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## **Factors contributing to the limited applicability of the caregiver-patient-family triad in critical care**

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### **Abstract**

**Introduction:** The caregiver-patient-family triad is a fundamental relational model in critical care, recognised for its positive impact on clinical outcomes and patient satisfaction. However, its effective implementation in Congolese hospitals remains problematic. This study aimed to identify the factors contributing to the limited application of this triad at the Bolenge General Referral Hospital (HGR) and to propose avenues for improvement tailored to the local context.

**Methods:** A cross-sectional study with descriptive and analytical objectives was conducted from 15 January to 15 April 2026. Exhaustive sampling enabled the inclusion of 92 healthcare professionals working in the critical care units of the Bolenge General Reference Hospital (HGR). The data, collected using a validated self-administered questionnaire exploring organisational, communicational, cognitive and institutional dimensions, were subjected to univariate and bivariate analyses (Pearson's chi-squared test).

**Results:** Only 16.3% of respondents were able to systematically involve the family in the care process. The predominant barriers included excessive workload (89.1 per cent), a lack of time dedicated to communicating with families (84.8 per cent), the absence of family involvement protocols (80.4 per cent), a lack of training on the triadic relationship (77.2 per cent) and perceived communication difficulties (72.8 per cent). Inferential analysis revealed that the effective integration of the triad is significantly correlated with specific training for healthcare staff ( $p < 0.001$ ) and the existence of clear institutional protocols ( $p = 0.002$ ).

**Conclusion:** The operationalisation of the caregiver-patient-family triad within the Bolenge Regional General Hospital remains hampered by multidimensional systemic barriers. The introduction of targeted training, the development of appropriate protocols and the provision of dedicated spaces for families are priority areas for action to optimise the quality of critical care.

**Keywords:** healthcare provider-patient-family triad, critical care, organisational barriers, care relationship, DRC.

## 1. Introduction

In the field of critical care, patient management requires a holistic approach that goes beyond purely technical and medical interventions. The caregiver-patient-family triad is emerging as an essential model for ensuring optimal quality of care [1]. This model is based on the dynamic interaction between the healthcare professional, the patient and their loved ones, each of whom plays a crucial role in the healing process. The literature highlights the importance of this triad in promoting patient wellbeing. According to Cabe and Priebe [2], the therapeutic relationship is a determining factor in the care experience, influencing not only clinical outcomes but also the patient's overall satisfaction. Furthermore, the active involvement of the family in the therapeutic journey is recognised as a key element in optimising clinical outcomes [3].

Recent changes in the position and role that patients wish to occupy within their care pathway have profoundly altered relational dynamics in hospitals. Internationally, legal frameworks (such as the French Act of 4 March 2002 on patients' rights) have institutionalised the concept of a 'trusted person', thereby legally enshrining the role of relatives [4]. This development reflects a broader societal transformation in which patients and their families are becoming fully-fledged stakeholders in healthcare.

However, the role of family members in the care relationship with adults hospitalised in critical care remains ambiguous. Healthcare professionals adopt differing stances towards families, involving them in very varied ways [5]. Whilst certain traditional practices tended to systematically exclude family members on the pretext of preserving the patient's privacy or the smooth running of care, we are now seeing a shift towards partnership-centred approaches [6].

The *patient- and family-centred care* approach is receiving increased attention within resuscitation and critical care teams [7]. This philosophy of care recognises relatives as essential partners, requiring formalised collaboration and active listening to help the family cope with the crisis associated with critical illness. Clear, transparent information and a flexible approach to family involvement form the cornerstones of this approach [8].

In the Democratic Republic of the Congo (DRC), the healthcare system faces significant macroeconomic constraints that directly impact the management of human and material resources in public healthcare facilities [9]. The Bolenge General Referral Hospital (HGR), located in Equateur Province, is no exception to these realities. Although

empirical findings suggest a low level of family involvement in the decision-making aspects of care, no quantitative study had previously objectively measured the variables hindering the application of the caregiver-patient-family triad within this institution [10].

To address this data gap, this study has set itself three objectives:

- To identify the nature of the barriers (organisational, communicational, cognitive and institutional) hindering the integration of the triad into critical care at the Bolenge Regional General Hospital;
- To determine the structural and professional factors influencing its effective implementation;
- To formulate pragmatic strategic recommendations tailored to the healthcare context of the Équateur region.

## 2. Methods

### 2.1. Study design and setting

This was a cross-sectional study with a descriptive and analytical focus, conducted within the critical care units of Bolenge General Hospital (Internal Medicine, Surgery, A&E and Intensive Care) over a period from 15 January to 15 April 2026.

### 2.2. Sample and selection criteria

The study population comprised healthcare staff (nurses, doctors, nursing assistants) working in the target departments. Inclusion criteria included a minimum of six months' continuous service at the institution and the provision of free and informed written consent. Students, trainees and staff on sick leave or long-term leave were excluded. A comprehensive census resulted in a final sample of 92 healthcare professionals.

### 2.3. Operational definitions

- **Caregiver-patient-family triad:** A systemic care model in which the patient, the care team and the family interact interdependently, characterised by effective collaboration and two-way communication [1].
- **Appropriate integration of the triad:** Documented clinical practice meeting at least three of the following criteria: systematic provision of

information to the family; authorised presence during certain care procedures; participation in non-critical decisions; the existence of a dedicated reception area; and formalised communication.

- **Organisational barriers:** Constraints inherent in the immediate working environment (workload, high patient-to-staff ratios, time pressure).
- **Communication barriers:** Difficulties relating to the flow of communication (medical jargon, language barriers, lack of interpersonal skills).
- **Cognitive/individual barriers:** A sense of limited personal competence felt by the carer when faced with families' emotional reactions.
- **Institutional barriers:** Lack of guiding frameworks, standardised protocols and thematic continuing professional development programmes [11].

#### 2.4. Data collection and processing

The variables were collected using an anonymous, self-administered questionnaire comprising 35 items. This questionnaire was validated during a pre-test conducted with 10 professionals not included in the final sample. The structured questionnaire explored five dimensions: (1) current integration practices, (2) perceived barriers, (3) level of relational training, (4) individual attitudes, and (5) suggestions for improvement. The data were double-entered into Microsoft Excel before being exported to the statistical programming software R (version 4.3) for cleaning and analysis.

#### 2.5. Statistical analyses

Univariate analysis was used to describe the socio-demographic characteristics and the prevalence of barriers in terms of absolute numbers (\$n\$) and percentages (%). Bivariate analysis utilised Pearson's  $\chi^2$  test to identify statistically significant associations between the level of compliance with the integration of the triad and institutional or professional variables. The threshold for statistical significance was set at  $p < 0.05$  [12].

#### 2.6. Ethical considerations

The study received institutional approval from the Ethics Committee of the Institut Supérieur des Techniques Médicales de Mbandaka. Written consent was obtained from each participant, and strict data confidentiality was ensured by anonymising the data collection forms.

### 3. Results

#### 3.1. Sample profile

The median age of the 92 healthcare professionals included was 36 years (interquartile range, IQR: 29–44 years), with a predominance of male staff (61.9%). The average length of service at the institution was 8.4 years ( $\pm 5.2$ ). The breakdown by profession was as follows: nurses (62.0 per cent), doctors (17.4 per cent) and nursing assistants (20.6 per cent). Furthermore, only 23.9 per cent of respondents reported having previously received specific continuing professional development on the triadic relationship or communication with relatives in a critical care setting.

#### 3.2. Univariate analysis: Practices and mapping of barriers

The rate of compliant integration of the triad proved to be particularly low: only 15 professionals (16.3 per cent) met the defined operational criteria. Access to routine clinical information was the aspect most commonly shared with families (58.7 per cent), whilst the involvement of relatives in treatment decisions represented the lowest level of interaction (19.6 per cent).

The various categories of barriers reported by healthcare professionals are ranked in Table 1.

**Table 1** – Mapping of barriers to the integration of the care-giver–patient–family triad as expressed by healthcare professionals (N=92)

| Category of barriers | Nature of the reported constraint                                   | Frequency (n) | Percentage (%) |
|----------------------|---------------------------------------------------------------------|---------------|----------------|
| Organisational       | Excessive workload (ratio of 12 patients per nurse)                 | 82            | 89.1%          |
| Organisational       | Lack of time set aside for communicating with families              | 78            | 84.8%          |
| Institutional        | Lack of institutional protocols for family integration              | 74            | 80.4%          |
| Institutional        | Lack of continuing professional development programmes on the triad | 71            | 77.2%          |
| Communication        | Perceived communication difficulties with families                  | 67            | 72.8%          |
| Communication        | Excessive use of medical jargon with relatives                      | 58            | 63.0%          |
| Institutional        | Lack of dedicated spaces for families within wards                  | 54            | 58.7%          |
| Individual           | Feeling of helplessness when dealing with emotions                  | 49            | 53.3%          |
| Institutional        | Visiting hours too restrictive                                      | 43            | 46.7%          |
| Organisational       | Time pressure associated with                                       | 41            | 44.6%          |

|  |                                       |  |  |
|--|---------------------------------------|--|--|
|  | managing life-threatening emergencies |  |  |
|--|---------------------------------------|--|--|

### 3.3. Bivariate analysis: Factors correlated with the application of the triad model

The cross-tabulation analysis highlights highly significant associations between certain structural variables of the healthcare facility and the likelihood of healthcare staff applying the triad model (Table 2).

**Table 2** – Analysis of factors associated with the correct application of the triad

| Influencing factors assessed                 | Compliant implementation (n=15) | Non-compliant integration (n=77) | Statistic ( $\chi^2$ ) | p-value    |
|----------------------------------------------|---------------------------------|----------------------------------|------------------------|------------|
| Specific continuing professional development |                                 |                                  | 22.14                  | \$<0.001\$ |
| Yes                                          | 12 (80.0 per cent)              | 10 (13.0 %)                      |                        |            |
| No                                           | 3 (20.0 %)                      | 67 (87.0 %)                      |                        |            |
| Availability of a protocol                   |                                 |                                  | 9.56                   | \$0.002\$  |
| Yes                                          | 11 (73.3%)                      | 19 (24.7 per cent)               |                        |            |
| No                                           | 4 (26.7 per cent)               | 58 (75.3%)                       |                        |            |
| Dedicated physical space                     |                                 |                                  | 4.21                   | 0.040      |
| Yes                                          | 8 (53.3%)                       | 17 (22.1 per cent)               |                        |            |
| No                                           | 7 (46.7 per cent)               | 60 (77.9%)                       |                        |            |
| Length of service                            |                                 |                                  | 0.15                   | 0.698      |

|               |                   |            |  |  |
|---------------|-------------------|------------|--|--|
| Age 5 years   | 9 (60.0 %)        | 42 (54.5%) |  |  |
| Under 5 years | 6 (40.0 per cent) | 35 (45.5%) |  |  |

**Analysis note:** The acquisition of specific knowledge through continuing professional development and the existence of a formalised integration protocol are the key determinants of the triad being applied correctly. Length of service shows no statistically significant association ( $p = 0.698$ ), indicating that experience gained over the years does not compensate for the lack of standardised theoretical, methodological and institutional guidelines.

## 4. Discussion

The results of this study highlight a critical gap between international theoretical recommendations for holistic care and actual practices at Bolenge General Hospital, with a compliance rate limited to 16.3 per cent. This low rate is consistent with data documented in hospital settings across sub-Saharan Africa, notably in Benin (18.5 per cent) and Burkina Faso (21 per cent), confirming that the limited operationalisation of partnerships with families is part of a regional systemic dynamic [13, 14].

### 4.1. Analysis of the main organisational barriers

Excessive workload (89.1 per cent) stands out as the predominant barrier. With staff-to-patient ratios sometimes reaching one healthcare professional per twelve beds in critical care, staff are faced with constant clinical trade-offs. Faced with this overload, healthcare staff prioritise routine medical and technical procedures and the management of life-threatening emergencies at the expense of relational and communicative interventions, which are mistakenly regarded as secondary [15]. This finding is corroborated by the 84.8 per cent of respondents who cited a lack of time. Our findings are consistent with those of Kaboré et al. in Ouagadougou, who noted that a high-quality therapeutic alliance is physically impossible without institutionally guaranteed time slots [16].

### 4.2. Institutional and procedural issues

The absence of integration protocols (80.4 per cent) constitutes a major systemic barrier. In the absence of formal guidelines, the implementation of the triad depends solely on the individual awareness or initiative of certain healthcare professionals [17]. This reflects the persistence of a traditional biomedical model of care, centred exclusively on the individual patient. However, as Bennett et al. point out,

recognition of the theoretical benefits of the triad never automatically translates into clinical skills without managerial support and clear implementation procedures [18].

### 4.3. Communication challenges and feelings of incompetence

The communication difficulties experienced (72.8 per cent) and the recurrent use of medical jargon (63.0 per cent) indicate a lack of interpersonal skills. These findings are consistent with the analyses by McCabe and Priebe, who posited that language barriers significantly undermine mutual trust within the triad [2]. Furthermore, the feeling of incompetence when faced with families' emotional reactions (53.3 per cent) highlights the urgent need to equip professionals with techniques for active listening, crisis management and delivering complex news in critical situations [19].

### 4.4. Continuing professional development as a key lever for action

Inferential analysis confirms a strong correlation between access to specific training and compliance with best practice ( $p < 0.001$ ). Continuing professional development is therefore not merely an optional extra, but the very foundation of the transformation of practices. The fact that only 23.9 per cent of professionals have benefited from such training largely explains the prevalence of restrictive attitudes. According to the literature, the integration of interpersonal modules helps to reduce carers' anxiety and optimise the overall efficiency of the care provided [20].

### 4.5. Prospects for operational adaptation and limitations of the study

Given the scarcity of financial resources in the province of Ecuador, innovative, low-cost approaches (*frugal innovation*) must be considered. The appointment of one family liaison nurse per team or the introduction of brief, standardised briefing sessions would help to structure the dialogue without overburdening the teams.

*Limitations of the study:* The cross-sectional design limits the ability to formally establish rigid causal links. Furthermore, the use of a self-administered questionnaire introduces a potential risk of social desirability bias. However, the choice of an exhaustive sample within the Bolenge General Hospital ensures robust internal validity for this study.

## 5. Conclusion and recommendations

The operationalisation of the caregiver-patient-family triad within the critical care units of the Bolenge General Referral Hospital faces major systemic barriers. Although basic factual information is partially provided to relatives, their active involvement in the therapeutic and decision-making process remains marginal. This situation stems directly from chronic work overload, a pronounced lack of continuing professional development and a glaring absence of protocol-based and structural guidelines.

In order to transform these barriers into drivers of performance and to establish a care approach that is genuinely centred on the patient and their family, the following operational recommendations are set out:

- **To the Hospital's General and Medical Management:**
  - Develop and formalise a framework protocol for family involvement, setting out the rights, responsibilities and access arrangements for relatives in critical care units according to the level of clinical severity.
  - Initiate a reassessment of healthcare teams' workloads and plan, in the medium term, to readjust patient-to-staff ratios in A&E and intensive care units.
- **In the Continuing Professional Development Department:**
  - To organise and make compulsory half-yearly training sessions focusing on the relational dynamics of the triad, active listening techniques, managing the stress of hospitalisation, and communication in crisis situations.
- **To Heads of Critical Care Services (Head Physicians and Senior Nurses):**
  - Set aside a formalised daily time slot for discussion (for example, a 15-minute update per patient) between the care team and the family representative, with details systematically recorded in the clinical care record.
- **To Provincial Health Authorities and Institutional Partners:**
  - Appoint 'family liaison nurses' on a rota basis to streamline the flow of information and minimise the use of complex medical jargon.
  - Allocate specific material resources to enable the refurbishment of physical spaces dedicated to patient reception (fully equipped waiting rooms, rooms for confidential consultations) within public healthcare facilities in the province of Équateur, in order to restore dignity and privacy to the care relationship.

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