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Trauma-Informed Training to Strengthen Prehospital Workforce Resilience: A Mixed-Methods Longitudinal Programme Evaluation

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Abstract

Background

Paramedics work in high-stress environments characterised by recurrent exposure to traumatic events, while health-system resilience depends on a workforce that can maintain safe and effective practice during emergencies. Evidence on the sustained application of trauma-informed care (TIC) training in prehospital services remains limited. This study evaluated the acceptability, perceived professional application, and organisational implications of a structured TIC training programme for paramedics.

Methods

A mixed-methods longitudinal programme evaluation was conducted with 30 paramedics who completed a 40-hour, five-day TIC training programme. Immediate post-training assessment examined acceptability and perceived applicability. At three months, participants completed a 24-item researcher-developed Trauma-Informed Approach to Emergency Cases Form; responses were summarised descriptively. At six months, an independent psychologist conducted structured interviews with a randomly selected subset of participants. Interview data were analysed thematically using Braun and Clarke's six-phase framework.

Results

Immediate post-training satisfaction was high (mean 9.85/10, SD 0.2). At three months, median scores were 5.0 across all questionnaire items, with observed minimum scores ranging from 3 to 4, indicating high self-reported endorsement of competencies related to trauma recognition, stress regulation, psychological first aid, burnout prevention, peer support, and professional well-being. At six months, participants described continued use of stress-regulation strategies, more supportive team communication, peer support, boundary-setting, and greater awareness of leadership and organisational support needs. Participants also advocated broader access to TIC training within emergency medical services.

Conclusions

The findings suggest that structured TIC training is feasible and perceived as applicable to prehospital practice, with reported use of trauma-informed strategies extending to team functioning and professional self-regulation six months later. Because the evaluation lacked a pre-training baseline, comparator group, validated follow-up outcome measures, and objective patient or service outcomes, causal effectiveness cannot be inferred. Multi-site studies using validated and behaviour- or service-level

outcomes are needed to determine whether trauma-informed workforce development strengthens health-system preparedness and resilience.

Background

Health-system resilience depends not only on infrastructure, supplies, and governance but also on a workforce capable of maintaining safe and effective practice during emergencies. World Health Organization frameworks identify workforce capacity and competency-based education as core components of emergency preparedness and response [1]. Paramedics are positioned at the frontline of this capacity: they routinely respond to sudden-onset events such as traffic collisions, fires, interpersonal violence, mass-casualty incidents, and disasters, with recurrent exposure to injury, death, uncertainty, and intense operational demands [2–7]. These conditions are associated with increased risks of post-traumatic stress, burnout, anxiety, depression, and reduced occupational well-being [6, 7].

Trauma-informed care (TIC) has emerged as a framework for organising services around recognition of trauma exposure and its effects, appropriate responses to stress reactions, prevention of re-traumatisation, and attention to the physical and psychological safety of both service users and providers [8]. In health-care organisations, TIC also has workforce implications because it emphasises safe working environments, peer support, supervision, transparent communication, empowerment, continuous learning, and self-care [8–14]. These principles are particularly relevant to prehospital services, where decisions are made rapidly and staff may have limited opportunities for recovery or structured support between traumatic incidents.

Although trauma-informed curricula for health professionals are increasingly described, empirical evaluation remains uneven and often concentrates on short-term satisfaction, knowledge, or attitudes [15–18]. Implementation research also indicates that training alone is unlikely to produce system-level change without organisational leadership, supportive policies, supervision, and mechanisms that reinforce trauma-informed practice [9].

Emerging evidence underscores the critical importance of designing comprehensive trauma-informed training programs that equip healthcare professionals with the necessary knowledge, skills, and competencies whilst integrating the core principles of trauma-informed care—namely, safety, trustworthiness and transparency, peer support, collaboration and mutuality, empowerment, and gender and cultural sensitivity. These programs must also address the multidimensional framework of trauma-informed care, including awareness of trauma prevalence, recognition and management of stress-related symptoms, prevention of re-traumatization, and the protection of healthcare personnel from burnout and secondary traumatic stress [16, 19, 20]. However, a lack of empirical evaluation continues to limit the identification of best practices and refinement of trauma-informed interventions. Evidence is especially limited regarding how paramedics perceive and apply TIC principles after training and what organisational conditions they identify as necessary for sustained use in prehospital emergency services.

This study therefore reports a mixed-methods longitudinal programme evaluation of a structured TIC training programme for paramedics. The objectives were to assess (1) immediate acceptability and perceived applicability of the programme, (2) self-reported trauma-informed competencies at three months, and (3) reported application of TIC principles and organisational implications at six months. The study was designed as an implementation-oriented workforce evaluation rather than a test of causal effectiveness.

Methods

Study design and participants

A mixed-methods longitudinal programme evaluation was conducted following a structured TIC training programme delivered in July 2024 to a cohort of 30 paramedics working in prehospital emergency services. Participants were aged 22–46 years (median 26.5 years). Immediate post-training, three-month, and six-month assessments used complementary quantitative and qualitative methods. The evaluation did not include a pre-training outcome assessment or a separate comparator group.

Training programme

The 40-hour programme was delivered over five consecutive days, with one eight-hour module per day. It integrated the Health Belief Model, Theory of Reasoned Action, and Participatory Education Theory to support trauma-informed communication, reflective listening, stress regulation, and problem-solving. The curriculum was grounded in neurobiological and psychosocial models of trauma and embedded the TIC principles of safety, trust, peer support, collaboration, empowerment, and cultural sensitivity. Learning methods included case-based discussion, guided self-reflection, group analysis, relaxation practices, and field-based examples relevant to paramedic work. The multidisciplinary training team comprised two social workers, a psychiatrist, an occupational health and safety specialist, and a physiotherapist.

- **Types and prevalence of traumatic events**: The epidemiology of individual, collective, societal, and systemic traumatic events was examined globally and within Türkiye, alongside core TIC concepts and their implications for emergency case management.
- **Traumatic stress reactions and intervention strategies**: The module linked stress theories with the neurobiology of acute stress, normalised common stress reactions, and introduced triage, psychological first aid, brief psychoeducation, and cognitive-empathy-based communication.
- **Management of psychiatric emergencies**: The module addressed classification and differential assessment of psychiatric emergencies and included a specific focus on suicide-risk management in prehospital settings.
- **Disaster preparedness**: Preparedness and response strategies were discussed with emphasis on earthquake and fire scenarios and the operational demands placed on emergency personnel.

- **Health and safety of paramedics**: The module addressed occupational psychosocial risks, burnout, secondary traumatisation, ergonomic risks, ethical dimensions of self-care, peer support, supervision, and strategies to sustain professional well-being.

Evaluation procedures and outcomes

Immediately after training, participants completed a Training Evaluation Form assessing perceived usefulness and applicability of the programme, adequacy of discussion time, comfort in sharing experiences, valued aspects of the training, and overall satisfaction on a 1–10 scale. At three months, participants completed the researcher-developed Trauma-Informed Approach to Emergency Cases Form online. At six months, an independent psychologist conducted structured online interviews with a randomly selected subset of participants to explore continued use of training content, perceived influence on professional practice and interpersonal interactions, and organisational conditions relevant to sustained trauma-informed practice.

Trauma-Informed Approach to Emergency Cases Form

The 24-item form assessed self-reported competencies and perceptions related to recognising the impact of trauma, identifying trauma-related responses in service users and providers, stress regulation, psychological first aid, prevention of re-traumatisation, burnout and secondary trauma management, use of support systems, and professional well-being. Items were rated on a five-point Likert scale. Internal consistency in the present sample was high (Cronbach's alpha = 0.896). Because the form was developed by the research team and had not undergone independent validation, findings were interpreted descriptively rather than as evidence of change in validated clinical or behavioural outcomes.

Qualitative interviews

Six months after the programme, structured interviews explored perceived longer-term benefits, practical use of strategies in emergency settings, and broader effects on professional and interpersonal functioning. Interview data were analysed using Braun and Clarke's six-phase thematic analysis framework [21], enabling identification and organisation of recurring patterns across participant accounts.

Data analysis

Immediate post-training satisfaction scores were summarised using the mean and standard deviation. Three-month questionnaire responses were treated as ordinal data and summarised using medians, minima, and maxima. Cronbach's alpha was calculated to describe internal consistency of the 24-item form. No inferential pre-post comparisons were conducted because the evaluation did not include a pre-training administration of the follow-up outcome measure. Qualitative interview data were analysed

thematically as described above, and illustrative quotations were selected to represent recurring patterns in participants' accounts.

Ethics approval and consent

The study received ethical approval from the University Ethics Board (reference 2020-20845-33). Informed consent was obtained from all participants.

Results

Immediate post-training evaluation

All participating paramedics rated the programme immediately after completion. Overall satisfaction was high (mean 9.85/10, SD 0.2). Participants described the information as useful and reported that adequate time had been allocated for discussion. They particularly valued facilitator expertise, the supportive and emotionally regulated facilitation style, interactive learning, attention to protective strategies for professionals, and the use of real-world case scenarios. Participants also reported that opportunities to discuss emotional experiences and coping strategies increased the perceived practical relevance of the programme to their professional roles.

Three-month self-reported competencies

At three months, all 30 participants completed the Trauma-Informed Approach to Emergency Cases Form. Median scores were 5.0 for all items, with observed minimum scores ranging from 3 to 4 and maximum scores of 5 (Table 1). High ratings were observed across domains addressing recognition of traumatic stress, identification of occupational stressors, psychological first aid, communication in psychiatric emergencies, burnout and secondary-trauma prevention, use of support systems, collegial relationships, and management of work-related stress. Because no comparable pre-training measure was available and responses showed marked clustering at the upper end of the scale, these findings indicate high self-reported endorsement at follow-up rather than measured improvement over time.

Table 1
Median scores on the Trauma-Informed Approach to Emergency Cases Form at three months (n = 30)

Domain / Item	Median	Min	Max
Understanding the prevalence of psychological trauma			
Enhanced understanding of cognitive, physical, emotional, behavioural, and social responses following traumatic experiences	5.0	4	5
Ability to assess the impact of psychological trauma on emergency health care services	5.0	4	5
Recognition of the importance of normalizing traumatic stress responses in grieving individuals	5.0	4	5
Application of training content to coping with professional challenges	5.0	3	5
Understanding traumatic stress responses and implementing appropriate interventions			
Identification of stress-contributing factors in the professional environment	5.0	4	5
Recognition of trauma-sensitive approaches in mitigating stress responses	5.0	4	5
Awareness of the role of breathing and oxygen intake in autonomic regulation	5.0	3	5
Acquisition of new perspectives on managing occupational stressors	5.0	3	5
Recognition of the impact of stressor identification on job performance	5.0	4	5
Enhanced ability to apply psychological first aid techniques	5.0	4	5
Transfer of learned techniques to real-life emergency cases	5.0	3	5
Improved communication with individuals at risk of suicide	5.0	3	5
Strengthened skills in psychiatric emergency management and patient safety	5.0	3	5
Increased patience in professional practice	5.0	4	5
Preventing burnout and secondary traumatisation			
Early recognition of burnout symptoms	5.0	4	5
Utilisation of burnout coping strategies to sustain professional practice	5.0	3	5
Application of secondary trauma strategies for self-protection	5.0	3	5
Perceived contribution of burnout and secondary trauma training to professional development	5.0	4	5
Utilisation of support systems for managing occupational stress	5.0	4	5
Maintaining and promoting paramedics' well-being			

Domain / Item	Median	Min	Max
Understanding the prevalence of psychological trauma			
Empowerment through sharing acquired knowledge with colleagues	5.0	4	5
Increased sense of professional value	5.0	4	5
Positive impact on family relationships	5.0	4	5
Strengthened collegial relationships	5.0	4	5
Improved management of work-related stress	5.0	4	5
Recognition of the importance of TIC for all paramedics	5.0	4	5

Six-month qualitative findings

The six-month interviews identified two overarching themes reflecting the reported integration of TIC into professional and personal practice and participants' understanding of core trauma-informed principles.

Theme 1. Integrating trauma-informed practices into professional and social life

Several participants reported that they had begun to apply stress management techniques learned during the training, such as breathing exercises and mindfulness practices. One paramedic shared a specific example:

I responded to a serious traffic accident. Before arriving at the scene, I felt my anxiety rising. Then I remembered the breathing exercises from training. I took a moment, focused on my breath, and immediately felt more in control. It greatly impacted my ability to think clearly and act efficiently.

In addition, many participants found that recognizing the physiological basis of stress responses helped them manage their reactions more effectively. One noted, ‘Understanding how the amygdala overrides the prefrontal cortex in high-stress situations made me more aware of my and my patients' reactions and how to regulate them.’

Subtheme 1: Solution-oriented thinking

The training encouraged a shift from a problem-focused to a solution-focused approach, which helped participants manage stress more effectively. One participant mentioned that the training enabled them to learn to separate the person from the problem by adopting a more structured and objective approach to stressful situations.

Subtheme 2: Strengthening teamwork and leadership

One of the most significant moments was a paired discussion exercise where participants were encouraged to ask, ‘Are you okay?’ The participant notes that this revealed how little colleagues know

about each other's emotional well-being, reinforcing the importance of active listening. A notable shift in team dynamics emerged, particularly among those in supervisory roles. Some participants reported adopting a more empathetic leadership style that took into consideration the emotional states of their colleagues when conducting evaluations or disciplinary actions.

As an administrator, I now approach investigations with a new perspective. Instead of assuming negligence, I ask, 'What happened to you?' or 'What led to this reaction?' This shift has helped build trust and improve collaboration within the team.

Some participants expressed that they became more open to collaborative decision-making and delegating responsibility rather than taking on excessive personal workloads. A paramedic stated, 'After the training, I started accepting and appreciating everyone for who they are. I stopped taking on extra workloads when I accepted my colleagues for who they were. This allowed me to collaborate more effectively.'

Subtheme 3: Increased self-awareness, self-regulation, and coping mechanisms

A predominant sub-theme was the participants' realization that the training focused not only on patient care, but also on their well-being. This shift in perspective led to a greater emphasis on self-awareness and emotional resilience in their daily work. They reported greater emotional regulation and an improved ability to separate work-related distress from personal life. The training enabled them to actively encourage colleagues to manage crises more effectively, reinforcing teamwork and reducing stress in high-pressure situations. Participants emphasized that the training also helped them recognize PTSD symptoms and provided strategies for managing these stressors. They highlighted the importance of peer support and learning how to assist colleagues in coping with trauma.

Subtheme 4: Influence on social relationships

Beyond professional settings, the training significantly affected participants' relationships. Several noted they became more patient and empathetic with family members and partners.

I used to carry my work stress home. My family would notice, but I did not know how to separate it. After the training, I started using techniques to regulate my emotions before interacting with my wife and children. I feel more present and engaged now.

One participant highlighted how they applied trauma-informed principles to parenting: 'My 13-year-old daughter is preparing for her exams, and I realized she was extremely anxious. Instead of dismissing her stress, I used the techniques from the training to support her more effectively.'

Subtheme 5. Institutional and systemic considerations

The participants strongly advocated for expanding the training to all emergency medical personnel, stating that the field has a pressing need for such education owing to constant exposure to traumatic

events (e.g., deaths and injuries). They argue that paramedics often underestimate the long-term psychological effects of trauma, which can manifest later. The participant underscores that trauma exposure is an inevitable part of their field, making such training essential. A recurring concern was the need for broader implementation of trauma-informed training across emergency services. Participants strongly advocated for making such training mandatory, particularly for recruits. ‘We deal with trauma every day—deaths, severe injuries, critical incidents. This inevitably affects us, even if we do not recognize it immediately. Every paramedic should receive this training to cope better.’

Some participants emphasized that trauma-informed care should not only be offered as voluntary training, but integrated into national emergency protocols. Participants stressed that higher-level administrators should also receive training to foster a more supportive workplace culture. They advocated for organizational changes to reduce job dissatisfaction and stress, including increased communication between frontline staff and management. ‘This should not be just an extra course. It should be a fundamental part of paramedic education, recognized at the institutional level.’

Theme 2. Understanding the basic principles of trauma-informed care

In-depth interviews were analysed to understand the basic principles, and the statements for each trauma-informed principles are interpreted and given as sub-themes below.

Subtheme 1. Safety

Participants reported that the training fostered both emotional and physical safety. It was observed that group activities and sharing sessions provided an environment where participants felt comfortable expressing themselves. One participant described this experience as follows: ‘The training created a space where everyone felt at ease. We knew that sharing our emotions would not lead to judgement.’ In addition, participants stated that during the training, the instructors emphasized a participant-centred approach, adapting the training pace according to the participants' needs and frequently asking how participants felt and how they wished to proceed. This statements aligns with the concept of ‘creating a safe space.’ Specifically, group activities such as the ‘Yarn Exercise’ enabled participants to share suppressed traumatic experiences, which they found to be therapeutic: ‘At the end of the exercise, I shared a memory that I had never disclosed to anyone for years, and it was truly relieving.’

Another example of how participants learned to protect themselves in cases they encountered in their professional lives was expressed by one participant as follows:

In the training, through case examples, we were informed that in certain situations we need to visit cases accompanied by the police and ensure our safety first. I took note of this and shared it with my colleagues. After the training, we protected ourselves by requesting police support whenever necessary.

With this statement, the participant highlighted that attendees gained knowledge on protecting their safety both during and after the training.

Subtheme 2. Trustworthiness and transparency

The professionalism of the trainers and their transparent approach during the training process contributed to increased trust among participants. One participant expressed the following sentiment: ‘The clear and transparent explanations provided by the trainers made me feel more at ease and increased my confidence in the process.’ Transparency is critical in effectively implementing trauma-informed approaches in pre-hospital emergency care. Another participant reflected on the impact of perceived trustworthiness on professional practice: ‘I can now articulate my thoughts more clearly. Previously, I would suppress my emotions out of fear of others' reactions. However, with this training, I have learned to establish healthier boundaries.’

These statements indicate that trauma-informed education enhances patient safety and healthcare professionals' ability to express themselves as well as strengthens their professional identity.

Subtheme 3. Peer support

During the training, strong peer solidarity was observed among participants. One participant described the impact of peer support when encountering a traumatic event:’I was very anxious while responding to a traffic accident case. However, I remembered what I had learned during the training and told my team, ‘Let’s take a deep breath first.’ It helped maintain control in that moment.’

This finding underscores that trauma-informed care enhances individual intervention skills. One participant explained the impact of an exercise focused on mutual understanding: ‘In the exercise where we focused on listening and understanding each other, I realized how little we knew about each other, even though we have been friends for years. That was very important for me.’

Another participant described changes in her relationships with colleagues after the training as follows: ‘After the training, I started asking my colleagues questions like ‘How are you?’, ‘How should we do this? Do you have any ideas?’, and ‘Should we try this?’ more often.’

These results show that communication between colleagues needs to be strengthened to enhance their wellbeing, and this improvement encourages them to protect each other physically and emotionally while working together.

Subtheme 4. Collaboration and mutuality

Interactive methods used during the training facilitated communication and encouraged the sharing of knowledge and experiences. One participant described the effect of collaboration in the training context as follows: ‘Everyone’s opinions were valued in the training, which made us feel more engaged. As we encountered diverse perspectives, we developed a broader outlook on various situations.’ Participants also reported that group discussions enhanced the learning process: ‘The insights we gained from each other during discussions significantly increased the impact of the training. Seeing different approaches to real case analyses helped me develop new perspectives in my field interventions.’

Furthermore, pre-hospital emergency care professionals exhibited increased collaboration with colleagues when responding to traumatic events. One participant expressed heightened awareness of colleagues' experiences:

I now have a better understanding of my colleagues. As an administrative staff member, I sometimes observe how healthcare workers react to incidents. The sharing and professional support mechanisms provided during training improved participants' sensitivity to traumatic cases and contributed to a more informed approach to crisis management.

Subtheme 5. Empowerment

The trauma-informed approach supports the empowerment of not only patients but also service providers (8). The training included stress management strategies, breathing exercises, and relaxation techniques. One participant described the impact of these techniques on her professional and personal life: ‘I have begun to incorporate the breathing exercises we learned into my professional and daily routine. It was a truly calming experience. ‘

Supporting the training with case studies helped participants better understand the topics that comprised the training program and improved their ability to intervene in cases. The training also provided opportunities for participants to increase their self-awareness and develop professional resilience through feedback mechanisms. As a result, participants reported feeling professionally stronger:

I used to take things too personally. For example, I would internalize the reactions of patients' families. However, during the training, I learned that people react differently to trauma. Now, I can set healthier boundaries, which has made my professional life more sustainable. Notably, participants reported a greater willingness to share knowledge and support colleagues after the training.

One participant described this change through the following statement: ‘After the training, I started sharing what I learned with my colleagues. We even practice breathing exercises together at our station. Sometimes, I even suggest stress management techniques to my patients.’

Subtheme 6. Cultural and gender sensitivity

Trauma-informed service delivery necessitates broad sensitivity encompassing individual awareness and cultural and gender perspectives (8). In this study, participants engaged in a learning process that included individuals from different professional and personal backgrounds, which enriched their perspectives. One participant highlighted the inclusivity of the training: ‘Despite our diverse backgrounds, everyone had the opportunity to express themselves. The training was inclusive in terms of gender sensitivity as well.’ Notably, participants developed different perspectives on trauma-informed service delivery based on gender dynamics. One participant reflected on this aspect: ‘Hearing viewpoints from both male and female participants allowed me to develop new approaches. This has strengthened my communication with patients.’ Participants also noted that their enhanced awareness of gender roles

positively influenced their interactions with colleagues and patients: ‘Listening to different perspectives on gender roles during training helped me adopt a more sensitive approach toward both patients and colleagues.’

Discussion

This mixed-methods longitudinal programme evaluation examined the perceived applicability of a structured TIC training programme for paramedics over six months. The findings should not be interpreted as evidence of causal effectiveness. Rather, they provide implementation-oriented information about programme acceptability, high self-reported endorsement of trauma-informed competencies at three months, and participants' accounts of how selected strategies were used in professional practice and team interactions at six months.

The immediate post-training findings showed high acceptability and perceived relevance, particularly for interactive learning, case-based discussion, and opportunities to address professionals' own emotional responses. These features are consistent with literature emphasising active participation and facilitator competence in health-professional training [22–25]. However, satisfaction is a proximal educational outcome and does not itself establish changes in professional behaviour or service quality. The more informative contribution of the present evaluation lies in the six-month accounts of self-regulation during emergency incidents, peer check-ins, supportive communication, boundary-setting, and dissemination of strategies to colleagues. These findings suggest perceived translation of training content into day-to-day practice, although objective observation was not undertaken.

The organisational findings are particularly relevant to health services research. Participants did not describe TIC as an individual skill set alone; they identified leadership, communication, peer support, supervision, and wider institutional access to training as conditions for sustained practice. This is consistent with implementation research showing that organisation-level factors shape whether trauma-informed approaches are maintained after training [9, 26]. It also supports a systems perspective in which workforce development is linked to organisational culture and service governance rather than delivered as an isolated educational event [8, 27].

From a health-system resilience perspective, paramedics represent a workforce whose operational functioning must be maintained during high-stress incidents and disasters. International preparedness frameworks increasingly emphasise competency-based workforce development as a component of emergency preparedness and response [1, 28, 29]. The present findings suggest that trauma-informed workforce development may contribute to this agenda by addressing psychosocial risk recognition, self-regulation, peer support, and psychologically safer team practices. These are plausible mechanisms for supporting workforce readiness and continuity of care, but the current study did not measure system resilience, service performance, or patient outcomes directly.

Implications for health services and workforce development

For prehospital services, the findings support considering TIC training as one component of a broader workforce-support strategy rather than as a stand-alone course. Implementation may be strengthened by linking training to supervision, peer-support mechanisms, leadership development, occupational psychosocial-risk management, and routine opportunities for reflective practice. Training managers and establishing clear organisational pathways for staff support may be especially important if trauma-informed principles are expected to influence team culture and service delivery. Future implementation studies should also assess feasibility, fidelity, resource requirements, and the organisational conditions that enable or constrain sustained use across different emergency-service contexts.

Strengths and limitations

The study has several strengths, including a multidisciplinary, structured programme; follow-up extending to six months; and the use of qualitative interviews to examine how participants described applying training content in real-world emergency work. The design also has important limitations. First, there was no pre-training outcome assessment or comparator group, so change attributable to the programme cannot be estimated. Second, the three-month measure was researcher-developed and relied on self-report; its very high scores and limited range indicate a ceiling effect and restrict discrimination between levels of competency. Third, the study did not include objective assessment of professional behaviour, implementation fidelity, service quality, patient safety, or patient outcomes. Fourth, the small cohort and single programme context limit transferability, and the recruitment process may have introduced selection bias. Finally, qualitative findings were based on a subset of participants and may be affected by recall and social-desirability bias. Future research should use multi-site designs, clearly specified recruitment procedures, pre-training baselines, validated measures, objective behavioural indicators, and service- or patient-level outcomes.

Conclusions

This programme evaluation suggests that a structured TIC training programme was acceptable to paramedics and that participants perceived trauma-informed strategies as relevant to stress regulation, peer support, team communication, and professional practice over a six-month follow-up period. The organisational themes indicate that sustained trauma-informed practice is likely to require leadership engagement, supervision, peer-support structures, and integration with wider workforce-development and psychosocial-risk-management systems. The study does not establish causal effectiveness or generalisability. More rigorous multi-site evaluations are needed to determine whether trauma-informed workforce development improves professional behaviour, service quality, workforce sustainability, and health-system preparedness.

Abbreviations

TIC
Trauma-informed care
PTSD
Post-traumatic stress disorder

Declarations

Ethics approval and consent to participate

Ethical approval for the study was obtained from İstanbul Bilgi University Ethics Committee (reference 2020-20845-33). The study was conducted in accordance with the ethical principles of the Declaration of Helsinki and applicable institutional and national ethical standards. Written informed consent was obtained from all participants prior to participation in the study.

Consent for publication

Not applicable. The manuscript does not contain any identifiable individual data. All participant quotations are anonymised.

Availability of data and materials

De-identified quantitative data generated and analysed during the current study are available from the corresponding author on reasonable request. Qualitative interview transcripts are not publicly available because they contain potentially sensitive information and public sharing could compromise participant confidentiality.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

ZS, ÖÇ, and MNT contributed to the conceptualisation and investigation of the study. ZS and ÖÇ contributed to the methodology. MNT contributed to visualisation and manuscript preparation. ZS, ÖÇ, and MNT contributed to data acquisition and writing. ÖÇ and MNT contributed to data interpretation, writing, and supervision. All authors contributed to drafting the manuscript, and ZS critically revised the manuscript. All authors read and approved the final manuscript.

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