

Psychosocial, Material, Logistical, Information, and Communication Needs of Informal Caregivers during Cardiovascular Hospitalization at the Abidjan Heart Institute, Côte d'Ivoire: A Cross-Sectional Study

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Abstract

Background: In many hospitals, relatives remain with patients and assist with day-to-day needs, communication, and expenses. Evidence on the needs of these accompanying caregivers during cardiovascular admission in sub-Saharan Africa remains limited. This study described psychosocial, material, logistical, and information and communication needs among caregivers at the Abidjan Heart Institute. **Methods:** A descriptive cross-sectional study was conducted from March to August 2024. Among patients hospitalized for more than 3 days, adults aged at least 18 years who had been present with the patient for more than 3 days were recruited consecutively. Data were collected through an interviewer-administered questionnaire. Perceived stress was assessed using a single four-point self-rating item, whereas anxiety was explored with a yes/no question. Neither measure was designed as a validated diagnostic tool. Analyses were descriptive. **Results:** The study included 205 caregivers, with a mean age of 42 ± 12 years; 75% were women. No caregiver reported an absence of stress; just over half (52%) rated their stress as moderate, and 86% reported feeling anxious about the patient's condition. Psychological support was largely unavailable, as reported by 95% of participants. Caregivers also described several practical difficulties during hospitalization. Nearly all reported having no dedicated place to rest or sleep (97%) and no food service within or close to the institute (94%), while 82% experienced financial difficulties. Communication with the healthcare team was another recurring issue: 87 caregivers (42%) said they did not receive regular updates about the patient's condition, and 71

(35%) found the information provided difficult to understand. **Conclusion:** Caring for a hospitalized cardiovascular patient was associated with emotional strain as well as practical, financial, and communication challenges. These findings should not be interpreted as evidence of psychiatric disorders, given the nature of the measures used. They do, however, point to aspects of hospital care that could be reviewed locally, including more consistent communication with families, access to psychosocial support when needed, suitable areas for rest, and better links to available social assistance.

Keywords

Informal Caregivers, Cardiovascular Hospitalization, Psychosocial Needs, Family-Centered Care, Côte d'Ivoire

1. Introduction

Cardiovascular disease contributes to morbidity and health-service demand across sub-Saharan Africa [1], and a hospital admission often reorganizes family life around it. In many low- and middle-income settings, relatives stay on the ward, help with day-to-day care, fetch medicines and supplies, relay questions to clinicians, and meet expenses that fall outside formal hospital provision [2] [3].

For families caring for someone with heart disease, the impact goes beyond providing practical help. Caregiving may also weigh on emotional well-being, disrupt social life, and place additional pressure on household finances. The American Heart Association has drawn attention to the increasingly important role of family caregivers in heart failure care [4]. Similar difficulties were reported in a 2026 mixed-methods review of cardiac caregiving, particularly psychological distress, financial constraints, limited understanding of health information, and insufficient support [5].

A separate 2026 study from intensive care units in Pakistan found moderate or high perceived stress in many family caregivers and documented unmet mental-health needs; its use of a validated stress scale and its ICU setting limit direct comparison with the present study [6].

The Abidjan Heart Institute is a referral center for cardiovascular care in Côte d'Ivoire. Previous studies from the institute have focused on patients with heart failure, including comorbidity profiles, post-discharge follow-up, and treatment optimization [7]-[9]. Less is known about the relatives and other companions who remain with patients during admission. This study therefore aimed to describe their psychosocial needs, material and logistical constraints, and information and communication needs during cardiovascular hospitalization.

2. Materials and Methods

2.1. Study Setting and Design

This descriptive cross-sectional study was conducted in the inpatient services of

the Abidjan Heart Institute over six months, from March to August 2024.

2.2. Participants and Recruitment

The study population consisted of adults accompanying hospitalized patients. Selection proceeded in two stages. At patient level, only patients hospitalized for more than 3 days were retained. This threshold matches the mean length of stay at the institute, which was 3.9 days in the medical ward and 4.3 days in cardiovascular surgery. At caregiver level, eligibility required an age of at least 18 years, presence with the patient at the institute for more than 3 days, and informed consent. Refusal of consent was the only pre-specified non-inclusion criterion. The “more than 3 days” criterion thus applied to the patient’s admission and to the caregiver’s presence, at two successive stages of selection. Eligible caregivers were recruited consecutively throughout the study period. In all, 402 patients were admitted during the study period. Of these, 169 were hospitalized for more than 3 days and were accompanied by 295 caregivers. Among those caregivers, 205 met the eligibility criteria and were included; 90 did not meet the caregiver selection criteria. The study record does not document which criterion applied in each individual case. A breakdown by reason, whether age, duration of presence, or refusal of consent, is therefore not available (**Figure 1**).

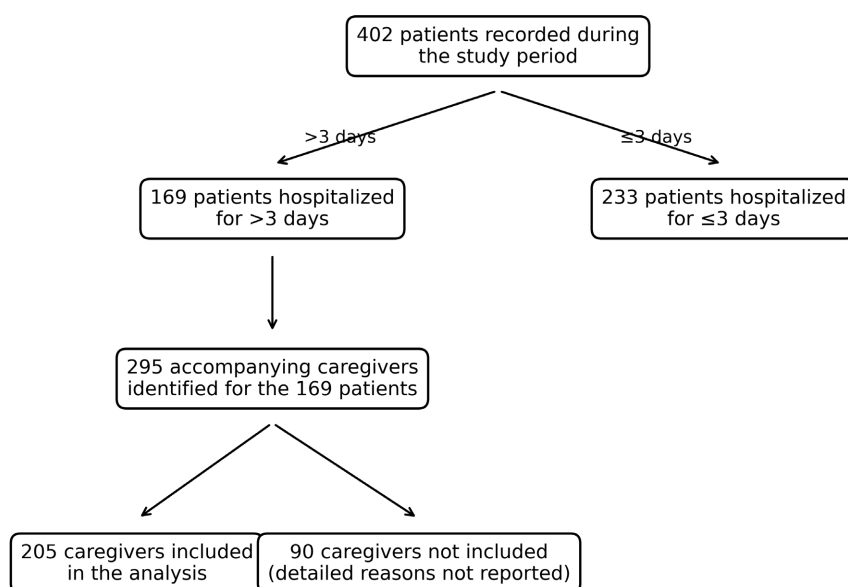


Figure 1. Recruitment flow of patients and accompanying caregivers during the study period.

2.3. Data Collection and Variables

Data were collected with a 20-item interviewer-administered questionnaire developed for the study and reproduced in full in the Appendix. It was written and administered in French, which is the official language of Côte d’Ivoire and the language of clinical communication at the institute. No translation procedure was involved, and the Appendix presents an English translation of the original French

instrument. The items fell into five sections: sociodemographic characteristics and caregiving context (items 1 - 8), psychosocial needs (items 9 - 12), material and logistical needs (items 13 - 16), information and communication needs (items 17 - 19), and one open-ended item on suggestions for improvement (item 20). Item 16, on material and logistical needs, allowed multiple responses; all other closed items were single-response. Three items are central to the present analysis, and their wording is given here. Financial difficulty was assessed by item 15: "Do you experience financial difficulties related to accompanying the patient (medical costs, transport, meals, accommodation, etc.)?" (yes/no). Access to information was assessed by item 17: "Do you feel that you receive regular information about the patient's health status?" (yes/no). Perceived need for support was assessed by item 11, "Do you have access to psychological support (counsellor, psychologist, support group)?" (yes/no), followed by item 12, "If not, does this seem necessary to you?" (yes/no).

Interviews were administered face to face by the principal investigator, assisted by one or two trained collaborators from the department. The same standardized procedure was followed throughout. The interviewer introduced the study, obtained informed consent, and read the items aloud in a fixed order. Additional explanation was given whenever an item was not understood. Answers were recorded directly on the form, and each questionnaire was checked for completeness before the participant was left. Interviewer training consisted of this standardized administration procedure, and no assessment of inter-interviewer reliability was carried out. No formal pilot study was undertaken, and the questionnaire as a whole was not validated psychometrically.

2.4. Assessment of Stress and Anxiety

Stress related to the patient's illness was assessed with one ordinal item rated from 1 to 4 (1 = no stress, 2 = low stress, 3 = moderate stress, 4 = high stress). Anxiety related to the patient's health status was assessed with a yes/no question. Access to psychological support was assessed with a yes/no item, followed by an item on the perceived need for such support that was worded as a conditional follow-up but was administered and recorded for every participant. Both stress and anxiety measures were study-specific self-reports rather than validated psychometric or diagnostic instruments. They are therefore reported as self-rated stress and self-reported anxiety, not as clinical diagnoses.

2.5. Statistical Analysis

Data were entered and processed using Microsoft Excel and SPSS. Quantitative variables were summarized with the mean and standard deviation, and categorical variables with frequencies and percentages. Questionnaires were checked for completeness at the time of administration, and no missing responses were recorded. The denominator for every proportion reported below is therefore the full sample of 205 caregivers. Percentages are rounded to the nearest whole number

and may sum to slightly less than 100%. Each caregiver completed one interview, and each questionnaire was analysed as a single independent observation. The study objectives were descriptive, and no inferential analysis is reported in this article. No separate sample-size target was set; the analysis included the caregivers recruited consecutively during the predefined six-month study period.

2.6. Ethical Considerations

This was a questionnaire-based, non-interventional study. Institutional authorization to conduct the study and collect data was granted in March 2024 by the Medical and Scientific Directorate of the Abidjan Heart Institute, before the start of the study period. The study was not submitted to a separate research ethics committee; therefore, no ethics committee approval number or formal exemption identifier is available. The study was conducted in accordance with the principles of the Declaration of Helsinki. Participation was voluntary, informed consent was obtained from every participant before questionnaire administration, and study information was anonymized and handled confidentially.

2.7. AI-Assisted Manuscript Preparation

After completion of the study and data analysis, generative AI tools (OpenAI ChatGPT and Anthropic Claude, accessed August 2026) were used to assist with English-language editing and reference checking. They were not used for participant recruitment, data collection, or statistical analysis. The authors reviewed and edited the resulting text and remain responsible for the scientific content.

3. Results

3.1. Participant Characteristics

The analysis included 205 caregivers. Mean age was 42 ± 12 years (range 18 - 68 years), and women represented 75% of the sample. The 36 - 45-year age group accounted for 29.8%. Thirty percent had no formal schooling; 46% were merchants or farmers; and 60% were married or living with a partner. Siblings accounted for 34% of accompanying relatives and parents for 28%. Fifty-six percent of participants reported that the patient had two accompanying caregivers, and 76% had been accompanying the patient for less than one week (**Table 1**).

3.2. Psychosocial Experience

No caregiver selected the “no stress” response option on the study-specific stress item. Moderate stress was selected by 52% of participants, low stress by 24% and high stress by 23%. These figures are rounded and sum to 99%. Anxiety related to the patient’s condition was reported by 86% of caregivers. Ninety-five percent reported no access to psychological support, and 94% considered psychological support necessary. The item on perceived need was worded as a follow-up to the item on access, but it was administered to every participant. Its denominator, like that of every other item, is the full sample of 205 caregivers, with no missing responses

(Table 2 and Figure 2).

Table 1. Sociodemographic and caregiving characteristics (N = 205).

Characteristic	Category	n (%) or %
Age group, years	18 - 25	15 (7.3%)
	26 - 35	52 (25.4%)
	36 - 45	61 (29.8%)
	46 - 55	44 (21.5%)
	>55	33 (16.1%)
Sex	Female	75%
	Male	25%
Education	No formal schooling	30%
	Primary	22%
	Secondary	24%
	Higher	23%
Occupation	Merchant/Farmer	95 (46.3%)
	Retired/Unemployed	65 (31.7%)
	Civil servant	24 (11.7%)
	Student	21 (10.2%)
Marital status	Married/Partnered	123 (60.0%)
	Single/Widowed	82 (40.0%)
Relationship to patient	Sibling	69 (33.7%)
	Parent	58 (28.3%)
	Child	37 (18.0%)
	Spouse/Partner	33 (16.1%)
	No family relationship	8 (3.9%)
Duration of accompaniment	<1 week	155 (75.6%)
	>1 week	50 (24.4%)

Percentages are based on the full sample of 205 caregivers, with no missing responses; small differences from 100% reflect rounding.

Table 2. Psychosocial findings.

Psychosocial indicator	Reported result
Self-rated stress (N = 205)	No stress 0%; Low 24%; Moderate 52%; High 23%
Self-reported anxiety related to patient condition (N = 205)	86% yes
Access to psychological support (N = 205)	95% no
Perceived need for psychological support (N = 205)	94% yes

Stress and anxiety were assessed with study-specific self-report items, not validated diagnostic instruments. No missing responses were recorded for any item. Percentages are rounded and may sum to slightly less than 100%.

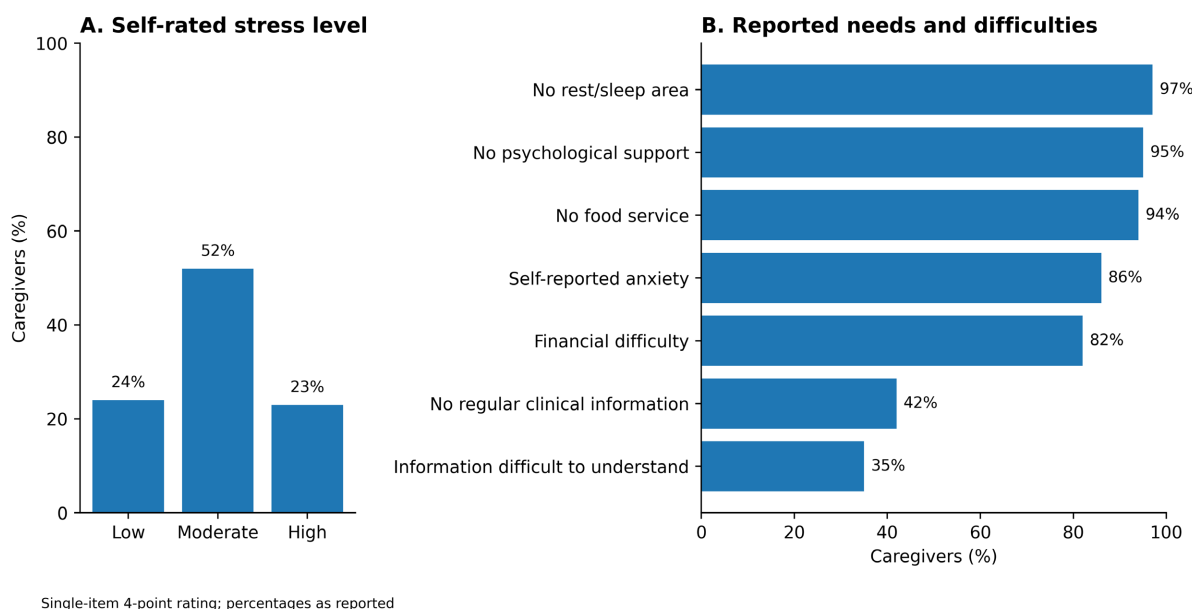


Figure 2. Self-rated stress distribution and selected caregiver-reported needs and difficulties (N = 205).

3.3. Material, Logistical, and Financial Needs

A rest or sleeping area was unavailable to 199 caregivers (97%), and 193 (94%) reported no food service at the institute or nearby. Financial difficulties related to accompaniment were reported by 168 caregivers (82%). When asked about material needs, 168 (82%) selected reduced service costs, 104 (51%) a food service, and 95 (46%) a rest or sleeping area. Multiple responses were permitted.

Reported unavailability of a service and selection of that service as a priority need were measured by two different items, and the two did not coincide. A rest area was unavailable to 97% of caregivers but was selected as a material need by 46%. A food service was unavailable to 94% but was selected by 51%. The explanation lies in the wording of item 16, which asked caregivers to designate their principal material needs among competing options. A caregiver could confirm that a service did not exist without ranking it above the reduction of hospital costs, which 82% selected and which was the most frequently designated need. The availability figures describe the conditions of accompaniment at the institute; the needs figures describe what caregivers themselves prioritized. Institutional unavailability was not treated as equivalent to an unmet individual need.

3.4. Information and Communication Needs

Eighty-seven caregivers (42%) reported not receiving regular information about the patient's health status, and 71 (35%) found the information difficult to understand. Reported information needs followed a similar pattern: 87 (42%) wanted regular clinical updates, 80 (39%) wanted more information about treatment, and 71 (35%) wanted information that was clearer and easier to understand (**Table 3** and **Figure 2**).

Table 3. Material, logistical, financial, and information-related findings.

Domain	Indicator	n (%) or %
Material/logistical	No rest or sleeping area	199 (97.1%)
	No food service at ICA or nearby	193 (94.1%)
	Financial difficulties	168 (82.0%)
Material needs*	Reduced service costs	168 (82.0%)
	Food service	104 (50.7%)
	Rest/sleep area	95 (46.3%)
Information/communication	No regular information on patient status	87 (42.4%)
	Information difficult to understand	71 (34.6%)
Information needs	Regular clinical updates	87 (42.4%)
	More information on treatment	80 (39.0%)
	Clearer and understandable information	71 (34.6%)

Percentages are based on the full sample of 205 caregivers, with no missing responses; *multiple responses were allowed for material needs.

4. Discussion

This study describes the needs reported by adults who stayed with patients during cardiovascular hospitalization at the Abidjan Heart Institute. Among the 205 participants, 52% rated their stress as moderate and 86% reported anxiety about the patient's condition, yet only 5% had access to psychological support. Alongside this psychological strain, caregivers reported constraints around rest, food access, expenses, and communication with the clinical team.

Since stress and anxiety were measured with questions developed for this study, the percentages reported here should not be directly compared with findings based on validated scales. The comparison is more meaningful when looking at the nature of the difficulties caregivers described. From this perspective, the experience reported in Abidjan is consistent with findings from other settings. The American Heart Association has described caregiving in heart failure as a source of psychological, physical, and financial strain [4]. A 2026 mixed-methods review of 42 studies reached a similar conclusion, identifying emotional distress, financial difficulties, limited health literacy, and lack of adequate support as recurring challenges for cardiac caregivers [5].

In Pakistan, a 2026 ICU study using the PSS-10 also documented perceived stress and unmet mental-health needs among family caregivers [6].

Emotional and material needs were reported alongside one another, a pattern also described in hospital-based caregiving research. A qualitative meta-synthesis from low- and middle-income countries found that family caregivers often provide hospital care while occupying an uncertain place within the formal care system and absorbing personal costs [2]. A systematic review from sub-Saharan Africa also documented health and economic consequences of informal caregiving

for chronic disease [3]. In the present study, reports of no rest area, no nearby food service, and financial difficulty show that the conditions of accompaniment extend beyond psychological experience.

Women represented three-quarters of participants. This pattern is also seen in cardiovascular caregiving literature [4] [5], but the present study was not designed to test whether stress or unmet needs differed by sex. Siblings and parents were the most frequently reported accompanying relatives, which reflects the involvement of the wider family network without showing whether that involvement reduced or increased caregiver strain.

Communication formed a separate part of the reported experience. Forty-two percent of caregivers said that updates on the patient's condition were not regular, and 35% found the information difficult to understand. In cardiovascular care, relatives may later contribute to medication management, symptom monitoring, and decisions after discharge [4]. A 2026 study of heart-failure patient-caregiver pairs found that health literacy and the way patients and caregivers worked together were linked to satisfaction with care [10]. In Abidjan, this suggests that communication should go beyond simply giving information. Regular updates, clear explanations, and checking what caregivers have actually understood may help make communication more useful and responsive to their needs.

Intervention studies have produced mixed results, suggesting that programs developed elsewhere should be adapted and evaluated locally before being introduced. Reviews of interventions for caregivers of people with heart disease or heart failure report improvements in some caregiver outcomes, but effects vary by intervention and outcome [11] [12]. In a randomized trial of telehealth early palliative care for caregivers of people with advanced heart failure, caregiver quality of life, mood, and burden did not improve significantly compared with usual care [13]. A 2025 multicentre study of 126 family caregivers in Italy, Poland, Portugal and Spain found lower reported burden among those who received support from public, private, or non-profit organizations [14]. That study appears under a title referring to cardiovascular patients, but it was conducted in caregivers of stroke survivors. Against that background, referral pathways, caregiver education, planned communication, and links to social services are appropriate candidates for local evaluation at the Abidjan Heart Institute.

5. Strengths and Limitations

The study adds hospital-based data from a cardiovascular referral center in West Africa and used consecutive recruitment across psychosocial, material, financial, and communication domains. Its cross-sectional descriptive design does not support causal inference or the identification of independent predictors. Stress and anxiety were assessed with self-report questions developed for this study rather than validated scales, so the results are not directly comparable with studies that used standardized instruments. Interviews took place during the patient's hospitalization, after the caregiver had been present for more than 3 days. The ques-

tionnaire thus captured the caregiver's experience at a single point in time, and needs arising earlier in the admission or after discharge were not measured. We were also unable to examine whether caregivers' experiences differed according to the patient's cardiovascular diagnosis or disease severity, because these data were not available for analysis. The 205 caregivers were accompanying 169 patients, so some patients were represented by more than one caregiver. Each caregiver was interviewed once and independently, but this clustering was not taken into account in the descriptive analysis, and correlated responses within a patient cannot be excluded. A further limitation is that the reasons why 90 identified caregivers did not meet the selection criteria were not documented individually.

Responses to the open-ended item on suggestions for improving the accompaniment of relatives (item 20) were not analysed here. The present article was restricted to the closed-ended items; the free-text responses call for a qualitative approach and are reserved for a separate report.

6. Practical Implications

The findings suggest several candidates for service-level evaluation: a scheduled time or routine for family updates, plain-language explanations, referral to psychological or social-work services, a process for identifying caregivers who report high stress, and access to basic rest facilities. Clearer information about expected costs and available social assistance may also help families plan during admission.

None of these measures should be adopted without prospective evaluation. Future studies would benefit from validated measures of stress, anxiety, and caregiver burden; patient-level cardiovascular diagnoses and severity data; and analyses designed to identify which caregiver characteristics are associated with unmet needs.

7. Conclusion

Caregivers accompanying patients at the Abidjan Heart Institute faced a range of emotional, financial, practical, and communication difficulties during hospitalization. Limited psychological support, inadequate places to rest or obtain food, and difficulties receiving clear information about the patient's condition were among the concerns most often reported. These findings point to practical areas where caregiver support could be improved within cardiovascular services, particularly through clearer communication, better access to psychosocial and social support, and greater attention to basic needs during hospitalization. Although the study was conducted in a single specialized center, many of the difficulties identified are similar to those reported in other caregiver populations. Further studies using validated caregiver measures and more detailed clinical data would help clarify how these needs vary across different cardiovascular settings.

Data Availability Statement

The dataset is not publicly available because it contains confidential individual-

level information. De-identified data may be obtained from the corresponding author upon reasonable request, with approval from the Medical and Scientific Directorate of the Abidjan Heart Institute and in accordance with data-protection requirements.

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Author Contributions

Benedicte Carine Boka conceived and designed the study, supervised data collection, performed the statistical analysis, interpreted the findings, and drafted the manuscript. Fatoumata Traore and Nancy Mobiot contributed to data collection, interpretation of the findings, and critical revision of the manuscript for important intellectual content. Micesse Estelle Tano, Augustin Yeo, and Yacouba Kone contributed to data collection, interpretation of study findings, and critical review of the manuscript. Djenamba Bamba-Kamagate supervised the work, contributed to interpretation of the findings, and critically revised the manuscript for important intellectual content. All authors read and approved the final version of the manuscript and agree to be accountable for the accuracy and integrity of the work.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix

Table A1 reproduces the 20-item study questionnaire. The instrument was written and administered in French, the official language of Côte d'Ivoire and the language of clinical communication at the institute; the English translation is given here, and the original French version is available from the corresponding author. Item 16 allowed multiple responses; all other closed items were single-response. Item 20 was open-ended and was not analysed in the present article.

Table A1. Study questionnaire (English translation of the original French instrument).

Item	Question	Response options
Section 1. Sociodemographic characteristics and caregiving context		
1	Age	Open (years)
2	Sex	Male/Female
3	Level of education	No formal schooling/Primary/Secondary/Higher
4	Marital status	Married/Single/Divorced/Widowed
5	Occupation	Civil servant/Merchant/Student/Retired/ Farmer/Homemaker/Unemployed
6	Relationship to the patient	Spouse/Father/Mother/Brother or sister/Son/Daughter/No family relationship
7	Number of caregivers accompanying this patient	1/2/3 or more
8	Duration of accompaniment	Less than one week/More than one week
Section 2. Psychosocial needs		
9	On a scale of 1 to 4, how would you rate your level of stress related to the patient's illness?	1 = No stress/2 = Low stress/3 = Moderate stress/4 = High stress
10	Do you feel anxious because of the patient's health condition?	Yes/No
11	Do you have access to psychological support (counsellor, psychologist, support group)?	Yes/No
12	If not, does this seem necessary to you?	Yes/No
Section 3. Material and logistical needs		
13	Do you have access to a rest or sleeping area at the hospital?	Yes/No
14	Do you have access to meals at the hospital or nearby?	Yes/No
15	Do you experience financial difficulties related to accompanying the patient (medical costs, transport, meals, accommodation, etc.)?	Yes/No
16	What are your main material needs? (multiple responses allowed)	Reduction of service costs at the institute/Catering service/Rest or sleeping area/Other (specify)
Section 4. Information and communication needs		
17	Do you feel that you receive regular information about the patient's health status?	Yes/No
18	Is the information you receive clear and understandable?	Yes/No
19	Would you like to receive more information about the treatment?	Yes/No
Section 5. Suggestions and recommendations		
20	What suggestions would you make to improve the accompaniment of relatives at the hospital?	Open-ended response