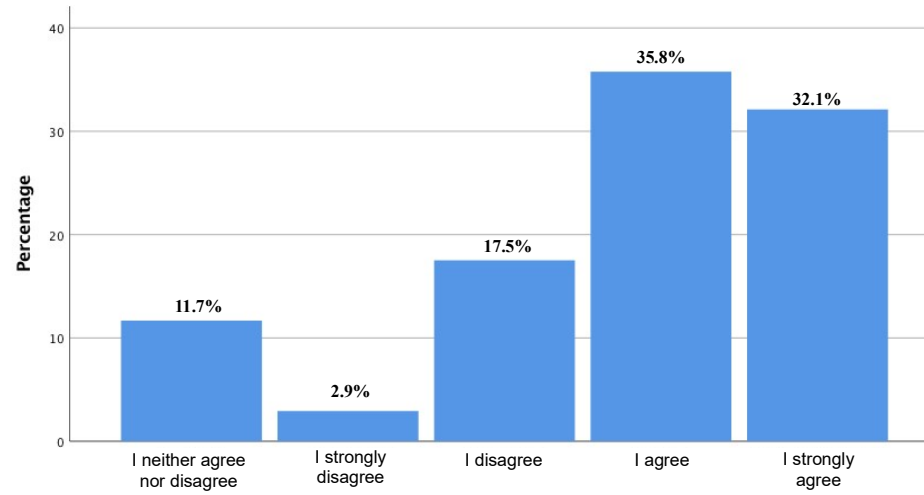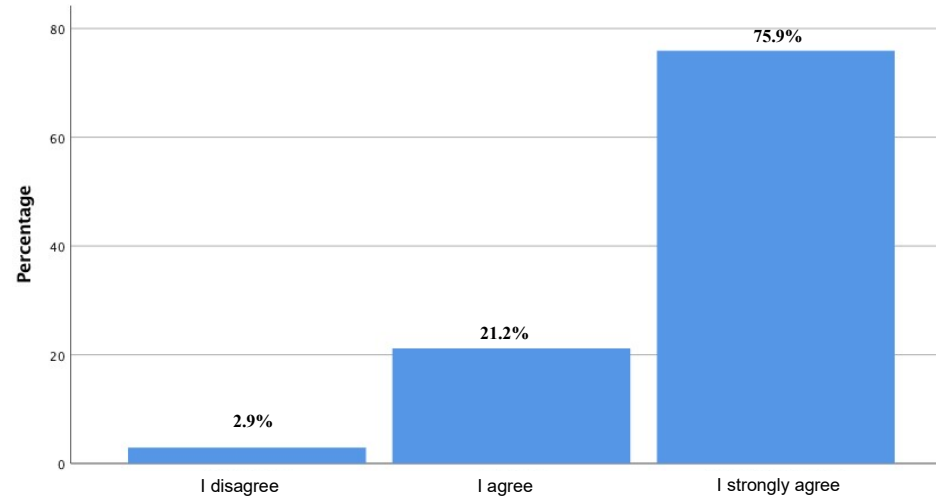**I am very anxious about my health in this emergency situation due to COV-SARS-2.**
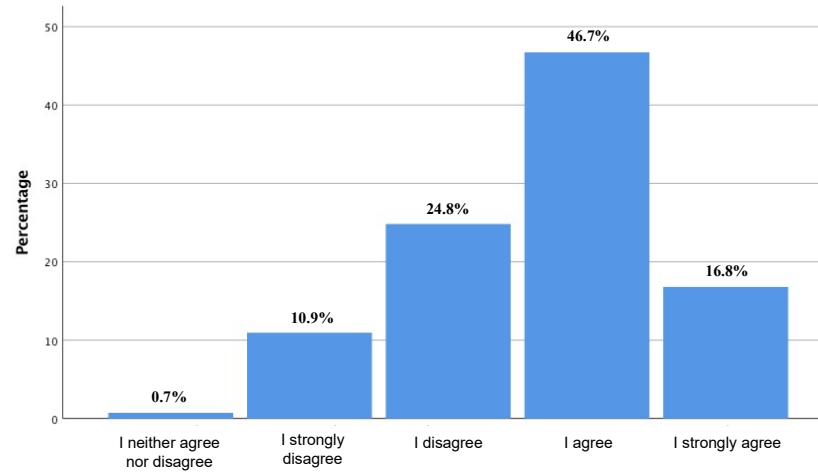
I look forward to the periodic follow-up visits to feel relief.
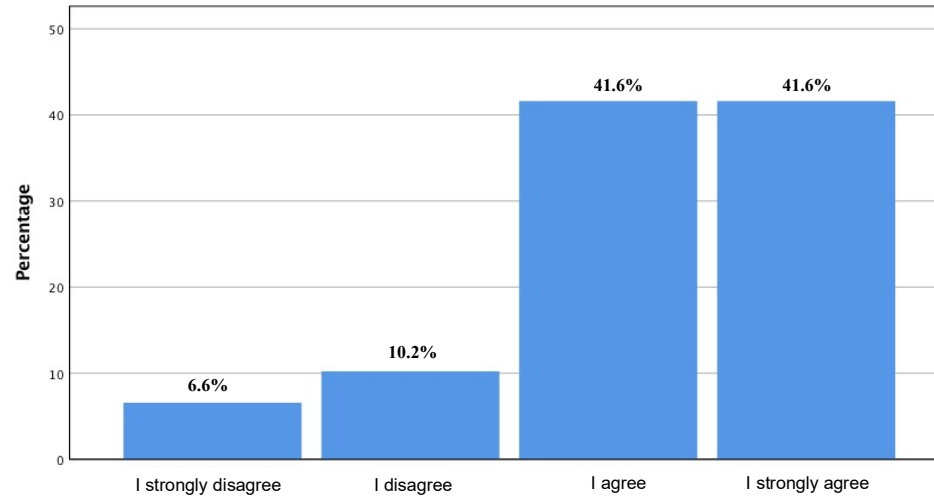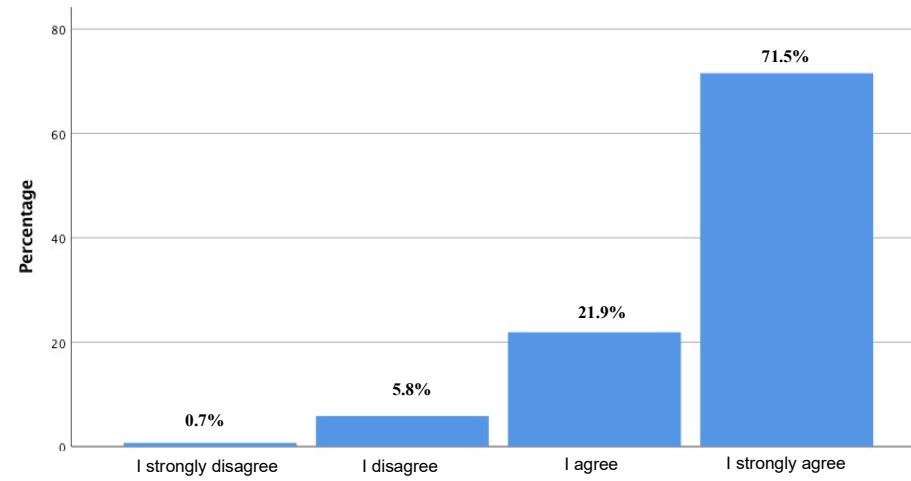
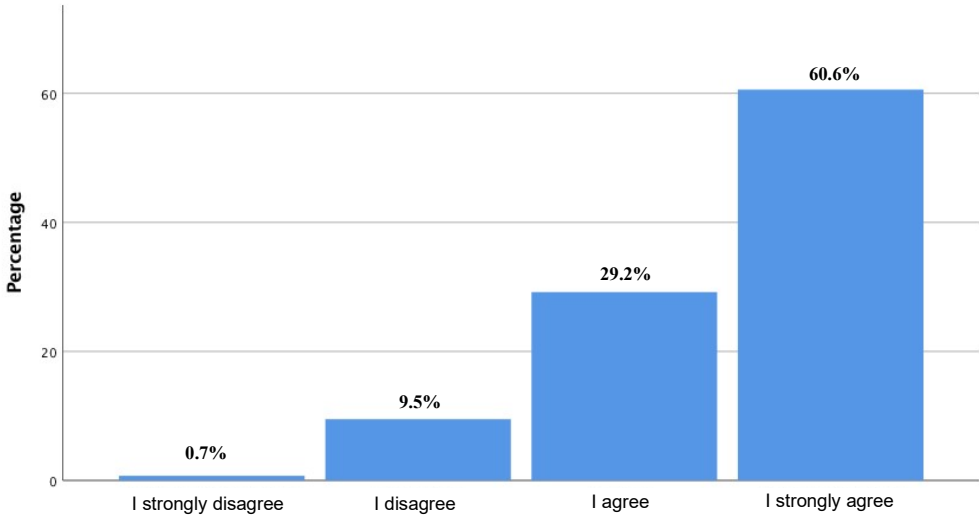**Before the interview, I thought it would be easy to have a phone follow-up consultation.**

During the follow-up phone call, I could clearly understand the doctor's advice/recommendations.
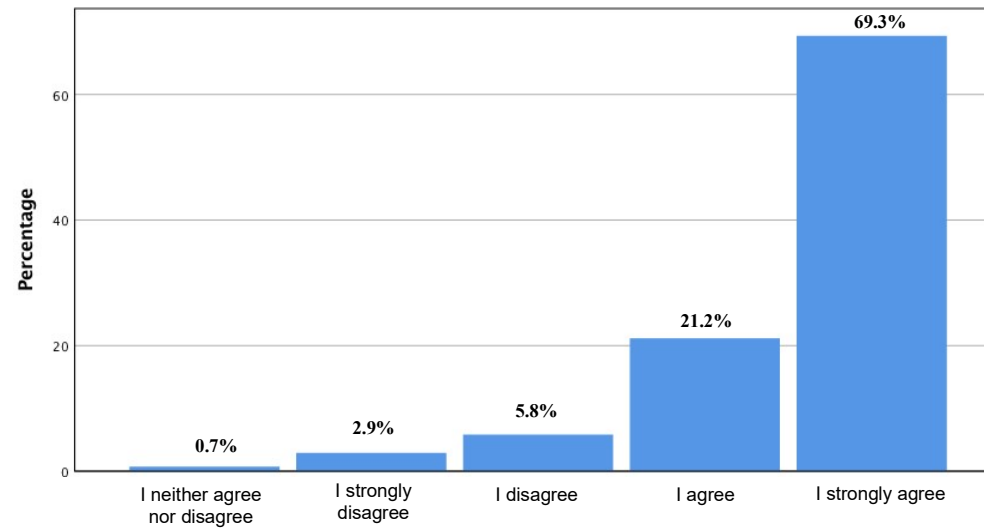
**During the follow-up phone call, I felt that the doctor understood my needs.**

The follow-up phone call allowed me enough time to clarify everything useful to my situation at the moment.
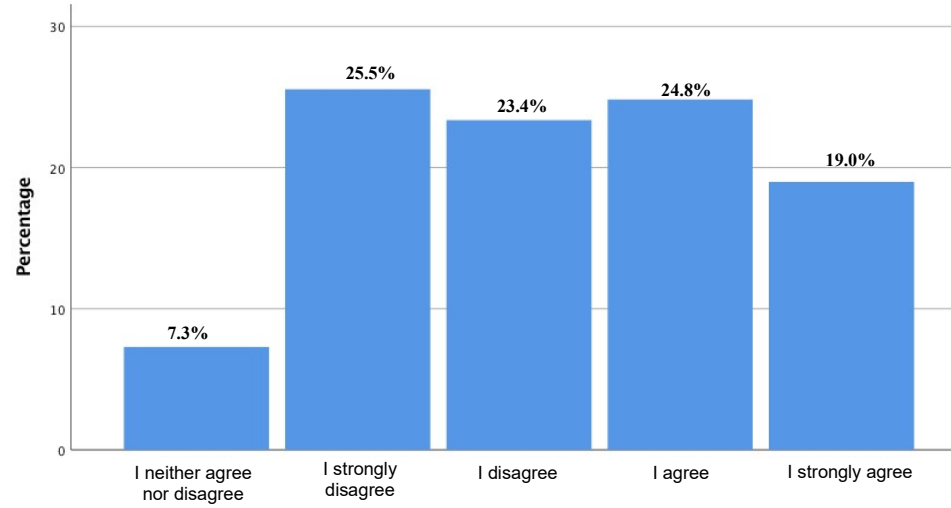
During the phone call, I had an opportunity to ask questions and ask for clarifications related to my condition.

In the absence of a clear clinical need, I was pleased to be able to avoid going to the hospital for a standard follow-up visit.
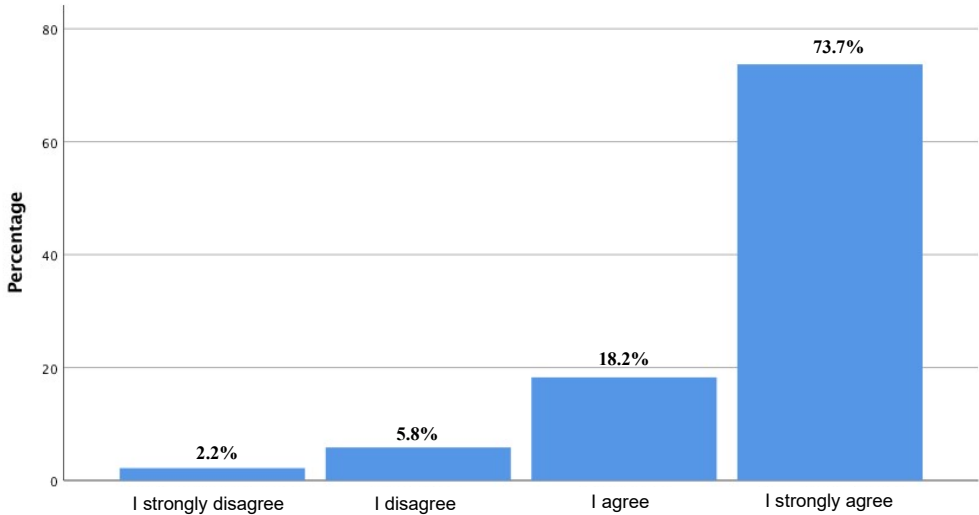
In the absence of an urgent clinical need, I would like phone follow-ups in the future instead of going to the hospital.

Overall, in comparison with a standard follow-up visit, how satisfied were with the phone call?
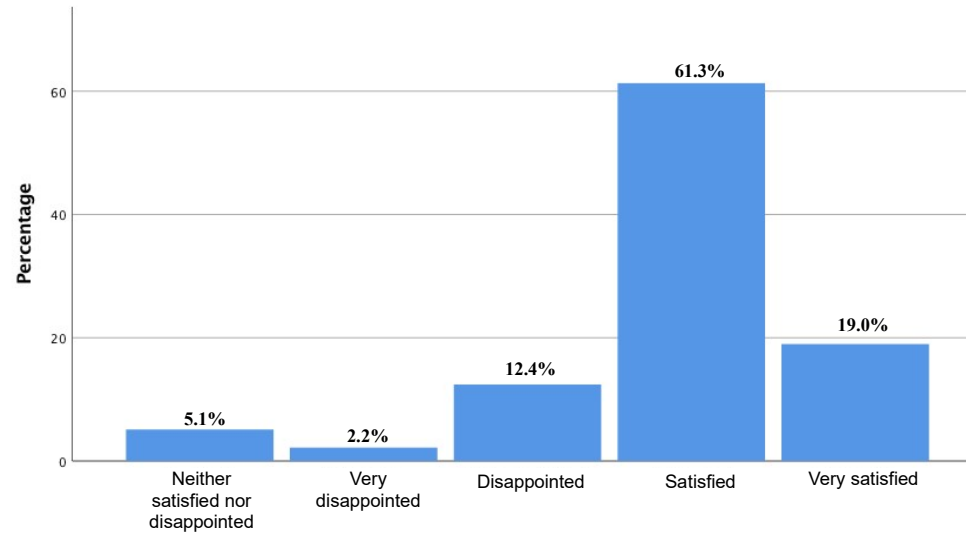
Table S1. Multivariate analysis of clinical and biological bCS characteristics and survey answers. *P* values of <0.05 were considered statistically significant. Significant values are bold. Chi square test has been used.

	Age	Educational level	Pandemic phase	Residence	Family history of cancer	Personal history of second cancer	Time from diagnosis	Stage	Previous chemotherapy	Time from end of chemotherapy or anti-Her2 therapy	Previous endocrine therapy	Ongoing endocrine therapy	Time from last physical follow-up
Do you usually need to be accompanied when you attend the clinic?	**0.030**	**<0.001**	0.789	0.299	0.866	0.101	0.821	0.980	0.244	1.000	0.867	0.203	**0.039**
Are you anxious about your health in this emergency situation due to COV-SARS-2?	0.845	**0.002**	0.579	0.746	0.865	0.608	0.007	0.851	0.759	0.117	0.661	0.540	0.934
Do you look forward to the periodic follow-up visits to feel relief?	0.684	0.201	0.670	0.621	0.312	0.068	0.929	0.550	0.839	0.310	0.292	**0.048**	0.442
Before the interview, do you thought it would be easy to have a phone follow-up consultation?	0.391	0.146	0.513	0.862	0.578	0.250	0.940	0.943	0.911	0.264	0.314	0.541	0.951
During the follow-up phone call, could you clearly understand the doctor's advice/recommendation?	0.735	**0.042**	0.222	0.777	0.778	0.052	0.169	**0.001**	0.968	0.086	0.621	0.506	0.779
During the follow-up phone call, did you feel that the doctor understood your needs?	0.242	0.651	0.028	0.280	0.337	0.581	0.978	0.897	0.568	**0.048**	0.410	0.682	0.940
Did the follow-up phone call allow you enough time to clarify	0.948	0.496	0.274	0.385	0.556	0.502	0.979	0.348	0.562	0.090	**0.027**	0.455	0.995

everything useful to my situation at the moment?													
During the phone call, did you have an opportunity to ask questions and ask for clarifications related to your condition?	0.966	0.536	0.583	0.338	0.895	0.143	0.668	0.839	0.289	**0.037**	**0.018**	0.230	0.959
In the absence of a clear clinical need, were you pleased to be able to avoid going to the hospital for a standard follow-up visit?	0.987	0.081	0.858	0.253	0.585	0.204	0.657	0.835	0.685	**0.048**	0.661	0.999	0.605
In the absence of an urgent clinical need, would you like phone follow-ups in the future instead of going to the hospital?	0.797	0.189	0.706	0.219	0.664	0.050	0.322	0.156	0.303	0.184	0.481	0.063	0.554
Overall, in comparison with a standard follow-up visit, how satisfied were you with the phone call?	0.423	0.589	**0.003**	0.881	0.463	0.541	0.082	**0.036**	0.086	0.102	0.067	0.147	0.884