Family Satisfaction in Intensive Care during the COVID-19 Pandemic Using the FS-ICU24 Questionnaire

Satisfação dos Familiares em Cuidados Intensivos durante a Pandemia de COVID-19 Utilizando o Questionário FS-ICU24

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ABSTRACT

Introduction: The COVID-19 pandemic caused an abrupt change in the pattern of communication involving patients, family members, and healthcare professionals. This study aimed to evaluate family member satisfaction with intensive care units (ICU) care and communication strategies during the COVID-19 pandemic. Secondary objectives included identification of areas requiring improvement, and assessment of the impact of both COVID-19 diagnosis and in-person visits on overall satisfaction.

Material and Methods: A prospective, observational single-center study was conducted among family members of ICU patients admitted between March and September 2020. During this period, ICU visiting policies suffered changes, ranging from full restrictions to eased limitations, which impacted ICU communication procedures and patient contact with family members. Three months after ICU discharge, the designated family members of patients were contacted and invited to fill in a questionnaire that assessed family satisfaction using a Likert response scale.

Results: There was a total of 168 family members contacted (response rate of 57.7%). Most participants were globally satisfied with the care provided by the ICU staff and, apart from communication between nurses and family members, all other questions scored a satisfaction rate above 80%. The study found a statistically significant association between satisfaction and the consistency of clinical information provided and the possibility of having visits (p = 0.046). The odds ratio of being satisfied with information consistency was found to be 0.22 times lower in family members that were able to visit the patient in the ICU during the COVID-19 pandemic [OR = 0.22 (95% CI: 0.054 - 0.896)] compared with families that were unable to presential visit their family member. No statistically significant differences were found in the satisfaction rates between COVID-19 and non-COVID-19 admissions.

Conclusion: This is one of the first studies to assess satisfaction among family members of ICU patients during COVID-19 restrictions and the first, as far as we know, performed in the Portuguese population. The overall satisfaction levels were similar to the estimates found in previous studies. A lower degree of satisfaction with information consistency was found in family members who had in-person visits, possibly related with heterogeneity of senior doctors delivering information. COVID-19 diagnosis was not associated with decreased satisfaction.

Keywords: Communication; COVID-19; Intensive Care Units; Patient Satisfaction; Portugal; Quality of Health Care; Surveys and Questionnaires

RESUMO

Introdução: A pandemia de COVID-19 impôs alterações no padrão de comunicação entre doentes, familiares e profissionais. Os objectivos deste estudo foram avaliar a satisfação dos familiares com os cuidados prestados pelas unidades de cuidados intensivos e as estratégias comunicacionais durante a pandemia de COVID-19. Os objectivos secundários incluíram a identificação de áreas de melhoria e a avaliação do impacto do diagnóstico de COVID-19 e das visitas presenciais na satisfação global.

Material e Métodos: Estudo prospetivo, observacional e unicêntrico que avaliou os familiares de doentes em unidades de cuidados intensivos admitidos de março a setembro de 2020. Neste período, ocorreram alterações na política de visitas, que alternaram entre restrições totais e permissão de visitas restritas; estas modificações impuseram alterações na política de comunicação e no contacto dos doentes com os seus familiares. Aos três meses após alta da unidade de cuidados intensivos, o familiar de referência foi contactado para preencher um questionário que avaliou a sua satisfação através de uma escala de Likert.

Resultados: Cento e sessenta e oito familiares foram contactados (taxa de resposta de 57,7%). A maioria dos participantes estava globalmente satisfeita com os cuidados prestados e a generalidade das questões apresentava uma taxa de satisfação superior a 80%. Uma associação com significado estatístico foi encontrada entre a consistência da informação clínica e a possibilidade de visitas presenciais (p = 0,046). O *odds ratio* de satisfação foi 0,2 vezes menor em familiares que puderam visitar o doente durante a pandemia COVID-19 [OR = 0,22 (95% CI: 0,054 – 0,896)] em comparação com familiares cuja visita presencial não foi possível. O diagnóstico de COVID-19 não apresentou impacto na satisfação dos familiares.

Conclusão: Este é um dos primeiros estudos a avaliar a satisfação de familiares de doentes internados em unidades de cuidados intensivos durante a pandemia de COVID-19 e é, tanto quanto é do nosso conhecimento, o primeiro realizado numa população portuguesa. A satisfação global é semelhante a estudos prévios publicados. O menor grau de satisfação com a consistência da informação em familiares que fizeram visitas aos doentes pode estar relacionado com heterogeneidade no estilo de comunicação entre os médicos seniores da unidade de cuidados intensivos. O diagnóstico de COVID-19 não esteve associado a uma redução na satisfação global dos familiares.

Palavras-chave: Comunicação; COVID-19; Inquéritos e Questionários; Portugal; Qualidade dos Cuidados de Saúde; Satisfação do Doente; Unidades de Cuidados Intensivos

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INTRODUCTION

In recent years, Intensive Care Medicine shifted from patient centered care to patient and family centered care.[1,2] Consequently, the perceived quality of care by patients and family members has become an area of special interest with multiple strategies to leverage knowledge and continuous improvement.[3] Among different interventions, a proactive communication is recognized to play a key role.[4,5] Therefore, assessment of family member satisfaction is a valuable tool in the global process of quality improvement in intensive care units (ICU),[2] namely quality of the communication process. Questionnaires comprise one of the several methods used to assess family member satisfaction in the ICU. In a recent systematic review, "Family Satisfaction in the Intensive Care Unit" (FS-ICU24) questionnaire was identified as one of the most reliable in terms of psychometric properties.[3]

The outbreak of the new coronavirus disease (COVID-19) brought on a pandemic crisis that affected almost every country in the world, with more than 250 million confirmed cases in a two-year period.[6] Its rapid growth led to an overwhelming pressure in hospital and ICU settings.[7] Faced with the rapid spread of COVID-19, social distancing measures and social isolation became mandatory in most European countries, and Portugal was no exception.[8-10] This health crisis caused a dramatic and abrupt change in the pattern of communication involving all parties, with a particular impact on patients and their family members, mainly in the ICU setting, with loss of non-verbal communication cues such as voice tone, posture, or face expression. Effective communication is known to rely on both verbal and non-verbal dimensions, with the latter being more significantly disrupted by the physical barriers imposed by the pandemic.[4] Different tools have been developed to minimize the physical distance impacting patients and their loved ones[11] and several recommendations have been made on how to overcome isolation.[12]

The aim of this study was to assess family member satisfaction with ICU care and communication strategies during the COVID-19 pandemic. Secondary objectives included identification of improvement areas, and assessment of the impact of both COVID-19 diagnosis and face-to-face visits in the overall satisfaction level.

MATERIAL AND METHODS

Setting

A prospective observational study was conducted among families of ICU patients admitted between March and September 2020 in a 21-bed single center ICU, at a district hospital in northern Portugal. The pre-pandemic ICU policy included a liberal daily visiting period (11 am to 8 pm), where family members could visit their relatives and access clinical updates from the senior doctor in charge. Due to the COVID-19 pandemic and in accordance with local and government policies, full restrictions of hospital visits were applied between March and June 2020. Since June 2020, local policies have allowed a short visiting period for ICU patients.

Several strategies were developed to reduce the gap between patients and family members due to the implemented restrictions, with the additional need to address both the virtual clinical updates and the family expectations. Following a literature review of previous reports, mainly from the first epidemic center in Europe,[13] the ICU unit implemented several changes to the patient-communication policy. This included a daily videoconference call to all eligible patients (awake and able to interact), identified in the morning shift using a checklist, which addressed current and target Richmond Agitation-Sedation Scale (RASS) scores, delirium and competence to interact with the environment. Clinical updates were given by telephone daily by one of the senior intensivists. On weekdays, this task was carried out by the same intensivist, in order to ensure consistency of information. On weekends, this responsibility was assigned to the most experienced doctor on duty. These clinical updates were addressed to a designated family member, over 18 years old.

Population

Three months after discharge from the ICU, designated family members of patients were contacted by telephone and were invited to participate in the survey. Informed consent was obtained and an email with an anonymous online questionnaire was sent. This included a formal written consent form, questions concerning the demographic profile and the FS-ICU24 questionnaire. Full anonymity and confidentiality were assured, and measures to guarantee confidentiality were put in place. Data was aggregated at the end of the study and statistical analyses were conducted.

The inclusion criteria were: Patient's designated family member, as defined upon ICU admission by patient and clinical staff. The study considered all admissions between March and September 2020.

The exclusion criteria were: Family members of patients with an ICU hospitalization period under 48 hours (to ensure sufficient exposure to ICU routines) and family members of patients who died during hospitalization.

Ethics Committee

The full study protocol was approved by the local Ethics Committee (Comissão de Ética para a Saúde da ULSM, E.P.E.) under identification number 54/CE/JAS.

Questionnaire

An online form of the FS-ICU24,[14] translated and validated to Portuguese language,[15] was adapted to the present study. The FS-ICU24 is a 24-question tool that assesses family satisfaction using a contained Likert response scale ranging from "very dissatisfied" to "completely satisfied" regarding satisfaction in two major subsets: satisfaction with information and satisfaction with the decision-making process. Several questions of the FS-ICU24 cover specific content regarding physical interaction, such as symptom management, coordination of care, waiting room atmosphere and participation in daily rounds. Since physical and direct contact with the designated family member was not possible during the study period, these questions were previously excluded.

Statistical analysis

A descriptive analysis of collected data was conducted. Categorical variables are presented as frequencies and percentages, whereas the continuous variable is expressed as mean and standard deviation. Normal distribution was verified using skewness and kurtosis (accepted values between -1 and +1). In order to create a binary variable, family satisfaction with each item of the FS-ICU24 questionnaire was categorized into globally satisfied ("completely satisfied" and "very satisfied" responses) or globally unsatisfied ("mostly satisfied", "slightly dissatisfied" and "very dissatisfied" responses), as determined by previous manuscripts.[2]

Comparison tests were used to test for an association between the family's global satisfaction and their individual characteristics. Continuous variables were compared using independent-sample *t*-test and categorical variables were compared using Pearson's chi-squared test or Fisher's exact test, depending on sample size.

All reported *p* values are two-tailed, with a p value < 0.05 indicating statistical significance. Analyses were performed using Statistical Package for Social Sciences (SPSS) software (version 27).

RESULTS

During the study period, 266 patients were admitted to the ICU, of whom 64 died during hospitalization (51 in the ICU and 13 in the general ward), thus excluding family members from the survey. Additionally, 11 patients had an ICU hospitalization under 48 hours and their families were consequently excluded. Another 20 families were not included in the study due to the inability to attain a formal contact (after two missed phone calls in a 24-hour period), and three refused to participate. Questionnaires were sent to 168 relatives, with a response rate of 57.7%.

Characteristics of participants and responses

The mean age of family members was 52.2 years [standard deviation (SD) = 13] and the majority was female (69%). The most frequent kinship was spouse (48%), and most family members reported a daily contact with the patient (61%). More than half of the interviewed (51.6%) had completed secondary education (Table 1).

Most participants were globally satisfied (defined as being "very satisfied" or "completely satisfied") with the care provided by the ICU staff (Table 2). Apart from communication between nurses and family members, all other questions scored a percentage of global satisfaction above 80%.

During the study period, 34% of patients were admitted due to COVID-19 pneumonia and 58% of their family members were also diagnosed with SARS-CoV-2 infection. To assess the impact of the COVID-19-related hospitalization on family satisfaction, comparison tests were performed, and no statistically significant differences were found among satisfaction rates between COVID-19 and non-COVID-19 related admissions (Table 3).

During the study period, restrictions to visits related with the pandemic were eased, which allowed 40.2% of family members to visit patients during their ICU hospitalization. To assess the impact of in-person visits during ICU hospitalization on family satisfaction, comparison tests were performed. A statistically significant association was found between satisfaction and the consistency of clinical information provided and the possibility of having in-person visits (p = 0.046). The odds ratio of being satisfied with information consistency was found to be 0.22 times lower in family members who were able to visit the patient in the ICU during the COVID-19 pandemic [OR = 0.22 (95% CI: 0.054 - 0.896)] (Table 4).

DISCUSSION

To the best of our knowledge, this is one of the first studies to assess satisfaction among family members of ICU patients during COVID-19 restrictions and the first performed among the Portuguese population. There are several methods that can be used to acquire family satisfaction assessments, with questionnaires being one of the most common and replicable in literature.[2,3,14,16,17]

In this study, overall satisfaction stood mostly above 80%, which is consistent with previous studies published in the literature.[2,18] In this ICU, communication with families is mainly done by doctors, which can justify the lower satisfaction levels of respondents regarding communication with nurses.

Approximately 60% of families were not allowed to be present during ICU hospitalizations. Consequently, several items in the FS-ICU24 questionnaire were interpreted through telephone experiences and video calls, namely sections

concerning decision-making processes and the care provided to the patient. Surprisingly, statistical significance was found between satisfaction with information consistency and in-person visits, with an odds ratio of 0.22 disfavoring in-person visits. As previously noted, for families that were unable to visit their relatives at the hospital, daily communication was carried out by a single senior doctor; for those who were able to visit, this communication was done in-person by the patient's assigned doctor. This heterogeneity of interlocutors may justify the statistical difference regarding information consistency and highlights its importance throughout the entire ICU hospitalization experience.

A COVID-19 diagnosis has a psychological impact on various domains, not only on healthcare workers[12,19] but also on family-patient close interactions, which were inevitably disrupted.[12,20] The role of family members of ICU patients goes beyond legal and informative aspects: they serve as advocates for the patients' wishes and informants for significant others who cannot be physically or virtually connected to the patient.[4,11,21] Concerns of death among loved ones, severe course of illness, healthcare failure and general social and economic changes have been reported, with decreased levels of happiness and overall life satisfaction, which in turn can predispose to depression and anxiety.[22] This problem was already assessed in the COVID-19 pandemic by Cattelan and colleagues,[23] where the designated family members experienced psychological distress and reported remote communication as an overall negative experience.

This study hypothesized that general satisfaction could be lower, if COVID-19 disease was the major cause of admission in the ICU. However, during the course of the study, there were no statistically significant differences found in overall satisfaction between families whose relatives were admitted due to COVID-19 pneumonia and those who were not. It is possible that concerns about ICU hospitalization itself may supersede the specific diagnosis. More research is needed to assess the specific impact of a COVID-19 pneumonia diagnosis on family satisfaction.

In addition, areas of improvement were also identified, mainly through open questions at the end of the survey. Family members of 26 patients suggested several changes to our current policy, such as more than one daily communication with the ICU team or more time spent during visiting hours. Their suggestions are currently being reviewed in order to assess their feasibility in the future.

This study had several limitations. Families of patients who died in the ICU were excluded to avoid imposing a telephone conversation during a recent mourning. Nonetheless, there are previous studies reporting higher satisfaction rates in family members of patients who died in the ICU, compared with survivors.[17,18] Although bias may be present, the responses of these families would probably sustain or increase the overall satisfaction rates. Although our study sample is smaller compared to other published studies,[18] single and multicenter studies were found with similar number of respondents.[2, 24] The population interviewed in this single center survey was mainly made up of female spouses. Even though this reflects the real demography of the population under study, specific variations in other relevant subgroups may differ from this reality, as previous studies found that white ethnicity had a higher satisfaction rates compared with members of other ethnicities.[14] The response rate was only 57.7%, which might be a potential respondent bias in survey-dependent studies; however, this response rate is identical to others in the literature.[17,18] The FS-ICU24 is a questionnaire that assesses patients' family satisfaction with ICU provided care[14,15] and was found to be one of the most reliable and valid in relation to its psychometric properties.[3] Nevertheless, care must be taken in conclusions obtained from a single research method.

CONCLUSION

This is one of the first studies to assess satisfaction among family members of ICU patients during COVID-19 restrictions and the first performed within the Portuguese population. Overall satisfaction levels were similar to estimates found in previous studies. A lower degree of satisfaction with information consistency was found in family members who had in-person visits, possibly related with the heterogeneity of senior doctors delivering information. A COVID-19 diagnosis was not associated with decreased satisfaction.

AUTHOR CONTRIBUTIONS

JC: design of the work, data acquisition, drafting of the paper.
CTL: data acquisition and analysis, drafting of the paper.
DC, EG: statistics and critical review.
RA: critical review of the manuscript.

PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in 2013.

DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

COMPETING INTERESTS

The authors have no conflicts of interest to declare.

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Table 1 – Demographic characteristics of responders

Age (years) - mean ± sd	52.2	±13
Sex, n (%)		
Female	67	(69.1)
Male	30	(31.9)
Kinship, n (%)		
Spouse	48	(49.5)
Son / daughter	33	(34.0)
Parent	9	(9.3)
Other	7	(72)
Frequency of contact with patient, n (%)		
Daily	61	(62.8)
More than once a week	15	(15.4)
Weekly	13	(13.4)
Monthly	8	(8.2)
Shares residence with patient, n (%)		
Yes	61	(62.8)
No	36	(37.1)
Resides in the same locality of the hospital, n (%)		
Yes	47	(48.5)
No	50	(51.5)
Educational level, n (%)*		
Less than basic education	17	(17.7)
Basic education	14	(14.6)
Secondary education (not completed)	15	(15.6)
Secondary education (completed)	28	(29.2)
Technical course	6	(6.3)
Bachelor degree	16	(16.7)

n: number of relatives; sd: standard deviation.
*: 1 missing value for education level

Table 2 – Responses to FS-ICU 24

Items	Very dissatisfied		Slightly dissatisfied		Mostly satisfied		Very satisfied		Completely satisfied		Non applicable		Globally satisfied*	
How well the ICU staff showed an interest in your needs, n (%)	0	(0.0)	0	(0.0)	12	(12.4)	28	(28.9)	57	(58.8)	0	(0.0)	85	(87.6)
How well the ICU staff provided emotional support to you, n (%)	0	(0.0)	0	(0.0)	15	(15.5)	29	(29.9)	52	(53.6)	1	(1.0)	81	(83.5)
The courtesy, respect, and compassion you were given, n (%)	0	(0.0)	0	(0.0)	17	(17.5)	30	(30.9)	49	(50.5)	1	(1.0)	79	(81.4)
How often nurses communicated to you about your family member's condition, n (%)	3	(3.1)	4	(4.1)	11	(11.3)	24	(24.7)	34	(35.1)	21	(21.7)	59	(60.8)
How often doctors communicated to you about your family member's condition, n (%)	0	(0.0)	2	(2.1)	13	(13.4)	26	(26.8)	52	(53.6)	4	(4.1)	78	(80.4)
Willingness of ICU staff to answer your questions, n (%)	1	(1.0)	1	(1.0)	9	(9.3)	30	(30.9)	54	(55.7)	2	(2.1)	84	(86.6)
How well ICU staff provided you with explanations that you understood, n (%)	1	(1.0)	1	(1.0)	10	(10.3)	32	(33.0)	51	(52.6)	2	(2.1)	83	(85.6)
The honesty of information provided to you about your family member's condition, n (%)	0	(0.0)	2	(2.1)	5	(5.2)	34	(35.1)	55	(56.7)	1	(1.0)	89	(91.8)
How well ICU staff informed you what was happening to your family member and why things were being done, n (%)	0	(0.0)	2	(2.1)	9	(9.3)	36	(37.1)	48	(49.5)	2	(2.1)	84	(86.6)
The consistency of information provided to you about your family member's condition, n (%)	2	(2.1)	1	(1.0)	8	(8.2)	34	(35.1)	47	(48.5)	5	(5.2)	81	(83.5)

n: number of responses

*: globally satisfied defined as being very or completely satisfied

Table 3 – Comparison between COVID-19 and non-COVID-19 admissions regarding global satisfaction (FS-ICU 24)

Items	COVID-19				non COVID-19				OR (95% CI)		p value
	Globally satisfied*		Non satisfied		Globally satisfied*		Non satisfied				
How well the ICU staff showed an interest in your needs, n (%)	27	(81.8)	6	(18.2)	58	(90.6)	6	(9.4)	0.47	(0.14 - 1.58)	0.328[2]
How well the ICU staff provided emotional support to you, n (%)	27	(81.8)	6	(18.2)	54	(85.7)	9	(14.3)	0.75	(0.24 - 2.33)	0.618[1]
The courtesy, respect, and compassion you were given, n (%)	27	(81.8)	6	(18.2)	52	(82.5)	11	(17.5)	0.95	(0.32 - 2.85)	0.930[1]
How often nurses communicated to you about your family member's condition, n (%)	13	(72.2)	5	(27.8)	46	(79.3)	12	(20.7)	0.68	(0.20 - 2.28)	0.531[2]
How often doctors communicated to you about your family member's condition, n (%)	26	(81.3)	6	(18.8)	52	(85.2)	9	(14.8)	0.75	(0.24 - 2.33)	0.619[1]
Willingness of ICU staff to answer your questions, n (%)	30	(90.9)	3	(9.1)	54	(87.1)	8	(12.9)	1.48	(0.37 - 6.01)	0.742[2]
How well ICU staff provided you with explanations that you understood, n (%)	30	(90.9)	3	(9.1)	53	(85.5)	9	(14.5)	1.70	(0.43 - 6.76)	0.533[2]
The honesty of information provided to you about your family member's condition, n (%)	30	(90.9)	3	(9.1)	59	(97.7)	4	(6.3)	0.68	(0.14 - 3.23)	0.689[2]
How well ICU staff informed you what was happening to your family member and why things were being done, n (%)	30	(90.9)	3	(9.1)	54	(87.1)	8	(12.9)	1.48	(0.37 - 6.01)	0.742[2]
The consistency of information provided to you about your family member's condition, n (%)	27	(90)	3	(10)	54	(87.1)	8	(12.9)	1.33	(0.33 - 5.43)	1.000[2]

n: number of responses
*: globally satisfied defined as being very or completely satisfied.
1: Pearson's chi square test; 2: Fisher's exact test

Table 4 – Comparison between in-person and non in-person visits regarding global satisfaction (FS-ICU 24)

Items	Presencial visits				No presential visits				OR (95% CI)		*p value*
	Globally satisfied*		Non satisfied		Globally satisfied*		Non satisfied				
How well the ICU staff showed an interest in your needs, n (%)	35	(89.7)	4	(10.3)	50	(86.2)	8	(13.8)	1.40	(0.39 - 5.01)	0.757[2]
How well the ICU staff provided emotional support to you, n (%)	34	(87.2)	5	(12.8)	47	(82.5)	10	(17.5)	1.45	(0.45 - 4.61)	0.531[1]
The courtesy, respect, and compassion you were given, n (%)	33	(8.6)	6	(15.4)	46	(80.7)	11	(19.3)	1.32	(0.44 - 3.91)	0.622[1]
How often nurses communicated to you about your family member's condition, n (%)	27	(75.0)	9	(25.0)	32	(80.0)	8	(20.0)	0.75	(0.25 - 2.21)	0.601[1]
How often doctors communicated to you about your family member's condition, n (%)	30	(78.9)	8	(21.1)	48	(87.3)	7	(12.7)	0.55	(0.18 - 1.66)	0.283[1]
Willingness of ICU staff to answer your questions, n (%)	34	(89.5)	4	(10.5)	50	(87.7)	7	(12.3)	1.19	(0.32 - 4.38)	1.000[2]
How well ICU staff provided you with explanations that you understood, n (%)	31	(81.6)	7	(18.4)	52	(91.2)	5	(8.8)	0.43	(0.12 - 1.46)	0.212[2]
The honesty of information provided to you about your family member's condition, n (%)	35	(89.7)	4	(10.3)	54	(94.7)	3	(5.3)	0.49	(0.10 - 2.31)	0.437[2]
How well ICU staff informed you what was happening to your family member and why things were being done, n (%)	33	(86.8)	5	(13.2)	51	(89.5)	6	(10.5)	0.78	(0.22 - 2.75)	0.750[2]
The consistency of information provided to you about your family member's condition, n (%)	30	(78.9)	8	(21.1)	51	(94.4)	3	(5.6)	**0.22**	**(0.05 - 0.90)**	**0.046**[2]

n: number of responses
*: globally satisfied defined as being very or completely satisfied
[1]: Pearson's chi square test; [2]: Fisher's exact test