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Scientific articles

Propuesta de estrategias para la atención integral y el trato digno a víctimas de siniestros viales en Tránsito Bucaramanga

Proposal of strategies for the comprehensive care and dignified treatment of road accident victims in Transit Bucaramanga

Propostas de estratégias para o atendimento integral e tratamento digno às vítimas de acidentes de trânsito no Trânsito de Bucaramanga

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Resumen

Partiendo del contexto de la atención a víctimas de accidentes de tránsito como un reto clave para la seguridad vial y la salud pública, este estudio analiza estrategias para mejorar la atención en la Dirección de Tránsito de Bucaramanga (DTTB), garantizando un trato digno y eficiente. Mediante una metodología mixta, se evaluaron las percepciones de víctimas y funcionarios mediante encuestas, entrevistas y análisis documental. Los hallazgos revelan deficiencias en la intervención en el lugar del accidente y en el seguimiento post accidente, en particular debido a la falta de asistencia psicológica y orientación legal. Esto exacerba la vulnerabilidad de las víctimas y limita su acceso a la justicia. Se concluye que es esencial un protocolo de atención integral que articule a las entidades involucradas. Se recomienda la implementación de un modelo centralizado que integre la atención médica, el apoyo psicológico y la asesoría legal para garantizar una atención basada en la dignidad de los usuarios.

Palabras claves: Atención integral; Acceso a la justicia; Seguridad vial; Víctimas de siniestros viales; Protocolo de atención; Asistencia multidisciplinar.

Abstract

Framed within the context of providing assistance to victims of road traffic accidents—a key challenge in road safety and public health—this study analyzes strategies to enhance the quality of care provided by the Transit Department of Bucaramanga (DTTB), with a focus on ensuring dignified and efficient treatment. Employing a mixed-methods approach, the perceptions of both victims and officials were assessed through surveys, interviews, and document analysis. The findings reveal significant shortcomings in on-site intervention and post-accident follow-up, particularly due to the absence of psychological assistance and legal guidance. These gaps exacerbate victims' vulnerability and limit their access to justice. The study concludes that a comprehensive care protocol that articulates the efforts of all involved entities is essential. It recommends the implementation of a centralized model that integrates medical care, psychological support, and legal counsel in order to provide assistance grounded in the dignity of users.

Keywords: Comprehensive care; Access to justice; Road safety; Victims of road accidents; Care protocol; Multidisciplinary assistance.



Resumo

Sob a perspectiva do atendimento às vítimas de acidentes de trânsito como um desafio fundamental para a segurança viária e a saúde pública, este estudo analisa estratégias para aprimorar o atendimento no Departamento de Trânsito de Bucaramanga (DTTB), a fim de garantir um tratamento digno e eficiente. Utilizando uma metodologia mista, as percepções das vítimas e dos agentes foram avaliadas por meio de pesquisas, entrevistas e análise documental. Os resultados revelam deficiências na intervenção no local do acidente e no acompanhamento pós-acidente, principalmente devido à falta de assistência psicológica e orientação jurídica, o que agrava a vulnerabilidade das vítimas e seu acesso à justiça. Conclui-se que um protocolo de atendimento integral que coordene as entidades envolvidas é essencial. Recomenda-se a implementação de um modelo centralizado que integre atendimento médico, apoio psicológico e assessoria jurídica para garantir um atendimento baseado na dignidade dos usuários.

Palavras-chave: Atenção integral; Acesso à justiça; Segurança no trânsito; Vítimas de acidentes de trânsito; Protocolo de atendimento; Assistência multidisciplinar.

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Introduction

Road safety is a crucial challenge on the international public health agenda. More and more cities are facing a growing crisis and greater challenges in urban traffic management, with all the challenges this entails. According to the Pan American Health Organization (2023), injuries and deaths from traffic accidents represent a problem of global magnitude, with an estimated 1,300,000 preventable deaths and nearly 50,000,000 injuries, most of which, of course, are also preventable. This outlook was highlighted at the meeting on improving global road safety, where governments committed to integrating intersectoral efforts to reduce both injuries and deaths (Forensis, 2021). This issue, to date, has remained largely unaddressed and has not had a significant impact, especially given the increasing traffic chaos, as is the case in Colombia and, consequently, in Bucaramanga, the city that is the subject of this paper.

In Colombia, the situation is particularly alarming: during 2023, 7,477 deaths from traffic accidents were reported, a figure that increased by 32% compared to the previous year. "In the department of Santander, 406 deaths were recorded, of which 72 occurred in



Bucaramanga" (Forensis, 2021, p. 407). However, despite the fact that international organizations, such as the UN (2020), and national strategies, such as the National Road Safety Plan 2022–2031 (Agencia Nacional de Seguridad Vial, 2022), have raised the need to establish standards and measures to guarantee the safety of users, in Bucaramanga (Colombia), the absence of a formal protocol for comprehensive care for victims of road accidents persists amid growing traffic disorder.

This growing traffic chaos in the city is a reality that affects the quality of life and the economic and solidarity circuits of the city and its inhabitants (Acebedo & Velasco, 2017) and has various causes. The vehicle fleet has grown uncontrollably, with an increasing presence of motorcycles, disregard for traffic regulations and poor compliance with regulations such as SOAT and technical-mechanical inspection (Universidad Autónoma de Bucaramanga, 2024). This vehicular expansion has not been accompanied by improvements in road infrastructure or public transport (Vanguardia, 2025), which has generated congestion, accidents and disorganization in urban mobility (Infobae, 2024). Furthermore, there is still a weak articulation between development plans and road safety policies (Bucaramanga Metropolitana Cómo Vamos, 2024), a situation that the Municipal Development Plan itself recognizes as one of the main problems of the city (Mayor's Office of Bucaramanga, 2024). Faced with this, Comparative studies have shown that Bucaramanga needs to adopt more sustainable practices, similar to those of other Latin American cities (Restrepo & Díaz, 2023).

These shortcomings and difficulties also translate into fragmented care and delays in both primary intervention (at the scene of the accident) and secondary care (follow-up, psychological support, and legal assistance). This situation violates the basic right to treatment based on dignity as a fundamental principle, centered on the recognition of the value of the person and the resulting respect (Kant, 1980), and highlights the urgent need to coordinate the various actors involved in the matter.

According to interviews with experts from the Department of Traffic, currently, primary care (at the scene of a road accident) for road users who are victims of accidents is limited to the administrative and technical aspects, with no specific support or advice. Although the procedures at the counters are friendly and relatively quick, they lack the connection with the human element that victims need in most cases, especially with regard to the legal advice and psychological support that a person in these circumstances may need.



Current strategies are provided in primary care (during traffic accidents), in accordance with the technical sheet of the "Standardized Operating Protocol (POE)", considering the responsibilities of the Traffic Directorate and the current legal framework, such as the "National Land Traffic Code (Law 769 of 2002 and its amendments)", as well as the guidelines of the National Police and other road care entities, which are applied in Bucaramanga from the process delimited by law, which generally involves the following actions: 1. Securing the Scene. 2. Initial Assessment and Inter-Institutional Coordination. 3. Gathering Technical and Legal Information. 4. Sketches and Documentation of the Accident. 5. Restoring Normal Traffic. 6. Closing the Procedure and Legal Follow-up. The latter involves moving on to the next stage: filing the IPAT with the competent authority, delivering copies of the report to the interested parties (when applicable), reporting it to the Ministry of Mobility or the Directorate of Traffic for administrative purposes, coordinating with insurance companies, if applicable, and forwarding it to the Prosecutor's Office in cases of personal injury, negligent homicide, or evidence of a crime. This first stage involves a technical, healthcare, and legal issue, which is where the responsibility of traffic authorities ends.

Regarding secondary care, the following moments occur in the Directorate of Traffic and Transportation (which are presented in more detail as they correspond to the research interest of this work):

1. Formal registration of the accident: validation of the Police Traffic Accident Report (IPAT), assignment of a file number to the case, verification of complete victim data (identity, contact information, health conditions), and registration in the Traffic Directorate's internal system or national platform (RUNT, SIMIT).

2. Institutional channeling: referral of the case to the Attorney General's Office if there are indications of criminal liability (personal injury or negligent homicide); notification to the vehicle's insurer if there is a mandatory (SOAT) or voluntary (RC) policy; guidance to the victim or their family on rights vis-à-vis insurers (medical, funeral, and compensation coverage) and legal and administrative procedures; and request for copies of the IPAT, sketches, and other evidence.

3. Administrative support: issuance of necessary certificates or certifications for judicial, medical, funeral, or insurance procedures, information on appeals or settlements, if the victim wishes to file a claim for damages, and guidance on victim assistance options (Ombudsman's Office, Ombudsman's Office, Prosecutor's Office, SISEVE).



4. Case follow-up: monitoring the legal process, if an investigation is opened, supporting the traffic judge or ordinary judge with evidence from the technical report if an expert opinion is required, verifying compliance with obligations by the responsible party (material repairs, appearance at hearings, and response from the insurer).

5. Support in conciliation or conflict resolution: in some cases, at the request of a party, the Traffic Department may facilitate extrajudicial conciliation between the parties (when there are no serious injuries or death) and guidance for access to conciliation centers or the Transportation Superintendency if there are non-compliances.

6. Case closure and filing: Once the case is resolved (judicially or administratively), the file is archived. At this point, the victim can request a copy of the file or proof of the accident resolution for legal or employment purposes.

Institutional secondary care does not necessarily or obligatorily imply direct medical or psychological services, but the Transit Department may refer or coordinate with other entities (Ministry of Health, EPS, hospitals, Ombudsman's Office) if required.

Consequently, the minimum technical, legal, and administrative requirements are met; however, they lack a humane and comprehensive approach, especially with regard to psychological and legal support, as many victims face post-traumatic stress disorder, anxiety, grief, or guilt, even in non-fatal accidents. Nor does it provide effective and accessible legal advice, as many victims, especially from vulnerable sectors, do not understand their rights or how to assert them before insurers, prosecutors, or judges. Thus, there is often no clear route to immediate emotional care or ongoing psychological follow-up. This lack of support can exacerbate suffering, hinder recovery, and affect the victim's willingness to face legal issues. In short, formal compliance is achieved, but institutional sensitivity to human suffering is lacking. Incorporating real and timely emotional and legal support is not only ethical and fair, but also improves its effectiveness and reduces re-victimization, as is the case elsewhere in the country (see Table 1).

Table 1. Comparison of Care for Victims of Traffic Accidents in Latin America

Country / City	Psychological support	Legal advice	Comprehensive approach
Bucaramanga (general model)	Not systematic. Not offered as part of the transit protocol.	Limited. It is referred to the Prosecutor's Office or conciliation without accompaniment.	Predominantly technical and administrative.
Bogotá (comprehensive care for victims)	Yes. Referral to district mental health services. Early psychosocial intervention.	Yes. Legal support in coordination with the Ombudsman's Office and legal clinics.	Yes. Victim-centered approach as a subject of rights.
Medellín (Secretary of Mobility + Health)	Yes. Psychosocial intervention coordinated by the Ministry of Health.	Yes. Basic legal guidance from Mobility and coordination with the Legal Entity.	Yes. Intersectoral care model.
Chile (CONASET Program)	Yes. Emotional support included in road safety strategies.	Partial. Legal information available, but no individualized advice.	Moderate. Focus on prevention, but with humane care lines.
Argentina (Buenos Aires - SISEVI)	Yes. Integrated emotional and psychosocial support programs.	Yes. Lawyers are available within the framework of SISEVI (Road Safety System).	Yes. Comprehensive emotional, legal, and technical care.
Mexico City (CDMX - Attention to Road Victims)	Yes. Psychoemotional care through CEAVI (Victim Care Center).	Yes. CEAVI offers free legal assistance.	Yes. Inter-institutional model with a human rights approach.

Source: Pan American Health Organization (2022)

From this situation, the central question of this study arises: How can intersectoral coordination be achieved in the city of Bucaramanga (Colombia) to consolidate the comprehensive care unit for victims of road accidents? Thus, the general objective arises: to propose strategies that allow for the qualification of care and dignified treatment of victims through the centralization and coordination of efforts within the Bucaramanga Traffic Department. This is achieved through the following specific objectives: to recognize the perceptions of victims and officials regarding the effectiveness and dignified treatment of conflict resolution in road accidents; to identify guidelines for comprehensive care based on a diagnosis; and to design care routes within the Traffic Department that optimize the management and treatment of victims.

Method

This study adopts a qualitative approach, with a projective orientation (Hurtado, 2010), which allows for an in-depth understanding of the experiences and perceptions of the actors involved, both victims and officials. It is particularly well-suited to address complex and multidimensional problems (Hernández et al., 2010). This approach is justified by the



intention not only to describe and diagnose a reality, but also to design intervention and improvement strategies applicable to the institutional context, in this case, of the Bucaramanga Transit and Transportation Directorate. Thus, two methodological phases have been designed:

Study design and phases

The research was structured following the holistic model proposed by Hurtado (2010), which includes a methodological cycle with the following phases: Exploratory: review of the state of the art, regulatory analysis and institutional protocols. Descriptive and diagnostic: collection of empirical information through surveys and semi-structured interviews. Analytical and predictive: interpretation of the findings and formulation of improvement proposals. Interactive and evaluative: validation of the comprehensive care model with experts and key actors in the transit system. Likewise, a mixed methodology was used, since its application involved a survey and semi-structured interviews.

Participants and sample

The sample consisted of 100 users of the administrative and operational services of the Bucaramanga Traffic Department, selected using a non-probability convenience sample. The inclusion criterion was having had a recent experience (between 2021 and 2023) related to a traffic accident managed by the department.

Sample distribution:

Gender: 50% female and 50% male.

Age: Between 18 and over 40 years, with predominance in the 24 to 29 age group (29%).

Educational level: 50% high school, 32% technical/technological, 14% professional and 4% primary.

It should be clarified that, due to limited access to a complete victim database, the sample cannot be considered representative of the entire affected population in the city, which constitutes a significant methodological limitation. However, the findings offer relevant evidence consistent with similar studies conducted in other Colombian cities, such as Bogotá and Medellín, where deficiencies in psychosocial and legal care for victims of road accidents have also been documented (Sandoval, 2020; Detrie Niampira et al., 2021). Furthermore, institutional and academic diagnoses have pointed to the need to overcome

fragmented institutional responses through care pathways focused on the rights and dignity of victims (Almeida, 2014; National Road Safety Agency, 2022). This strengthens the validity of this study as a local diagnostic approach, useful for formulating institutional improvement strategies.

Instruments and items

For data collection, two main instruments were designed and applied:

Survey (administered via Google Forms) aimed at users of the Traffic Department, consisting of 12 items distributed in three thematic categories:

- Customer service (staff friendliness, waiting times, accessibility).
- Service during the intervention at the scene of the accident (number of agents, quality of service).
- Post-accident care (information received, legal advice, psychological support).

Likert-type scales, multiple choice and closed questions were used.

Semi-structured interview guide, addressed to four traffic officials, three road safety experts and four accident victims.

The questions were structured around the aforementioned analytical categories, with an emphasis on perceptions of the treatment received, institutional weaknesses, and proposals for improvement.

Both instruments were validated by expert judgment (two researchers with experience in social studies and applied methodologies), who offered feedback on the wording, item relevance, and scale clarity, which allowed for improvements to the instruments before their final implementation.

Data analysis

The quantitative data collected through the surveys were processed in spreadsheets, applying basic descriptive statistical procedures, such as absolute frequencies, percentages, and simple cross-referencing of sociodemographic and perception variables.

The qualitative data derived from the interviews were analyzed using thematic content analysis, which allowed for the categorization of common patterns in the testimonies and their alignment with the study's objectives.



Ethical aspects

The study adhered to the ethical principles for research involving human subjects established in Resolution 8430 of 1993 of the Colombian Ministry of Health. Each participant was previously informed of the purpose of the study, their rights, and the confidentiality of the information provided. Informed consent was obtained from all respondents and interviewees, respecting their autonomy and privacy.

Results

The results presented below allow us to assess the current state of care for road accident victims in Bucaramanga from an empirical and critical perspective. Based on the analysis of surveys, interviews, and regulatory documents, we identify perceptions, institutional gaps, and practices that affect the guarantee of rights. These findings constitute the basis for supporting the proposal of a comprehensive and dignified care model, focused on the real needs of those affected.

Diagnostic Phase

Semi-structured Interviews: Interviews will be conducted with road safety experts (e.g., Traffic Department officials, members of the Mayor's Office, and final-semester TICCF students) and victims of road accidents. These interviews will identify the main shortcomings and perceptions of the treatment received.

Document Analysis: Regulatory documents (such as the National Road Safety Plan 2022–2031) will be reviewed and successful cases in other regions will be compared to identify good practices and establish guidelines for improvement.

Benchmarking: Successful and recognized experiences in Colombia and Latin America. The results of this part of the study can be summarized, maintaining the two main analysis criteria, as follows:

In Latin America, several cities are implementing innovative systems to improve care for users and victims of traffic accidents, from the moment of the incident through recovery and subsequent procedures. A fundamental aspect is care during intervention at the accident scene, which begins with a timely and empathetic response. In Bogotá, the Bogotá Health Secretariat (2020) has established district routes that include early psychosocial intervention at the accident scene, in coordination with health and justice entities. In Medellín, the coordination between the Medellín Mobility Secretariat and the Health Secretariat allows for



comprehensive intervention at the accident scene, with trained personnel and basic legal guidance (Medellín Mobility Secretariat, 2022). In Mexico City, the Mexico City Victim Assistance Center (CEAVI) provides psychoemotional care from the earliest stages of the process (Mexico City Victim Assistance Center, 2022). In Buenos Aires, the Comprehensive Care System for Victims of Road Accidents (SISEVI) offers immediate support through interdisciplinary teams that integrate psychology, social assistance, and legal services (National Road Safety Agency, 2019). In Chile, the National Traffic Safety Commission (CONASET) includes strategic lines for emotional support in its National Traffic Safety Plan, although without individualized legal advice (National Traffic Safety Commission, 2021). Finally, in Montevideo, the National Road Safety Unit (UNASEV) promotes rapid response actions coordinated between traffic, health, and justice (National Road Safety Unit, 2020).

Regarding post-accident services, regional best practices focus on comprehensive recovery for victims and the simplification of administrative procedures. In Bogotá, the Ombudsman's Office, together with university legal clinics, facilitates access to justice for victims and their families (Bogotá Health Secretariat, 2020). In Medellín, coordinated legal and psychosocial support is provided, with follow-up on reported cases (Medellín Mobility Secretariat, 2022). The CEAVI model in Mexico City provides free legal advice, as well as guidance on compensation and symbolic reparation processes (Mexico City Victim Assistance Center, 2022). In Buenos Aires, the SISEVI centralizes post-accident services through a national system that guarantees legal and emotional support for victims (National Road Safety Agency, 2019). Chile, through CONASET, has developed legal information and re-victimization prevention strategies, although it still lacks systematic post-accident support (National Traffic Safety Commission, 2021). Finally, Montevideo is making progress in developing a coordinated approach between the health system and conflict resolution bodies (National Road Safety Unit, 2020). These international experiences reflect the importance of victim-centered care as a subject of rights, through comprehensive, empathetic, and inter-institutional models.

In summary, some international models present notable components that could serve as a reference to strengthen local care. In Mexico City, the model implemented by the Victim Assistance Center (CEAVI) has managed to consolidate a clear path of comprehensive care that includes immediate psychoemotional support, free legal advice, and accompaniment throughout the judicial and administrative process, which has reduced re-victimization and improved institutional perception. Meanwhile, in Buenos Aires, the Comprehensive

Assistance System for Victims of Road Accidents (SISEVI) stands out for its intersectoral approach, with specialized technical teams working to restore victims' life plans, integrating health, justice, transportation, and social work. These models share a common logic: placing the victim at the center as a subject of rights, which has proven to be an effective strategy for improving the quality of service, reducing suffering, and strengthening citizen trust in institutions.

Surveys: A survey was administered to victims and staff involved in providing care to contrast and supplement the information obtained through interviews. This part of the data processing was carried out using a tool aimed at users of the administrative services of the Bucaramanga Traffic and Transportation Directorate, using *Google Forms* as the data collection tool.

The data were tabulated into the following categories: customer service, service during the traffic accident response, and post-accident service (at the Traffic Department). These categories were represented graphically to facilitate a clear and systematic understanding of the results, which are presented in statistical percentages:

Table 2. Personal information

Age	18 - 23	24 - 29	30 - 34	35 - 39	40 or more
Number of people	3	29	18	21	29
Educational level	Primary	Baccalaureate	Technician or technologist	Professional	
Number of people	4	50	32	14	
Gender	Female	Male			
Percentage	50	50			

Source: Prepared by the authors

The table presents personal information of a sample of individuals classified by age, gender and educational level. In terms of age range, the distribution is heterogeneous, with the 24 to 29 age group being the largest (29 people), followed by the 40 and over age group (29) and the 30 to 34 age group (18), while the 18 to 23 age group (3) and 35 to 39 age group

(21) are less representative. In terms of gender, the sample is evenly distributed with 50% female and 50% male participants, suggesting gender parity in data collection. Regarding educational level, the majority have secondary education (50 people), followed by technical or technological training (32), while a smaller percentage have achieved professional studies (14) or only have primary education (4). These data suggest that the population is composed primarily of young adults and middle-aged individuals with a mid-level education, which allows for better responses, given the expected analytical skills of the respondents.

Table 3: Customer Service

Questions	Excellent	Very good	Good	Regular	Deficient
How would you rate the courtesy and friendliness of the customer service staff?	7	25	61	7	0
Questions			Yeah %	No %	
Did you receive the necessary information in a timely and accurate manner?			86	14	
Do you consider the wait time to be served to be reasonable?			89	11	
Do you find our facilities accessible to people with disabilities?			89	11	

Source: Prepared by the authors

Indicator: Staff Courtesy

Average: 3.92

Standard deviation: 0.61

Fashion: 3

Regarding the courtesy and friendliness of the customer service staff, respondents gave this aspect an average of 3.92 out of 5 (SD = 0.61) on a Likert-type scale (1 = poor; 5 = excellent). The mode was 3 (good), indicating a generally positive perception, although with room for improvement to achieve levels of excellence.

The data indicate that the overall perception of customer service at the Bucaramanga Transit Authority is largely positive. In terms of staff courtesy and friendliness, 93% of respondents rated the service as "good," "very good," or "excellent," with only 7% indicating it was "fair," and no reports of "poor." Furthermore, 86% of users reported receiving timely and accurate information, while 89% stated that the wait time for service was reasonable.

These results suggest that, in their initial phase of contact with citizens, Transit Authority staff provide adequate service in terms of courtesy and response times.

However, although the overall assessment is positive, there are aspects that require improvement. In particular, the need to ensure that the information provided is clear and understandable for all users is highlighted, especially in stressful or emergency situations. Furthermore, while 89% of respondents consider the facilities accessible to people with disabilities, this does not necessarily imply that all accessibility needs are met. It is essential to complement these findings with qualitative studies that will allow for a more detailed assessment of the experience of users with reduced mobility or special needs.

Table 4. Service during the intervention of the events in the traffic accident

Questions	One		Two	Three or more	None
How many traffic officers attended and intervened at the accident scene?	50		43	7	0
	Excellent	Very good	Good	Regular	Deficient
How would you rate the quality of service you received from traffic officers at the scene?	21	11	53	11	4
	Yeah %	No %			
Do you think that number of traffic officers was sufficient for the actions carried out at the scene?	46	54			

Source: Prepared by the authors

Indicator: Service on scene of the accident

Average: 3.58

Standard deviation: 0.96

Fashion: 3

Regarding the quality of service provided by agents, the average rating was 3.58 (SD = 0.96), with a mode of 3 (good). Although a moderately favorable perception was observed, the relatively high standard deviation suggests a diversity of experiences among users, some of whom rated the service as average (11%) or poor (4%). This variability could be due to factors such as arrival times, responsiveness, and interpersonal skills, underscoring the need for periodic training and improvement strategies in primary intervention.

A key aspect of service perception is the number of traffic officers responding to a traffic accident. According to the data collected, 50% of respondents reported that only one officer was present at the scene, while 43% reported the presence of two officers, and only 7% indicated that there were three or more. This distribution could explain why 54% of respondents considered the number of traffic officers on the scene insufficient. A lower presence of officers can affect the response capacity for evidence collection, traffic control, and assistance to the involuntary.

Regarding the quality of service provided at the accident scene, 53% of respondents rated the service as "good," 11% as "very good," and 15% as "fair" to "poor." These results suggest that, although the majority perceives adequate service, a significant proportion of people believe that the care provided at the accident scene is suboptimal. Factors such as delayed arrival of officers, a lack of empathy in their treatment, or a lack of coordination with other emergency agencies may influence this negative perception. To improve these aspects, it is recommended to optimize the distribution of human resources, implement periodic training, and review response times in the offices.

Table 5: Post-accident road service (At the Traffic Department)

Questions	Yes, completely	Yes, mostly	Neutral	Not entirely	No, not at all.
Are you satisfied with the information provided by the Bucaramanga Transit Authority about your rights and options?	21	36	18	25	0
	Excellent	Very good	Good	Regular	Deficient
Overall, how would you rate the service you received from the Bucaramanga Transit Authority?	4	32	43	21	0
Questions	Yeah %		No		
Did you receive the necessary information for the insurance claim and/or damage compensation process?	14		86		
Did you receive legal support and guidance during the process from the traffic department?	7		93		
Did you receive psychological support and guidance during the process at the Traffic Department?	100		0		

Source: Prepared by the authors



Indicator: Satisfaction about/options

Average: 3.53

Standard deviation: 1.09

Fashion: 3

Indicator: Overall service rating

Average: 3.51

Standard deviation: 0.82

Fashion: 3

In the post-accident follow-up, the level of satisfaction with the information provided regarding rights and options was assessed. In this case, the average score was 3.53 (SD = 1.09), with a mode of 4 ("yes, mostly"), reflecting an intermediate perception. However, 25% of respondents explicitly stated that they had not received the necessary information, which compromises effective access to rights.

Regarding the overall perception of the service received at the Traffic Department, the mean was 3.51 (SD = 0.82), with a mode of 3 (good). Although 79% rated the service as "good" to "excellent," 21% rated it as "fair," which reveals the need to strengthen post-accident components.

The results show that there are indeed gaps in post-accident care. Only 21% of those surveyed stated they were completely satisfied with the information they received about their rights and options, while 25% stated they had not received sufficient information. This lack of guidance translates into greater uncertainty for victims regarding the protection of their rights and the administrative protocols to follow. Furthermore, the general perception of post-accident service is mixed: 79% rate it as "good," "very good," and "excellent," but 21% consider it "fair," indicating that there is still room for better integration of services from the Bucaramanga Traffic and Transportation Directorate.

One of the most worrying findings is the lack of institutional support in legal and emotional matters. Ninety-three percent of those surveyed reported not having received legal guidance during the process, while 100% stated they had not received psychological support from the Traffic Department. This lack of assistance exacerbates victims' feelings of vulnerability and hinders their recovery. In many cases, early psychological care can prevent emotional distress resulting from road accidents, and legal guidance is crucial for accessing insurance and compensation. The complete absence of these services highlights a serious shortcoming in the current care model, reinforcing the need to implement a comprehensive



care protocol with an emphasis on horizontal integration that respects and ensures victims' rights.

In summary, the results obtained show that, while customer service at the Bucaramanga Traffic Department is perceived as mostly positive in terms of courtesy and response times, there are significant deficiencies in on-scene intervention and, especially, in follow-up. The lack of traffic officers at the accident scene generates a perception of a lack of control and effective care, which can negatively impact evidence collection and immediate assistance to victims. Furthermore, the quality of service at the accident scene varies, with a significant percentage of respondents rating it as "fair" or "poor," suggesting the need to improve staff training and strengthen appropriate protocols for a complete integration of services.

The most critical aspect identified in this study is the absence of a comprehensive support system for victims after the accident. The lack of legal guidance and psychological assistance exacerbates the vulnerability of those affected and limits their ability to access their rights and resources. The lack of these services within the Traffic Department highlights the need to establish a formal comprehensive care protocol that guarantees emotional and legal support for victims. Implementing a centralized care model, with inter-institutional participation and training strategies for officers, will improve the efficiency of the service, guarantee dignified treatment, and reduce the feeling of lack of protection currently faced by those who have suffered a traffic accident.

Design and Validation Phase

Based on the results, we will proceed with the final part of this work, corresponding to the proposal and its validation:

Design of the Comprehensive Care Protocol: Based on the diagnosis, a model will be developed to centralize the response to road accidents, integrating psychological support, first aid assistance, legal assistance, and procedures for collecting and preserving evidence.

Model Validation: Following the projective approach of the holistic model proposed by Hurtado (2010), the protocol was validated through expert judgment, a technique widely used to assess the relevance, coherence, and applicability of instruments or proposals in applied research. To this end, specialists with experience in road safety, victim assistance, and public management were selected and evaluated the model using a valuation matrix with previously defined criteria. A four-level Likert-type scale (not relevant, slightly relevant,



relevant, very relevant) was used to quantify the degree of adequacy of each component of the protocol. This process not only identified aspects susceptible to improvement but also ensured that the proposal responded to the real needs of the institutional context. As Escobar-Pérez & Cuervo-Martínez (2008) point out, expert judgment is a valid strategy to guarantee content validity, combining technical analysis with the evaluators' practical experience.

Socialization and Training: Once validated, the model will be socialized with relevant entities, ensuring the necessary training for its effective implementation.

Discussion

The findings of this study highlight multiple critical dimensions in the care provided to road accident victims in Bucaramanga, particularly in relation to institutional fragmentation, the lack of emotional and legal support, and limitations in the intersectoral response. The results are discussed below based on the identified areas of care and contrasted with previous studies and relevant regulatory frameworks.

1. Primary care: positive perception, but limited to the superficial

The data show a favorable perception among users regarding aspects related to staff courtesy (mean = 3.92; SD = 0.61), wait time (89% consider it reasonable), and physical accessibility (89%). These findings are consistent with institutional studies that highlight advances in citizen service in administrative areas (National Road Safety Agency, 2022).

Therefore, this perception cannot be interpreted as evidence of comprehensive care. As Carreras (2015) points out, truly dignified care is not limited to kindness, but must involve effective support mechanisms during and after the traumatic event. In other words, primary care is adequate in form but insufficient in content (Ibero-American Federation of Victims' Associations Against Road Violence, 2016).

Furthermore, recent studies have shown that the lack of comprehensive care can lead to re-victimization of affected individuals by not adequately addressing their emotional and legal needs (Ártica, 2015).

2. On-site intervention: insufficient operational capacity

Most reported incidents were handled by one (50%) or two (43%) officers, and 54% of users considered this presence insufficient. Although the quality of service was rated with

a mean of 3.58 (SD = 0.96), this dispersion indicates heterogeneous experiences and reveals that a significant portion of the population perceives the response as deficient.

This finding aligns with Sandoval's (2020) study, which identifies similar shortcomings in Bogotá, particularly related to delays, a lack of human resources, and a lack of empathetic care. The lack of operational presence also limits the capacity for evidence collection, scene control, and timely provision of services, as confirmed by the *World Health Organization* (2018).

Furthermore, the lack of standardized protocols and specialized training in road accident management can aggravate the situation, as noted by the World Health Organization (WHO, 2018), highlighting the importance of an immediate and coordinated response at the scene of the accident.

3. Post-accident care: the most critical point

The most worrying results are evident in the post-accident phase. Only 14% received clear guidance on insurance, 7% received legal advice, and none (0%) reported receiving psychological support. Although the overall mean score for the service was 3.51 (SD = 0.82), 21% rated it as "fair," demonstrating that the experience is not only incomplete but also ineffective in terms of rights.

This gap directly contradicts the provisions of *Law 2251 of 2022*, which establishes the State's obligation to guarantee comprehensive care to victims of road accidents, including legal, psychological, and social assistance measures, which are not materialized in the institutional practice of the Bucaramanga Traffic Directorate. It also conflicts with the *Ibero-American Guide for the Care of Traffic Victims* (Ibero-American Federation of Victims' Associations against Road Violence, 2016), which proposes an approach focused on restoring victims' life plans, with clear pathways for psycho-legal care and comprehensive reparation, dimensions that remain fragmented or absent in the context analyzed. Furthermore, studies such as those by Detrie Niampira et al. (2021) show that this lack of institutional support increases levels of suffering and hinders victims' emotional and functional recovery.

At the international level, models such as those in Mexico City (CEAVI), Buenos Aires (SISEVI), and Bogotá have implemented mechanisms for linking health, justice, and traffic that allow for comprehensive care, as highlighted by PAHO (2022). In contrast, the

case of Bucaramanga reveals a lack of effective intersectoral coordination, which constitutes a structural rather than operational failure.

Furthermore, recent research has shown that post-traumatic stress disorder (PTSD) is a common psychological consequence in traffic accident victims, affecting their quality of life and recovery capacity. A study by Núñez-Soliz et al. (2025) found that between 15% and 25% of people who are victims of traffic accidents tend to develop PTSD within the first six months after the event. This finding underscores the importance of implementing effective clinical and psychosocial interventions to improve victims' emotional recovery and prevent relapse. These interventions may include, in an initial stage, the application of psychological first aid at the scene of the accident, with personnel trained to emotionally support victims and reduce the immediate impact of the trauma. Subsequently, it is essential to offer specialized individual psychological care, such as trauma-focused cognitive-behavioral therapy, and group support spaces that allow for working through the grief, fear, and guilt associated with the event. Furthermore, it is recommended to establish clear referral and follow-up routes from the transit agency to mental health services and community support networks. The lack of these measures exacerbates the psycho-emotional impact of those affected. Therefore, the lack of immediate psychological care can lead to post-traumatic stress disorder, depression, or social withdrawal, as Ponce de León et al. (2018) point out.

4. Institutional and social implications

The lack of legal counsel limits access to fundamental rights, especially for people from vulnerable sectors or without support networks. This creates a condition of structural disadvantage and deepens inequality. Furthermore, the lack of immediate psychological care can lead to post-traumatic stress disorder, depression, or social withdrawal, as Ponce de León et al. (2018) point out.

The fact that users value primary care positively should not obscure the fact that, overall, it is biased, reactive, and technical. This affects the perception of justice,

delegitimizes institutions, and leaves victims defenseless, as Ártica (2015) and Collado (2020) argue.

Furthermore, the lack of comprehensive and coordinated care can have significant economic repercussions for both victims and the health system, by prolonging recovery and increasing costs associated with prolonged treatment and legal litigation (WHO, 2018).

5. Validation of the intervention proposal

The comprehensive protocol proposed in this study gains further strength in the face of the identified gaps. In line with the projective approach (Hurtado, 2010), the findings not only diagnose the problem but also propose solutions tailored to the local context. The incorporation of formal psychosocial care pathways, free legal advice, and institutional coordination mechanisms is not only an ethical imperative, but also a strategy for operational efficiency and symbolic reparation (Ártica, 2015).

Evidence supports that effective coordination improves response times, reduces re-victimization and optimizes public resources, as confirmed by the ANSV (2022) and the experience of Medellín and Bogotá in their intersectoral models.

Furthermore, the implementation of comprehensive care units for victims of traffic accidents, such as those proposed by FICVI (2016), can serve as a model for structuring a more effective response focused on the needs of victims.

Detrie Niampira et al. (2021) propose that, in these times, in addition to the efficiency and proactivity of the human factor, technology plays a fundamental role in optimizing response times and inter-institutional coordination. In their proposal, they show that the implementation of digital platforms and various user-friendly technological resources allow for more efficient communication between the different actors involved in road accident response. The incorporation of these tools in the context of the Bucaramanga Traffic Directorate could contribute to mitigating fragmentation problems and improving the management of road emergencies and post-accident response (Quintero & Pérez, 2011).

Finally, the validation of the protocol using qualitative methods and comparison with international best practices reinforces the proposal's relevance. Furthermore, the participation of experts and stakeholders ensures that the model can be adapted to the real needs of the

local context, also opening up the possibility of replicating it in other cities with similar problems.

Conclusions

This study highlights the need to establish a comprehensive care protocol for victims of road accidents in Bucaramanga. The analysis identifies several deficiencies in inter-institutional coordination, access to support services, and post-accident care, which affect the quality of the response and the protection of victims' rights.

The results of this investigation confirm that the current care model for victims of road accidents at the Bucaramanga Traffic Department lacks a comprehensive and humane approach. While the administrative and technical procedures required by current regulations are followed, there is evidence of marked institutional fragmentation and profound weaknesses in the psychosocial and legal aspects of care, which contradict the principles of dignity and protection of rights established in national and international legislation.

Consistent with the study's objectives, it was possible to characterize users' perceptions of the system, revealing a positive assessment of primary care in terms of friendliness and wait times, but also strong criticism of the lack of emotional support, effective legal advice, and post-accident follow-up. These perceptions, supported by quantitative data with measures of central tendency, allowed for a rigorous diagnosis of the main shortcomings of the current model.

Based on this diagnosis, a comprehensive care protocol proposal was developed, articulated with successful experiences in other cities and based on centralized service delivery, inter-institutional coordination, and the incorporation of psycho-legal aspects. This proposal not only responds to an operational need but also represents an ethical and political imperative: recognizing victims as active individuals in the care process, not simply passive subjects.

This study, although exploratory in nature, provides relevant empirical evidence that confirms what has been indicated in the specialized literature: without comprehensive care that includes emotional support, effective access to justice, and guidance on rights, victims face risks of revictimization, exclusion, and defenselessness. In this sense, the incorporation of psychosocial care pathways, free legal advice, and specialized training for officials is not only a desirable strategy, but a necessary condition to guarantee truly restorative care.



In short, the findings of this research not only reveal an institutional deficit, but also open up a horizon of possibilities for the structural transformation of care for road accident victims. The proposal developed, conceptually validated, offers a viable roadmap for moving toward a management model centered on human rights, administrative efficiency, and comprehensive care for those affected. Its implementation and sustainability will require political will, resource allocation, and ethical commitment from the competent authorities.

In the specific context of Bucaramanga, the implementation of a comprehensive care model would not only close institutional gaps but also transform the victims' experience, offering a more humane, coordinated, and effective response. The findings of this study, although localized, reveal patterns that could guide concrete actions in municipal public policies, especially in the coordination of traffic, health, and justice. The implementation of a formal protocol, centered on the dignity and rights of victims, would have a positive impact not only on their emotional and legal recovery, but also on institutional legitimacy and the building of citizen trust.

To this end, it is proposed that the protocol include specific resources to guarantee an effective and victim-centered response: an emergency telephone line for immediate psychological care, staffed by mental health professionals; a one-stop shop for free legal guidance, coordinated with legal clinics and the Ombudsman's Office; and accessible informational materials (physical and digital) on victims' rights, care pathways, insurance, and reporting mechanisms. These elements would not only allow for a more humane and efficient response, but would also dignify the experience of those affected, preventing their re-victimization and strengthening the bond between citizens and institutions.

Limitations of the study

While this study provides valuable findings for the design of a comprehensive care model for road accident victims, it is important to recognize certain methodological elements that could be considered in future research to strengthen and expand its scope.

This exploratory study has certain methodological limitations that should be considered when interpreting its results. First, the sample was non-probabilistic and used for convenience purposes. While this facilitated access to individuals with recent road accident experience, it limits the possibility of statistical generalization. However, the findings provide valuable input for contextual assessment and the formulation of local proposals.



Second, the use of self-administered online surveys may have limited the participation of individuals without digital access, suggesting the need to combine virtual and in-person strategies in future research. Furthermore, the quantitative analysis focused on descriptive statistics, which was adequate for the purposes of the study, but leaves open the possibility of further inferential analysis in later stages.

Finally, although a comprehensive care protocol validated by experts was proposed, its practical application has not yet been implemented, which represents an opportunity for future evaluative and interventional research.

These limitations do not detract from the study's value; rather, they highlight areas for improvement and consolidate its contribution as a diagnostic and proactive basis for institutional strengthening. By identifying these opportunities for improvement, paths are outlined to advance toward an increasingly robust, contextualized model centered on the dignity of victims.

Future Lines of Research

Based on the results and limitations identified, multiple possibilities arise for further study of road accident victim care. The following lines of research emerge as complementary and necessary avenues for consolidating a comprehensive, sustainable, and rights-based approach.

Impact of psychological support on victims' recovery: A significant lack of psychological assistance was evident in the care provided to road accident victims. Future studies could analyze the impact of implementing psychological support programs on reducing post-traumatic stress and improving the emotional well-being of those affected.

Evaluating technological models for road accident management: The implementation of digital platforms and artificial intelligence-based management systems could optimize accident response. Future research could focus on evaluating the effectiveness of technological tools to streamline assistance, improve data collection, and optimize inter-institutional coordination.

Comparative analysis of comprehensive care models with other cities: This study focused on Bucaramanga, but it is relevant to compare it with other cities, such as Bogotá and Medellín, that have implemented successful comprehensive care models for traffic accident victims. Such comparisons would allow for identifying best practices and designing strategies adapted to the local context.



Socioeconomic factors that influence access to post-disaster care: It is important to examine how victims' socioeconomic conditions affect their access to medical, psychological, and legal assistance services. A more detailed study of this issue could guide more inclusive and equitable public policies.

Training strategies for traffic officers in victim management: Staff training was identified as a determining factor in the quality of care. Future research could evaluate training programs in empathic communication, psychological first aid, and crisis management to improve traffic officers' response.

Evaluating the impact of national legislation on the protection of victims of road accidents: While regulations such as Law 2251 of 2022 exist, their implementation still presents challenges. An analysis of the degree of implementation and effectiveness of these regulations would identify legal gaps and propose regulatory improvements.

Studies and proposals on inter-institutional coordination in victim care: The fragmentation of care services remains a problem. A study focused on coordination between health, traffic, and justice entities could offer solutions to improve efficiency and reduce bureaucracy in road accident management.

In conclusion, this research opens the door to multiple lines of analysis that can contribute to substantially improving care for road accident victims. A deeper understanding of these aspects will allow for the development of more effective strategies and the implementation of public policies that guarantee dignified treatment and a comprehensive response to those affected by traffic accidents.

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