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CORRESPONDENCE

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Use of the OpinionFamily program to improve satisfaction among families of intensive care unit patients

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To the editor

Meeting the needs of families of intensive care unit (ICU) patients has emerged as a major target to reduce the risk of post-traumatic stress disorder [1, 2]. The OpinionFamily program was developed by a 12-member working group including intensivists, nurses, and a sociologist, in partnership with "ChooseMyCompany.com", a company specializing in satisfaction surveys, to assess family satisfaction anonymously over time, and to provide regular feedback reports to caregivers to facilitate prompt implementation of appropriate improvement interventions. The program combines (i) 24/7 availability of a Critical Care OpinionFamily Survey (CCOFS) on a touch screen in the ICU waiting room for confidential completion by patients' relatives (Fig. 1A; Additional file 1: Methods S1); (ii) a feedback report sent to each center every 3 months (baseline, periods 1, 2, and 3); and (iii) implementation of report-based interventions at each center (Additional file 1: Methods S2). The CCOFS included six dimensions (Proximity to the patient, Comfort, Availability of caregivers, Trust, Support, and Information; Additional file 1: Table S1) according to validated measures of family satisfaction [1, 3, 4].

In this prospective study, we evaluated the effectiveness of the OpinionFamily program on family satisfaction between December 2018 and December 2019 in four French university hospital ICUs (characteristics in Additional file 1: Table S2). Our framework for identifying and auditing corrective actions was based on Plan-Do-Study-Act cycles. The primary outcome was the proportion of satisfied family members at each period; secondary outcomes were the proportion of satisfied family members for each dimension at each period. The Comité de Protection des Personnes Ile-de-France5 (N°e-5-16) approved the protocol.

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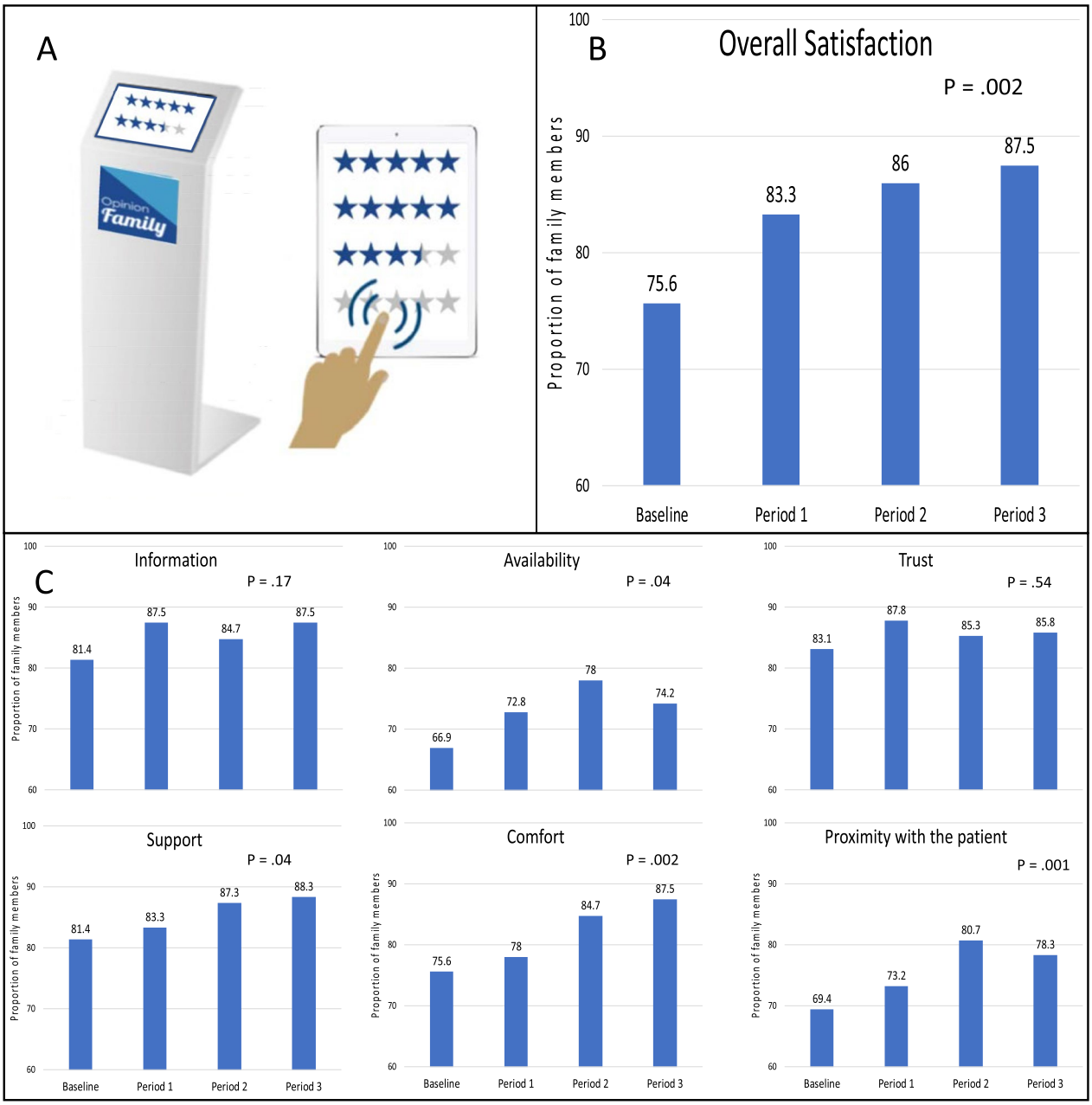

Fig. 1 Family Satisfaction Across the Study Periods as assessed using the Critical Care OpinionFamily Survey. **A** The OpinionFamily secure touch screen available 24/7 in the waiting room of the intensive care unit, **B** Overall family satisfaction; **C**, Family satisfaction for each of the six satisfaction-related dimensions. *P* values shown on the figure are for the evolution over time of the proportion of satisfied family members (baseline, $n=242$; period 1, $n=287$; Period 2, $n=150$; Period 3, $n=120$) using Mantel–Haenszel's chi-square test for trend

Changes in family satisfaction over time were analyzed using Mantel–Haenszel's chi-square test for trend, and a mixed generalized linear regression model with a binomial distribution and a logit link function, taking the period as fixed effect and the center as random effect. Odds ratios (OR) with 95% confidence intervals (CI) were calculated for each period, with the baseline period as reference. As a sensitivity analysis, analyses were repeated using only the surveys completed by a family member for the first time.

During the study, 4826 patients were admitted to the ICU and 736 family members (66.3% reference person, 54.3% women) completed 799 questionnaires. Characteristics of the patients and family members were similar

across the 4 periods (Additional file 1: Table S3). Among the 23 interventions introduced (mean of 6 per center), 7 (30%), 7 (30%), 5 (22%), 2 (9%), and 2 (9%) were related to the Information, Availability, Comfort, Trust, and Proximity dimensions, respectively (Additional file 1: Table S4). Additional file 1: Fig. S1 shows the distribution of replies for each CCOFS item. The overall proportion of satisfied family members increased significantly over time, from 75.6% at baseline to 87.5% for period 3 ($p=0.002$, Fig. 1B); the increase concerned four of the dimensions: Comfort ($p=0.002$), Proximity ($p=0.01$), Availability ($p=0.04$), and Support ($p=0.04$) (Fig. 1C). The odds of relative satisfaction increased from period 1 to period 3, with baseline as reference [OR 1.61 (95% CI 1.04–2.47), 1.89 (1.09–3.29), and 2.23 (1.20–4.15) for periods 1, 2, and 3, respectively]. The improvement in overall satisfaction was consistent when only family members responding to the CCOFS for the first time were considered ($n=736$) (Additional file 1: Table S5).

One-third of the interventions introduced involved improving information provision. Proactive communication improves families' understanding of treatment, which is associated with a decreased prevalence of stress symptoms [5]. Consistent with guidelines that call for the ICU environment to be designed to improve the family experience [1], comfort-related interventions, such as improved waiting rooms or signage to orient family members within units, were associated with greater family satisfaction. The CCOFS also identified the need to improve caregiver availability, as previously suggested [3, 4]. Here again, simple and inexpensive measures, such as systematic badge wearing by caregivers, lists of doctors in waiting rooms, or identification of the caregivers in charge at the entrance to each room, helped improve satisfaction.

Our study has several limitations. First, data were obtained from only 15.3% of family members with a possible non-response bias. We cannot exclude that several family members responded to the survey for the same patient; however, two of three respondents were the reference member. Second, the interface may have selected family members who were digitally educated. However, characteristics of the family members were not different from those reported in other similar, non-digital studies [2, 5]. Third, the CCOFS developed for the present study was not validated prior to the study. However, the items and dimensions included are based on recent guidelines and validated scales. Finally, before–after studies are associated with major biases stemming from regression to the mean and the Hawthorne effect.

Implementation of the OpinionFamily program appears to significantly increase overall family satisfaction. Further studies are needed to confirm these results and to evaluate the program's effectiveness in ultimately improving psychological outcomes of family members.

Abbreviations

CCOFS	Critical Care Opinion Family Survey
CI	Confidence interval
ICU	Intensive care unit
OR	Odds ratios

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s13054-023-04445-2.

Additional file 1: eAppendix. OpinionFamily Group. **Methods S1**. Scaling and Scoring Methods. **Methods S2**. Real-time analysis and multifaceted improvement interventions. **Table S1**. Critical Care OpinionFamily Survey. **Table S2**. Characteristics of the participating intensive care units. **Table S3**. Patient and family member characteristics for each study period. **Table S4**. Interventions implemented in the four participating intensive care units to improve family satisfaction. **Table S5**. Family satisfaction during each study period using the Critical Care OpinionFamily Survey with only surveys completed by a family member for the first time taken into consideration. **Figure S1**. Distribution of responses from family members for each item of the Critical Care OpinionFamily Survey.

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Author contributions

VL and MF conceived the trial and wrote the initial proposal. ST and AR provided substantial contributions to design of the study, and wrote the statistical analysis plan. VL, EM, NB, IB-G, KR, AMD, MF collected the data. VL and MF vouch for the data and their analyses. ST and AR had access to the study data and did the statistical analysis. The manuscript was revised by all authors to validate its intellectual content. All co-authors have approved the final version of the manuscript, agreed to submit the present version, and to be accountable for all aspects of the work and to ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All authors read and approved the final manuscript.

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Availability of data and materials

The trial steering committee (VL and MF) will work to make study data available on legitimate request. Notwithstanding, the steering committee must grant that any proposed publication should be of high quality, and fulfill the related legal and regulatory requirements (e.g., concerning data protection and privacy). The steering committee has the right to review and comment on any draft manuscript prior to publication.

Declarations

Ethics approval and consent to participate

The study has been approved by the Comité de Protection des Personnes Ile-de-France 5 (N° e-5-16).

Consent for publication
Not applicable.

Competing interests
The OpinionFamily program was developed in partnership with "ChooseMyCompany.com", a specialist in satisfaction surveys. VL has a family link with Laurent Labbé, founder and head of the company "ChooseMyCompany.com".

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