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## TORTURE

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IRCT  
Fælledvej 12  
Globalhagen House  
Building C, 2nd floor  
2200 Copenhagen N  
Denmark  
Telephone: +45 44 40 18 30  
Email: publications@irct.org

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# When home becomes a prison: House arrest as a form of psychological torture

Pau Pérez-Sales<sup>1</sup> and Sara Lopez-Martin<sup>2</sup>

1 Editor-in-Chief. Correspondence to [pauperez@runbox.com](mailto:pauperez@runbox.com)

2 Senior Legal Adviser. SiRa Center.

## Abstract

The editorial critically examines the use of administrative movement restrictions—particularly house arrest—as extrajudicial counter-terrorism measures, highlighting their widespread application in both democratic and authoritarian regimes. Drawing from legal analysis, case studies and forensic evidence, it argues that such measures—when imposed without due process, judicial oversight, or proportional safeguards—can amount to cruel, inhuman or degrading treatment, and even torture. House arrest, especially when indefinite and coupled with intrusive surveillance, stigmatization, and lack of access to basic needs or legal remedies, often constitutes a coercive environment with profound psychological and social impacts. Using the framework of the Istanbul Protocol and relevant UN standards, the article maps the legal and clinical thresholds at which deprivation of liberty in home settings transitions into a torturing environment. The editorial calls for urgent international scrutiny of these practices, emphasizing the need to reinforce legal safeguards, ensure judicial review, and uphold human dignity in the face of expanding administrative powers.

**Keywords:** Administrative detention, house arrest, Psychological Torture

The last decade has seen an steady rise in the number of countries that have established extrajudicial administrative means imposed by government agencies (or administrative bodies) to curtail individual liberties, generally based on the application of ad-hoc counter-terrorism measures or appealing to global national security policies. The Office of the High Commissioner for Human Rights (OHCHR) has recently presented a report to the UN General Assembly (*A/HRC/57/29*), expressing its deep concern and advocating the limitation of these measures to exceptional situations and under strict principles of legality and proportionality. (OHCHR, 2024)

This set of measures comprises a broad catalogue of situations. We will analyse here movement restriction measures, alone or in conjunction with other administrative measures as potentially amounting to ill-treatment or torture.

## Definitions

The term *house arrest* or *home confinement* usually refers to a legal restriction where a person is confined as an alternative to imprisonment. It may also include electronic monitoring

(ankle bracelet), restricted visits or scheduled reporting and it is usually part of a supervised sentence, parole or early release measure.

However, in many jurisdictions, limitations of movements including house arrest are administrative measures of custody. They are non-trial based measures without a criminal conviction. In UK and similar legal systems, these measures are also labelled *control orders* allowing restrictions on movement, communication, or internet access.

In *Administrative Detention (AD) or Administrative custody*, there is a custodial holding without formal charges or trial, based on security or immigration grounds. Typically authorized by executive or military authorities, it is used in countries like Turkey, Israel, China or Egypt (table 1). The use of AD is controversial under international law as it implies holding a person based on an anticipated future danger or risk. People is not necessarily at home but, most of the times, is held in prisons or detention centres for an indefinite time. Therefore, it has been considered as an arbitrary deprivation of liberty.

**Table 1** *Administrative house arrest. Selected examples*

Country	Type of Measure	Legal Basis	Key Characteristics
Turkey	Administrative house arrest	Law No. 7145 (2018) & Emergency Decrees	Restrictive orders up to 15 days, renewable; electronic ankle monitors; used post-coup against journalists, activists.
Egypt	Administrative detention / house arrest	Emergency Law No. 162 (1958); Anti-Terror Law	Indefinite renewals; no formal charges; controlled by Supreme State Security Prosecution (SSSP); widespread surveillance.
Russia	Administrative arrest & counter-terrorism restrictions	Federal Code on Administrative Offenses; Anti-Terror Law (2006)	Short-term detention (15–30 days); asset freezes; anti-terror zones impose communication/movement bans.
Israel	Administrative detention / house arrest (ad hoc)	Military Orders (West Bank); Incarceration of Unlawful Combatants Law (2002)	Detention renewable every 6 months; no maximum duration; closed hearings; based on classified info.
France	Administrative house arrest (MICAS)	Decree 2015-1475; SILT Law (2017)	Formerly without trial during State of emergency; now judicial approval required; movement restricted to municipality.
United Kingdom	Control Orders / TPIMs	TPIM Act (2011)	Curfews, mandatory residence, electronic monitoring; 2-year duration; judicial oversight and review.
China	Residential Surveillance at Designated Location (RSDL)	Criminal Procedure Law, Art. 73	Secret detention up to 6 months; no lawyer or family access; risk of torture; used in national security cases.
Iran	Prolonged executive-ordered house arrest	No clear legal basis; National Security Council decision	Indefinite home confinement; no trial; enforced isolation and surveillance.
Tunisia	Administrative house arrest / mobility restrictions	Organic Laws 2015-26 & 2019-9; Ministry Decrees	Restrictions via S17/S08 security files; no prior notification; no judicial review; travel bans.
Nicaragua	Judicial & de facto house arrest	Criminal Procedure Code, Art. 167	Applied legally as precautionary measure; also imposed arbitrarily by police without court order.
Uganda	Preventive house arrest (informal)	Police Act, Art. 24	Police station guards at residences of opposition leaders; no charges or court order; no access to legal remedies.

Based on the Working Group on Arbitrary Detention deliberations<sup>1</sup>, Ferstman (2024) labels as “detention grey zones” when people are being held in de facto locations or zones that are not normally labelled or perceived as “detention centres”, including house arrest.

#### **Administrative restriction of movements as a preventive detention.**

The core element of discussion in house arrest is its *preventive* nature. Preventive means that the authorities (civil or military) restrict basic liberties of a citizen to prevent “possible” illegal activities. As the decision is based on suspicions by the detaining authority, the judicial is circumvented without proper right of the suspect to legal safeguards, including the right to habeas cor-

<sup>1</sup> WGAD, Deliberation 01: ‘House Arrest’, UN Doc E/ CN.4/ 1993/ 24 (12 January 1993) 9.

pus, defence and trial. Furthermore, by definition, the authorities do not have enough basis, evidences or proofs to build a legal case. Otherwise, they would formally detain the person. The decisions are usually taken on the basis of restricted information, hindering legal defence. In practice there is a blurred area where it is impossible to know whether the person has had their liberties restricted by potential acts against the State, or potential acts against the government. The measure is, de facto, in many countries, a source of political control of opponents.

### Case studies

#### *Administrative measures of suspects of terrorism in Tunis (S1-S17 files).*

In the aftermath of the 2011 Tunisian Revolution and the subsequent collapse of Ben Ali's regime, Tunisian authorities have made numerous pledges to uphold the rule of law and international human rights standards. Nevertheless, persistent security challenges and the state's responses have repeatedly eroded these pledges. Reports of arbitrary detention, torture, mistreatment, and police harassment, along with violations of freedom

of movement, privacy, and employment rights, have been frequently documented (SANAD, 2024).

From 2013 onward, terrorist attacks and returning fighters from conflict zones such as Syria and Iraq prompted increased surveillance by the Ministry of the Interior. In 2015, Tunisia adopted the National Strategy Against Extremism and Terrorism, emphasizing border surveillance, communication monitoring, and specialized security units (Saferworld, 2017). Despite these measures being theoretically justified, their implementation has resulted in significant human rights abuses that some authors have qualified as similar to *colonial pacification practices* (Simoncini, 2023).

Individuals considered potential security threats face systematic registration and control, notably under the "S17" classification, involving stringent police oversight. Officially, S17 is described as border control, yet in practice, it involves extensive domestic restrictions, including travel bans, repeated police summons, home visits, violent administrative searches, employment interference, and social stigmatization. Individuals often face these measures without official notification or legal justification, reinforcing a climate of uncertainty and fear.

**Table 2.** *Persons under administrative measures in Tunis (SANAD, unpublished data)*

Basic Data	Type of Situations	Physical and Psychological Impacts
AA, born 1984, Tunisia, unemployed, father of four.	Arbitrary detentions Prolonged house arrest (8 years), Police surveillance, Arbitrary interrogations, Economic/social pressure.	Acute symptoms (shock, dissociation, panic attacks, hypervigilance), Complex PTSD, severe anxiety, insomnia, flashbacks. Social isolation, significant professional and social deterioration.
Ch.O. born 1989, Tunisia, mother of an 11-year-old daughter.	Physical violence causing miscarriage, Continuous police surveillance, Arbitrary searches and interrogations, Movement restriction (S17 file), Workplace harassment, Intimidation against family.	Complex PTSD (re-experiencing, avoidance, hypervigilance), Generalized anxiety (panic attacks, chronic stress, insomnia), Severe depression (social isolation, extreme fatigue, suicidal ideation), Significant deterioration of family and social relationships.
EY, born 1999, Tunisia, mother of a 9-month-old child.	Physical abuse, Sleep deprivation, Threats during detention, Continuous surveillance, Coercive administrative measures (S17/S08 files), Threats and intimidation against family and close associates, Obstacles in education and employment.	Complex PTSD (hypervigilance, nightmares, flashbacks), Severe depression (loss of interest, hopelessness, isolation), Extreme anxiety (panic attacks, constant fear), Significant social and familial deterioration.

The profiling process behind S17 and related classifications is opaque. Authorities frequently rely on vaguely defined criteria, such as “serious information” regarding associations with terrorist groups, without clarifying what constitutes sufficient grounds for suspicion. In January 2018, the Tunisian Ministry of Interior reported that 29,450 individuals had been prevented from traveling to conflict areas under S17 measures since 2013 (Amnesty International, 2018). Human rights organizations, including the Network for the Observation of Transitional Justice, estimated in 2017 that approximately 100,000 Tunisian citizens were subject to S17 measures (Makki, 2018).

Many affected individuals have no criminal records or proven associations with terrorism, suggesting discriminatory and arbitrary practices, often based solely on religious appearance or association with suspected individuals.

**Severe suffering.** Testimonies from affected persons detail severe psychological and material consequences. The constant, unpredictable police presence disrupts daily life and erodes community trust (Makki, 2018; OMCT/SANAD, 2019; OMCT, 2015). Table 2 shows three example of persons “filed” by the Tunisian authorities assessed using the Istanbul Protocol (OMCT, personal communication). It shows how house arrest is one among many other restrictions and human right violations that act in a way that produce enormous personal costs and suffering to the person and family, constituting a torturing environment. The individuals assessed experience intense anxiety, complex PTSD, depression, social isolation, stigma, family breakdown, and loss of employment opportunities.

Legal challenges against these restrictive measures face obstacles, including slow judicial procedures and non-compliance by the Ministry of the Interior with court decisions (Makki, 2018; SANAD, 2024). Despite some judicial successes, many continue experiencing, after years, intrusive surveillance and harassment without recourse or explanation, highlighting failures in judicial oversight and accountability mechanisms (OMCT, 2022 pg 6, 2023 pg 44-49).

Table 3 delineates the main reasons why S-17 measures constitute a Torturing Environment and Table 4 outlines the reason why it could amount to psychological torture.

Tunisian human right organisations underscore the necessity for authorities to balance legitimate security concerns with respect for fundamental human rights, adhering strictly to legality, necessity, and proportionality in implementing restrictive measures. Transparent criteria, prompt judicial review, and respect for court decisions are crucial to prevent abuses and protect individuals from arbitrary state actions (Amnesty International, 2018).

### *House arrest in Occupied Palestine*

**Children.** House arrest is a measure used by Israeli Military Commander administrative authorities or judges in Israel since 2015<sup>2</sup>. The law was approved under emergency regulations, although it has been used at all times since then. The number of children under house arrest measures has been increasing steadily. According to OCHA figures, in the period 2014-2017, approximately 700 Palestinian children in East Jerusalem had been detained every year, usually on charges of stone-throwing<sup>3</sup>. More than 600 Palestinian children were kept under house arrest in 2022, according to the Commission for Detainees and Ex-Detainees Affairs<sup>4</sup>. This has been interpreted as a form of discriminative punishment to Palestinian children, provided that no children of Jewish origin has ever been put into house arrest since the implementation of the measure. House arrest of a child transforms homes into prisons. According to the Palestinian Torture Rehabilitation Centre (TRC) in Ramallah, an institution that provides psychological support to parents and children, the effects on the family are devastating. The houses are very small and there is no place where the children can play, nothing to do. Children are not allowed to talk to neighbours or other children, nor receive visits. Most notably, parents are the responsible of the implementation of the measure, creating an atmosphere of constant tension. Parents are described as facing guilt feelings for being forced to produce the suffering of their children and instruct them to obey Israeli military orders (Rasras et al., 2023), “internalizing the gaze” of authorities’ (Shalhoub-Kevorkian, 2021) (see Table 5).

Children are confined not only to a physical space, but also to a temporal one. The unending time produces anxiety and psychological suffering ultimately leading to feelings of helplessness and depression. Furthermore, home, usually a place of inner calm and safety, becomes a threatening space and fear due to family tension and the occurrence of repeated raids and interrogations (Al-Arja, 2022; Chamiel & Walsh, 2018; Shalhoub-Kevorkian, 2021).

**Adults.** House arrest is also used in a selective way, as an alternative to administrative detention (Langford et al., 2019), against political leaders. An illustrative example is the case of Adnan Ghaith, the Palestinian Authority’s Governor of Jerusalem from 2018 to 2021. Israeli authorities accused him of undermining Israeli sovereignty in the city. He had to pay bails of thousands of dollars, had his communications subjected to sur-

2 [https://www.solidarity-ps.org/en/-House-Arrest\\_-\\_%D8%A7%D8%B3%D8%B1%D9%89](https://www.solidarity-ps.org/en/-House-Arrest_-_%D8%A7%D8%B3%D8%B1%D9%89)

3 <https://www.ochaopt.org/content/children-detention>

4 <https://www.middleeastmonitor.com/20221227-israel-courts-issued-600-house-arrest-orders-against-palestinian-children-in-2022>

*Table 3. S-File administrative measures as a Torturing Environment.*

**Prolonged and indefinite restrictions without legal clarity:** Continuous imposition of house arrest and surveillance for years without formal charges or defined time limits creates a coercive and degrading environment.

**Unpredictable and arbitrary police interference:** Constant unannounced visits, interrogations, and searches generate fear and instability, key conditions that contribute to psychological breakdown.

**Social and economic damage:** Loss of employment, reputation, and family relationships due to restrictions fosters a condition of helplessness and suffering.

**Lack of judicial oversight and remedies:** Denying individuals effective legal recourse or disregarding court decisions places them in complete vulnerability, removing protective mechanisms and increasing exposure to abuse.

**Structural isolation and social control:** Surveillance, travel bans, and community ostracization isolate individuals from society, mimicking aspects of a solitary confinement in an open setting.

**Stigmatization and dehumanization via opaque classification:** Using vague security labels like S17 with no explanation dehumanizes and strips individuals of legal identity and dignity. Discrimination based on religious symbols or networks perpetuates racialized or ideological bias, akin to practices from colonial policing.

**Chronic psychological trauma documented clinically:** Consistent findings of complex PTSD and depression, assessed under international standards like the Istanbul Protocol, confirm that harm is systemic and severe.

**Cumulative effects of multi-layered coercive measures:** The simultaneous imposition of travel bans, surveillance, job loss, and police harassment creates an overwhelming environment of domination and fear.

**State-sanctioned harassment and intimidation of families. Multigenerational impact:** Targeting and threatening family members extends the suffering beyond the individual, undermining familial support structures and turning homes into sites of fear. The disruption of parental presence and income affects children's development and well-being, creating a multi-generational cycle of trauma.

*Table 4. S-17 file administrative measures as amounting to psychological torture*

- Deliberate induction of mental suffering
- Enforced powerlessness and humiliation
- Sleep deprivation and hypervigilance from constant surveillance
- Destruction of hope and future planning
- Destruction of personal and social identity
- Threats against family and social fabric
- Chronic and unresolved fear
- Institutionalized gaslighting and denial
- Intrusion in intimate and domestic space
- Negation of legal subjectivity

veillance, and experienced periodic police raids at his residence, during which he and his family were interrogated and physically assaulted. During his 3-year tenure, he was arrested 28 times<sup>5</sup>, later released without charges. The extended period of house arrest and the additional restrictive measures imposed entailed

severe physical and psychological distress, as well as considerable economic hardship for him and his family. Furthermore, these measures effectively prevented Mr Ghaith from carrying out his civil responsibilities<sup>6</sup>.

5 <https://www.middleeastmonitor.com/20211126-israel-places-palestinian-governor-in-jerusalem-under-house-arrest/>

6 <https://www.palestinechronicle.com/israeli-court-sentences-jerusalem-governor-to-open-ended-house-arrest-video/>



**Table 5.** *Severe suffering in parents and children under house arrest in east Jerusalem (Al-Arja, 2022; Chamie & Walsh, 2018; Shalhoub-Kevorkian, 2021)*

Children	Parents
<ul style="list-style-type: none"> <li>– Chronic traumatic stress</li> <li>– Anger. Frustration. Fear</li> <li>– Humiliation. <i>Feeling like an animal in a cage</i></li> <li>– Have to present before a “behaviour officer”. Lengthy interrogations.</li> <li>– Guilt about causing problems to siblings and parents</li> <li>– Eight every ten children loose academic year and have academic future compromised</li> </ul>	<ul style="list-style-type: none"> <li>– Symbolic damage: Parents are prison guard of their sons</li> <li>– Feelings of guilt, shame, helplessness</li> <li>– Social stigma</li> <li>– Job loss. Economic breakdown</li> <li>– Raids in the house by soldiers or armed settlers. Regular interrogation of parents.</li> </ul>

*House arrest as amounting to ill-treatment or torture*

Soley and Lin described the case of AC, a woman in house arrest in Iran assessed by experts of the International Forensic Expert Group (IFEG) using the Istanbul Protocol. She had been detained for a number of years in prison, being held in solitary confinement and suffering harsh interrogations. She was released with an ankle monitor to her family’s home to remain under house arrest and forbidden from being more than a few hundred meters away. During her imprisonment, AC developed severe neck stiffness and neck and shoulder pain, which was exacerbated by lying on a hard floor to sleep and being handcuffed for extended periods of time. Due to the severity of her neck pain, she was unable to stand up. House arrest prevented her from accessing any medical treatment. Additionally, she had a medical history of breast cancer. However, she was unable to receive an adequate evaluation to determine whether the excruciating pain was related to metastatic extensions. During her imprisonment, she developed serious symptoms of claustrophobia, and obsessive-compulsive thinking and behaviour which could not be treated while in house arrest. AC lived under constant fear of being returned to prison or having a new legal case launched against her. Her PTSD symptoms and chronic pain and anguish had a negative impact on her family. The IFEG’s forensic experts determined that if the house arrest location cannot provide a secure and non-threatening environment, survivors’ physical and psychological well-being may be at risk of developing into chronic conditions, which could amount to ill-treatment or torture. (Soley & Lin, 2021).

*House arrest as violating the anti-torture convention – legal considerations*

The Special Rapporteur on the Promotion and Protection of Human Rights and Fundamental Freedoms while Countering Terrorism (SRCT) regarding the use of control orders in Australia<sup>7</sup>

established in 2006 that: “house arrest (like any form of detention) is only permissible during the course of a criminal investigation; while awaiting trial or during a trial; or as an alternative to a custodial sentence (while on parole, for example). Australia should similarly ensure that control orders do not unduly interfere with the rights to family life, employment and education”.

Recently, in 2020 the SRCT also established that “Some countries have increasingly moved towards using administrative measures as a legal basis on which to rely for the management and prevention of terrorism, and to provide for ex post rather than ex ante judicial review, with significant consequences for the protection of individual rights” (A/HRC/43/46)<sup>8</sup>, indicating that ex post judicial review is not sufficient protection.

The UN Special Rapporteur on Torture (Juan Méndez, 2015) also established that “Excessive use of administrative restrictions such as prolonged house arrest or control orders without charge or trial may result in cruel, inhuman or degrading treatment.”<sup>9</sup>

The Working Group on Arbitrary Detention and the Human Rights Committee have considered that the detention of a person including house arrest will be arbitrary if it includes elements of inappropriateness, injustice, lack of predictability, lack of due process of law or discrimination<sup>10</sup>.

7 <https://documents.un.org/doc/undoc/gen/g06/155/52/pdf/g0615552.pdf>

8 <https://docs.un.org/es/A/HRC/43/46>

9 A/HRC/28/68

10 Report of the Working Group on Arbitrary Detention (A/HRC/16/4), para. 8(e). See also, for example: Mukong v. Cameroon, Human Rights Committee Communication No. 458/1991, UN Doc CCPR/ C/51/D/458/1991 (1994), para. 9.8; and de Morais v. Angola, Human Rights Committee Communication No. 1128/2002, UN Doc CCPR/C/83/D/1128/2002 (2005), para. 6.1; and Gorji-Dinka v. Cameroon, Human Rights Committee Communication No.



The Human Rights Committee has expressed concern about the inclusion of thousands of people, including human rights defenders, activists and opposition politicians, on “terrorist lists” without any hearings or other due process being held<sup>11</sup>. Additionally, established that “deprivation of liberty can take many forms. When restrictions imposed on a person’s life are so severe as to isolate or incapacitate them, and especially when prolonged and without effective judicial review, they may amount to inhuman or degrading treatment<sup>12</sup>.”

The Committee against Torture in its General Comment 2 established that deprivation of liberty, even outside formal detention, can constitute torture or ill-treatment if applied abusively<sup>13</sup>. In successive documents has had an even a more clear stand in recommending the elimination of all forms of administrative detention, including house arrest<sup>14</sup>. It has also expressed concern about the increasing use of “preventive justice”, which circumvents ordinary criminal justice procedures to give extensive powers to the police.<sup>15</sup>

In the last decade - and especially since 2020 - international bodies have converged in considering non-judicial house arrest as a highly problematic measure, which often violates basic human rights. The general consensus is that administratively imposed house arrest amounts to a deprivation of liberty and should therefore be subject to the same restrictions and guarantees as any detention (immediate judicial control, limited duration, right to defence and periodic review).

#### *When house arrest amounts to ill-treatment and torture?*

There are at least six elements to consider, alone or in combination, when assessing house arrest as psychological torture.

1. **Security- Fear producing actions.** The cases described show that most often than not, restriction of movements is not an isolated administrative measure, but it is associated with other measures that might constitute torturing environments.
  - Surveillance,
  - Continued presence of military or police officers in the surroundings
  - Unannounced visits including assaults or physical coercion,
  - Violation of privacy and intrusive searches confiscating or destroying papers or personal effects.
  - Threats and other coercive elements producing chronic tension and fear
  - Humiliation and degrading attitudes and discrimination.
2. **Detention for an indefinite period of time, without the possibility of review measures or legal remedy,** creating a prison in time with a *de facto* blockade to the life project and to the possibilities of subsistence.
3. **Lack of legal safeguards, present in formal detention.** Persistent lack of information about one’s legal status, combined with an inability to influence or predict outcomes, fosters a profound sense of uncontrollability. This perceived helplessness is a key psychological mechanism underlying chronic stress, trauma, and the erosion of agency.
4. **Breaking social and collective identity**
  - Threats and harassment to family members
  - Rumours and misinformation to break family ties
  - Prohibition of visits or any form of communication, creating a *de facto* house based solitary confinement.
5. **Impeding access to basic needs.**
  - Food and basic livelihoods
  - Psychological support
  - Health care
  - Employment opportunities
  - School and studies
6. **Constant reminders of the exclusion and control condition**
  - Use of electronic bracelets
  - Summons to the police station to sign or report. Repeated interrogations of an intimidatory or degrading nature

#### **Assessment using the Istanbul Protocol**

In order to assess the facts and the severity of the suffering associated to them, the forensic expert should consider individual, family and community impacts. They should also consider the conditions of the house (size, habitability, minimum conditions, access to light, water, or food, temperature), and elements of personal vulnerability (age, personal circumstances, chronic illness-

1134/2002, UN Doc CCPR/C/83/D/1134/2002 (2005), para. 5.1

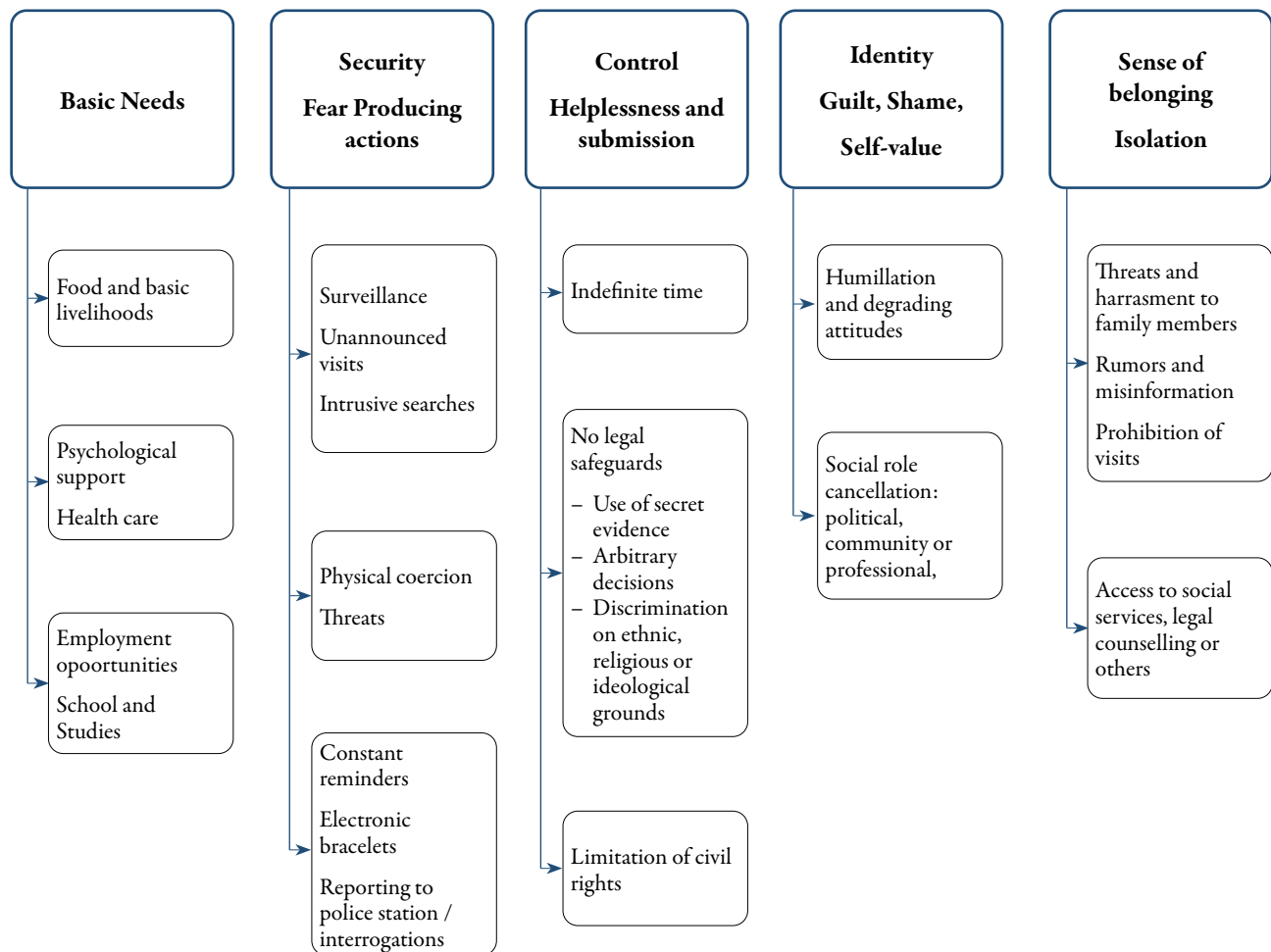
11 CCPR/C/A/CO/5, par. 13 de la Constitución.

12 A/HRC/13/39/Add.5 (2010). Also UN Human Rights Committee (ICCPR General Comment No. 35, 2014): “House arrest can amount to deprivation of liberty under Article 9 ICCPR if it is imposed without judicial control and for extended periods.”

13 Committee Against Torture. (2008). General comment No. 2: Implementation of article 2 by States parties (CAT/C/GC/2). Parag 15. UUNN. <https://www.refworld.org/legal/general/cat/2008/en/53514>

14 See, for example, its Concluding Observations on: Jordan, UN Doc A/65/44, para. 60(13); Moldova, UN Doc CAT/C/CR/30/7 (2003), para. 6(d); Egypt, UN Doc CAT/C/CR/29/4 (2002), para. 6(f); and China, UN Doc A/55/44, para. 101

15 CAT/C/DEU/CO/6, párr. 41

**Figure 1** organises all the elements of coercion according to its potential psychological impact.

es requiring monitoring or treatment, history of psychological disorders and others). Being confined in a small, overcrowded dwelling within a marginalized settlement—such as those seen in Tunisia or Egypt—can generate far greater distress than seclusion in a comfortable, spacious residence, like those occupied by high-ranking Chilean officials convicted of torture<sup>16</sup>

### Conclusions and recommendations

House arrest measures, particularly when lacking judicial oversight, clarity, and proportionality, can constitute a torturing en-

vironment with severe psychological, social, and economic consequences.

Human rights organizations may consider re-examining house arrest as a context that can, in certain circumstances, amount to cruel, inhuman, or degrading treatment—rather than assuming it is inherently a milder alternative to detention. Attention to broader, systemic patterns such as family-level repercussions, community stigmatization, and sustained social exclusion can enrich advocacy efforts. The systematic use of the Istanbul Protocol to assess and document the psychological impact of prolonged administrative restrictions could strengthen both legal and public interventions. In contexts where litigation is viable, strategic cases may help expose deeper structural issues. Collaboration with psychosocial professionals is also im-

<sup>16</sup> Franklin, J. (2013, September 27). *Chile closes luxury prison for Pinochet-era human rights offenders*. The Guardian. <https://www.theguardian.com/world/2013/sep/27/chile-closes-luxury-prison-pinochet-cordillera>

portant to ensure that mental health perspectives inform documentation, accompaniment, and potential reparative measures.

States may benefit from reviewing and, where necessary, reforming administrative control measures such as house arrest, particularly in light of concerns around legality, necessity, and proportionality. Ensuring individuals have timely access to independent judicial review is essential to uphold basic procedural safeguards. Attention should also be given to preventing discriminatory practices, including profiling based on religious appearance, social associations, or geographic origin, within counter-terrorism frameworks. Acknowledging the potential long-term harm caused by these measures—including psychological and social consequences—could open the path toward appropriate reparative measures, such as compensation and access to psychosocial support.

United Nations mechanisms—including the Committee Against Torture, the Special Rapporteur on Torture, and the Working Group on Arbitrary Detention—may consider incorporating forms of house arrest into their monitoring frameworks when credible evidence suggests patterns of coercion or harm. In certain contexts, it may be appropriate to explore whether such measures could meet the threshold for cruel, inhuman, or degrading treatment, or even psychological torture.

Periodic reviews under instruments such as the UPR, CAT, or ICCPR provide key opportunities to encourage states to report transparently on the use of administrative control measures and on their compliance with judicial decisions. Where relevant, UN agencies could also play a role in facilitating protective mechanisms for individuals at risk—particularly human rights defenders, journalists, and civilians subjected to prolonged or extrajudicial forms of house arrest.

These practices do not exist in abstraction—they shape the daily lives and mental wellbeing of real individuals. When measures intended for security begin to blur with coercion, and legal processes are perceived as instruments of fear, the boundary between legitimate control and cruel treatment becomes dangerously unclear. It is both possible and necessary for institutions—national and international—to reaffirm that boundary with transparency, proportionality, and accountability. Safeguarding human dignity must remain at the heart of any preventive measure.

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# Torture, trauma, and posttraumatic symptoms in Syrian women asylum seekers in the Greek border camp of Idomeni

Marta Guarch-Rubio<sup>1</sup>, Antonio L. Manzanero<sup>2</sup>, Francisco Roy Delgado<sup>3</sup>, Anca Minescu<sup>4</sup> and Dumaha Mohamed<sup>5</sup>

1 San Jorge University, Zaragoza. Correspondence to: [mguarch@usj.es](mailto:mguarch@usj.es)

2 Complutense University, Madrid.

3 San Jorge University, Zaragoza.

4 Limerick University, Ireland.

5 Psychologist in the Sahrawi Refugee Camps in Tinduf (Algeria)

## Abstract

**Introduction:** Experiencing traumatic events and torture due to war, the migratory process, and staying in confinement centers exposes refugees to a high risk of suffering psychological problems. The vulnerability of experiencing posttraumatic symptomatology is mediated not only by the traumatic experiences but also by the contextual and migratory factors at the time of assessment. The present study aimed to determine the quantity and intensity of posttraumatic symptoms in a sample of refugee women blocked at the Idomeni refugee camp (Greece) under eviction. Moreover, some qualitative data were gathered throughout the interviews. **Method:** The methodological approach was a mixed method where 23 Syrian and Kurdish women, aged 28.9 years ( $SD = 12.6$ ), were interviewed through the Harvard Trauma Questionnaire (HTQ) in its Iraqi version. **Results:** The women experienced between 7-32 traumatic events ( $M = 19.47$ ,  $SD = 6.68$ ) and 4-16 torture events ( $M = 9.78$ ,  $SD = 3.35$ ). Re-experiencing was the most reported symptom (95.6%). A 78.26% showed posttraumatic symptoms that exceeded the cut-off point for diagnosis the Post-traumatic Stress Disorder (PTSD) with the HTQ criteria and 91.30% with the DSM-IV criteria. On the other hand, qualitative data emphasized the importance of the fact that arriving and living in the camp in Idomeni severely shook the women's beliefs. **Conclusion:** Despite the low correlation found between traumatic and torture events and the posttraumatic symptoms due to the ceiling effects of the results, women reported traumatic and torture events associated with war and the migratory process. The high scores could be explained by the stress associated with torture events, the eviction of the refugee camp, and the frustration of their expectations regarding their reception in Europe as refugees. The notion of torturing environments emerges as a plausible framework to study the link between mental health and European forced migration routes.

**Keywords:** Trauma; torture; PTSD; refugee; woman studies;

## Introduction

The effects that war and political violence have on the civilian population increase the risk of suffering psychological and behavioural disorders related to a traumatic origin (Berthold et al., 2019; Gómez-Varas et al., 2016; Guarch-Rubio et al., 2021;

Ibrahim & Hassan, 2017; Manzanero et al., 2024; Mollica et al., 1992; Morales-Valiente et al., 2023). Surviving in a context of war implies multiple sources of victimization, among them, direct or indirect exposure to death, siege, lack of food, or the systematic violation of Human Rights. It is estimated that around

80-90% of current war victims are civilians (Roberts, 2010). In addition, it has been observed that being a woman in the context of war and seeking refuge implies being exposed to multiple situations of sexual abuse and violence (Ashford & Huet-Vaughn, 2000; Guarch-Rubio & Manzanero, 2017; Hynes, 2004; Niaz, 2014; Pérez et al., 2022). Gender inequality transversally affects all societies and converts refugee women into second-class displaced persons (Guarch-Rubio, 2023). The culture of war increases the vulnerability to poverty in women, intrafamily violence, prostitution, and forced marriage, as well as the experience of traumatic events based on the inequality of power and privileges associated with men as a social construct (Hynes, 2004). In the migration context, gender superiority is understood as a social construct since being a woman refugee exacerbates the threat of reporting experiences of gender violence in their countries of origin, transit and destination countries (Esposito et al., 2020). Consequently, the agencies oriented to promote humanitarian aid focus on ending gender-based violence across their interventions (IASC, 2015).

#### **Posttraumatic stress disorder assessment in refugee camps**

Most refugee studies have focused on assessing the presence of posttraumatic stress disorder (PTSD) and other associated disorders, such as anxiety or depression (Bogic et al., 2012, 2015; De Jong et al., 2003; Priebe et al., 2013; Steel et al., 2009). However, the assignment of diagnoses is a complex process that must be carried out by clinical specialists and must not be based solely on a questionnaire. As such, just considering the values from the quantitative surveys might contribute to the further victimization of those surveyed. Despite this, the violence associated with armed conflicts is a risk factor for the development of PTSD and other pathologies, and most of the studies based their results on the diagnoses instead of the symptomatology.

PTSD requires experiencing a traumatic event and is characterized by the tendency to suffer re-experiencing (intrusive memories of the event, dreams, or the feeling that it is happening again), avoidance (efforts to avoid thoughts, feelings, memories, places or people related to the event), negative changes in mood and way of thinking (not having hope in the future, feeling guilty, difficulty feeling positive emotions or feeling distant from family members and friends) and hyperactivity behaviors (difficulty sleeping, irritability or expressions of anger) (APA, 2013). Steel et al.'s (2009) meta-analysis of 181 studies showed a prevalence of 30.6% of PTSD in people victims of war and forced displacement. A recent meta-analysis of 21 studies (Handiso et al., 2023) indicated an initial PTSD prevalence of 17.65% in the period immediately following resettlement (up to one year after arrival) and a tendency for the

prevalence to decrease to 11.64% over time. However, studies with more than six years of follow-up suggested that the prevalence of PTSD might not substantially decrease within the first six years after resettlement.

It seems that resilience may characterize victims of traumatic events, as the prevalence of PTSD found in most studies is not very high. From a salutogenic model, various studies show that in some cases, victims of traumatic events such as wars, torture, or refugee situations could develop posttraumatic growth, which can occur simultaneously with PTSD. Posttraumatic growth has been defined as the experience of positive changes that result from facing highly challenging life crises (Tedeschi & Calhoun, 2004), changes that can be beneficial on cognitive, emotional, and even behavioral levels. Different PTSD prevalence values can be explained by the influence of various factors that accompany the mental health assessment after an armed conflict. Sousa (2013) and Rodin and Van Ommeren (2009) suggest that these factors include contextual elements, the pre-existence of clinical disorders before the conflict, conditioning factors that predispose or make an improvement impossible, and the influence of methodological aspects. In this vein, women suffer from PTSD to a greater extent than men (Kimerling et al., 2002; Tekin et al., 2016). A recent study with adolescent war victims in the Gaza Strip (Manzanero et al., 2024) indicates that two distinct types of PTSD with different levels of severity could be distinguished: socially preserved and socially weakened. The socially weakened modality exhibited more severe psychological conditions across various dimensions, including memory processes, physical well-being, thoughts, emotions, and self-concept. The conditions of detention camps for refugees, due to their living conditions, could give rise to a more severe variant of PTSD.

Moreover, cultural factors could play an important role in the occurrence of PTSD in refugees and should be taken into account when evaluating this disorder (Bryant et al., 2023).

#### *The exodus*

Since 2011, the war in Syria has forcibly displaced more than half of its population, causing more than eight million people to be displaced, both internally and externally, most needing international assistance (UNHCR, 2023). Syria has become an international battlefield where human rights violations are systematic (Amnesty International, 2018), in what has become known as a "war of annihilation." The protection of the civil population has turned out to be ineffective, since neither the periodic publication of reports by non-governmental organisations (Amnesty International, 2019; Human Right Watch, 2020) nor the denunciation of inhumane crimes against humanity has been able

to bring this war to a halt. In short, the war in Syria increases exposure to traumatic events and, occasionally, the development of trauma associated with them (Alpak et al., 2015; Ibrahim & Hassan, 2017; Kakaje et al., 2021; Kazour et al., 2017; Sa et al., 2022). Despite the obligations agreed upon in Geneva, whereby protection should be granted to all war refugees, today's migration policies make access to asylum-seeking complicated. Compounded with growing hostility towards refugees and the habitual shortage of resources in the host countries, many Syrians are returning to their country of origin, which, in turn, is amidst chaos and destruction. Even though hostilities in Syria flared up in 2023, with 7.2 million people being displaced within the country, a total of 13.8 million Syrians remained forcibly displaced in 137 countries (UNHCR, 2024). For this research, the peak of the Syrian migration process towards the EU in 2015 and 2016 is relevant. Many Syrian nationals remained stuck in border refugee camps waiting for relocation processes. As for Greece, 856,723 and 173,450 migrants arrived irregularly across the Mediterranean only in 2015 and 2016, respectively, many of them Syrian refugees (UNHCR, 2020). In recent years, entry through the once main gateway into the EU has been transformed by the measures and the agreements on border containment designed and executed by the EU and by shifting migration routes (Zaragoza-Cristiani, 2017). Thus, although some migration policies purport to conserve a Europe "without strangers knocking at the door," the presence of migrations reveals that it is a constant phenomenon and which, for that very reason, awaits future human management (Bauman, 2016). After the Agreement in March 2016 between the EU and Turkey, Macedonia closed its borders with Greece, and 60,000 refugees remained trapped without the chance to progress to any European country (Bjertrup et al., 2018). The camp in Idomeni was the starting point of the "March of Hope" and central to European migration movements. In this context, the Idomeni refugee camp located in the border area between Greece and Macedonia went from being a makeshift, temporary camp, with minimal health care services (Gargavanis et al., 2019) to being a refugee camp where the accumulation of people soared daily due to the closing of the borders. In March 2016, it is estimated that between 11,000 and 13,000 migrants/refugees were blocked in an informal refugee camp in Idomeni, with space for 2,500 people, with 180 latrines and showers, which meant miserable living conditions (Amnesty International, 2016). In this context, thousands of refugees were blocked at the closed Greek-Macedonian border. They were not allowed into this territory, creating a cascading effect on the "Balkan route" countries and leaving several thousand refugees stranded at the northern Greek border. However, despite difficulties, many refugees refused to leave

Idomeni for fear of being transferred to official camps where they would have to be registered (Dublin Regulation) and where they feared their living conditions would worsen (Donnelly & Muthiah, 2019).

Nevertheless, the Idomeni refugee camp was officially and forcibly dismantled in May 2016 (Anastasiadou et al., 2018). Situations of violence and police interventions with tear gas ensued, which forced *Médecins Sans Frontières* (2016) to evacuate their patients and to work thereafter outside the camp for security reasons. Moreover, the symbolic use of institutional violence, such as the overflight of fighter planes and the arrival of Macedonian tanks in the area, took a toll on the mental health of the refugees, leading to instances of posttraumatic reactivation. It was in this context, during the days leading up to the dismantling of the Idomeni refugee camp, that this study took place. The dual vulnerability of women, previously documented in such settlements, directed the research objectives toward them. That is why, even though there were violent situations inside the camp, these had more of a latent character on account of the higher presence of women and minors. Thus, this study focused exclusively on women due to how hard it generally is in these settings to gain access to their testimonies and the lack of access to them in the Idomeni refugee camp. The initial objectives of this study, then, were the assessment of traumatic and torture events experienced by women refugees in Idomeni and the prevalence of PTSD. Previous research has shown how the accumulation of traumatic factors increases the presence of psychological disorders. In this study, we expected to find a high prevalence of posttraumatic symptoms due to the violent events experienced in the Idomeni refugee camp, which ultimately led to its dismantlement.

## Method

### Participants

A total of 23 women of Syrian nationality took part in the study, although three identified themselves as Kurds. They were between 18 and 66 years of age ( $M = 28.9$ ,  $SD = 12.6$ ), and the majority were married (91.30%).

### Procedure

Following the Istanbul Protocol, personalised interviews were carried out at the Idomeni Camp, between the border of Greece and Macedonia, in May 2016. The methodological approach was a mixed method approach where the quantitative and qualitative results were discussed, as Manek et al. (2023) suggested. The Istanbul Protocol is considered a practical tool to effectively guide the investigation and documentation of torture and



ill-treatment, protection of victims and advocacy work of civil society on behalf of victims (UNHCR, 2022). Following the definition of torture by the United Nations Convention against Torture (UNHCR, 1984), the present paper examines violent and torture events experienced by women refugees during their transit of migration. This research includes their traumatic experiences faced during the three migratory phases: during their stay in the war country, during the migrant journey and their stay at the blocked EU's borders between Greece and Macedonia and other borders. Accepting that torture might be conceptualised as a process of humiliation and psychological breakdown, refugees landing in a repressive border regime are susceptible to being victims in torture environments and suffering trauma (Pérez-Sales et al., 2016).

At the time of assessment, the Balkan migratory routes were blocked, and consequently, the European borders were closed for migratory flow. The complete eviction of the camp in Idomeni (Greece) led to a drastic rupture at the end of the study. However, it was a strength of the study, making this evident and placing it very explicitly in the context of the European migration policies and border regime studies. In this context and to evacuate Idomeni, the United Nations High Commissioner for Refugees (UNHCR) and the Greek Government urged Syrian refugees to seek asylum in Greece, settle temporarily in official detention centers, or take advantage of the programs of voluntary return to Syria. When the assessment took place, no woman had applied for asylum or had had an interview with immigration agents to assess her status. All the assessed women intended to continue their journey to other European areas. The interviewer completed the questionnaire through individual interviews in the women's tents. Similarly, in Ibrahim and Hassan's (2017) study of Syrian-Kurdish refugees in Iraq, the informed consent of voluntary participation was collected in written or verbal form for cultural reasons. Verbal consent was obtained using the same standard written document that collected information about the voluntary, anonymous, and confidential nature of participation for research purposes without consequences for their asylum resolution.

This project was approved by the Ethical Committee of the Complutense University of Madrid (Spain) and declared of interest to the United Nations High Commissioner for Refugees (UNHCR) and the United Nations Agency for Palestine (UNRWA).

Before the assessment, the refugee camp of Idomeni (Greece) was completely evacuated, which prevented the sample from being larger.

## Measures

### *Demographic characteristics*

The interviewer recorded the participants' age, ethnicity, marital status, country of origin, grounds for seeking asylum, and the dates they arrived at the camp, as directly reported by the study participants.

### *Torture events and trauma exposure*

The Harvard Trauma Questionnaire (HTQ) was used in its Iraqi version, adapted to the assessment of the effects of trauma among Middle Eastern populations (Shoeb, Weinstein, & Mollica, 2007). The five parts of the HTQ scale were applied, with different objectives: to discriminate the presence of brain damage (part III, current study exclusion criteria), to assess the exposure to traumatic events (section I, 43 items), to collect the descriptive experience of the traumatic events (section II), to evaluate posttraumatic symptomatology (section IV, 45 items), and finally to assess the exposure to torture (Section V, 34 items). Sections I and V use a binary "Yes / No" response format to reflect the experience of traumatic events and torture, respectively, throughout the life of the interviewee.

### *PTSD symptoms and diagnoses*

Section IV is composed of 45 items that describe the presence of posttraumatic symptomatology using a Likert scale ranging from 1 (not at all) to 4 (extremely). The HTQ provides independent scores for each section, and the total score is obtained through the average, using 2.5 as the clinical cut-off point. Scores greater than 2.5 indicate a higher probability of suffering from PTSD (Ibrahim & Hassan, 2017; Rasmussen, Verkuilen, Ho, & Fan, 2015).

The present study used one index for the diagnosis of PTSD that considered only the DSM-IV criteria and included 16 items from section IV grouped into four diagnostic categories: re-experimentation = items 1, 2, 3, 16; avoidance = items 11, 15; negative affect = items 4, 5, 12, 13, 14; and hyperactivation = items 6, 7, 8, 9, 10 (Rasmussen et al., 2015).

### *Data analysis*

A mixed-methods approach, incorporating both quantitative and qualitative analysis, was used.

Quantitative data were analysed using IBM SPSS (Version 25), and specific statistical techniques are mentioned in the results section. All p-values were set with a significance threshold of .05.

The current study objectives centre on qualitative data processing and analysis of the narratives. This qualitative approach was used to analyse the information gathered through the 23

interviews. The main objective was to explore these women's experiences of war and conflict, living conditions, access to essential services, security, protection, and uncertainty and hopes for the future.

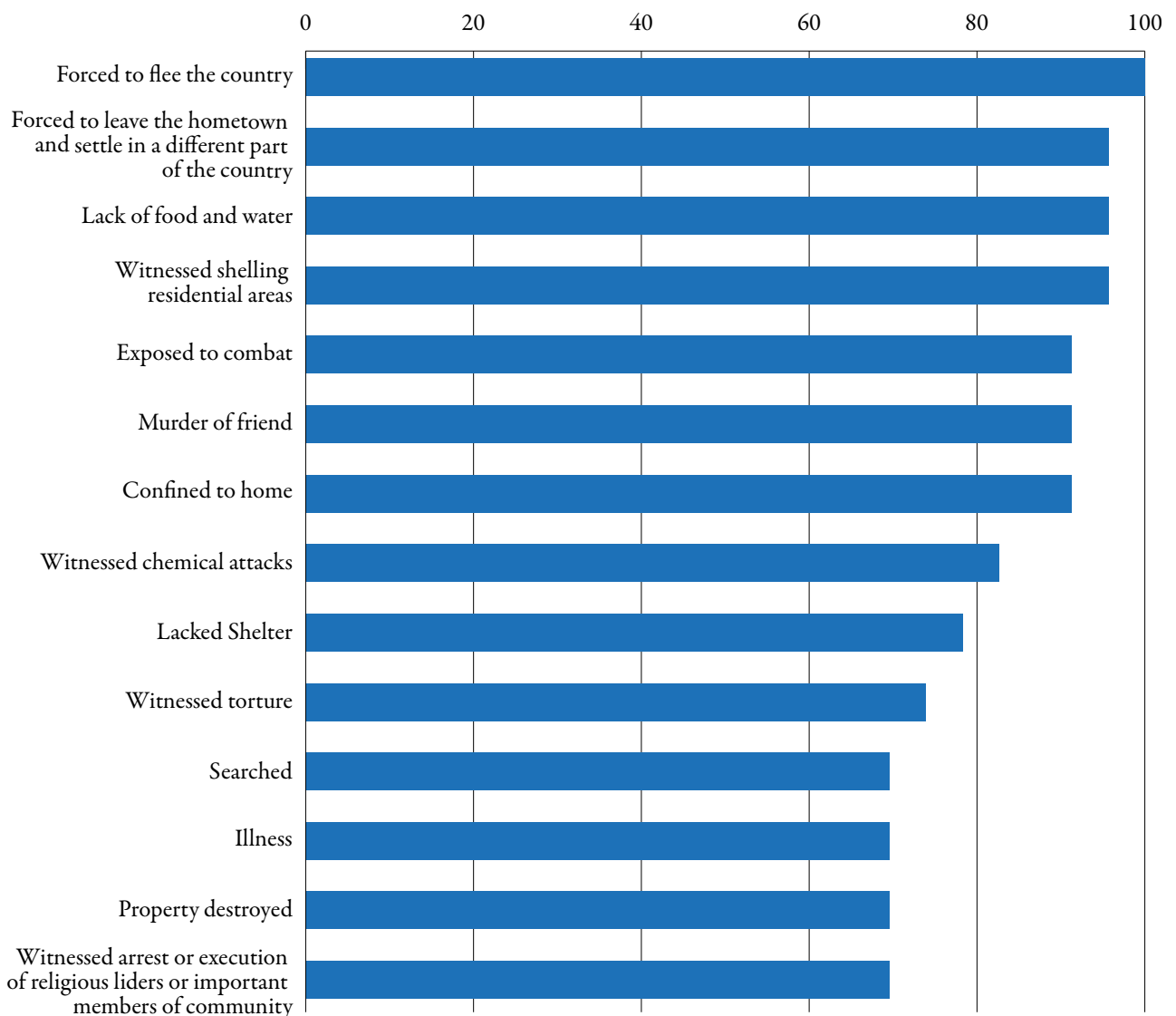
## Results

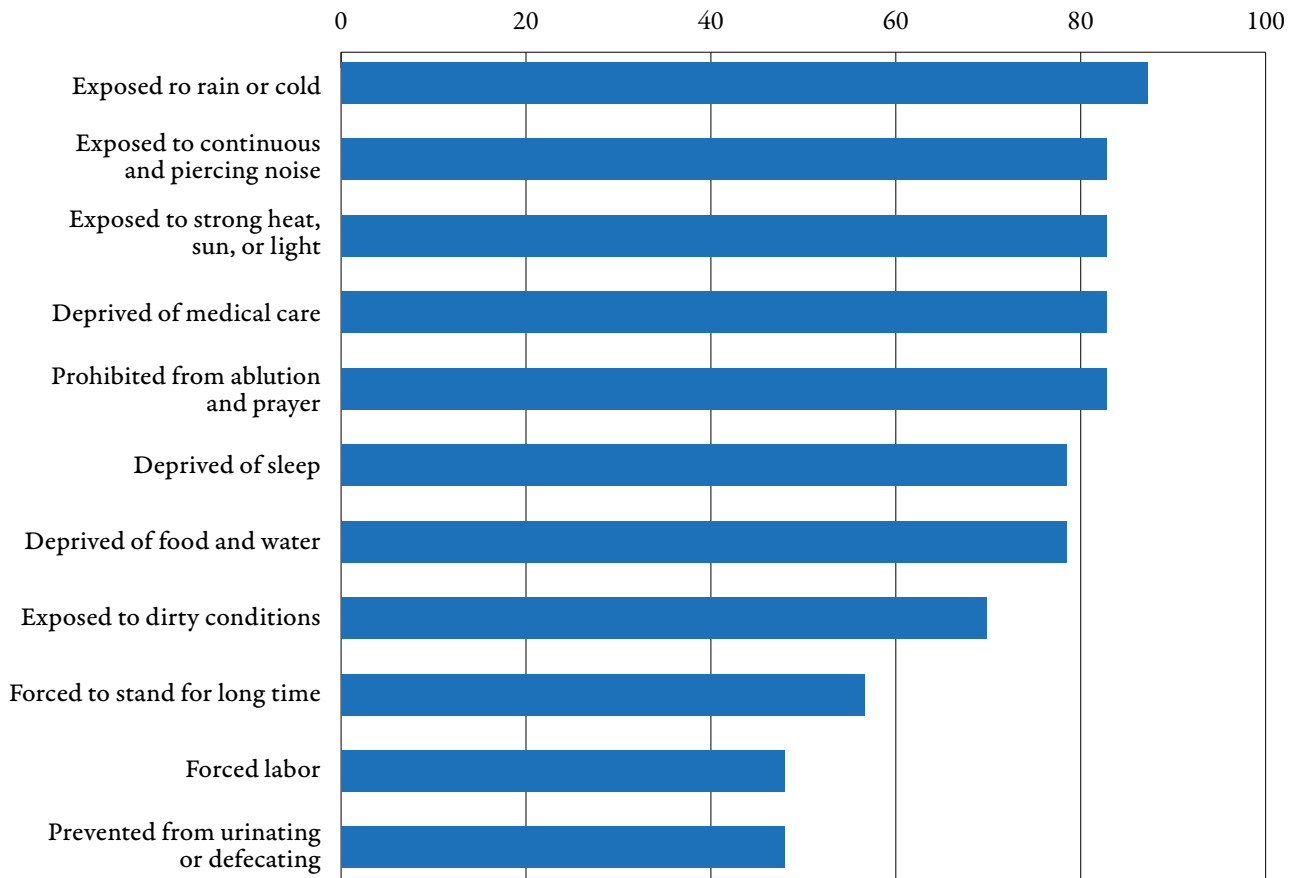
### *Quantitative data results*

The HTQ results showed a mean Torture score of 9.78 ( $SD = 3.36$ ) and a mean Trauma score of 19.48 ( $SD = 6.68$ ). Concerning the HTQ subscales corresponding to DSM-IV symptoms and diag-

nostic criteria, we found a *Re-experiencing* subscale mean of 3.45 ( $SD = 0.53$ ), an *Avoidance* subscale mean of 3.17 ( $SD = 0.98$ ), and a *Negative Affect* subscale mean of 3.06 ( $SD = 0.65$ ) (Table 1). An extremely high posttraumatic symptomatology was found. A 78.26% % showed posttraumatic symptoms that exceeded the cut-off point for diagnosis of PTSD with the HTQ criteria and 91.30% with the DSM-IV criteria. Scores obtained for the PTSD symptomatology evaluated under the DSM-IV criteria correlated significantly (Pearson bivariate analyses) with those of the HTQ criteria,  $r = .803$ ,  $p < .001$ . The participants experienced a range of 7-32 traumatic events ( $M = 19.47$ ,  $SD = 6.68$ ).

**Figure 1.** Most frequent traumatic events (%).



**Figure 2.** Most frequent torture experiences (%).

Concerning situations of torture, except for one of the participants who indicated not having suffered any element of torture, the number of events suffered by the women ranged from 4 to 16 ( $M = 9.78$ ,  $SD = 3.35$ ). The forced exposure to environmental factors and the absence of coverage of basic needs due to migration and war are noteworthy.

Often, the psychological impact of exposure to death and perceived helplessness in war environments generates a psychological imprint that accompanies refugees over time. However, clinical manifestations may vary from one person to another. Tekin et al. (2016) found the usual presence of flashbacks, hypervigilance behaviors, and psychological distress in refugee women with PTSD, while in men, they found detachment behaviors. In the present study, the comparison of means indicated a slightly lower presence of negative affect compared to re-experiencing posttraumatic symptomatology, according to the DSM-IV,  $t(22) = 2.811$ ,  $p < .01$  (see Table 1).

Next, the indicators with the highest score in each category of posttraumatic symptomatology (re-experiencing, avoidance, negative affect, and hyperactivation) are indicated, although high scores were obtained for all groups.

Exceeding the cut-off point for diagnosis the Post-traumatic Stress Disorder (PTSD) through the DSM-IV criteria and the HTQ criteria did not correlate with having suffered torture ( $r = .269$ ,  $p = .215$ ;  $r = .095$ ,  $p = .667$ ; respectively) or having experienced traumatic events ( $r = .263$ ,  $p = .225$ ;  $r = .051$ ,  $p = .817$ ; respectively). Probably it is due to the ceiling effects of the results. Finally, the correlation between each of the four diagnostic categories (re-experiencing, avoidance, negative affect, and hyperactivation) and the presence of traumatic events and torture was only significant for re-experiencing and number of traumatic experiences suffered ( $r = .469$ ,  $p < .05$ ), that is, the greater the number of traumatic experiences, the higher the score in re-experiencing.

**Table 1.** *Sample demographic and clinical characteristics.*

Variables †	n (%)
Age, years (Mean, SD)	28,90 (12.67)
<b>Ethnicity</b>	
Syrian	20 (87%)
Kurdish	3 (13%)
<b>Marital status</b>	
Married	21 (91,3%)
Single	2 (8,7%)
HTQ Torture score (Mean, SD)	9.78 (3.36)
HTQ Trauma score (Mean, SD)	19.48 (6.68)
HTQ Re-experiencing subscale (Mean, SD)	3.45 (0.53)
HTQ Avoidance subscale (Mean, SD)	3.17 (0.98)
HTQ Negative Affect subscale (Mean, SD)	3.06 (0.65)
HTQ Hyperactivation subscale (Mean, SD)	3.31 (0.69)
DSM-IV PTSD score (Mean, SD)	3,25 (0,50)
HTQ PTSD score (Mean, SD)	3,01 (0,55)
<b>DSM-IV PTSD Diagnose</b>	
No PTSD	2 (8,7%)
PTSD	21 (91,3%)
<b>HTQ PTSD Diagnose</b>	
No PTSD	5 (21,7%)
PTSD	18 (78,3%)

† N = 23 for all variables.

### *Qualitative data results*

Of those 23 women assessed, 21 described episodes of violence in Part II of the HTQ, justifying their need to flee to Europe due to the war in Syria.

Considering the characteristics of the women evaluated in the present study and included in the annex, the following were established: Age: The surveyed individuals spanned a var-

ied range of ages, from young to elderly. Experience of war and conflict: The surveyed individuals had direct or indirect experiences of war and conflict in their countries of origin. Refugees: All surveyed individuals met the criteria to be a refugee.

Regarding the main themes considered in this evaluation, the most relevant and recurrent ones were: *1. Experience of war and conflict:* Women shared their personal experiences and the impact of war on their lives, such as the loss of loved ones, the destruction of their homes, and the violence they have endured. *2. Living conditions in the camps:* The living conditions in the refugee camps were addressed, including the lack of essential services, overcrowding, lack of privacy, and limited resources. *3. Access to essential services:* Refugee women described their challenges in accessing essential services such as healthcare, education, clean water, sanitation, and hygiene. *4. Security and protection:* Women expressed their concerns about personal security, including fear of gender-based violence, lack of protection, and the risk of abuse. *5. Uncertainty and hopes for the future:* Narratives included many concerns about the future and hopes of returning to their homes, finding stability, or accessing opportunities for themselves and their families.

### **Conclusions**

The analysis of the quantitative data shows that 78.26% of the women exceeded the cut-off point for diagnosis of PTSD with the HTQ criteria and 91.30% with the DSM-IV criteria.

When the data from the present study is compared to that of other studies that have considered the prevalence of PTSD in the civilian population in refugee camps bordering Syria (Alpak et al., 2015; Ibrahim & Hassan, 2017; Kakaje, et al., 2021; Kazour et al., 2017; Sa et al., 2022) it is observed that the prevalence of PTSD is lower than that found in the present study. Alpak et al. (2015) evaluated 532 Syrian refugees in Turkey. They found a prevalence of 33.5%, which amounted to 71% if focused on women with a personal or family history of psychiatric diagnosis and with previous experience of two or more traumas. Ibrahim and Hassan (2017) found that 38.46% of the Syrian-Kurdish refugees they evaluated in the Kurdish region of Iraq met diagnostic criteria for PTSD according to the HTQ criteria, compared to 35.16% with the DSM-IV criteria. Finally, the evaluation of trauma in Syrians confined in Lebanon placed the prevalence at 27.2% (Kazour et al., 2017). To date, the prevalence of PTSD found in refugees from Syria is close to the figure proposed by Steel et al. (2009) of 30.6% and below that found in the present study.

However, unlike other studies on the cumulative factor of traumatic experiences in the present study the presence of posttraumatic stress symptomatology cannot only be explained

**Table 2.** *HTQ Indicators by Categories of Posttraumatic Stress Disorder (PTSD)*

Indicators PTSD DSM-IV	Not at all		A Little		Quite a bit		Extremely	
	N	%	N	%	N	%	N	%
R1 Recurrent thoughts or memories of the most hurtful events or terrifying events	2	8.7	1	4.3	4	17.4	16	69.6
R2 Recurrent nightmares	1	4.3	5	21.7	2	8.7	15	65.2
R3 Feeling as though the event is happening again	3	13.0	0	0	5	21.7	15	65.2
R4 Sudden emotional or physical reaction when reminded of the most hurtful events	1	4.3	1	4.3	4	17.4	17	73.9
A1 Avoiding activities that remind you of the hurtful event	3	13.0	3	13.0	2	8.7	15	65.2
A2 Avoiding thoughts or feelings associated with the hurtful events	5	21.7	2	8.7	2	8.7	14	60.9
N1 Inability to remember parts of the most hurtful events	7	30.4	4	17.4	3	13.0	9	39.1
N2 Less interest in daily activities	4	17.4	2	8.7	1	4.3	16	69.6
N3 Feeling detached or withdrawn from people	6	26.1	5	21.7	1	4.3	11	47.8
N4 Unable to feel emotions	5	21.7	3	13.0	3	13.0	12	52.2
N5 Feeling as if you don 't have a future	0	0	1	4.3	1	4.3	20	87.0
H1 Trouble sleeping	1	4.3	4	17.4	1	4.3	17	73.9
H2 Feeling irritable or having outbursts of anger	3	13.0	3	13.0	2	8.7	15	65.2
H3 Difficulty concentrating	1	4.3	4	17.4	3	13.0	15	65.2
H4 Feeling on guard	2	8.7	3	13.0	4	17.4	14	60.9
H5 Feeling jumpy, easily startled	5	21.7	2	8.7	1	4.3	15	65.2

R = Re-experiencing; A = Avoidance; N = Negative Affect; H = Hyperactivation.

by the number of traumatic experiences but also because the time and place of the assessment involved an added stress effect, which led to the ceiling effect observed in the results (see Annex). High scores were obtained for all the symptom categories (re-experiencing, avoidance, negative affect, and hyperactivation). The political will to evacuate the Idomeni refugee camp and the closure of borders implied violence, lack of food, and pressure for refugees to decide about an uncertain future (continuing the route illegally, requesting asylum in Greece, or returning to Syria). Thus, the rupture of expectations that the refugees had projected regarding their arrival in Europe, the lack of a social support network, the economic cost of the trip, and the continuing war in their country of origin could be elements of influence. In this sense, the maintenance of PTSD

was not only associated with the experience of violence but also with the difficulties of daily life or the quality of life at the camp at the time of the assessment (De Jong et al., 2003).

Regarding the qualitative analyses and narrative data collected, it is summarised that: a) the surveyed women had been living in refugee camps for a variable period and faced challenges in terms of housing, access to basic services, and security; b) there was a common concern about the availability and quality of basic services such as clean water, sanitation, healthcare, and education; c) they had expressed concerns about personal security and protection in refugee camps, including violence, exploitation, and the lack of adequate protection mechanisms; d) there was a widespread sense of uncertainty about the future and prospects of returning to their countries of origin, along

with expressions of hopes for a better life and the pursuit of opportunities.

The interpretation of their narratives revealed a fundamental alteration of their belief system, as they initially considered that fleeing from a country at war would provide them with refuge and protection in Europe. However, the closing of borders, their forced retention, and the living conditions at Idomeni altered their perception of the world and security, aggravating the traumas and exposing them to new risk situations. It has been reported that the traumas that generate the most profound emotional disruptions are those whose memory affects the value system of oneself, the world, or the future (Kimerling et al., 2002).

Given the results on the condition of the camp and the context of the experimented events in Idomeni, it is noted that torture does not just involve physical pain. However, psychological torture is not frequently explored and denounced. This study reinforces how the context of migration promotes a torture environment, as it creates the conditions for torture that drive the victim to lose their self-control and be vulnerable (Pérez-Sales et al., 2016). More specifically, and according to this study, refugee camps might be considered as torturous environments. Since refugees live under non-humanitarian conditions, they are involved in an atmosphere of helplessness, hopelessness and legal defenselessness. In this vein, a recent research was carried out at Moria Reception Center (Greece) and concluded that refugees living there were systematically ill-treated and their rights were violated; as such, all of these elements led to considering these living conditions as a torture environment (Pérez-Sales et al., 2022).

### Limitations and strengths of the study

The main limitation of the present study is the reduced size of the evaluated sample, as the data collection was interrupted by the surprise dismantling of the camp in the third week of May 2016, making it impossible to continue with the assessments. However, this study is a first step towards the development of future research with more participants and generalisable results, which may lay the foundations for protocols and psychological care programs for war victims arriving in Europe.

On the other hand, the novel contributions of the present study shed scientific evidence regarding the state of mental health of Syrian people confined in detention centers in Europe. In addition, it considers the context in which the assessments take place (forced dismantling of the refugee camp) as an added stress factor. Consequently, it will be necessary to carry out a more detailed study of the effect that being blocked in a refugee camp after having experienced traumatic events and torture resulting from war and the migratory process has on

the mental health of refugees. These results highlight the importance of addressing these needs and providing comprehensive support to refugee women to improve their well-being and quality of life while preventing severe mental diseases, such as PTSD and its further consequences, in these women and their families. To sum up, the methodology used in this research reports the subjective symptomatology referred by the women refugees, although to check the presence of PTSD, a broader assessment should be performed.

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### Conflict of interest

The authors reported no potential conflict of interest.

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## Annex 1. Personal descriptions of the most relevant traumatic experiences contributed by the participants (HTQ, Part II).

Participant	Traumatic Experience
Female, Syrian, married, 25 years of age	<p>I saw air strikes and artillery bombings in my city that caused deaths, bloody wounded, and people burned by fire. My house was also destroyed. Some people from my city were executed and hanged by ISIS.</p> <p>My current life is very hard at the camp. Animals would surely refuse to live like us here, without food or water.</p>
Female, Syrian, married, 29 years of age, pregnant	<p>Due to the bombing and the destruction of my house, we had to dig out shelters to sleep in. As I walked down the street, the howitzers/bombshells fell everywhere, and I thought that at any time I was going to die. I have lost my family and relatives and I was forced to leave my country.</p> <p>Now, I live in a very small tent that did not resist the torrential rains and we got wet by the water. I have suffered from food poisoning due to the poor state of the food and the contamination of the water.</p> <p>I am 9 months pregnant and with a small child. My husband is not with us.</p>
Female, Syrian, married, 32 years of age	<p>The air strikes on the civilian population and the Aleppo schools caused us horror.</p> <p>The Idomeni camp will finish the lives of Syrians and Kurds. There is a shortage of food. The Macedonian authorities assaulted us and used tear gas and rubber bullets against us.</p>
Female, Syrian, married, 26 years of age, pregnant	<p>The air strikes, howitzers, and explosive barrels in Syria did not cease day or night. I thought that my family and I were going to die at any time.</p> <p>Now I live at the Idomeni camp. I'm pregnant and I cannot find food for my child to be born healthy.</p>
Female, Syrian, married, 65 years of age	<p>My husband had a shop, one day the market was bombed, and my husband was blinded. Now he is in Germany with my son. I am waiting for family reunification.</p> <p>We have been in this camp for 2 months and 24 days. I think death forgot about us. Neither animals nor humans can live in it.</p>
Female, Syrian, married, 29 years of age	<p>Air strikes and three howitzers reached our house while we were inside, and neighbors died. I have seen how a citizen was buried alive.</p> <p>At the Idomeni camp, life is as hard as in Syria, under constant suffering and fear.</p>
Female, Syrian, married, 20 years of age, with her children	<p>The most difficult moment of my life was when my uncle was beheaded by ISIS in front of me, his wife, and his one-year-old son. Assad's forces bombed my city. A friend of my family blew himself up and nobody did anything to help him.</p> <p>Here, my daughter was about to lose her life, and Doctors Without Borders took us to the hospital.</p>
Female, Syrian, married, 25 years of age	<p>I lived bombings, chemical weapons, destruction, and robberies. Our house was destroyed, and we lost some relatives there.</p> <p>At the camp, the worst is the weather. We have to wait a long time standing in line for the distribution of food, and if there is a problem, the distribution is closed, and we are left without food.</p>
Female, Syrian, married, 25 years of age	<p>I have seen people injured, dead, corpses, pieces of people everywhere. I cannot bear what I have seen.</p>
Female, Syrian, married, 31 years of age	<p>I lived in Aleppo. My house was destroyed, and all my friends have died. My father's house was destroyed, and he was wounded in the shoulder despite having heart problems and now he is in Turkey.</p> <p>We had no house, no electricity, no food, no water, nothing, everything was destroyed.</p>

Participant	Traumatic Experience
Female, Syrian, married, 23 years of age	In Syria, many people died and there were many houses destroyed. Torture is that of thought and this exhausts me. At the camp, there are fights between people. I want to get reunited with my husband.
Female, Kurdish, married, 37 years of age	I have 4 children and I do not have a house or belongings or money. I was tortured in Turkey, they tried to drown us in the ocean. I am with my children at the Idomeni camp and they are sick due to lack of medication and food. The Macedonian police used tear gas and we suffered torture. In Kurdistan, there were many problems and we escaped to Syria for one year, then because of the war, we returned to Turkey and from there to Greece where we were tortured and suffered everything.
Female, Syrian, married, 22 years of age	I have gone through many dangerous situations and several times I was about to lose my life. The most painful thing was watching my brothers die. At the Idomeni camp, my children are always sick.
Female, Syrian, single, 24 years of age	The sea in Turkey. The forest in Greece and Macedonia. The wait at the border of Greece. The worst situation at the camp is to be without a roof, or electricity, and be afraid and hungry. Closing of borders. Closing of borders; the sea; the airplanes; the destruction; war.
Female, Syrian, single, 19 years of age	The sea from Turkey to Greece. The border between Greece and Macedonia. The Forest from Macedonia to Serbia. Hunger on the border of Macedonia. The cold is because of the lack of a roof. Sailing in the sea. Walking in the woods for a long time. We were forced to wait at the border.
Female, Syrian, married, 32 years of age	I suffer psychological damage from the air strikes and the mistreatment. As I was afraid something would happen to my children, I decided to look for a better roof and a better future for my children. A message for those who are interested: The way of living at the camp is not healthy for anyone, especially for our children in terms of food, water, and climate.
Female, Syrian, married	Where I lived, a howitzer fell. I have felt horror and fear and since then it hurts, and the war continues. The Macedonian authorities threw tear gas at us. Closing of borders.
Female, Syrian, married, 21 years of age	Our houses were bombed and destroyed. My brother was kidnapped and tortured. My husband was wounded and imprisoned, he lost a foot. Our way of living at the Idomeni camp is very bad in every way (housing and food, etc. ...).
Female, Syrian, married, 26 years of age	The airport was bombarded intensely with explosive barrels and missiles and the bombing hit our house and it was destroyed. We decided to escape with our children so that nothing would happen to them. My husband was detained as a hostage in the city of Idlib. Idlib was bombed by missiles and chemical weapons. We covered our faces with cotton towels, and we escaped. We were imprisoned twice by the Turkish authorities in Izmir. We are currently at the camp and the food is very bad, there is a lack of clothes and medical care is not good. The smugglers that brought us here took advantage of us and charged us a lot of money. We are left with nothing (money, food, home) for our children.
Female, Syrian, married, 66 years of age	Air strikes and chemical weapons caused the death of relatives, friends, civilians, and innocents. Our suffering is based on food, climate, and way of life. We came to Europe to seek security and not to live in camps on the border. We do not have money and there are sick people. In Europe, we have suffered a lot and have been humiliated. From Syria, we escaped war, bombing, and murder.

Participant	Traumatic Experience
Female, Kurdish Syrian, married, 21 years of age, pregnant	<p>I have seen and suffered a lot: exhaustion, fatigue, bombing by artillery and missiles, fear, and horror at sea.</p> <p>We do not want to see our children die before our eyes.</p> <p>I'm pregnant, sick and I have a son. There is not enough medical attention and we want a clinic for our children.</p>
Female, Syrian, married, 25 years of age	<p>I have escaped from the war with my husband and son.</p> <p>We suffer in tents. We fear for our children. They throw tear gas against us.</p>
Female, Kurdish Syrian, married, 24 years of age	<p>We left Syria leaving everything we had because of the air strikes. We arrived here three months ago, and our children are sick and our mood is very low. We cannot go back because we do not have a home or a nation. We want to rest. Enough is enough.</p> <p>At the camp, we live among insects and snakes, there is no drinking water, no milk for the children. We are between life and death. We do not have money.</p> <p>We left our nation and no country wants to receive us.</p> <p>We want a country that gives us refuge so we can rest.</p>

# Recovery and study of human remains at the Chapel of S. Domenico – Al-Tahira Cathedral, Iraq: Medico-legal and forensic anthropological investigations

Laura Donato<sup>1,2</sup>, Douglas H Ubelaker<sup>3,2</sup>, Rossana Cecchi<sup>4</sup>, Jessika Camatti<sup>5</sup>, Marco Albore<sup>6</sup>, Gianpiero D'Antonio<sup>6</sup>, Gabriele Napoletano<sup>6</sup>, Letizia Sorace<sup>6</sup>, Michele Treglia<sup>7,2</sup>, Luigi Tonino Marsella<sup>7,2</sup> and Costantino Ciallella<sup>6</sup>

- 1 PhD program in Applied Medical Surgical Sciences, Department of Surgical Sciences, University of Tor Vergata, Rome (Italy).
- 2 Laif (laboratorio di Antropologia e Invecchiamento Forense), Sezione di medicina legale, sicurezza sociale e tossicologia forense, University of Tor Vergata, Rome (Italy).
- 3 Smithsonian Institution, Washington, DC, USA.
- 4 University of Modena and Reggio Emilia, Modena (Italy).
- 5 University of Parma, Parma (Italy). Correspondence to: [jessikacamatti@gmail.com](mailto:jessikacamatti@gmail.com)
- 6 Department of Anatomical, Histological, Forensic and Orthopedic Sciences, Sapienza University of Rome, Rome
- 7 Department of Surgical Sciences, University of Tor Vergata, Rome

## Key points of interest:

- Contemporary forensic anthropological investigations can be applied to the study of torture allegations in historical cases.

## Abstract

**Introduction:** The Chapel of St. Dominic of the Cathedral of 'Al-Tahira' in Qaraqosh (Iraq) allegedly contained human remains belonging to two victims, according to the testimonies of locals. In this article, the authors discuss the recovery and study of human remains that took place there in May 2022. **Methods:** Italian forensic anthropologists and pathologists conducted excavations, discovering skeletal remains identified as two individuals (C1 and C2). Bones were analysed for sex, age, height, and dental traits, and underwent microscopic examination. Anatomically repositioned remains were scanned via CT, and facial reconstructions were made. The cause and manner of death were hypothesised. **Results:** An extensive fracture complex with transverse orientation was observed in the occipital region of C1. C2 showed cranial disintegration, with fracture fragments affecting the structures of the left neuro- and splanchnic skull, and to a greater extent, the left hemifacial, orbital, and zygomatic regions and the same side of the face. In addition, no bones attributable to the left hand of C2 were found. **Discussion:** Concerning C1, nothing precludes that the death occurred due to severe blunt-fracture trauma with greater expression at the level of the cranial district. On the other hand, it seems reasonable to assume that C2 was the victim of an assault in which his left hand was amputated, he was beaten and pierced by a bayonet, and finally, he was killed with a rifle shot to the head.

**Keywords:** human remains, buried human bodies, forensic anthropology, human bones, forensic science



## Introduction

In cases of buried human bodies, the assessment first aims to analyse the modalities of burial in the ground and, therefore, involves areas that are not directly referable to the biological sciences of the study of the corpse.

Thus, this part of the investigation is essentially carried out in situ and continues, in continuity of operations, by analysing how the human remains were found, examining their position and any alterations to their integrity, which can also be attributed to geological variations in the terrain.

The next phase concerns the extraction of the bone remains from the burial and their observation, as well as re-aggregating them to form the original skeleton. This phase involves recovering the integrity of the skeletal segment in its anatomical form and observing the possible presence of alterations to the original form that may suggest information relating to the age of the subject at death, their stature, the manner of death and other elements (White & Folkens, 2005; Christensen et al., 2019; Klepinger, 2006).

The Chapel of St. Dominic of the Cathedral of 'Al-Tahira' in Qaraqosh (Iraq) allegedly contained human remains belonging to two victims, according to the testimonies of locals.

According to testimonies, in June 1915, two Christian priests travelled from Mosul to Bakhdida (Qaraqosh) with four merchants after visiting the bishop. Following a recent Ottoman military defeat and the killing of a soldier in Qaraqosh, the merchants fled while the priests continued. Ottoman soldiers intercepted the priests, and while the 33-year-old initially escaped, the 44-year-old was likely shot. Witnesses report that when the younger priest returned, he was subjected to torture, including amputation of his left hand, and was ultimately killed by a cut to the throat.

This paper discusses the recovery and study of human remains at the Chapel of S. Domenico – Al-Tahira Cathedral of the Syro-Catholic Archdiocese of Mosul, located in Qaraqosh, Iraq, which took place in May 2022.

## Materials and methods

In May 2022 at the request of the Postulator of the Causes of Saints, Rev. Dr. Luis Fernando Escalante, with a mandate conferred by the *Congregatio de causis sanctorum*, Vatican City, a search began for two bodies allegedly belonging to two individuals, according to the testimonies of locals, in the Chapel of St. Dominic of the Cathedral of "Al - Tahira" in Qaraqosh (Iraq). The excavations took place inside the Chapel, in an area in front and to the right of the altar, near an epigraph on the wall of the east-facing side of the chapel, and involved a multidisciplinary working team from Rome, which included five forensic pathologists and one forensic anthropologist.

After a prolonged excavation, skeletal remains of two individuals were uncovered in a tomb structure made of bricks and mortar. Located about 1.86 m below floor level, the tomb was reached by removing layers of marble-granite, cement, earth, and a final brick layer, likely part of the hypogeum vault. The tomb, parallel to the altar, was oval-shaped with a west-east orientation for the central axis and south-north for the transverse axis. The remains were positioned with their bodies oriented west-east. Henceforth, they were identified by the abbreviations C1 and C2 (Figure 1). Fragments of emerald, green fabric, likely ecclesiastical burial clothing, were found on both individuals. Ornamental vessels, approximately 1 cm in diameter and discoidal in shape, were found on the right side of each skull.

**Figure 1:** The left photo illustrates the cleaning of the skeletal remains using soft brushes during the excavation phase; referring to the central image, C1 is located on the left, while C2 is on the right. The right photo better visualises the position of the ornamental vessels concerning the skeletal remains.



The forensic anthropologist examined each bone, also inferring information about sex determination, height calculation, age at death calculation, and dental formula. Bone elements also underwent microscopic examination. Both anatomically repositioned bone remains were subjected to CT examination, and facial reconstructions of the two examined individuals were performed. Finally, the cause and manner of death of C1 and C2 were hypothesised based on the multidisciplinary investigations conducted.

## Results

### *a. Forensic anthropology investigations: Study of individual C1*

#### *a.1 Revision of bone remains*

- Skull: An extensive fracture complex with transverse orientation is observed in the occipital region (Figure 2).

The equatorial fracture line is divided into two sections by the sagittal suture. The first extends leftward for 2.5 cm before branching into three lines. The second moves supero-externally for 1.5 cm, orthogonal to the first and superior by 2 cm. The third moves infero-externally for 3 cm to the left of the lambdoid suture. The right line extends 3 cm rightward before branching infero-externally to rejoin the left lambdoid suture. The first branch extends supero-externally for 7 cm, branching into two 1 cm arms. The second extends lateral-

**Figure 2.** C1, skull: extensive fracture complex in the occipital region.



ly for 3 cm, and the third moves inferiorly to rejoin the right lambdoid suture. The mandible shows a weak connection to the splanchnocranium.

Ribs: The fracture of the 5th right rib is reported.

Vertebrae: Nothing to report.

- Right scapula: scapular plate with two longitudinal fractures, parallel to each other, converging approximately in the centre at the level of the right fourth rib, from anterior to posterior.
- Left scapula: Nothing to report.
- Pelvis: Fracture of the left innominate.
- Humerus: The head crest is more accentuated to the left.
- Radius: The distal epiphysis of the right radius is slightly larger than that of the left radius.
- Right and left ulna: Nothing to report.
- Right hand: Nothing to report.
- Femur: the angle of bony prominence in the area where the distal epiphysis articulates with the patella is also present bilaterally, but externally on the right is less developed than on the left. On the left: slight protrusion at the level of the inner margin of the epiphysis; pitting at the level of the condyle internally.
- Right and left patella: Nothing to report.
- Right and left tibia: In the proximal region, slight pitting is present.

#### *a.2 Sex determination*

Masculine character (glabella +1, mastoid process +2, supra-orbital margin +2, occipital protuberance +1, mandible +1, chin +1, mandibular angle +1, inferior margin +1, upright ramus +1, mandibular condyle +1, posterior margin upright ramus +2) (Acsádi & Nemeskéri, 1970).

#### *a.3 Height calculation*

- Measurements for determining the height: right humerus length: 33.0 cm; right ulna length: 27.3 cm; right radio length: 25cm; right femur length: 47 cm; right tibia length: 37 cm; right fibula length: 36.5 cm; left humerus length: 33 cm; left ulna length: 27.5 cm; left radio length: 23.5cm; left femur length: 45.5 cm (broken); left tibia length: 37.6 cm; left fibula length: 36.5 cm.
- Height calculation (Trotter, 1970; Lee et al, 2024)  
White males (18-30 years old).  $1.30 (\text{Fem} + \text{Tib}) + 63.29 \pm 2.99$   
 $1.30 (47 + 37) + 63.29 \pm 2.99 = 172 \pm 2.99 \text{ cm (range } 169.5 - 175.48 \text{ cm).}$

#### *a.4 Calculating Age at Death (Ost, 2022; Lovejoy et al., 1985)*

Stage 5: Partial densification of the auricular surface, moderate retroauricular activity, and slight alteration (osteophytes) are possible at the surface's apex (lower margin). Age 40-44 years.

### a.5 Dental formula

Right maxilla: teeth C<sup>1</sup> to M<sup>2</sup> present in situ; presence of ceramic prostheses with a triangular base and scalloped edges; the base measures 3.5 cm and the height is 2.5 cm and has a concavity that recalls the anatomy of the upper palate; the end of this prosthesis is modelled in ceramic in the shape of an incisor which, in the overall arrangement of the elements, corresponds to I<sup>1</sup>. Left maxilla: present in situ from C<sup>1</sup> to M<sup>2</sup>; the remaining elements are absent. Right mandible: M<sub>3</sub> present not in situ; M<sub>2</sub>, M<sub>1</sub>, P<sub>3</sub> present in situ; P<sub>4</sub> present not in situ; C<sub>1</sub>, I<sub>2</sub>, I<sub>1</sub> present in situ. Left mandible: M<sub>3</sub>, M<sub>2</sub>, M<sub>1</sub>, P<sub>3</sub>, P<sub>4</sub>, C<sub>1</sub>, I<sub>2</sub>, I<sub>1</sub> present in situ.

### b. Forensic anthropology investigations: Study of individual C2

#### b.1 Revision of bone remains2

– Skull (Figure 3): presence of cranial disintegration with fracture fragments affecting the structures of the left neuro- and splanchnic skull and to a greater extent the left hemifacial, orbital, zygomatic regions and the same side of the face. In the left temporo-parietal-occipital region, there is a large area of substance loss with an extensive comminuted fracture, loss of the typical conformation of the cranial ovoid, and partial dispersion of the fragments. Seven fragments are in the immediate vicinity due to the interposition of earthy material.

A curvilinear fracture originates medially in the left orbit, crossing the glabella obliquely from left to right and moving upward into the right frontal region with leftward concavity.

In the middle third, the first fracture branches transversely 1 cm to the right, while the main fracture continues to 2 cm from the coronal suture.

In the temporal region, anterior to the extensive area of bone loss, two linear fractures are present: one oblique from inferior-superior to posterior-anterior, ending in the left fron-

tal region, and another one with an almost vertical course from inferior to superior, lateral to medial, terminating in a rounded, irregular-looking area in the left parietal region.

Our manual reconstruction of the left temporo-parietal-occipital region was incomplete due to persistent fragment loss, particularly in the postero-lateral area. The defect primarily involves the occipital squama, trapezoidal in shape, with a lateral major side and a medial minor side. The smaller side reveals a roughly rounded laceration (1.2 cm in diameter), uniformly coloured with the surrounding bone. Margins show inward flaring extending 2 cm, visible along the internal cranial table. This is highlighted with a red line in the image, with margins showing flaring of the walls on the internal cranial table.

A fragment of rusty metal with a length of 4.3 cm is found in the middle and posterior cranial fossa. The left facial region is altered by the absence of the maxilla and zygomatic bone, and fractures are observed in the mandible at the right horizontal ramus level. At the same time, on the left, there is substance loss at the mandibular angle level.

- Sternum and clavicles: nothing to report.
- Right rib cage: at the level of the 4th rib, there is a complete fracture of the rib body (Figure 4); on the vertebral end of the 5th rib, in correspondence with the joint with the vertebral apophysis, there is a sulcus of suspected nature
- Left rib cage: fracture of the 3rd rib. -
- Vertebrae: lesion of the L5 vertebral body, which extends throughout the volume from top to bottom, keeping the vertebral body connected
- Right scapula (Figure 5): Fragmented into four sections in the acromion and proximal aspects. At the level of the scapular

**Figure 3.** C2, skull.



**Figure 4.** C2; the fourth right rib is fractured on the left side of the photo.

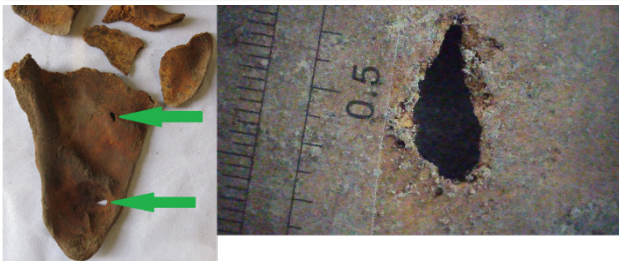




plateau, two full-thickness lacerations of bone tissue are detected. Their margins appear everted in a posterior direction from front to back, which are referred to as lesion A (inferior) and lesion B (superior).

Lesion A is located in the distal third, in correspondence with the medial side of the scapula. It has a triangular shape and a greater transversal axis, with an acute angle facing the lateral profile of the scapula. The base of this lesion is almost parallel to the medial profile of the bone. It has a length of approximately 0.60 cm and a width at the base of approximately 0.25 cm, with sharp margins. A thin, irregular fracture originates from the corner of this lesion, which moves

**Figure 5.** C2, right scapula.



obliquely from inferior to superior and from medial to lateral for about 2 cm.

Lesion B is in the middle third of the bone, near its medial side. It has a triangular shape, a central oblique axis from top to bottom, and an altered-medial direction, with an angle slightly turned towards the medial and near scapular margin to the upper edge of the scapula. It is approximately 0.6 cm long and approximately 0.3 cm wide at the base. Macroscopically, almost clean margins characterise it.

- Left scapula: Fragmentation of the proximal area into three sections. It presents a laceration piercing the bone tissue at the level of the middle third of the medial margin. It shows a right angle in the lateral direction and two slightly indented margins in the medial direction.
- Right innominate: Fragmented and with loss of its anatomical continuity. Absence of the ventral arch, indicative of male sex, is observed. The articular surface of the symphysis pubis is smooth. The trend is regular both in terms of area and perimeter. Acetabular cavity halved.
- Left innominate: Fragmented, with large fragments. Absence of ventral arch.
- Sacrum: Fragmented in its proximal posterior position.

- Right humerus: The presence of numerous fissures from fracture is noted.
- Right radius: Fragmented with slight pitting at the distal epiphysis. The proximal epiphysis is also absent; the fracture line has a whitish colour, where it is fragmented, but as it proceeds inwards, it tends to take on a homogeneous colour to the surrounding bone tissue.
- Right ulna: Fracture near the proximal metaphysis and slight hyperostosis near the olecranon, more severe than the opposite one. Slight prominence in the inferior region of the olecranon joint.
- Right hand: Nothing to report.
- Left humerus: Fractures that extend along the entire length of the diaphysis. The fracture had a homogeneous colour compatible with pressure movements from case failure and fractures of the condyles of light colour. Posteriorly, there is an accentuated crest at the level of the humeral head.
- Left ulna: Interrupted in continuity at the proximal metaphysis and the distal third level. The distal epiphysis presents a fracture of the tip of the ulnar styloid and fractures along the entire diaphysis of homogeneous colour. At the level of the proximal epiphysis, slight hyperostosis of the olecranon joint is observed.
- Left radius: Interrupted in its continuity in the middle third in the absence of the head. Fracture lines running along the length of the diaphysis are evident. A chromatic difference of the fracture present at this level can be appreciated near the distal epiphysis.
- Right femur: Usually shaped and intact. The posterior aspect of the head has cam deformities with slight thickening of the edges. The linea aspera is less marked on the right side than on the left, with slight weakening of the bony structure of the proximal epiphysis.

The distal epiphysis is affected by posterior pitting with characteristics like the opposite ones.

- Right patella: Usually shaped and intact, with a more robust and rounded shape than the left one.
- Right tibia: Fragmentation of the proximal epiphysis and partial loss of the posterior cortical surface with hypochromic fracture margins. The distal epiphysis has less marked bone development than the corresponding opposite region, with slight pitting of the other facet joints.
- Right fibula: Eversion of the cortical surface of the distal epiphysis with pitting.
- Right foot: Calcaneal enthesis is more developed than the opposite one; it is jagged and robust in appearance but with fewer vertical striae and bony protrusions indicative of great

er flexion (different traction). Pitting present at the level of the talus with slight relief of the facet joints.

- Left femur: Usually shaped and intact. A cam deformity is present on the posterior aspect of the head. Posteriorly, the bone has a well-developed rough line. In the posterior region, pitting is present between the two condyles of the distal epiphysis. At the level of the distal epiphysis, both internally and externally, there is a slight elevation of the crest that extends up to the posterior facets,
- Left patella: anteriorly striations and furrows, as from the excavation of tendons on the bone (enthesis). Posteriorly, a slight elevation of the facet and bone crest. The left aspect has a flatter and more tapered shape than the right.
- Left tibia: pitting at the level of the anterior aspect of the proximal epiphysis. Bone crest in the anterior part of the upper tibial epiphysis. Protrusion of the line on the posterior articular surface facing inward. The anterior region of the shaft and proximal tibial epiphysis are well developed. The distal epiphyses show a protrusion of the posterior line with the squatting facet and protrusion of the posterior articular face of the tibia at the level of the proximal epiphysis.
- Left fibula: fracture of the distal epiphysis, which prevents a complete evaluation.
- Left foot: partially reconstructed, sesamoid bones were located. Moderately developed posterior calcaneal entheses, raised and striated surface, and underlying lower facets. Slight pitting of the talus, with slight development of the joint margins. There is slight pitting in the remaining bone elements of the tarsus examined.

#### *b.2 Sex determination*

Masculine character (marked glabella +1, extensive mastoid process +1, marked browbone +1, almost vertical upright ramus +1).

#### *b.3 Height calculation*

- Measurements for determining the height: right ulna length: 27.3 cm; right radio length: 24.8 cm; right femur length: 44.0 cm; right tibia length: 38.5 cm; right fibula length: 37.5 cm; left humerus length: 31 cm; left ulna length: about 27.8 cm; left radio length: 24.3 cm; left femur length: 44 cm (broken); left tibia length: 38 cm; left fibula length: 38 cm.
- Height calculation (Trotter, 1970; Lee et al, 2024)  
White males (18-30 years old).  $1.30 (\text{Fem} + \text{Tib}) + 63.29 \pm 2.99$   
 $1.30 (44 + 38.5) + 63.29 \pm 2.99 = 170.54 \pm 2.99 \text{ cm}$   
(range 167.55 – 173.53 cm).

#### *b.4 Calculating age at death*

Pubic symphysis modification (Baca et al, 2022; Todd, 1920) stage 6-7 (estimated age 30-35/39-44); sternal end fourth rib changes (Iscan, 2013) stage 3 (estimated age 25-34). Therefore, from the analysis of the available elements, it is possible to conclude that C2 had an estimated age between 25-39 years at the time of death.

#### *b.5 Dental formula*

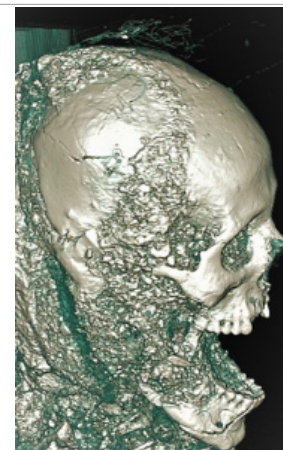
Right maxilla: M<sup>3</sup> included. The remaining teeth are present in situ. Left maxilla: present in situ from C<sup>1</sup> to M<sup>1</sup>; the remaining elements are absent. Right mandible: from M<sub>3</sub> to C<sub>1</sub> present in situ; I<sub>2</sub> present not in situ; I<sub>1</sub> absent. Left mandible: I<sub>1</sub>, I<sub>2</sub> are not present in situ; the remaining teeth are in situ.

#### *c. Medico-legal investigations*

After a macroscopic study on site, after exhumation and recovery of the individual bones, a microscopic investigation was carried out with a Jiusion USB HD 2MP 40-1000X digital monocular microscope. This examination applied to C2 (4<sup>th</sup> right rib, L5 vertebral body, scapulae, distal epiphysis of the ulna) revealed the presence of continuous full-thickness lesions, homogeneously coloured to the outer bone covering, which can be identified with a high degree of probability as vital fractures attributable to the action of third parties. Lesion A of the right scapula showed slight irregularities, while slightly irregular margins characterised lesion B. The microscopic examination of the 5<sup>th</sup> right rib of C2 documented the consolidation of a fracture.

Both anatomically repositioned bone remains were subjected to CT examination at the Saint Mary Medical Complex

**Figure 6.** C1, 3D CT reconstruction of skull: fractures are visible in the right part of the skull.



(SMC) diagnostic centre located in Qaraqosh, Mosul, to characterise better the lesions already found and exclude any alterations not visible macroscopically. Figure 6 shows the 3D CT reconstruction of the skull belonging to C1, which documents the fractures found macroscopically.

In addition, facial reconstructions of the two examined individuals were performed. This was done by acquiring CT scans of the skulls and then processing them using dedicated software to extrapolate their three-dimensional virtual volume from the DICOM file (Slicer 4.10.2). Then, the three-dimensional rendering of the skulls was manipulated using 3D graphics software (ZBrush, version 2022.0.6, Pixologic®). Using this software, it is possible to apply shims to the bone surface. These elements represent indicators of soft tissue thickness, the size of which varies depending on the sex, age at death and ethnicity of the individual examined. To this end, the biological profile was studied using a forensic anthropological method to obtain the necessary information. The application of the tissue shims preceded the processing of the facial physiognomy of the two individuals to get a characterisation of the physiognomic features (Figure 7). The accuracy of this technique has recently been the subject of a publication (Donato et al, 2024).

## Discussion

The present paper discusses the discovery of the bone remains allegedly belonging to two Christian priests whose deaths were attributed to a violent traumatic event at the hands of third parties in 1915. At the time, Iraq was ruled by the Ottoman Empire, so Ottoman soldiers acted in that territory on behalf of that empire. According to the testimonies of local individuals, the reason why the priests were killed lay in the fact that they were individuals who belonged to the Christian religion and represented clerical exponents. In fact, in those days, the Ottoman convoy had suffered a military defeat in Mosul, and the day before, a soldier had been killed in Qaraqosh while attempting to rape a local Christian woman. For this reason, the moment the priests and merchants became aware of the presence of the Ottomans, the merchants ran for safety precisely because they feared that they were in danger as Christians. Unfortunately, the priests did not have the same perception of risk, and this cost them their lives.

In the present case, it seems clear that the discrimination of the subjects as openly belonging to Christian beliefs and as exponents of Christian beliefs at the community level constituted the *primum movens* of the violent event with a fatal outcome. The recent military defeat in Mosul and the recent

**Figure 7.** Facial reconstructions; on the top, left lateral, frontal, and right lateral views of C1's facial reconstruction; on the bottom, left lateral, frontal, and right lateral views of C2's facial reconstruction.





killing of the soldier who had attempted to rape a Christian woman played a role in the decision to attack the two priests. Moreover, those who inflicted the violence held an official position concerning the Ottoman Empire that ruled Iraq in the year this event took place.

Consequently the facts could amount to torture with a final result of death.

It is likely, based on forensic and circumstantial data, that both deaths can be placed in a context of violent death for reasons of religious and ethical hatred.

#### *Individual C1*

C1 exhibited anthropological traits consistent with males aged between 40 and 44 years and an estimated height of 169.5–173.5 cm. Evidence of trauma included polyfractures predominantly affecting the posterior skull and brain, consistent with a blunt-fracture nature, likely resulting from a fall. Additional thoracic injuries (fractures of the right 5th rib and scapula) support this interpretation.

The study of skull fractures assumes relevance in the forensic context, especially to identify traumatogenesis. At the cranial level, five types of fractures can occur, namely: a) diffuse fracture complexes, b) circumscribed fracture complexes, c) isolated fractures of the cranial vault, d) fractures of the cranial vault radiating to the base, e) isolated fractures of the skull base.

In forensic analysis, cranial fractures are classified into five types: (a) diffuse complexes, (b) circumscribed complexes, (c) isolated vault fractures, (d) vault fractures radiating to the base, and (e) isolated basal fractures. These can result from direct trauma—either unipolar (localised impact) or bipolar (compression between opposing forces)—or indirect trauma, typically involving force transmission from distal body parts, as seen in ring fractures at the skull base.

Fracture patterns often follow meridian or equatorial orientations, depending on how traumatic forces stress or compress cranial diameters. This is due to the decrease in the diameter between the two points of application of the force or between the point of application and the reaction pole. It can depend on the increase in the perpendicular diameter, which induces a disintegration of the bone molecules by moving away from each other or tearing, resulting in fractures. If the force is particularly intense, the kneeling of the cranial case along the perpendicular diameter produces fracture lines that are arranged in an equatorial direction (Crudele et al., 2020; Haug et al., 1994; Simon & Newton, 2024; Yoganandan & Pintar, 2004; Sahoo et al., 2013; Sahoo et al., 2016).

Regarding the cranial fracture of C1 (Figure 2, Figure 6), such fractures are identifiable with an impact lesion on a

large and wide surface. Therefore, this fracture complex can be considered as the result of a fall, or from being thrown from a horse, based on the harmful peculiarity and following the testimonial data collected on the spot and therefore to believe that the cause of death of C1.

In conclusion, there is reason to believe that death occurred due to severe contusion-fracture trauma with greater expression at the level of the cranial district and less expression at the thoracic level; as far as the means are concerned, they seem likely to be due to an impact against a rigid resulting from a fall from moderate height, possibly from a horse. The failure to highlight pathognomonic elements indicative of the action of a firearm against the cranial district does not allow for the confirmation of this harmful hypothesis.

#### *Individual C2*

C2 presented anthropological characteristics relating to the male sex, an estimated age at death between 25 and 44 years and an estimated height between 167.5 and 173.5 cm. Evidence of significant violence included extensive cranial trauma affecting the left splanchnocranium and neurocranium, thoraco-abdominal trauma (including a fractured right 4th rib and vertebral body at L5), and sharp force injuries to the right scapula. Notably, no bones attributable to the left hand were recovered, aligning with oral accounts of a possible amputation.

Compared to C1, C2 presented with more severe and extensive injuries. A significant cranial defect with loss of bone substance was observed, particularly on the left side, suggestive of high-energy trauma (Figure 3).

It therefore appears helpful in recalling some forensic pathological aspects of cranial firearm injuries. On a rigid surface, the entry into the bone shows a sharper and more linear margin at the level of the external table and a wider, flared hole on the internal table. The exit site is hollowed out in a truncated cone with the flaring facing outwards from the cranial cavity.

The production of secondary fractures of the skull depends on the firing distance and the projectile's kinetic energy. The gases produced by the shot contribute to the genesis of secondary fractures in shots fired on contact. In shots fired at long range, the secondary fractures are caused by the increase in pressure due to the direct effect of the projectile and by the phenomenon of the temporary cavity. Apart from other harmful factors, the greater the kinetic energy lost, the larger the temporary cavity, the pressure exerted on the braincase, and the extent of the secondary fractures. This can lead to an extensive and massive fracturing breakdown (Crudele et al., 2020; Haug et al., 1994; Simon & Newton, 2024; Yoganandan & Pintar, 2004; Sahoo et al., 2013; Sahoo et al., 2016).

Therefore, it is possible to state that a gunshot hit the head of C2. The lesion can be identified with a fractured area with collapse of the cranium compatible with the action of a projectile that penetrates and passes through the head.

Furthermore, secondary fractures, in the frontal and left parieto-temporal site, showed meridian and centrifugal direction associated with the loss of substance affecting the bones of the left hemiface. They are identifiable as a “burst” lesion.

Therefore, it is likely to believe that the massive lesion found in the cranial site may have caused the mortis of C2.

According to the witnesses, the two murders were attributed to a convoy of Ottoman troops. Moreover, it is possible to hypothesise that 1915-1917, MAUSER equipped the Ottomans with long-barrelled rifles. It was a German war rifle used during the First World War in the territories of the former Ottoman Empire and, therefore, also in Iraq (Ball, 2011).

Long-barrel shotguns can tolerate high pressure levels thanks to a more solid structure, and the barrel's length gives this type of weapon greater accuracy. The Mauser models support ammunition of 7.63 mm calibre, with a bullet mass of 5.5 g and a muzzle velocity of 430 m/s (Madea, 2014). Since the approximate estimates taken into consideration, it can be hypothesised that fractures affecting the left splanchnocranium and neurocranium are compatible with a fractured polytraumatic injury with greater cranial-brain expression resulting from the action of a long-barrelled gunshot.

A fragment of rusty metallic material was found in C2's skull. It was elongated, with a cocooned, pointed, and curved end. These elements do not allow us to attribute to the find any other genesis than that envisaged for the other metallic elements just mentioned.

Two continuous solutions passing through the bone tissue were in the right scapular plate. They showed margins everted posteriorly from front to back. They are named lesions A (lower) and B (upper). Each is approximately 0.6 cm long and identifiable as puncture wounds and cuts. Both are compatible with the action of a pointed and single-edged instrument.

The marks present at the level of the right scapula are compatible with the action of a tool equipped with a point, a wire and a rib. The weapon acted from front to back and had a length of at least 25 cm, i.e. such as to allow the penetration of the anterior region of the thorax and the penetration of the weapon up to the rear part of the rib cage, where the scapula is housed, piercing this last bone.

The alternative hypothesis, i.e. that of a bladed weapon struck behind individual 2, therefore from back to front, is incompatible with the dimensions of the two solutions found on the bone. Since the scapula is located immediately below the

skin in correspondence with the dorsal region of the body, any blade that managed to cross it would have caused a larger imprint.

A length equal to 0.6 cm, if projected onto the blade of a commonly used knife, determines a penetration not exceeding one centimetre. Therefore, the blow delivered posteriorly would have been extremely superficial and, therefore, insufficient force to completely pierce a compact bone such as the scapula.

With this force, the weapon is positioned at the end of a lever and, therefore, acts by transferring and enhancing the violent energy the person holding the rifle applies.

The different orientations of the two figurative images observed on the scapula corroborate the proposed hypothesis. It suggests that driving the bayonet into the body of individual 2 was a rapid recurrence and a defensive action that involved a minimal shift in the position between aggressor and victim.

Considering the gunshot wound to the skull as a first lesion, there would have been an immediate incapacity of the victim with his fall to the ground.; In this static position, the insertion of the objects with the bayonet should have taken place with the imprint oriented in the same direction for both blows.

The weapon's different orientation supports the opposite hypothesis of a standing subject. In fact, after receiving the first blow, he makes an instinctive defence movement that retains a displacement of the weapon's central axis before the second inflexion.

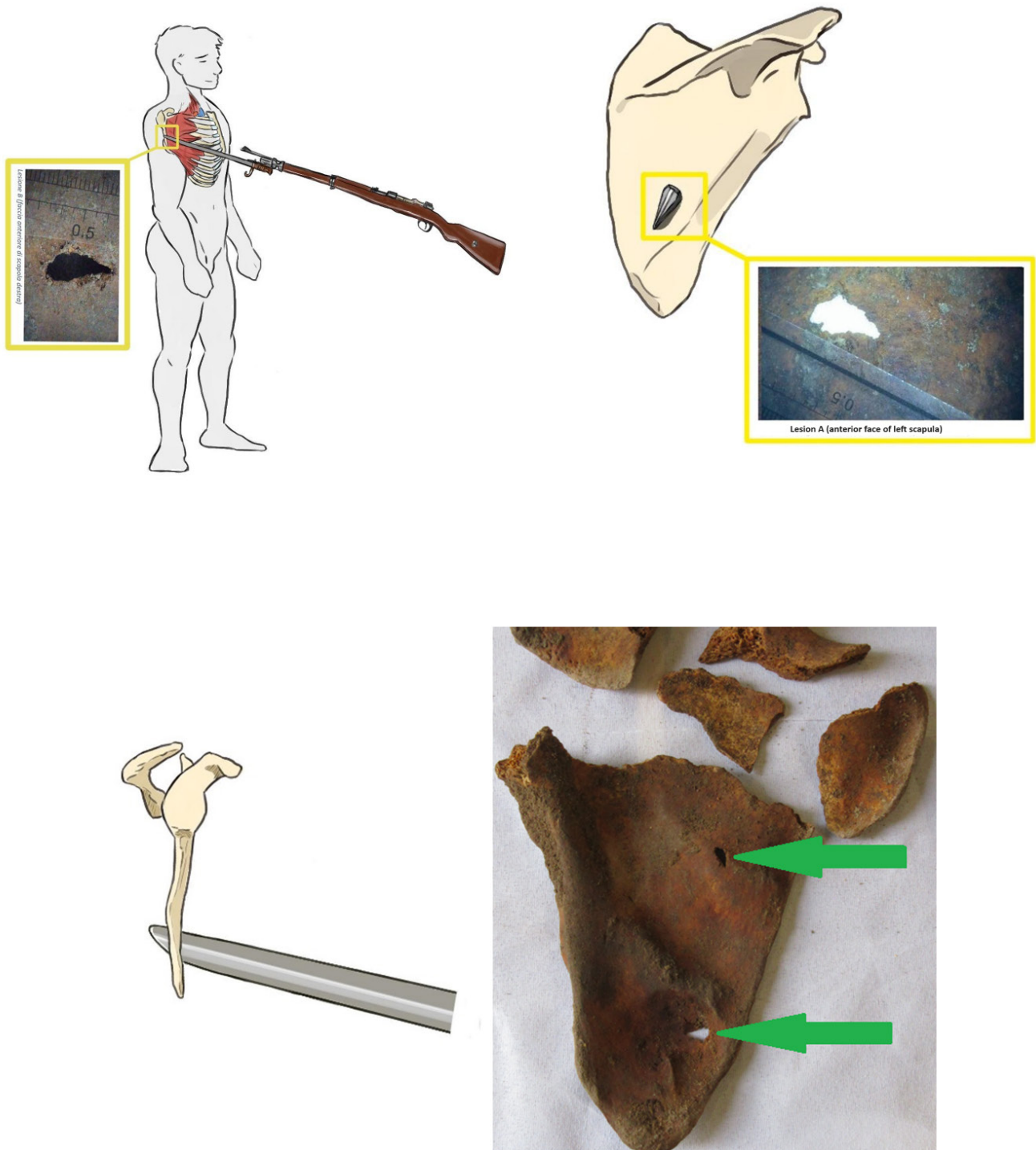
Considering the analysed data, the chest may have been drawn from a bayonet.

About how the blade reached the chest, it is possible that the same blade mounted on the end of a rifle was used to pierce the chest, from front to back and from left to right.

The involvement of the right 5<sup>th</sup> rib, at the level of the anterior axillary line, is more probable due to its characteristics. It should also be noted that one of the two mould injuries at the level of the right scapula had a transversal central axis. The other was slightly oblique from lateral to medial, therefore compatible with the action of a sharp instrument that has crossed the intercostal spaces before drawing the scapula. For explanatory purposes only, some representations of the possible dynamics are given in Figure 8. Therefore, it seems reasonable that one or more subjects produced both the cranial-brain and thoracic lesions placed anteriorly concerning the victim.

The left-hand bones were associated with a transversal fracture of the ipsilateral ulnar styloid. The data support the testimonial hypothesis of its amputation during the lethal trauma dynamics. Almost all the bone structures of the hand were found in anatomical continuity with each other, although dis-

**Figure 8.** Top left: Anterior view showing the entry point of a sharp, pointed instrument with a cutting edge. Top right: Posterior view illustrating the same type of instrument penetrating the scapula. Bottom: Lateral view depicting the trajectory of the sharp instrument as it enters the scapula from the side.



articulated from the ipsilateral upper limb at the level of the ulna-carpal girdle.

The presence of a few and limited fractures of the bone structures of the wrist can lead to the intervention of a weapon such as a “slash” (axe, hatchet, etc.). This type of weapon combines the characteristics of a high weight, typical of blunt instruments made of cohesive material with high density, with those of the cutting action of a wire. Therefore, it is suitable for determining the complete disarticulation of the district with just a few blows inflicted.

In conclusion, it is possible that C2 was the victim of an assault in which his left hand was amputated, he was beaten and pierced at least twice by a bayonet, and finally, he was killed with a rifle shot to the head. It seems reasonable to assume that a gunshot wound caused the extensive splenetic-fracture complex with greater interest in the left part of the skull. Also, further injuries are to be reported, in particular the two continuous solutions of the right scapular plate, referable to the action of a point and cut cold weapon, such as the tip of a bayonet, acting from front to back and piercing the chest, which could have caused, in any case, visceral lesions or even vascular sections, even of significant causative entities of acute pathological situation such for example pneumothorax or secondary hemothorax and vascular section. Nonetheless, we must consider the results of the amputation of the left hand, probably carried out using a slashing blade weapon, therefore very heavy, and capable of thoroughly dissecting the wrist with one or at least a few blows inflicted. The reconstruction of the lethal trauma dynamics allows to identify those peculiar characteristics in the killing of a man with violence and ferocity, represented by the plurality of harmful methods of attacking the body of the victim (firearm and bladed weapon) and from the implementation of harmful paintings of violation of its integrity (left hand amputation).

## Conclusion

The present paper aims to discuss the recovery and study of human remains in the Chapel of St. Dominic of the Cathedral of ‘Al-Tahira’ in Qaraqosh (Iraq) in 2022.

A team of Italian forensic anthropologists and pathologists were involved in the excavations, which allowed the discovery of skeletal remains referred to as two individuals (here named C1 and C2). Each bone remains was examined, inferring information about sex estimation, height calculation, age at death calculation, and dental formula. Bone elements underwent microscopic examination. Both anatomically repositioned bone remains were subjected to CT examination, and facial recon-

structions were performed. Finally, the cause and manner of death were hypothesised.

An extensive fracture complex with transverse orientation was observed in the occipital region of C1. C2 showed cranial disintegration, with fracture fragments affecting the structures of the left neuro- and splanchnic skull, and to a greater extent, the left hemifacial, orbital, and zygomatic regions and the same side of the face. In addition, no bones attributable to the left hand of C2 were found.

Regarding C1, the findings are consistent with death caused by severe blunt-force trauma, particularly affecting the cranial region. On the other hand, it seems reasonable to assume that C2 was the victim of an assault in which his left hand was amputated, he was beaten and pierced by a bayonet, and finally, he was killed with a rifle shot to the head.

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# Hidden scars: The impact of torture, traumatic brain injury, and PTSD on executive functions – a narrative review

Miguel Diaz<sup>1</sup> and Inger Wallin Lundell<sup>2</sup>

- 1 PhD, Senior Lecturer, Department of Health Sciences, Swedish Red Cross University. Correspondence to [miguel.diaz@rkh.se](mailto:miguel.diaz@rkh.se)
- 2 PhD, Senior Lecturer, Department of Health Sciences, Swedish Red Cross University.

## Key points of interest:

- Torture survivors often suffer from TBI, PTSD, cortical thinning, and executive dysfunction.
- Asylum interviews frequently disregard the neurological consequences of torture, complicating the asylum process.
- Executive dysfunction hampers survivors' ability to integrate into their new environment.

## Abstract

**Introduction:** Victims of torture are often subjected to physical violence, which can result in traumatic brain injury (TBI) and PTSD. Executive functions encompass a complex set of higher cognitive abilities that include memory, inhibitory control, cognitive flexibility, planning, reasoning, and problem solving. This narrative review aimed to outline how torture affects executive functions, particularly in the context of TBI and PTSD. **Methods:** We searched the scientific literature using the databases of PubMed, PsycINFO and PsychArticles. The search included combinations of the terms: Torture, Executive Functions, Traumatic Brain Injury, Stress, PTSD, Refugee, Asylum Seeker, Memory, Planning, Motivation, as well as relevant Medical Subline Headings (MeSH). **Results:** Both TBI and PTSD have been associated with thinning of the cerebral cortex, hippocampus, and amygdala. Such changes lead to a broad spectrum of cognitive and emotional issues. Victims of torture, for example, might display a lack of coherence, initiative, motivation, and the inability to respond to changes in their environment. **Discussion:** In most countries, asylum-seeking is based on interviews in which individuals must provide a detailed and coherent narrative of the events that justify asylum. However, the neurological consequences of torture are rarely considered during asylum-seeking interviews, and a lack of details and coherence might be considered as a proxy for false statements. **Conclusions:** Knowledge of the effects of torture on executive functions is critical for the design and implementation of treatment strategies that increase the chances of recovery.

**Keywords:** Migration, Memory, Attention, Refugee, Asylum Seeker.

## Introduction

Torture is a gross violation against human rights defined as any act by which severe pain or suffering, whether physical or men-

tal, is intentionally inflicted on a person with the consent or acquiescence of a public official for such purposes of obtaining information, a confession, or punishing them for an act they have

committed or are suspected of having committed (United Nations, 1984). Unfortunately, torture is common amongst asylum seekers, with some studies suggesting a prevalence as high as 80% (Tinghög et al., 2016).

Traumatic experiences like witnessing or experiencing violence, as in the case of torture, put a person at greater risk for a variety of psychological impairments and disability, among which posttraumatic stress disorder (PTSD) is the most common (Steel et al., 2009). PTSD is characterized by re-experiencing a traumatic event in the present, avoidance of traumatic reminders, and a sense of current threat (American Psychiatric Association, 2013; Cloitre, 2020). PTSD might develop after being threatened with death, serious injury, or sexual violence, and include recurrent, involuntary, and intrusive memories or dreams of the traumatic event, persistent avoidance of stimuli associated with the traumatic event, and negative alterations in cognitions and mood associated with it (American Psychiatric Association, 2013). Individuals who are exposed to assaultive trauma (sexual and non-sexual) are more likely to develop PTSD (Kessler et al., 2005). Since assaultive trauma is often used as a form of torture (Burnett & Peel, 2001; Pollanen, 2018) it is not surprising that the prevalence of PTSD among torture survivors is high (Abu Suhaiban et al., 2019).

Studies report that standard practices during torture include incarceration, blows with a blunt object such as whips or cables, crushing of the extremities, inflictions of burns by boiling liquid or cigarettes, cuts, electrical shocks, attempted drowning, asphyxiation, and gunshots (Clément et al., 2017). Blows to the head and asphyxiation can lead to traumatic brain injury (TBI), a condition that commonly results in physical, mental, and emotional disabling injuries (McPherson, 2019). Several reports suggest a considerably high prevalence of TBI in victims of torture, refugees, and asylum seekers. Studies carried out in Europe have reported that between 48–64% of these individuals suffered from blows to head that led to momentary loss of consciousness, chronic headaches, dizziness, balance problems, sleep issues, memory loss and concentration deficits (Doherty et al., 2016; Keatley et al., 2013; Moisaner & Edston, 2003).

### **Cognitive and emotional deficiency in TBI**

TBI is defined as an alteration in brain structure or function caused by an external force (Menon et al., 2010). The most common causes of TBI are physical assault, traffic accidents, sports injuries, and falls. The pathophysiology behind TBI involves shear injury of axons and disconnection of cortical and subcortical brain areas, hypoxia, and inflammation (Azouvi et al., 2017). A large body of evidence has proven that TBI is characterized by damage to, and significant loss of grey matter in one or sev-

eral brain regions, including the frontal and temporal lobes, as well as subcortical structures such as the thalamus, hypothalamus, amygdala, hippocampus, midbrain, and locus coeruleus (Shetty et al., 2016). Because of their location, the hippocampal-amygdala complex and the ventromedial prefrontal cortex are particularly vulnerable to damage by blows to the head (Depue et al., 2014).

TBI can significantly negatively impact the quality of life and ability to work due to long-lasting cognitive, emotional, and behavioural changes. It has been reported that up to 60% of patients recover from mild TBI within six months, and given the right treatment, 85% of patients recover successfully between 1–3 years after injury. However, about 15% of patients experience more persistent emotional and cognitive complaints (Benedictus et al., 2010). Recovery might be attributed to the nature and severity of the injury (sport injury vs. blows to the head during physical assault, for example), and factors such as age and comorbidity. Unlike mild TBI, moderate and severe TBI are distinguished by long-lasting impairments in self-awareness, reasoning, language, and visuospatial processing. Only 36% of patients who have suffered severe TBI have been able to return to work and live an independent life (Jordán et al., 2016). In extreme cases, patients have significant difficulties performing daily tasks such as driving, cooking, and handling money (Rabinowitz & Levin, 2014).

Executive functions are an umbrella term that encompasses higher cognitive abilities. It includes memory, inhibitory control, cognitive flexibility, planning, reasoning, and problem solving. These functions are necessary to set and achieve a goal, enabling understanding of complex and abstract concepts. TBI can lead to a rather broad spectrum of cognitive and emotional issues, amongst which executive dysfunction is one of the most common (Brenner, 2011). The ability to sustain attention for long periods of time is essential for goal-directed behaviour. The default mode network (DMN) is a brain network predominantly active during internally focused states, such as self-reflection, daydreaming, and recalling past experiences. It consists primarily of the medial prefrontal cortex, posterior cingulate cortex, precuneus, and angular gyrus. The DMN becomes deactivated during externally demanding cognitive tasks and active attention to the external environment. Disruptions or alterations in DMN connectivity have been associated with difficulties in emotional regulation, executive functioning, and self-related processing (Menon, 2023).

Using a simple choice reaction time task, Bonelle and colleagues (2011) assessed 30 patients with TBI secondary to assault, traffic accidents, falls and sport injuries, and compared their performance against age-matched healthy controls. They

found that impaired attention is common in patients with TBI, and that poor performance over time in tasks that require sustained attention and goal-directed behaviour is associated with abnormal patterns of activity in the DMN. Sustained attention during cognitively demanding tasks requires the regulation and deactivation of the DMN. Less activity in these areas is correlated to higher efficiency and thus, better performance. In other words, overactivity in the DMN implies a higher cognitive load, which eventually leads to mental fatigue. Further, mind wandering and increased internally focused attention have been coupled with higher activity in the praecuneus and posterior cingulate cortex. Patients with TBI not only fail to deactivate the DMN during tasks that require sustained attention but also show an abnormal pattern of recruitment in such areas, leading to decreased performance over time (Bonnelle et al., 2011).

Loss of conceptualisation and the ability to change strategies are common complaints in TBI patients. Several studies have reported a higher number of errors after moderate and severe TBI in tasks such as the Wisconsin Card Sorting Test (a test used to measure attention, perseverance, abstract thinking and set shifting in which patients are asked to sort different items according to arbitrary criteria and then change their arrangement according to new rules), (Ferland et al., 1998; Nelson, 1976; Rapoport et al., 2006). Speed of processing, mental flexibility and planning have also been previously studied in patients with TBI using the Tower of London test (a test used to detect deficits in planning in which patients must organise coloured beads on three vertical rods according to instructions using a restricted number of moves). Patients with TBI performed similarly on this task as healthy controls, but they took significantly longer to complete it (Azouvi et al., 2017; Ponsford & Kinsella, 1992; Spikman et al., 2000). Longer times to complete the test imply poor planning and greater caution in making decisions. Further, recent studies have reported that patients with TBI score poorly in tests of inhibition and cognitive interference, with a positive correlation between a number of errors and the severity of the injury (Cantin et al., 2007; Fortin et al., 2003). Finally, deficits in working memory have also been associated with altered activation patterns in the dorsolateral prefrontal cortex and Broca's area in patients with moderate and severe TBI (Perlstein et al., 2004). Executive functions are critical to regulating and adapting our behaviour concerning environmental conditions (Cristofori et al., 2019). However, little is known about the effects of torture on executive functions. Thus, the aim of this review was to outline how torture affects executive functions, memory formation and recollection, particularly in the context of TBI and PTSD.

## Methods

The present study is a narrative review aiming to identify and describe the effects of torture on executive functions, with particular attention to TBI and PTSD. Given the complexity and interdisciplinarity of the topic, a narrative rather than systematic review format was chosen, allowing a more integrative discussion and synthesis of findings across multiple fields (e.g., neuroscience, psychology, psychiatry, and medicine). The literature search strategy was broad yet intentionally flexible, combining systematic database searches with manual searches of relevant reference lists and consultation with experts in the field. Databases including PubMed, PsycInfo, and PsychArticles were searched using combinations of key terms and Medical Subject Headings (MeSH), such as "Torture," "Executive Functions," "Traumatic Brain Injury," "Stress," "PTSD," "Refugee," "Asylum Seeker," "Memory," "Planning," and "Motivation." Given the limited direct evidence explicitly linking torture and executive functions (for example, a PubMed search with these terms yielded only four articles in January 2025, two of which are included here), the review was intentionally broadened to include literature addressing cognitive and neural consequences of trauma, stress, and TBI, recognising their frequent co-occurrence in torture survivors. Articles were included based on their relevance to executive functioning, cognitive impairment, memory, and neural changes associated with torture, TBI, and PTSD. Articles focusing exclusively on physical health consequences unrelated to cognitive or executive functions (such as musculoskeletal or cardiovascular injuries) were excluded. The review incorporated peer-reviewed articles published in English and Swedish without any restrictions on publication date, ensuring that seminal studies and the latest evidence were considered. To further ensure comprehensive coverage and mitigate the risk of missing relevant literature, reference lists of the identified articles were manually reviewed, and additional pertinent literature was identified through expert consultation. Selection of articles was conducted collaboratively, involving discussions among the authors and clinicians within the research group specializing in the rehabilitation of torture survivors. This approach helped guarantee that significant, relevant research was neither overlooked nor intentionally excluded. In total, 32 studies were included in the results.

## Results

### *The link between torture, TBI, PTSD, and executive dysfunction*

Evidence of the effects of torture and TBI on cognitive functions is not particularly new. Already in the 70s and 80s, some reports were published describing anatomical and functional changes in



the brain as a result of blows to the head in about 65% of torture survivors (Jensen et al., 1982; Thygesen et al., 1970). In addition to psychological testing and clinical interviews, over the last couple of decades, the diagnosis of cognitive and emotional deficits in torture survivors after TBI has also been possible by modern diagnostic imaging techniques. A significant body of evidence supports a cause-and-effect association between TBI and neurological and psychiatric illness. Inner-cranial wave physics and the presence of bone protuberances inside of the skull due to blows to the head have been shown to cause significant damage to the orbital and anterior temporal lobes (Depue et al., 2014; Perry et al., 2016). Torture has been associated with altered central executive network (CEN) and the DMN functioning. While the CEN exerts top-down executive control over emotional processing (Depue et al., 2014), the DMN translates emotional responses into appropriate behaviour (Liddell et al., 2022). Altered functioning between these networks in torture survivors at rest seems to be responsible for withdrawal and dissociative behaviour, problems with self-regulation, and difficulties in recognizing safety signals from the environment, all of which are also classical symptoms of PTSD (Teicher et al., 2016).

Brain connectivity and cognitive control during goal-directed behaviour are also compromised. Goal-directed behaviour requires active engagement, cognitive control, and the ability to inhibit interfering processing and actions. Liddell and colleagues (2024) examined neural networks and behavioural mechanisms during a response inhibition task in a group of 33 torture survivors with PTSD against 44 patients with similar PTSD severity symptoms but no torture exposure. The researchers found that torture survivors had weaker connections in brain networks responsible for attention, motor control, and cognitive inhibition compared to non-torture survivors. Specifically, they showed reduced connectivity between the posterior DMN (left precuneus), the auditory-motor network (right superior temporal gyrus), and the dorsomedial frontal and dorsal attention networks. Interestingly, despite these brain differences, torture survivors performed the task as well as the non-torture controls, suggesting that they may rely on alternative neural mechanisms to compensate. Additionally, weaker connectivity in the superior temporal gyrus and between the frontal and dorsal attention networks was linked to greater PTSD symptoms, specifically dysphoria (Liddell et al., 2024).

Measuring cognitive decline and executive dysfunction because of TBI in torture survivors is particularly difficult since, in most cases, no pre-injury data exists, and thus, performance on cognitive and executive tests cannot be compared and attributed to the injury. Since torture survivors who have suffered TBI vary greatly in age, health status, educational level, cultural

background, and degree of injury, appropriate control groups are difficult to establish in scientific studies. Some studies rely on self-reports of mental health and cognitive ability. However, one of the hallmarks of moderate and severe TBI is that memory becomes impaired, and survivors lack self-awareness. Hence, individuals are known to under-report the number and severity of their symptoms (Jamora et al., 2012; Sbordone et al., 1998). Military personnel who suffered TBI because of torture or armed conflicts are one of the few groups that provide reliable data since pre-injury scores on both cognitive and executive function tests usually exist, and parameters such as age, educational level, cultural background, and health status are standardised amongst individuals. The Vietnam Head Injury Study was a multidisciplinary reevaluation of more than 600 head-injured veterans from the Vietnam War and uninjured controls. Individuals were tested in the Army General Classification Test upon enrolment and up to 15 years after injury. The authors found that in penetrating brain injury, total brain volume loss strongly predicted performance in subtests composed of vocabulary knowledge, arithmetic word problems, object-function matching, and mental imagery construction of boxes. Perhaps not surprisingly, the more total brain volume loss, the worse individuals scored on such tests, even 15 years after injury. Poor performance was particularly coupled to lesions in the left temporal and occipital lobes. Interestingly, higher scores pre-injury were associated with a slower cognitive decline and a better recovery up to five years after injury (Grafman et al., 1988).

In a sample of 42 Vietnamese ex-political detainees who had been tortured in Vietnamese re-education camps and resettled in the United States, a detailed history of TBI was obtained through the Harvard Trauma Questionnaire. The questionnaire includes different types of events such as traffic accidents, accidental falls, physical assault, torture and combat-induced TBI. Further, depression and PTSD symptoms were determined by interviews and the Hopkins Symptom Checklist-25. Finally, cortical thickness and subcortical volume were assessed by magnetic resonance imaging. TBI was associated with cortical thinning in the frontal and temporal lobes, which in turn correlated with higher symptoms of depression. The authors argue that TBI plays a role in the development of psychiatric conditions (Mollica et al., 2009), which is in line with previous data associating lesions in the prefrontal and temporal cortex with depression, anxiety, and mood disorders (Arulsamy et al., 2018; Pope et al., 2019; Silverberg & Panenka, 2019; Vanderploeg et al., 2005). It is important to note that mood disorders such as anxiety, depression, and PTSD can arise because of TBI even in populations who had not experienced psychological trauma before the head injury. Similar cases of thinning of the

cerebral cortex because of TBI have been reported in individuals involved in traffic and sport accidents (McKee et al., 2013). Torture can on its own lead to anxiety, depression, and PTSD. This means that in addition to playing a role in the development of mood disorders, TBI can significantly exacerbate cognitive decline and executive dysfunction in torture survivors (Doherty et al., 2016).

Traumatic events, even in the absence of TBI, have the potential to rewire brain circuitry, leading to long-term anatomical changes, which make recovery much more difficult. The prefrontal cortex and hippocampus are brain structures in direct contact with the amygdala and play an important role in behaviour (Depue et al., 2014). A study conducted in 21 combat veterans from the United States with mild TBI and comorbid PTSD from active duty, but no history of neurological disease prior deployment, showed that reductions in the size of the amygdala, leads to overprocessing of sensory input related to fear conditioning, which translates into anxiety and impulsive behaviour (Depue et al., 2014). Decreases in the size of the amygdala were also associated with higher scores in symptoms of PTSD. When compared to controls without TBI or PTSD, these individuals had lower scores on attention, perseverance, and self-control. It is worth noting that only individuals with mild TBI were included in the study. As such, a worsening of symptoms for cognitive and behavioural impairment is to be expected in those patients with moderate and severe TBI (Depue et al., 2014). In line with this, brain scans of torture survivors with PTSD have shown cortical thinning, reduced hippocampal volume, and hypometabolism in the caudate nucleus when compared to healthy controls (Liddell et al., 2022). Expressed in terms of functionality, this means memory loss, constant feelings of fear, and insecurity.

Elbert and colleagues (2011) examined how torture experiences alter brain responses to emotional stimuli, testing the hypothesis that repeated traumatic stress reorganises neural circuitry into a hyperresponsive “trauma network.” The authors suggest that traumatic events create strong connections among sensory, emotional, and physiological responses, which merge into a generalised trauma memory without clear associations to time or place. Consequently, survivors may experience exaggerated emotional reactions, hyperarousal, and flashbacks even to non-specific emotional stimuli. They compared neural activity in 46 survivors of torture or severe organised violence diagnosed with PTSD to 41 healthy, ethnically matched controls. To test this, they employed rapid serial visual presentation, where participants rapidly viewed sequences of emotionally negative, neutral, and positive pictures while their neural activity was recorded using magnetoencephalography. They found

significant differences in neural responses to emotional images between torture survivors with PTSD and healthy controls. For instance, torture survivors exhibited a rapid shift of neural activity from visual regions in the occipital cortex to limbic and fronto-temporal areas, including the amygdala, as early as 60–80 milliseconds after exposure to aversive images. On the other hand, controls maintained prolonged processing within visual sensory areas without notable early engagement of these emotional or frontal regions. In torture survivors, such an early activation of limbic and frontal regions reflects a “hyperresponsive trauma network” with a lower activation threshold and greater sensitivity to emotional cues, even when those cues are not explicitly related to their trauma. While controls showed stronger visual responses to neutral images, torture survivors showed stronger neural responses to aversive stimuli, demonstrating altered emotional prioritisation likely associated with chronic threat anticipation and vigilance (Elbert et al., 2011).

Higher levels of dissociative symptoms among torture survivors have been significantly linked to increased slow-wave activity (delta waves) in the left ventrolateral frontal cortex, a brain area associated with language processing and executive functions (Ray et al., 2006). This abnormal brain-wave activity suggests a functional disconnection between emotional processing and structured verbal memory retrieval, which aligns with the survivors’ reported difficulties in verbally accessing traumatic memories. Interestingly, these dissociative effects remained significant even after controlling for PTSD severity, emphasising that dissociative experiences independently impact brain functioning beyond PTSD symptoms. Additionally, torture survivors displayed reduced activity in brain regions (right hemisphere) involved in inhibitory control, suggesting an imbalance in approach-withdrawal behaviour (Ray et al., 2006).

Likewise, patients with torture-related PTSD showed significantly reduced volume in the left hippocampus and overall grey matter with concomitant ventricular enlargement when compared to healthy controls, indicating potential neuronal loss or atrophy (Zandieh et al., 2016). These changes are coupled with moderate hypometabolism (reduced metabolic activity) primarily in the occipital lobe, caudate nucleus, and, to a lesser extent, the temporal lobe, posterior cingulate cortex, and frontal and parietal regions. These findings suggest disruption in areas important for cognitive control, visual processing, and emotional regulation (Zandieh et al., 2016).

This is in line with recent evidence suggesting that torture survivors exhibit altered neural responses in brain regions central to executive functions, especially those involved in cognitive control, threat evaluation, and reward processing (Liddell

et al., 2021). Reduced ventral striatum activation in response to positive emotional stimuli (happy facial expressions) indicates impaired reward sensitivity and diminished motivational drive. This reduction is particularly pronounced among survivors with higher PTSD avoidance symptoms, suggesting specific deficits in the ability to initiate approach behaviours toward rewarding or positive experiences. Conversely, increased activation in the dorsomedial prefrontal cortex in response to threatening stimuli (fearful facial expressions) may indicate heightened cognitive effort in threat detection or conflict monitoring. Survivors show diminished hippocampal activation combined with stronger functional connectivity between the hippocampus and prefrontal and temporoparietal regions. Notably, this connectivity pattern is more pronounced among individuals exposed to higher cumulative trauma, potentially reflecting compensatory neural strategies to manage disrupted emotional regulation and memory processes (Liddell et al., 2021).

Scott and colleagues (2015) systematically reviewed neurocognitive deficits associated with PTSD, focusing on a large sample of 4,108 participants across 60 studies. The analysis included participants diagnosed with PTSD against groups of trauma-exposed participants without PTSD, and healthy, trauma-unexposed controls. Their findings indicate that PTSD is associated with neurocognitive deficits in verbal learning, memory, attention, and processing speed. Significant results were also seen in executive control, language, visual learning and visuospatial abilities. These findings are associated with dysfunction in the fronto-limbic network underlying the pathophysiology of PTSD. According to the researchers, neuropsychological functioning in attention, verbal memory, and speed of information processing is a key aspect in the clinical treatment of patients with PTSD (Scott et al., 2015). Likewise, Kanagaratnam and Asbjørnsen (2007) investigated 45 immigrants/refugees aged 18–55 who had been exposed to political violence and war. Among them, 22 individuals had a self-reported diagnosis of PTSD and 23 had no psychiatric diagnosis. The authors found impaired performance on tests of executive memory as well as problems in automatic processing in the war-exposed PTSD group. The more severe the posttraumatic symptoms, the more profound the impairment of executive memory. Problems in automatic processing can lead to compromised mental flexibility and negatively impact cognitive processing of traumatic memories (Kanagaratnam & Asbjørnsen, 2007).

Finally, exposure to traumatic events may produce lasting neural alterations in key brain regions involved in executive functioning, emotional regulation, and cognitive control, even

in the absence of diagnosable PTSD. Trauma-exposed individuals without PTSD (survivors of combat, motor vehicle accidents, and intimate partner violence) exhibit altered activation patterns in executive and emotion-regulatory brain areas, including the right anterior insula, praecuneus, anterior cingulate cortex, and orbitofrontal cortex, when compared to trauma-naïve controls. Conversely, individuals diagnosed with PTSD display distinct neural changes characterized by increased limbic activation, particularly within the amygdala and parahippocampal cortex, relative to both trauma-exposed and trauma-naïve individuals. These findings highlight the importance of recognising trauma exposure itself as sufficient to disrupt brain networks associated with executive and emotional processing, underscoring the need to assess executive functioning deficits broadly among trauma survivors rather than exclusively among those who meet full PTSD criteria (Stark et al., 2015).

A summary of the effects of torture-induced TBI and PTSD on executive functions is shown in Table 1.

#### *Remembering traumatic experiences*

It is commonly but wrongly believed that stressful experiences are always better recalled. Prolonged exposure to stress profoundly affects the brain and memory functioning. Specifically, sustained elevation of cortisol leads to shrinkage of the hippocampus and associated impairments in declarative memory, the ability to recall facts and previously learned information. Even though individuals deliberately try, they often struggle to retrieve stored memories (O'Mara, 2018). Sleep deprivation is a commonly employed method of torture and interrogation. Chronic sleep deprivation leads to significant physiological disruptions across multiple bodily systems and can ultimately result in death if sustained over prolonged periods. Individuals experiencing long-term insomnia typically exhibit reduced hippocampal volumes and associated impairments in declarative memory. Numerous experimental studies conducted on diverse groups—including university students, psychiatric patients, and military personnel—have consistently shown that sleep deprivation impairs cognitive functions and memory performance, with severity increasing proportionally to the duration of sleep loss (O'Mara, 2018). Moreover, sleep-deprived college students are significantly more susceptible to falsely confessing to acts they did not commit (Frenda et al., 2016).

Morgan and colleagues (2004) studied 509 young ( $25 \pm 5$  years of age) military personnel in active duty enrolled in military survival school training in the United States. Military survival school is highly stressful, realistic and one of the most challenging experiences in the military. Individuals were interrogated after 48 hours of sleep and food deprivation.

**Table 1.** *The effects of torture-induced TBI and PTSD on the brain's structure and function.*

Condition	Brain changes	Effects on Executive Functions
TBI	Reduced brain volume (frontal, temporal lobes, hippocampus, amygdala); disrupted connectivity in brain networks (e.g., DMN).	Difficulty concentrating, memory loss, problems with planning, slow information processing, reduced mental flexibility, impaired inhibitory control.
PTSD	Increased activation in limbic areas (e.g., amygdala), reduced hippocampal volume, cortical thinning.	Difficulty managing emotions, heightened fear responses, poor attention, memory issues, impaired cognitive flexibility.
TBI + PTSD	Structural damage (cortical thinning, hippocampal atrophy, amygdala shrinkage), functional changes in DMN, Central Executive Network, and other critical brain regions.	Severe deficits in attention, memory retrieval, emotional regulation, planning, flexibility in thinking, motivation, and self-control. Increased dissociation and emotional hyper-reactivity.

TBI: Traumatic brain injury; PTSD: Post-traumatic stress disorder; DMN: Default mode network.

Their study revealed that only 66% of the soldiers were able to identify pictures of their interrogators 24 hours after being interrogated. The authors argue that memory formation during highly stressful and personally relevant situations is subject to significant error. The poor performance in facial recognition is attributed to the inverted U-shaped relationship between stress hormones and memory, where moderate stress levels improve memory. Still, both low and high levels might disrupt it. Secondly, it is known that sleep, particularly REM sleep, is necessary for forming memories. Perhaps the soldiers had performed better if given a longer time and appropriate recovery from training. Lastly, the effects of stress on neural circuits involved in face recognition cannot be discarded. It is not known how catecholamines and cortisol affect these circuits during short and intense periods of stress (Morgan Iii et al., 2004).

These findings are in line with previous studies that show that the gist of a story, but not the details about it, is more easily recalled after events with a high emotional component, such as armed robbery (Herlihy et al., 2002). Moreover, details are more susceptible to disruption and change upon recollection than the central elements of the story. Taken together, these findings indicate that moderate stress levels might improve attention and the formation of memories during an emotionally intense experience. However, the recollection of details about the experience might be compromised (Herlihy et al., 2002; Morgan Iii et al., 2004).

In a sample of 27 Kosovan Albanians and 16 Bosnians with refugee status in the United Kingdom, discrepancies were found between the accounts of traumatic events given on two different interviews separated by up to seven months (Herlihy et al., 2002). All the individuals in this study were permitted

to remain in the United Kingdom under the United Nations High Commissioner for Refugees group, meaning they did not have to provide accounts of previous experiences to be granted asylum. The study was not associated with any clinical examination or migratory process. As such, the authors argue that it is difficult to see why the individuals investigated would provide false claims or exaggerate them on purpose. Since the discrepancies observed were about “peripheral details” (not central to the story), the authors suggest that there was no intent by the individuals to fabricate information. Interestingly, they found that individuals with PTSD became more inconsistent in their accounts the longer they waited between interviews (Herlihy et al., 2002).

This is consistent with previous studies showing that both the formation and recollection of memories can be influenced by emotions (McNally et al., 1994). It has been demonstrated that individuals with depression tend to focus on the negative aspects of previous events. Likewise, individuals suffering from anxiety will remember better and have a bias for situations they consider to be threatening (Herlihy & Turner, 2007). Finally, the recollection of events can also be influenced by the way questions are formed. Previous studies in asylum-seekers carried out by the United Nations demonstrate that inconsistency in the accounts given is highly dependent on the type and manner in which questions are asked (Herlihy et al., 2002).

Torture is characterized by hideous suffering and humiliation. A universal coping mechanism against it is dissociation, in which survivors actively and passively separate themselves from what is happening (Sarkar, 2009). Not surprisingly, dissociation during a traumatic experience leads to poor memory formation and recall. Time, ideas, and emotions are distorted

and can easily lead to inconsistencies while accounting for these events. Saadi and colleagues (Saadi et al., 2021) randomly reviewed 200 medico-legal affidavits from asylum seekers in the United States collected between 1987 and 2017 and described the most common memory complaints reported in them. They found that memory gaps of the traumatic event, difficulty establishing a timeline of the traumatic experience, dissociation (as a coping strategy), and persistent memory loss interfering with daily activities were the most discussed by clinicians. Gaps in memory were particularly common because of physical and sexual trauma. Dissociation was reported in these individuals as the leading cause of memory gaps both during the traumatic experience and during the interview with the physicians while applying for asylum (Saadi et al., 2021). The authors underline the difficulty of individuals in answering questions related to threats to their children, for example, and how recalling such events triggered dissociative behaviour at several times during the interviews. Avoidance of memories about traumatic experiences is a common coping mechanism and a symptom category in the PTSD diagnosis. According to the affidavits, some individuals consistently avoided both listening to the threats to their family as well as talking about it since it made dealing with emotional pain much easier (Saadi et al., 2021). Lastly, the study highlights how traumatic events can lead to memory gaps and concentration deficits, affecting performance in daily activities. The individuals are described as easily distracted and forget what they are doing mid-chore. The more concentration the task required or the more stressful it was, the higher the probability that the individuals would be affected by their previous trauma (Saadi et al., 2021).

## Discussion

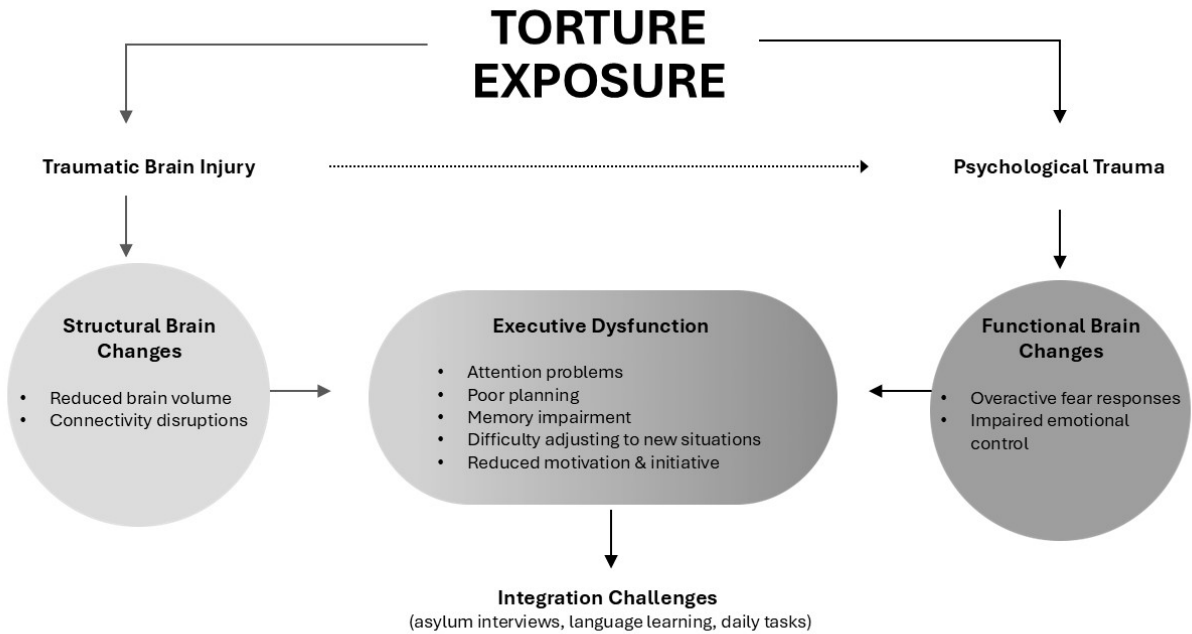
### *The asylum process and integration challenges for torture victims with executive dysfunction*

In most European countries, the asylum-seeking process is based on oral interviews in which individuals must provide a detailed and coherent description of the events that made them leave their country of origin and apply for refugee status. Moreover, migration authorities often focus on the legal aspects of the asylum-seeking process and the neurological consequences of torture are rarely considered during such interviews (Aarts et al., 2019; van Willigen, 2008). Problems with memory formation and recollection in torture survivors might lead to reluctance in migration authorities to attach credibility to asylum seekers' narratives.

Executive dysfunction is one of the most problematic sequelae of TBI, with significant and negative consequences

in daily activities, work performance, and social interactions even decades after injury. Following new rules and instructions proves difficult when individuals cannot change their behaviour in response to environmental clues. This leads to risk-taking or rule-breaking behaviour even in the face of negative consequences. Individuals do not necessarily choose to behave against norms and regulations, but they are unable to adapt to new information and internally process actions and responses (McDonald et al., 2002).

TBI and PTSD are difficult to treat and often lead to long-term effects. Recovering from trauma requires learning new strategies to deal with problems as well as acquiring new perspectives to look at oneself and the world. Successfully integrating in a new country after being granted asylum often requires learning a new language and social norms. (Abu Suhaiban et al., 2019). Further, neuroimaging research shows that social exclusion and emotional distress consistently activate regions associated with physical pain, especially the dorsal anterior cingulate cortex and anterior insula (Tchalova & Eisenberger, 2015). Experiences like social rejection or viewing pictures of lost loved ones activate these areas similarly to physical injuries. Pharmacological studies further support this overlap, with opioid-based painkillers alleviating emotional and social distress, underscoring a neurochemical link between social and physical pain systems (Tchalova & Eisenberger, 2015). This implies that traumatic social experiences such as rejection, exclusion, or severe emotional distress (all relevant to torture survivors) can directly and negatively affect brain regions involved in executive functions, emotional regulation, and cognitive control (Tchalova & Eisenberger, 2015). Therefore, a comprehensive approach is needed by migration authorities and healthcare professionals when meeting traumatised people. If learning a new language when suffering from PTSD or TBI proves difficult, the patient's entry into the labour market in their new country is delayed. Other expressions of executive dysfunction, such as difficulty taking initiative and multi-step planning, translate into problems getting to meetings on time, remembering what the meetings are about, and remembering afterwards what was discussed (Rabinowitz & Levin, 2014). Misunderstandings and conflicts can naturally occur between traumatised people and healthcare professionals, language teachers, work colleagues, and migration authorities. Not being able to perform can result in anxiety, and thus, everyday life easily becomes frustrating and confusing for these individuals. Unfortunately, the asylum process, as well as some efforts to integrate torture victims in their new countries, take little account of their needs and capabilities after the events that made them seek asylum (Figure 1).

**Figure 1.** Structural and functional mechanisms behind the integration challenges in torture survivors with TBI and PTSD.

## Conclusions

A high percentage of asylum seekers are victims of torture. A growing body of evidence confirms both the prevalence and extent of the injuries commonly suffered by torture survivors. The traumatic nature of torture has the potential to rewire brain circuitry. A high percentage of torture survivors develop PTSD. In many cases, survivors are subject to physical violence, which also results in TBI. Both PTSD and TBI have been associated with thinning of the cerebral cortex as well as structures such as the hippocampus and the amygdala. PTSD and TBI have a negative effect on executive functions. Patients suffer from memory problems, have difficulty paying attention, lack initiative and motivation, and cannot appropriately adapt their strategies to deal with daily activities based on changes in their environment. Lack of coherence in their accounts of previous events is common. The hardships of settling abroad while applying for asylum and integrating into the host country might exacerbate the torture-induced executive dysfunction and make recovery more difficult. Thus, a better understanding of the effects of torture on executive functions is needed to accommodate the needs of torture survivors in their interaction with migration authorities, social insurance agencies, educational institutions, and health-care providers.

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# Eye injuries in Bangladesh's 2024 student-led mass uprising: A public health crisis unfolds

Farhin Islam<sup>1,2</sup>, SM Yasir Arafat<sup>1</sup>, Mohammad Sorowar Hossain<sup>1,3,4</sup>

1 Biomedical Research Foundation, Dhaka, Bangladesh

2 Bangladesh Institute of Development Studies, Dhaka, Bangladesh

3 School of Environment and Life Sciences, Independent University, Bangladesh

4 Correspondence to: [sorowar.hossain@brfbd.org](mailto:sorowar.hossain@brfbd.org)

## Key points of interest:

- In most countries there is a need for independent monitoring and verification mechanisms to document and respond to mass injuries in protests.
- The Bangladesh case described underlines the importance of regulating riot control weapons and ensuring accountability for state-inflicted injuries.
- There is an intersection of medical neglect, repression, and mental health impacts in civil rights violations linked to less-lethal weapons.

## Abstract

**Introduction:** Initially peaceful, the 2024 student-led job quota reform protests in Bangladesh escalated into a nationwide uprising. The government responded with excessive force, leading to widespread violence, including severe eye injuries to hundreds of protesters. **Methods:** This study investigates the causes, consequences, and medical responses to these eye injuries, which resulted in lasting physical, psychological, and economic impacts on the victims. It uses secondary data, including reports from human rights organisations, hospital records, and media sources. Victim testimonies were collected from published sources to assess the immediate and long-term effects. **Results:** At least 647 individuals sustained severe eye injuries during the protests, according to the government report. The unlawful use of both lethal and less lethal weapons by law enforcement was the primary cause. Hospitals reported over 1,300 eye injury cases, with 630 of them requiring surgery. In the National Institute of Ophthalmology and Hospital alone, 382 patients lost vision in one eye and 19 lost vision in both. Most patients were young men. **Discussion:** This movement resulted in devastating eye injuries for hundreds of patients, with long-lasting physical and economic impacts. Victims, many of whom were breadwinners, faced significant challenges in receiving adequate medical treatment and long-term rehabilitation. Immediate governmental intervention is needed to ensure their inclusion in rebuilding post-uprising Bangladesh.

**Keywords:** eye injuries, Bangladesh, protest violence, human rights violations, job quota reform.

## Introduction

The job quota reform movement in Bangladesh began as a peaceful protest led by university students in July 2024, calling for restructuring the existing quota-based system for government jobs (Alamgir & Khan, 2024; Prothom Alo, 2024a). On July 14, after

controversial remarks by the Prime Minister, students organised a demonstration at Dhaka University, followed by nationwide protests (Daily Sun, 2024). The government responded with excessive force, resulting in widespread violence that extended beyond the initial job quota demands into a more significant an-

ti-government, pro-democracy movement (Chowdhury, 2024; Corea & Erum, 2024; Dhaka Tribune, 2024; New Age, 2024; Shuvra et al., 2024; The Business Standard, 2024a, 2024b). Finally, Prime Minister Sheikh Hasina's government, which many perceive as an authoritarian one, has ruled for the past 15 years at a stretch with the help of controversial elections (Mahmud, 2024), has fallen.

Among the most devastating outcomes of the violence were eye injuries sustained by hundreds of protesters. Law enforcement, in many cases, used pellet bullets and other forms of crowd control that disproportionately caused severe eye damage, leading to blindness in some cases. Several studies in the troubled region of Kashmir, full of military conflicts and social unrest, reported the incidence, clinical findings, and management of pellet gun-related ocular injuries during the widespread protests and riots, as well as clashes between the military and civilian population (Khan et al., 2012; Mushtaque et al., 2012; Wani et al., 2014; Wei et al., 2022). The young, working-age eye injury patients had poor visual outcomes, high medical costs, and a lengthy visual rehabilitation process that placed a heavy financial, psychological, and physical strain on both the patients and society as a whole (Wei et al., 2022). Pellets/projectiles-related eye injuries in crowd control or civic unrest are not so uncommon around the world (Essa, 2016; Rodríguez et al., 2021). During a brutal assault on primarily peaceful protests, hundreds of Iranians suffered severe eye injuries after being struck with paintball bullets, tear gas canisters, pellets, or other projectiles fired by security personnel (Ghajar & Shams, 2023). About 96% of eye injuries by kinetic impact projectiles in the global medical literature are from multiple kinetic impact projectiles (*Lethal in Disguise - How Crowd-Control Weapons Impact Health and Human Rights*, n.d.), which is why the Office of the United Nations High Commissioner for Human Rights (OHCHR) Special Rapporteur on Torture has called for them to be outlawed (OHCHR, 2023; United Nations, 2020). This article aims to explore the causes and consequences of these injuries, the treatment provided, and the prospects of the victims.

## Methods

This study used secondary data from various sources, including reports by human rights organisations, government websites, hospital reports, and victim testimonies published in national dailies. The data was analysed to assess the scale of eye injuries, their immediate and long-term effects, and the adequacy of medical response. Additionally, victim accounts were collected from public sources to provide insights into the personal impact of these injuries. The authors transcribed data from video record-

ings. Information from all the sources was translated into English where necessary.

This study relied on secondary data as collecting primary data was challenging after such a movement in the country when the law-and-order system was unstable. The secondary data on eye injuries were collected from the hospitals, so many cases were unreported, leaving the numbers underestimated. The government and human rights organisations' data were based on information from victims' families, eyewitnesses, hospitals, and national dailies. Nationally representative data on eye injuries in the protest is still unavailable because eye hospitals' data will underestimate the numbers.

## Results

### *Scale of injuries and deaths*

According to the Bangladesh Directorate General of Health's Management Information System (MIS), 19,200 people were injured (Hossain, 2024) and 708 died (The Daily Star, 2024a) across the country as a result of the protests. Of these, 647 individuals suffered severe eye injuries, with the Dhaka division reporting the highest number at 603 cases (Moral, 2024). However, these numbers are provisional and will have to be verified, corrected and updated because MIS has compiled the information provided by government authorities and hospitals where the numbers are underreported, as many people were not brought to the hospital at all, and many private clinics do not keep records (Hossain, 2024; Moral, 2024). Assuming that most patients with severe eye injuries showed up at one of the eye hospitals, hospital sources can be given more weight than other media reports. From 17 July to 27 August, the National Institute of Ophthalmology and Hospital (NIOH) alone treated 856 eye injury victims of the protest, where 382 lost vision in one eye and 19 in both (Chambugong, 2024). Besides NIOH, other prominent eye hospitals in Dhaka are the Eye Department of Dhaka Medical College Hospital, Lions Eye Institute, and Bangladesh Eye Hospital. Approximately 1,300 patients with eye injuries were admitted to these hospitals, 630 of them underwent surgeries, and over 90% of them have lost eyesight in one or both eyes (Samaddar et al., 2024). Among the people who were treated for eye injuries at the NIOH during and after the anti-discrimination student movement, 3.6% were women (Chambugong, 2024). However, this data is from a single centre (NIOH), and 856 people were treated in NIOH, but only 579 could be identified.

The Human Rights Support Society (HRSS) later reported, based on the information from victims' families, eyewitnesses, hospitals, and national dailies, that 819 people died during the protests, 70% of which were due to bullet wounds, primarily

inflicted by law enforcement (Human Rights Support Society, 2024). Nevertheless, the report also emphasised that the actual death toll could be at least 1,000 based on credible information from the media, hospitals, and other sources. Among the deceased, most (51%) were young adults and almost all of them (99.9%) were male (The Business Standard, 2024d), which means that young adult males are the major victims of this protest. The Anti-Discrimination Student Movement's subcommittee on health affairs suggested a much higher number of deaths of 1,581 people, which requires further verification by the government (The Daily Star, 2024b). According to the UN preliminary report, more than 600 people were killed between 16 July and 11 August (OCHR, 2024). The final fact-finding report by the UN's OHCHR reported as many as 1,400 protest-related deaths (OCHR, 2025). Table 1 provides a compilation of these statistics from various sources.

#### *Causes of eye injuries*

The most common cause of eye injuries was the use of pellet bullets from shotguns (Ahamad, 2024). These bullets, primarily used for crowd control, can be non-lethal under controlled conditions. However, their indiscriminate close-range use resulted in severe damage (Prothom Alo, 2024b). Rubber bullets, tear gas shells, and blunt force trauma from objects like bricks and sticks caused other injuries. In most cases, pellet wounds caused retinal haemorrhage that resulted in loss of vision (Samaddar et al., 2024). Causes for visual loss included retinal, anterior segment (including cornea) and optic nerve pathologies necessitating over 200 vitreo-retinal surgeries and approximately 40 corneal transplants at NIOH, for which there appears to be a shortage of donors (*Addressing the Crisis of Eye Injuries During July Movement*, 2024).

#### *Human Rights Violations*

The use of excessive force during the protests violated national laws, including sections 153(C) and 154 of the Police Regulations, Bengal 1943 (PRB),<sup>1</sup> which allows the use of firearms only as a last resort. Various fact-checking individuals and organisations have analysed video footage of various incidents, and it is seen that in many cases, shootings have occurred even though there were no circumstances in which members of the law enforcement forces could exercise their right to self-defence (Prothom Alo, 2024b). Additionally, the PRB stipulates that law enforcement must fire in a controlled manner, directed at the intended target and minimising casualties, and the fire must cease as soon as the objective is achieved (sec-

tion 154). Firearms must never be used simply to disperse an assembly, as it is unlawful to fire indiscriminately when policing an assembly (OCHR, 2025). However, many protesters and bystanders were shot indiscriminately, often at close range, in direct violation of these regulations (Prothom Alo, 2024b). Many of those who had fatal bullet wounds or gunshot wounds on their bodies were victims of aimed fire or targeted shooting (Prothom Alo, 2024b). According to media reports that have surfaced since 5 August, it was made clear that the police deliberately targeted and shot at the protesters' heads, chests, legs and even the eyes (Lohani & Supriya, 2024). OHCHR also confirmed that police fired rapid and multiple shotgun rounds targeting crowds' torsos and heads, increasing their lethality and risk of injuring vital organs and blinding, as seen in videos (OCHR, 2025). The use of force and firearms by police and paramilitary forces between 15 July and 5 August violated human rights, including the right to life and security (OCHR, 2025). RAB (Rapid Action Battalion: an anti-crime and anti-terrorism unit of the Bangladesh Police) personnel on helicopters were seen shooting rifles or shotguns loaded with lethal ammunition at protesters, whereas shooting firearms from a helicopter at crowds of protesters is inherently indiscriminate and, therefore, in violation of human rights standards since the weapons cannot be reliably aimed at particular individuals specifically posing an imminent threat (OCHR, 2025). According to section 155(B) of PRB, shooting over the heads of a crowd or at any other target outside the gathering is strictly prohibited as it can cause casualties from a distance. During the protests, these instructions of the police regulations were not followed, resulting in many people being shot while inside their homes, on balconies and rooftops. The OHCHR found recurring patterns of security forces violating international human rights law, including suppressing peaceful assembly rights, dispersing peaceful assemblies with disproportionate force, and even deliberately killing or maiming defenceless protesters by shooting them at point-blank range (OCHR, 2025). The OHCHR report also pointed out the fact that PRB allows police to use firearms with lethal ammunition to disperse unlawful assemblies where necessary to protect property, and it even states circumstances requiring the police to shoot directly into crowds, which is contrary to international law.

Shotguns with metal pellets are not considered lethal weapons by law enforcement in Bangladesh, and ordinary police officers in the field had broad discretion to decide when to deploy metal shot and when to use rubber bullets (OCHR, 2025). The use of shotguns loaded with metal pellets in public order management is not in line with international human rights law

1 [https://www.police.gov.bd/en/legal\\_instruments](https://www.police.gov.bd/en/legal_instruments)

(OCHR, 2020). The wide radius of the spreading metal shot makes this combination of firearm and ammunition inherently indiscriminate when deployed in the crowd. They can also not be considered 'less-lethal' given that the pellets penetrate the human body and can be deadly. They may also cause blindness and other serious injuries with long-term consequences (OCHR,

**Table 1.** Deaths and injuries due to Quota Movement 2024 in Bangladesh and a focus on eye injuries

Indicator	Statistics	Source	Type of source	Reference
Death	717	Directorate General of Health Services	Government body	(Government of Bangladesh, n.d.)
	819	Human Rights Support Society	Human Rights organisation	(Human Rights Support Society, 2024)
	1581	Anti-Discrimination Student Movement's sub-committee on health affairs	Students' body	(The Daily Star, 2024b)
	>600	Office of the High Commissioner for Human Rights (OHCHR) Preliminary Analysis Report	International organisation	(OCHR, 2024)
	1,400	Office of the High Commissioner for Human Rights (OHCHR) Fact-Finding Report	International organisation	(OCHR, 2025)
Injury	>19,200	The Daily Star	Newspaper report from government data	(Hossain, 2024)
	>18,000	Prothom Alo	Newspaper report from government data	(Moral, 2024)
	>30,000	Quota Movement Bangladesh	Website by protesters	(Quota Movement Bangladesh, n.d.)
	>33,000	Shohid dot info	Website by protesters	(Shohid Info, n.d.)
Eye injury	647	Directorate General of Health Services	Government body	(Moral, 2024)
	1300	Various hospitals across Dhaka*	Newspaper report from hospital data	(Samaddar et al., 2024)
	856	National Institute of Ophthalmology and Hospital	Newspaper report from single-center	(Chambugong, 2024)
Lost sight of one or both eye	550 (Specified numbers for unilateral and bilateral loss of vision are unknown)	Various hospitals across Dhaka*	Newspaper report from hospital data	(Samaddar et al., 2024)
	401 (Unilateral: 382, Bilateral: 19)	National Institute of Ophthalmology and Hospital	Newspaper report from single-center	(Chambugong, 2024)

\* National Institute of Ophthalmology and Hospital, Lion's Eye Institute, Bangladesh Eye Hospital, Dhaka Medical College Hospital's Ophthalmology Department and other hospitals in Dhaka

2025). Although the use of multiple kinetic impact projectiles (rubber or plastic bullets) is called to be outlawed by the UN, they caused serious eye injuries to the victims of the July uprising. The OHCHR report confirms that shotguns contain metal shot cartridges with up to 200 2-3mm metal pellets, while other cartridges have less-lethal 6 to 8 rubber bullets. In 2022 and 2023, Bangladesh Police ordered over three million metal shot cartridges, more than double the number of rubber bullets (OCHR, 2025), which indicates the high level of reliance on and widespread use of lethal metal shot by the Police. In several cases, less-lethal weapons (such as tear gas being deployed in confined spaces or sound grenades detonated directly within crowds) were also used in ways that would increase their propensity to injure severely (OCHR, 2025).

According to information from various sources in the law enforcement agencies, ammunition experts, various hospitals and multiple fact-checking individuals and organisations, and analysis of videos and images of weapons used during the clashes, three categories of weapons were used more frequently in shooting at protesters: shotguns, pistols and Chinese rifles, while weapons like sub machinegun (SMG) and light machinegun (LMG) were used in some places (Prothom Alo, 2024b). These shotguns use two types of bullets- rubber and lead, and their cartridges contain small balls or splinters (Prothom Alo, 2024b). These guns are mainly used to suppress riots. They are usually not lethal, but also lethal depending on the number of projectiles, size, and distance. More specifically, Amnesty International has verified the unlawful use of both lethal and less lethal weapons, including 12-gauge shotguns loaded with birdshot, 37/38mm grenade launchers, AK-pattern assault rifles and Chinese type 56-1 assault rifles against the protesters (Corea & Erum, 2024). Police in Bangladesh use 9 mm pistols along with 7.62 mm Chinese rifles, SMGs, and LMGs (Prothom Alo, 2024b). A 9 mm pistol is effective up to 50 meters, but it can still be lethal at greater distances; a 7.62 mm rifle bullet is fatal within 300 meters; and shotgun rounds can cause death within 40-50 meters, depending on the cartridge type (Prothom Alo, 2024b). OHCHR documented three instances of the Bangladesh Army using lethal military rifles, including the BD-08 (a Bangladeshi licensed copy of the Chinese Type 81 assault rifle with high-energy projectiles of 7.62x39mm), aiming at protesters. The projectiles have enough energy to kill or seriously injure someone even beyond a 600-meter range (OCHR, 2025).

The independent fact-finding inquiry conducted by OHCHR confirms that the former Government, security apparatus, and violent elements of the then ruling party Awami League systematically engaged in serious human rights violations between 1 July and 15 August, which raises concerns

from the perspective of international criminal law. The security forces, including police, RAB, and BGB (Border Guard of Bangladesh), used a combination of military rifles and shotguns loaded with lethal metal pellets, as well as less-lethal weapons, against protesters to disperse peaceful, albeit often disruptive, protests. From 19 July until the end of the protests, they fired lethal ammunition indiscriminately at protesters in Dhaka and elsewhere, resulting in many extrajudicial killings and injuries.

The Dhaka Medical College Forensic Medicine Department has found that over 78% of all deaths in Bangladesh were caused by firearms (including bullets from military rifles and shotguns loaded with lethal metal pellets) used by state security forces, which are not readily available to civilians. Of these, about 66% of deaths were caused by bullets fired from high-powered military automatic and semi-automatic rifles, and 12% of deaths were caused by shotguns loaded with lethal metal pellets. Victims of bullet wounds were typically struck by standard military 7.62x39mm lethal ammunition. Bangladesh Police, BGB, RAB, Ansar/VDP (Bangladesh Ansar and Village Defence Party) and Army members were seen (in video footage and images) wielding SKS (Soviet Union-made semi-automatic rifle), Type 56 and BD-08 rifles that use this calibre of ammunition. In some cases, they even used special armour-piercing ammunition against unarmed civilians, which is designed for combat situations against body armour and not for law enforcement applications and is available only to the Army or paramilitary forces such as BGB and RAB.

Al Amin, a seventh-grade student aged 14, was shot by 22 pellets, one of which injured his right eye. Despite his injury, hospital authorities refused to admit him as the authorities ordered the removal of all patients injured in the protests by that night, forcing his mother to seek treatment at multiple hospitals (Sammadar et al., 2024). The treatment was delayed further as the other hospitals were overwhelmed with injured patients too, according to the victim's mother. These type of cases were common, as the OHCHR report confirmed that police and intelligence agencies such as Detective Branch (DB) Police, Directorate General of Forces Intelligence (DGFI), National Security Intelligence (NSI) obstructed medical care by blocking ambulances, raiding hospitals, seizing medical records to conceal evidence, identifying and arresting injured patients, and intimidating health-care provider medical staff to falsify reports or deny treatments (OCHR, 2025). Testimony received indicates that this obstruction was undertaken based on orders given at higher levels, including during visits from senior officials to hospitals, confirms the OHCHR report. The National Human Rights Commission of Bangladesh is deemed non-compliant with the Paris Principles due to its lack of independent members and inability to

investigate violations by law enforcement agencies (Saha, 2023). Therefore, it has failed to hold authorities accountable for human rights violations during the protest (OCHR, 2025).

## Discussion

### *The impact on victims*

The eye injuries sustained during the protests have had devastating consequences for the victims, many of whom were young adult males, students, or primary breadwinners for their families. Among the 19 known people who lost sight in both of their eyes, six were students; two each were labourers, drivers and job holders; one was a teacher, while others' professions remained unknown (Chambugong, 2024). The long-term effects of blindness and other physical disabilities have drastically reduced their ability to work, leaving their families in financial crisis.

Habib (age 30), a sanitary worker who lost his right eye to a pellet bullet, cannot avail of expensive treatment (implanting an artificial lens in the right eye) to regain his vision due to lack of funds as his entire family is financially dependent only on him and they live from hand to mouth. He explained his current financial sufferings and the pressure he felt to repay them in the future as follows (Rayhan, 2024),

"As a sanitary worker, I used to earn Tk 700 daily, and when I did garbage disposal work, I earned Tk 900. But now, I can't see with one eye and am unable to work [at least for some days]. Today, I borrowed Tk 200 from someone just to buy food for the family. The landlord sent someone to collect the rent today, but I couldn't pay it."

Similarly, construction worker Delwar Hossain, who lost both of his eyes after being shot by police, explained (Chambugong, 2024),

"When I tried to run away from the police firing tear gas shells, I was hit by pellets in both eyes. Now I cannot see, and my wife, who works as a domestic worker, struggles to support our three daughters."

Losing sight in one eye or being partially sighted can significantly impact livelihood, too, in some occupations. For example, Mohammad Raju Islam, an autorickshaw driver from Thakurgaon who lost sight in his left eye, shared his feelings (Lohani & Supriya, 2024),

"There are two rear mirrors in the autorickshaws. Now that I have only one functioning eye, how can I go back to my normal life and drive my auto?"

The loss of vision not only impacts the victims' ability to earn a livelihood but also affects their mental health. According to a survey by the National Institute of Mental Health (NIMH), which was conducted on 55 injured people in the mass protest who were undergoing treatment at the NIOH, about 74.5% showed symptoms of depression, and more than 27.3% of them were suffering from severe depression (The Daily Star, 2024c).

Riyad, a 16-year-old student, described his shattered dreams after being shot by police (Lohani & Supriya, 2024),

"My dream was to grow up and join the Bangladesh Army. I lost my eyesight and the opportunity to join the military. I worry if I will be able to take the SSC [Secondary School Certificate] exam next month."

### *Treatment and medical care*

Many victims faced challenges in accessing timely medical care due to overcrowded hospitals, as victim Al Amin's mother said (Samaddar et al., 2024),

The hospitals were flooded with patients, which caused delays.

Victims reported being turned away from hospitals or discharged prematurely due to orders from higher authorities (Samaddar et al., 2024). The delayed treatment due to that may have exacerbated the severity of their injuries, which Al Amin has faced. At the authority's order, doctors asked his family to take him home despite multiple pellets still inside his body, including in the eye.

In some cases, victims received insufficient treatment. Kazi Faruq, a restaurant worker, explained (Samaddar et al., 2024),

"It is painful to be shot amid celebrations after such a successful revolution. Doctors are trying hard. If I can see at least with one eye, that's a lot for me. But the hospital cannot provide all the necessary medicines, and people are helping me buy them."

### *Legal and human rights concerns*

The indiscriminate use of force by law enforcement during the protests raises serious concerns about human rights violations. The United Nations Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights

guarantee the right to peaceful assembly and prohibit excessive use of force by the state. However, the response of law enforcement during the protests, including the use of pellet bullets, constitutes a violation of these international standards as well as domestic laws. Bangladesh urgently needs to update its outdated colonial-era police legislation in line with international human rights norms and standards.

Al Amin, an eye injury victim, described his experience (Samaddar et al., 2024),

"That day, I went to help my seniors and classmates. They were being attacked indiscriminately. But I never thought that the police would shoot and fire bullets at us."

### Limitations

This study relies on secondary data, which creates potential limitations regarding data accuracy and comprehensiveness. The number of deaths, injuries, and eye injuries (mentioned in Table 1) is provisional and must be corrected. Future scopes of studies with primary data could provide a richer and more nuanced understanding of their experiences, especially on the long-term effects of the injuries. A longitudinal follow-up in the future can be done to fully understand the long-term physical, emotional, and financial impacts on the victims.

### Conclusion

The 2024 job quota reform protests in Bangladesh not only highlighted the need for governmental reforms but also exposed the severe human rights violations committed by law enforcement. The use of excessive force, particularly pellet bullets, resulted in devastating eye injuries that have left at least 19 individuals blind and more than 300 partially sighted. These injuries have far-reaching consequences, both for the victims and their families, as they face an uncertain future with limited prospects for employment and financial stability.

The interim government has pledged to cover the medical costs of those injured during the protests (The Business Standard, 2024c), but long-term support is needed to ensure these victims are not left behind. Also, the implementation of this decision has reportedly encountered problems. Proper rehabilitation, financial aid, and job training programs must be implemented to provide these individuals with the means to rebuild their lives. The interim government should also ensure effective remedies for serious human rights violations following international standards to prevent the recurrence of such violations in the future.

Although Sharif, a day labourer who was a victim of eye injury in the protest, lost his sight in his right eye, a sense of satisfaction and contentedness filled his heart with peace as the movement succeeded. He noted (Barta24, 2024),

"Although I lost one of my eyes, I am very relieved now that the autocratic government has fallen. The oppression, injustice, and cruelty have now ended. It seems that I am reborn in a new Bangladesh."

The contributions and sacrifices of these eye injury victims should be acknowledged and remembered.

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### Disclosure statement

The authors report that there are no competing interests to declare.

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# Ballistic projectile maxillofacial injuries in the context of human rights violations in Chile: a 5-case series

Jesús Silva<sup>1</sup>, Denisse Lagos-Tissie<sup>2</sup>, Marcos Faundes<sup>3</sup>, Fiorella Betanzo<sup>4</sup>, Ángela López<sup>5</sup>

1 Universidad de Valparaíso, Chile. Correspondence to: [jesus.silva@uv.cl](mailto:jesus.silva@uv.cl)

2 Medico-legal Service, Valparaíso. Chile.

3 Medico-legal Service, Valparaíso. Chile.

4 Odontology Student, Universidad de Valparaíso. Chile.

5 Odontology Student, Universidad de Valparaíso. Chile.

## Key points of interest:

- Despite international guidelines on the use of riot control weapons, ballistic projectile injuries frequently affect the craniofacial region.
- Damage caused by such projectiles, particularly in the maxillofacial area, extends beyond physical harm, often resulting in aesthetic and psychological consequences.
- The potential risk of heavy metal poisoning should be considered when evaluating whether to retain embedded projectiles.

## Abstract

**Introduction:** On 18 October 2019, Chile experienced a wave of civil protests driven by social demands, which continued for several months across the country. The response by law enforcement and armed forces resulted in injuries caused by ballistic projectiles, some of which affected the maxillofacial region. **Materials and Methods:** This is a multiple case report study analysing five forensic reports prepared by forensic odontologists from the Medicolegal Service of the Valparaíso region, Chile. **Results:** Various injuries were observed, including fractured teeth, scars, paraesthesia, and embedded ballistic projectiles. **Discussion:** The injuries are often permanent, compromising functionality and causing aesthetic and functional damage. Lead poisoning should be considered in cases where projectiles remain lodged in soft tissues.

**Keywords:** Forensic dentistry, human rights, projectile, less-lethal weapon, lead poisoning.

## Introduction

On October 18, 2019, various cities in Chile witnessed numerous citizen protests motivated by social demands related to healthcare, education, social security, and other issues (Sferrazza Taibi et al., 2021). During these protests, the Armed Forces and law enforcement employed various weapons, including “riot shotguns” that fire rubber pellets (kinetic impact projectiles - KIPs) (Sferrazza Taibi et al., 2021). These projectiles are labelled as “non-lethal” or “less-lethal” munitions and are primarily in-

tended to incapacitate or disperse protesters by inflicting pain through blunt-force trauma. However, there is substantial evidence that these munitions can cause more than just blunt injuries, potentially leading to mutilation or even death (Velásquez Valenzuela et al., 2021).

Although there is no globally accepted definition regarding these weapons, Chilean protocols authorise using less-lethal kinetic impact projectiles (Reynhout, 2020). In a document requested by the Regional Prosecutor’s Office of Valparaíso,

the General Secretariat of Carabineros (Secretaría General de Carabineros, 2020) reported the weapons used starting October 18, 2019. The document specifies that TEC Harseim primarily produced the non-lethal ammunition used in 12-gauge shotguns. In contrast, the Civilian Police (Policía de Investigaciones-PDI) used cartridges produced by Companhia Brasileira de Cartuchos (CBC) (Reynhout, 2020).

As a result of this “social outbreak,” numerous human rights violations were reported. According to the National Institute of Human Rights (INDH), between October 17, 2019, and February 18, 2020, a total of 1,681 pellet injuries were recorded (nearly 60% of reported injuries), including 445 cases of ocular injuries (INDH, 2020). A 2021 study (Rodríguez et al., 2020) investigated cases of ocular trauma between October 18 and November 30, 2019, documenting 259 cases, of which 182 were associated with KIPs (Ortega et al., 2022; Rodríguez et al., 2020). Similar incidents have been recorded in other Latin American regions and European countries, highlighting that riot control weapons or “less-lethal weapons” may not only cause minor injuries.

The use of these weapons must also adhere to established guidelines. According to the United Nations Human Rights Guidance on Less-Lethal Weapons (OHCHR, 2021), KIPs should only be used on the lower abdomen or legs. They should not be aimed at the head or face, as such impacts can cause death or serious injuries. A report by the uniformed police (Casanova, 2020) confirms these UN recommendations, stating that these weapons should be used from 30 meters. However, forensic analysis may have underestimated the risk. Less-lethal pellets can be dangerous when fired at distances where their dispersion cannot be controlled effectively. Additionally, shotgun shooters do not have complete control over pellet spread, a problem that worsens over longer distances (Reynhout, 2020).

This paradox and the recommendations from various institutions highlight the fragile nature of the maxillofacial region. The structures in this area are thinner than those in other parts of the body and house vital organs, while also having aesthetic significance (Ortega et al., 2022). Injuries caused by less-lethal weapons in the maxillofacial region not only affect soft tissues or cause minor injuries but can also impact hard tissues, resulting in fractures or the lodging of projectiles within these structures. Such injuries require more complex treatment to restore the patient’s health fully (Ortega et al., 2022).

Given these circumstances, the objective of this study is to analyse, through a case report series, injuries caused by so-called non-lethal projectiles in the context of the 2019 social protests in Chile.

## Materials and methods

A case report series study was conducted based on five forensic reports prepared between 2019 and 2023 by two forensic odontologists from the Medicolegal Service of the Valparaíso region (SML). For such purposes, only the information relevant to the lesion logical study was considered, excluding any other identifying data of the victims. The same institution authorised this study.

The inclusion criteria for the reviewed reports considered the following: that the dental examination was part of an expert assessment within the context of an “Istanbul Protocol”; that the events in question took place during the period of the “social uprising” in Chile between 2019 and 2020; and lastly, that the reports contained all the required information according to the formats of the Legal Medical Service or the requirements of the requesting prosecution offices.

It is important to note that the primary function of the Medico-Legal Service (Servicio Médico-Legal or SML) in Chile is to serve as an auxiliary institution supporting the work of prosecutors and courts through scientific, medical, and forensic analyses. This institution does not provide medical care for victims and only acts under the orders of prosecutors or judges.

## Case reports

Table 1 summarises the relevant data of the affected individuals (age and sex), the reported events, the injuries recorded in the forensic odontologist’s report and the sequelae. Teeth numbers are according to the “Fédération Dentaire Internationale” (FDI).

## Discussion

The available literature regarding injuries caused by ballistic projectiles in the bucomaxillofacial region, particularly in the maxillary/mandibular area, is limited. Existing case reports predominantly focus on ocular injuries, which are often associated with more severe outcomes such as vision loss or globe rupture.

In a systematic review conducted by Sofia Ortega, a dental student at the University of Chile, compiled most case reports and studies related to “less-lethal weapons”, including four types: impact projectiles (PICs), tear gas, “TASER” devices, and rubber bullet grenades. Of the 39 articles analysed in this review, only five described injuries involving PICs or other types of projectiles within the context of protests, resulting in trauma to the maxillofacial region (Amaral et al., 2017; Cohen, 1985; Gonzalez et al., 2021; Maguire et al., 2007; Scolan et al., 2012). The primary injuries reported included fractures of the mandible, maxilla, nasal bones, and orbit; soft tissue injuries, predominantly affecting the skin at the impact site; localised oedema and haematoma;

**Table 1.** *Summary of Relevant Information from Forensic Odontology Report.*

Case	Sex	Age	Reported events	State agent involved (according to the report)	Observed and recorded injuries.	Sequelae of the injuries
1	Female	26 years	Projectile impact on the face and upper jaw area.	Carabinero (police officer)	- Fracture of upper central incisors (11 and 21 FDI). - Temporary crowns on teeth 11 and 21 (FDI)	-Aesthetic compromise involving anterior teeth. -Loss of vitality in two teeth (11 and 21, FDI)
2	Male	38 years	Multiple projectiles fired from approximately 2.5 meters hit the face. Some projectiles were removed at a local hospital, while others remained at the impact site.	Carabinero (police officer)	- Loss of teeth. - Presence of three facial scars. - Presence of a foreign object in the right cheek, with pain upon palpation. - Limited oral opening.	-Facial aesthetic compromise. -Potential lead poisoning. -Reduced masticatory efficiency. -Functional impairment in oral opening
3	Male	31 years	Projectile impacts during a peaceful protest, lodged in the face, neck, and shoulders.	Carabinero (police officer)	- Hyperpigmented scar on the right cheek. -Transfixing wound on right cheek. - Hypoesthesia and pain upon pressure in an area with a possible lodged projectile. - Lateral luxation of the lower molar (46 FDI).	-Facial aesthetic compromise. -Potential lead poisoning. -Continuous evaluation of tooth 46 (FDI) due to possible sequelae from dentoalveolar trauma
4	Male	26 years	Direct projectile impacts on the face and back. Visited a local hospital, where professionals decided not to extract the lodged projectile from his face.	Carabinero (police officer)	- Scar on the right cheek. - Hypoesthesia in the affected area. - There is a palpable foreign body 3 cm from the scar, with pain upon palpation.	-Facial aesthetic compromise. -Potential lead poisoning.
5	Female	24 years	Multiple projectile impacts on the face, chest, arm, and gluteus during a peaceful protest.	Carabinero (police officer)	- Scar on the left cheek, indurated upon palpation and with paraesthesia. - Reports pain with facial expressions and temperature changes	-Facial aesthetic compromise. -Activity modifications (singing)

**Photographs of the analysed cases:**

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**Figure 1.** Case #1. Complicated tooth fractures (11 and 21 FDI) due to the direct impact of a projectile.

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**Figure 2.** Case #3. Intraoral Mandibular photography of the patient. Teeth 46 (FDI) with lateral lingual luxation.

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**Figure 3.** Case #4. Skull X-ray showing a radiopaque structure in the right cheek area, approximately 6 mm in diameter, compatible with a projectile.

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**Figure 4.** Case #5. (Left) A flat scar in the genian region with an extension of 0.6 cm. (Right) Teleradiograph showing a radiopaque circular area, approximately 6 mm in diameter, located in the region adjacent to the left nasal notch and the infraorbital groove



and paraesthesia in the affected and adjacent areas. All patients reported pain or discomfort during specific facial movements or upon palpation of the injured region.

Similar injuries, such as hematomas and oedema in the impact zone and paraesthesia, were observed in the cases presented in this study. However, it is important to note that the examinations in these cases were conducted sometime after the injuries occurred, and several patients already presented scars. The cases in Ortega's systematic review exhibited fractures of various types. However, none described injuries to teeth, in contrast to this study, which identified three cases with fractures and dental injuries.

Notably, the available literature regarding dental injuries caused by ballistic projectiles is scarce or non-existent. One possible explanation is the lower perceived significance of these injuries relative to damage to other surrounding tissues, which may be considered more complex. However, damage to dental and maxillofacial structures entails functional impairment and aesthetic and psychological consequences, negatively affecting the patient's self-esteem.

Additionally, it is worth mentioning that in two cases from the study of Ortega et al., the foreign body (the projectile) lodged in the patient's face was removed, while in the cases presented in this work, the decision was made not to remove the projectile from the affected area.

Regarding the materials used in the projectiles, a study conducted by the Department of Mechanical Engineering (DI-MEC) at the University of Chile, at the request of the Ocular Trauma Unit (UTO) from the Hospital del Salvador (Santiago, Chile), confirmed that the type of projectile used by the Carabineros is composed of only 20% rubber, with the remaining 80% consisting of high-hardness minerals and/or metals such as silica, barium sulphate, and lead. These components increase the hardness and weight of the projectiles, thus amplifying the damage these pellets can inflict (Jorquera et al., 2019).

One issue highlighted by professionals who prepared the analysed reports in three of the cases presented is the potential for chronic lead poisoning due to the retention of ballistic fragments, which can pose a significant complication in firearm-induced injuries, and the removal of these fragments would mitigate this potential risk.

Lead is a soft metal that, in its inorganic form, can be toxic. This metal has been extensively studied for its long-term use, which has resulted in significant environmental contamination and increased exposure within the population, leading to various health issues (Poma, 2008; Quirgas, 2019). This exposure has often been underestimated due to the delayed onset of symptoms and/or adverse effects and a lack of awareness regarding the composition and physicochemical properties of the munitions used (Quirgas, 2019).



Lead can persist in the human body for prolonged periods, accumulating primarily in three compartments: blood, where 95% of lead is bound to erythrocytes; soft tissues such as the liver, kidneys, bone marrow, and central nervous system; and, after approximately two months of exposure, it can be deposited in the bones, where it may remain for up to 30 years. Lead may be released into the bloodstream under certain physiological conditions such as pregnancy, lactation, hyperthyroidism, or old age (Garcés & Bernardo, 2012; Poma, 2008; Quirgas, 2019).

It is known that lead interferes with calcium metabolism, as it closely resembles calcium, allowing it to mimic its functions, alter its effects on both the central and peripheral nervous systems, and affect vascular tone (Garcés & Bernardo, 2012; Quirgas, 2019). Toxic effects have also been reported in respiratory, haematological, hepatic, renal, endocrine, gastrointestinal, cardiovascular, musculoskeletal, and ocular systems (Quirgas, 2019). Chronic exposure may lead to conditions such as chronic nephropathy, anaemia, Parkinson's disease, amyotrophic lateral sclerosis, decreased fertility, and disruptions in reproductive hormone levels (Poma, 2008; Quirgas, 2019).

The mechanism by which lead is distributed throughout the body is not yet fully understood. However, it is believed that lead from the projectile casing initially diffuses in a soluble form, which is absorbed directly into the bloodstream. It then precipitates into an insoluble form, which macrophages capture and phagocytose (Garcés & Bernardo, 2012).

The development of lead poisoning depends on several factors, including the location of the projectile, the degree of fragmentation, the individual's physiological state, and the time interval between the injury and the rise in blood lead levels, which may range from a few days to several years. Although it is challenging to predict the incidence and risk of lead poisoning, the location of the projectile in synovial fluid and mobile joints has been established as a risk factor. In soft tissues, however, the retention of ballistic fragments can cause a foreign body reaction, leading to fluid cyst formation and an acute rise in blood lead levels, even long after the initial injury. These cysts have been reported in bones, connective tissue, muscles, and cartilage (Quirgas, 2019).

The recommended treatment for these cases is to eliminate the source of toxicity from the patient by removing the projectile. However, in some cases, this procedure can be complicated, as it may cause damage to other vital structures during the removal process. Therefore, the risk-benefit ratio of projectile removal must be carefully assessed, considering its location and proximity to vital organs (Garcés & Bernardo, 2012).

On a different note, an important aspect to consider in these types of injuries is their aesthetic (due to their location in the maxillofacial region) and psychological consequences due to the context of aggression. It has been observed that facial scars lead to a reduction in confidence and social activities due to feelings of shame and low self-esteem, which is also directly related to higher levels of post-traumatic stress disorder (PTSD) symptoms. It should be noted that the aesthetic evaluation is subjective, varying according to the evaluator and the affected individual, and the concept itself can differ based on factors such as the person's age, occupation, social relationships, and environment (Lagos-Tissie et al., 2021; Segundo-Jara et al., 2023).

Finally, it is crucial to highlight the importance of adhering to established protocols by law enforcement agencies regarding using less-lethal projectiles despite existing usage recommendations, which include instructions on where to aim and the optimal distance from which to fire. There is a paradox in these guidelines. As mentioned earlier, at greater distances, the force decreases, but the control over the pellets drops significantly, potentially leading to maxillofacial injuries despite following these recommendations. This is because the higher hardness of the projectiles means they do not bounce but instead penetrate the human body, potentially causing the damage described above (Universidad de Chile, 2019).

## Recommendations of good practice

### *During emergency care:*

- Provide a detailed description and evaluation of the observed injuries, which must be documented in the patient's medical record. In cases involving multiple healthcare professionals, it is recommended to assess visible external injuries and perform an intraoral examination to evaluate potential damage to internal structures or dental involvement.
- “Document the injuries”: Take photographs of the observed injuries. Ideally, the consent of the patient or their legal guardian is obtained.
- Multidisciplinary evaluation: Depending on the resources available in each healthcare centre, seeking support from all relevant disciplines is crucial to ensure the best possible patient care.
- Evaluate the need for projectile extraction: This should be based on previously mentioned factors such as location, fragmentation, the patient's physiological status, and the time elapsed since the injury. Projectiles lodged in joint areas are particularly prone to lead poisoning due to dissolution in synovial fluid.

- In cases where projectiles are extracted: Store foreign bodies according to national protocols for evidence handling and “chain of custody” procedures.
- If the decision is made to leave the projectile embedded in tissue: Consider annual blood tests to measure lead levels.
- Determine a medicolegal prognosis following current local legislation.

#### *During medicolegal evaluation:*

- Provide a detailed description and assessment of the observed injuries, supplementing information recorded by the emergency care provider and the victim’s account. Photographs are usually mandatory in forensic examinations.
- Functional impairment assessment: Evaluate cases in which the victim cannot perform normal physiological activities or has suffered loss of a structural organ.
- Aesthetic assessment: Consider the presence of scars in visible areas that could affect the individual’s self-perception. The assessment should also consider the impact on visible anterior teeth.
- Psychological assessment: A forensic psychological evaluation may be recommended due to the traumatic context of the assault or the resulting aesthetic or functional impairment.
- Following local regulations, apply the “Istanbul Protocol” where appropriate.
- Determine the medicolegal prognosis according to the internal regulations of each forensic service.
- The forensic evaluation may also indicate the need for additional examinations, such as imaging studies (X-rays, CT scans, or MRI) or laboratory tests, with particular emphasis on blood lead levels if a projectile remains embedded, especially in cases where the injury is of long standing (several months or years).

#### **Conclusion**

It is crucial to emphasise that, in cases where state agent violence and human rights violations are suspected, a bucomaxillofacial examination should be included as part of injury documentation, without disregarding the potential involvement of other affected structures. The limited literature on this subject may indicate an underrecognition of such injuries, which, particularly concerning dental structures, are often irreversible, with implications for biological tissue recovery as well as aesthetic and psychological harm. Furthermore, it is advisable to monitor levels of toxic components in individuals with projectiles retained in soft tissues, given the potential for long-term damage.

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# “Telefono”-Type Auditory Injuries in Migrants Crossing the Mediterranean: A Clinical Case Series

Marc Cassone<sup>1,2</sup>, Nicole Lessard<sup>1</sup> and Benilde Perez Amez<sup>1</sup>

1 MSF: Mediterranean Search and Rescue Operation

2 Department of Emergency Medicine, University of Vermont

## Keypoints:

- Migrants crossing the Mediterranean report having undergone physical violence in Libyan detention centres, including *telefono*.
- *Telefono*, or ear-cuffing, is a type of physical violence that can lead to complications including hearing loss, tinnitus, ear pain, tympanic membrane rupture, and ear infections.
- Healthcare workers treating vulnerable populations, such as migrants, should be aware of subtle presentations of different forms of violence.

## Abstract

This case series discusses three instances of *telefono*-type physical violence collected during a *Médecins Sans Frontières* (MSF) mission rescuing migrants crossing the Mediterranean from Libya. These cases demonstrate the various sequelae of repetitive ear-cuffing, including subjective hearing loss, tinnitus, ear pain, tympanic membrane rupture, and infection in this under-studied type of physical violence. The authors hope this case series further demonstrates the importance of awareness and recognition of subtle presentations of different types of torture.

**Keywords:** Ear Injury, Ear Cuffing, Tympanic Membrane Rupture, Libyan Detention Centres

## Introduction

Migrants and other people on the move are an especially vulnerable population. They are exposed to poor living conditions, environmental risks (extreme temperatures, floods, famines, etc.), infectious diseases, various types of violence, and dangerous journeys (across deserts, jungles, seas).

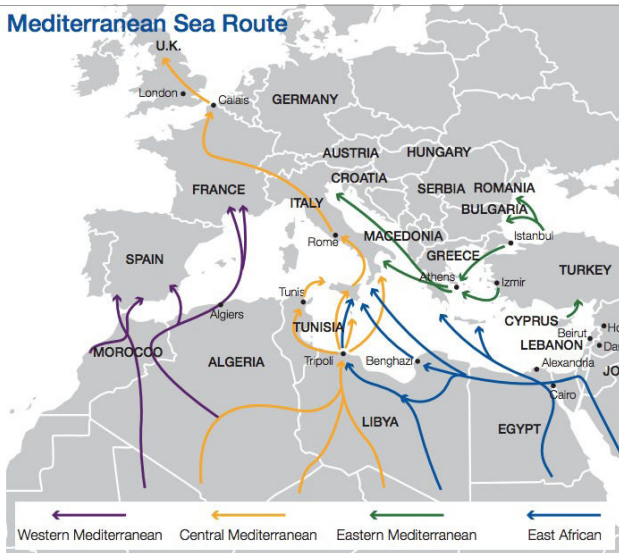
Global migration continues to rise; in 2020, there were an estimated 260 million international migrants worldwide (approximately 3.6% of the global population), not counting internally displaced people (McAuliffe & Oucho, 2024). Many migrants, whether in their country of origin or during transit, are at risk of physical violence and torture (International Rehabilitation Council for Torture Victims, 2017).

These cases were collected during the *Médecins Sans Frontières* (MSF) High Seas Mission in the Mediterranean. Es-

tablished in 2014, the mission serves as a Search and Rescue (SAR) and advocacy project for the hundreds of thousands of migrants crossing the Mediterranean from North African coastal waters with hopes of reaching Europe (Figure 1). This has been declared as one of the most dangerous and busiest migratory routes; in 2023 alone, 212,100 attempts were recorded across the Central Mediterranean (International Organization for Migration, 2024).

Many of the migrants, asylum seekers, and refugees welcomed onboard have been subjected to violent acts in both their countries of origin and during transit, including various forms of physical, mental, and sexual torture. In 2024, of the 2619 survivors rescued from the sea, 119 reported having undergone acts of physical violence (5%); however, this is suspected to be vastly underreported and under representative of true

**Figure 1.** Common Trans-Mediterranean Migration Routes (Source: World Economic Forum)



incidence, especially given limited time of interaction (two days on average) and sensitive nature of many of these injuries. Most of the injuries reported (85%) occurred in transit from their country of departure.

Most of these departures are from Libyan coastal waters, and many of the survivors have reported various acts of physical violence in Libyan detention centres. MSF, Amnesty International, and UNHCR have reported on and denounced the inhumane treatment of men, women, and child detainees in these centres (Médecins Sans Frontières, 2023; United Nations Human Rights Council, 2023; Amnesty International, 2021). This includes overcrowding, unsanitary conditions, poor access to food and water, and various forms of physical, mental, and sexual violence, often for financial or other gains (Médecins Sans Frontières, 2023). Many of these inhuman conditions have been corroborated by survivors on the *Geo Barrents*.

In December 2024, 45 survivors were rescued from the *Geo Barents* (Figure 2), a fibreglass boat, while travelling from Libya to arrive in Italy. Nationalities included Bangladeshi, Pakistani, and Tunisian. Thirteen of the 45 survivors (29%) rescued reported being physically, sexually, or mentally abused during transit. Three reported being subjected to *telefono* for not following orders or not providing money while in Libyan detention centres between 1-2 months prior.

**Figure 2.** S/V *Geo Barents*, the SAR rescue vessel for the MSF High Seas rescue operation. (Source: MSF Italy)



### *Telefono* as an Act of Violence

Many forms of physical torture will show visible scars, deformities, and physical limitations. However, some types of physical violence may not be initially apparent, yet still have lasting consequences. For example, *falanga*, the repeated beating of the soles of feet, may not always show dermatologic evidence of injury (scarring, skin hypertrophy, hyperpigmentation) or gross deformities, but may still cause chronic pain and ambulatory dysfunction (Amris et al., 2009).

*Telefono* is the repeated cuffing of the victims' ears, often with hands, and can be unilateral or bilateral. It is also known as "the hammer" (*chakoshi*), "the welcoming ceremony" (*khos-hamadgoui*), *piang piang*, and *kalot marasa* in different countries (Warborg-Larsen & Appel, 2018). This rapid increase in pressure inside the ear causes severe pain and can damage the auditory canal, including tympanic membrane rupture, scarring, cholesteatomas, and superimposed infections such as otitis media and otitis externa.<sup>9</sup> Outcomes can be worsened by a lack of hygiene or access to healthcare. Long-term sequelae may include auricular hematomas, scarring, chronic hearing loss, and tinnitus (Graessner, 1994; Sinding, 2000; Crosby et al., 2010). To date, limited data exists on this under-recognised and under-reported type of torture (Amris et al., 2009; Warborg-Larsen & Appel, 2018; Graessner, 1994; Sinding, 2000; Crosby et al., 2010).

### Cases

#### Case 1#

A 36-year-old Bangladeshi man with no reported comorbidities reported that he was repeatedly hit over his left ear approx-

imately one month prior while in a Libyan detention centre. His symptoms included persistent headache, left external and internal ear pain, and diminished hearing on the left. He denied tinnitus, ataxia, or bleeding. The external ear exam was unremarkable. Fiberoptic otoscopy showed a ruptured tympanic membrane and associated otitis media with purulence (Figure 3). He was treated with a course of oral amoxicillin. No otic suspension antibiotics were available onboard at the time. On Day 2 after rescue, he reported severe episodes of seasickness with dizziness and several episodes of emesis requiring Dimenhydrinate during high seas. The inner ear injury may likely have worsened these vestibular symptoms.

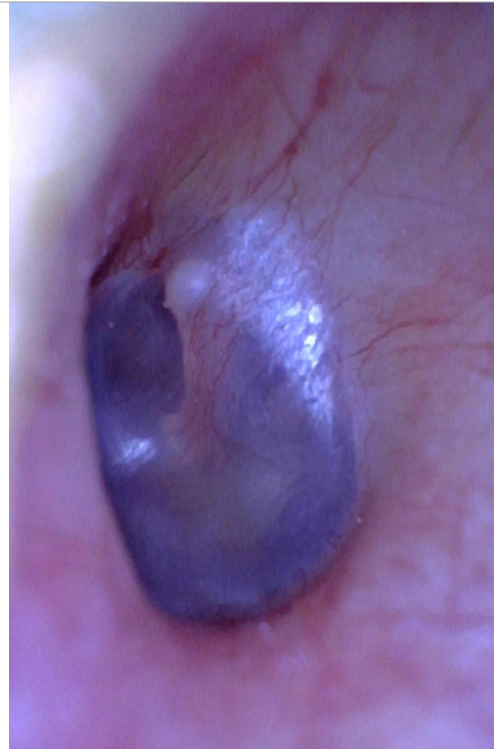
**Figure 3.** Fiberoptic otoscopy of ruptured left tympanic membrane with associated purulence and infection.



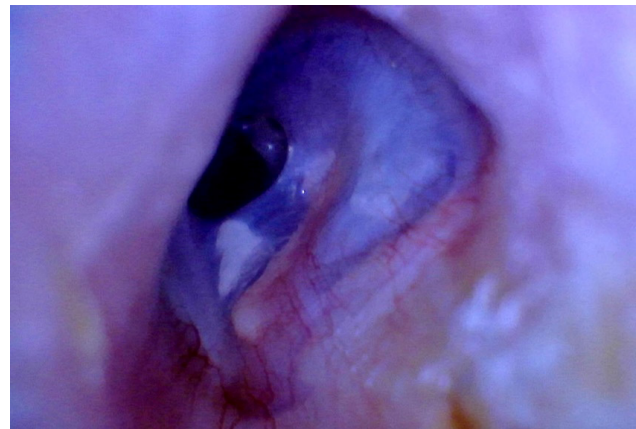
#### Case #2

A 26-year-old Bangladeshi male with no comorbidities reported that the event occurred two months prior while in a Libyan detention centre. He reported persistent left ear pain, partial hearing loss, and tinnitus. External and internal ear exams were without scarring or external signs of trauma (Figure 4). He denied any bleeding at the time of injury.

**Figure 4.** Fiberoptic otoscopy of intact left tympanic membrane of patient reporting hearing loss and tinnitus.



**Figure 5.** Fiberoptic otoscopy of ruptured right tympanic membrane and scarring of a patient reporting telefono-type physical violence.



#### Case #3

A 20-year-old Bangladeshi male with no comorbidities reported that the event occurred one month prior. He reported persistent tinnitus, partial hearing loss on the right, and internal ear pain. The external ear exam was unremarkable. Auditory canal



exam showed a ruptured tympanic membrane with some scarring (Figure 5).

On day four after rescue, the survivors were transferred to a migrant reception centre in Italy and lost to follow-up; evaluation of chronic symptoms and repeat exams were not obtained. Referrals were placed for specialist evaluation. Due to the brief period of the assessment and the sensitive nature of physical violence, it is possible that other cases were not reported, and the actual incidence of *telefono*-type injuries is underrepresented.

### Summary

This case series demonstrates the injuries and disabilities associated with *telefono*-type acts of physical violence occurring in Libyan detention centres. All three cases reported ear pain and hearing difficulties, indicating possible further auditory injuries not apparent on exam. Reported severe seasickness and tinnitus may indicate further injuries to aspects of the inner ear. Two cases had ruptured tympanic membranes, one of which had an associated infection. Patients with ruptured tympanic membranes should keep the ear canals clean and dry until the rupture closes. These often heal on their own, but cases with delayed healing should be referred to a specialist to consider patching (Limb et al. 2024). Tympanic membrane rupture with superimposed infection should be treated with oral antibiotics, and providers may consider adding topical otic antibiotics based on severity (Limb et al. 2024). Patients with persistent hearing loss or vertigo symptoms should be evaluated by hearing and balance specialists.

Providers caring for migrants and other vulnerable populations should understand the different types of torture and physical violence, especially those without obvious external signs of physical injuries. Survivors of detention centres with ear pain, hearing loss, or vestibular symptoms should be asked about and evaluated for *telefono*-type injuries and complications. Mental health sequelae of these are certainly under-reported, and the longitudinal care for these can be difficult in this mobile population.

Patients' verbal consent was given to collect fiberoptic otoscopy photos and testify.

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## A new birth in Italy: Founding of the Support Network for Survivors of Torture

Marco Bertotto<sup>1</sup>, Fabio Perocco<sup>2</sup>, and Giancarlo Santone<sup>3</sup>.



### New health needs linked to the torture-migration nexus in Italy

For at least two decades, Italy has been one of the main gateways into Europe for migrants and asylum seekers from Africa, the Middle East, and the Indian subcontinent. In a global context of restrictive and punitive migration policies and the ongoing “war on migration”, most are forced to take illegal routes, embarking on dangerous journeys and relying on criminal trafficking organisations. With this significant deterioration in the conditions of migration, violence and torture have become a structural part of the journey and of migration itself (Perocco, 2023). For example, those crossing through Libya or taking the Balkan route towards Italy are often subject to cruel, inhuman and degrading treatment (Perocco, 2022; Berta & Perocco, 2025).

Although most torture victims have been subject to torture in their countries of origin or during their migration journey, many migrants are also subject to injustices and human rights violations in Italy, due to the long and complicated procedure of seeking international protection, the inadequate reception system, exclusionary state policies, and institutional racism. For example, the systematic recourse to pushbacks and accelerated border procedures, the increasing rejection of asylum claims, and the use of administrative detention for both new arrivals and those being repatriated, creates “torturing environments” (Pérez-Sales et al., 2022) and contexts that favour mistreatment

– which have a powerful impact on the most vulnerable and those who have already been subject to torture.

There is thus an increasingly urgent need for the Italian health system to support victims of torture. This requires adequate resources, a multidisciplinary approach, and long-term rehabilitation processes, all of which go beyond the present capacities and normal operations of the Italian health system and the NGOs operating in this field.

### The Ministry of Health guidelines: Potential and limitations

The Italian state is responsible for setting guaranteed levels of care and monitoring their provision across the country. Regional authorities have complete autonomy in the planning and managing healthcare within their territories, as provided through Local Health Unit Authorities (Azienda Sanitaria Locale – ASL) and Hospital Trusts. The regions must ensure that patients receive all health services included in the Essential Levels of Care (Livelli Essenziali di Assistenza – LEA) determined by the government. In 2017, the Italian Ministry of Health published “Guidelines for the planning of assistance and rehabilitation interventions and for the treatment of mental disorders for persons who have been granted refugee and subsidiary protection status and who have suffered torture, rape or other serious forms of psychological, physical or sexual violence”<sup>4</sup>. In addition to highlighting the relevance and importance of this health need, the Guidelines set out the institutional framework for the organisation and provision of services for victims of torture.

The Guidelines aim to ensure appropriate and uniform interventions across the country, by assigning the coordination of care and rehabilitation to the Italian National Health System, which, as we have said above, is organised on a regional basis, in collaboration with private entities and non-profit organisations. They recommend a multidisciplinary, participatory, integrated, and holistic approach, which is relatively innovative for the Italian National Health System, which is usually organised on a sectoral basis.

The Guidelines recommend using linguistic-cultural mediation, which is considered essential both in the therapeutic relationship and in the procedure for the medico-legal certification of the violence<sup>5</sup>; the timely identification of torture victims by staff from the Local Health Unit Authorities and migrant reception centres; and the training of social and health workers

1 Medici Senza Frontiere Italia.

2 University of Venice, Italy. Correspondence to: [fabio.perocco@unive.it](mailto:fabio.perocco@unive.it)

3 Local Health Unit Authority Rome 1.

4 [https://www.salute.gov.it/portale/documentazione/p6\\_2\\_2\\_1.jsp?lingua=italiano&cid=2599](https://www.salute.gov.it/portale/documentazione/p6_2_2_1.jsp?lingua=italiano&cid=2599)

5 This is helpful for obtaining international protection or for avoiding administrative detention or repatriation.

to recognise the signs of suffering linked to traumatic experiences and to refer people to specialised rehabilitation services.

However, the Guidelines are rarely implemented and are respected in only a few regions. Most regional authorities have not explicitly incorporated them into formal acts to be implemented by Local Health Unit Authorities. Although there are some positive examples at the local level, these are isolated cases and often rely on the contribution of non-profit organisations. Furthermore, despite the various projects and efforts at collaboration within Local Health Unit Authorities, the absence of stable programming by regional authorities has meant that initiatives are often fragmentary, and networks of cooperation are mainly informal. In addition to a lack of adequate financial resources, there is currently no structured linguistic-cultural mediation service and a lack of professionals adequately trained in the early detection of torture victims, in the assessment of clinical profiles, and in the care of torture survivors.

### The founding of the Italian Support Network for Survivors of Torture

In the above-mentioned context, over the last two years, the main actors assisting torture survivors in Italy have come together to exchange their experiences and to begin a process aimed at strengthening rehabilitation programmes. In December 2024, the Italian Support Network for Survivors of Torture (Rete per il Supporto ai Sopravvissuti di Tortura – ReSST)<sup>6</sup> was established, bringing together public bodies, private entities, non-profit organisations, and NGOs that run specialised programmes or services for people who have suffered torture or other severe forms of intentional violence<sup>7</sup>.

Although created as a response to the torture-migration networks, ReSST concerns all survivors of torture. Its aims are: supporting the full implementation of the Guidelines and respecting international standards on human rights and the

prevention of torture; enhancing the good practices already operating in some Italian contexts; improving the availability and quality of services for torture survivors, including ensuring access to adequate rehabilitation programmes and other forms of support; promoting research, training, and professional development on these issues; and encouraging initiatives to roll-out rehabilitation programmes on a national scale. The ReSST aims to create a space for collaboration and confrontation to support the creation of an integrated system, ensure the early identification of torture victims and their access to rehabilitation programmes, increase the capacity to respond to the needs of torture survivors, strengthen instruments of prevention and monitoring, and inform and raise awareness among the public and within institutions on issues related to torture.

In early 2025, various new projects on regional programmes for the health of asylum seekers, funded by the Asylum, Migration and Integration Fund (AMIF), were set up in Italy. These projects aim to strengthen the capacities of the participating regions (17 out of 21) and their Local Health Unit Authorities to identify and care for asylum seekers affected by specific vulnerabilities and encourage the adoption and implementation of the Guidelines in the Italian regions. To this end, ReSST is engaged in institutional dialogue with the national and regional health authorities, the State–Regions Conference<sup>8</sup>, the Ministry of the Interior, and international organisations, to ensure the implementation of the Italian state's obligations as a signatory of the Convention against Torture as regards the rehabilitation of torture survivors. Last but not least, ReSST is committed to producing an annual report on its members' treatment and rehabilitation activities, which is presented each year on International Day in Support of Victims of Torture.

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<sup>6</sup> <https://controlatortura.it/>

<sup>7</sup> There are three types of ReSST members: associates, including health services, public bodies, private entities, and NGOs working in Italy to rehabilitate torture survivors and other severe forms of intentional violence by providing them with specialized support and pathways to recovery; observers, which includes organisations and experts engaged in torture prevention that do not directly manage rehabilitation programmes and services for survivors but instead contribute by exchanging knowledge and strengthening advocacy on the issue; and the Committee of Experts, which is an independent body composed of specialists with multidisciplinary expertise on issues of intentional violence, torture and victim rehabilitation, who contribute to scientific research, in-depth study in the different areas of intervention, and advocacy and awareness-raising activities.

<sup>8</sup> The State – Regions Conference fosters cooperation between the State, the Regions and the Autonomous Provinces by conveying the views of the Conference of the Regions and the Autonomous Provinces to the State.

Perocco, F. (2022). Torture et violence structurelle envers les migrants: le système de déshumanisation dans les Balkans. In F. Moussa-Babaci et al. (dir.), *Education et psychologie en temps de crises* (pp. 183-195). L'Harmattan.

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# OMCT Global Torture Index: A new measurement tool

Cecilia de Armas Michelis<sup>1</sup>

## Introduction

Torture and other forms of ill-treatment represent some of the most severe violations of human integrity and dignity. Yet, torture and ill-treatment remain widespread in many countries across the world and impunity for this crime is pervasive, constituting one of the primary obstacles to progress in the prevention and eradication of torture and ill-treatment. The lack of transparent, victim and survivor-centred and responsive mechanisms to process and sanction claims of torture and other ill-treatment leads to a global underreporting of such acts.

The Global SOS-Torture Index ('the Torture Index') aims to shed light on this crime by assessing the risk of being subjected to torture and other forms of ill-treatment in any given country. A thorough analysis based on comprehensive data, measuring the different dimensions of the eradication of torture, becomes crucial to identify trends and track progress and setbacks within and between countries and regions over time. The data has been collected and validated by OMCT members and partners with longstanding experience and local expertise on anti-torture and other human rights issues.

The universal anti-torture framework covers a comprehensive set of rights and obligations to eradicate torture. These are set out in the UN Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. From prevention to accountability and victims' rights, torture and other ill-treatment take place in detention settings, but also in extra-custodial settings, such as during protests, evictions, or day-to-day police operations. This crime is often perpetrated

against individuals or communities who have been historically marginalised and discriminated against. States need to put in place specific structures and safeguards to protect the rights of those who are more exposed to violence. It is equally crucial to promote and protect the role of individuals, institutions, and civil society organisations that defend the right to be free from torture and other ill-treatment.

The Torture Index's methodology is developed in partnership with members of the SOS-Torture Network as well as leading global anti-torture experts and implemented with a bottom-up approach, in which detailed first-hand information is gathered from local civil society organisations – mainly OMCT members and partners. Given their daily experience on the front line of the fight against torture in different contexts and different parts of the world, the almost 200 SOS-Torture Network members have an incomparable legitimacy to carry out this analysis. This is combined with a rigorous analysis and scoring methodology.

The OMCT Global Torture Index will be published on the 25 of June 2025, within the OMCT Global Week Against Torture, offering a comprehensive assessment of 26 countries across all regions of the world including Africa, Americas, Europe and Central Asia, Asia and MENA, with the intention to add more countries as the Index scales-up. We have selected the Index implementing countries based on strategic criteria to ensure relevance and effectiveness. Countries were chosen with attention to geographic diversity and the presence of pressing human rights issues, allowing the Index to reflect a broad global scope. Priority was given to countries where the OMCT has established members and close partners, ensuring strong local engagement and collaboration and a substantial base of relevant data, analysis, and reports, providing a strong foundation for evidence-based monitoring and advocacy. Lastly, we have selected countries that have undergone a review by the Committee Against Torture (CAT) in recent years or during the Index implementation year, aligning the information with international human rights mechanisms.

The Torture Index captures and assesses the progress on the various dimensions and obligations regulated by international human rights law under the following seven thematic pillars:

1. Political commitment against torture: Evaluation of the state's legal obligations, treaty ratifications, and implementation of core anti-torture commitments and public policies in line with international and regional frameworks at the national level.
2. Ending police brutality and institutional violence: Assessment of safeguards and oversight mechanisms to pre-



<sup>1</sup> Global Torture Index Coordinator at the OMCT, correspondence to: [cam@omct.org](mailto:cam@omct.org)

vent torture and other ill-treatment in the context of law enforcement operations and during arrest, police custody, and interrogation.

3. Freedom from torture while deprived of liberty: Evaluation of safeguards in detention facilities, ensuring decent conditions, legal protections, and humane treatment, with mechanisms for accountability and monitoring, especially for specific groups.
4. Ending impunity: Examination of mechanisms to ensure accountability for torture and other ill-treatment, including independent investigative and judicial mechanisms, effective remedies for victims, trained forensic services, and specific mechanisms to address accountability gaps in different contexts.
5. Victims' rights: Evaluation of the state's responsibility to provide holistic redress to torture victims, along with comprehensive rehabilitation, safety, and access to specialised services.
6. Protection for all: Assessment of the state's positive obligations to ensure the enjoyment of human rights and the right not to be subjected to torture and other ill-treatment of specific groups and individuals facing a higher risk – such as children, women, LGBTIQ+ individuals, and ethnic minorities—and the implementation of effective legal and institutional measures against violations by state and non-state actors.
7. Right to defend and civic space: Evaluation of the legal framework, institutional practices and risks faced by human rights defenders and civil society organisations due to their human rights work, focusing on the ability to operate freely, document abuses, and engage in decision-making processes without restrictions.

The Torture Index reviews states' compliance with the highest international standards against torture and ill-treatment, providing an overall assessment by scrutinising laws, policies, and their actual implementation. Key anti-torture standards include provisions set forth in:

- UN Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment and its General Comments (N° 2, 3,4)
- UN Optional Protocol to the Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment
- The UN Standard Minimum Rules for the Treatment of Prisoners.
- The UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials.

- Other crucial international and regional human rights instruments, standards, rules and guidelines.

### Methodology and approach

The Torture Index gathers first-hand information from local civil society organisations - mainly members and close partners of the SOS-Torture Network - annually. Given their daily, hands-on experience on the front line of the fight against torture in different contexts and across the world, network members are the best placed to gather quantitative and qualitative data to form the basis for the analysis.

The questionnaire is designed with a human rights-based approach, aiming to identify contexts, as well as individuals and groups, most at risk of torture and other cruel, inhuman and degrading treatment or punishment (CIDTP), e.g. women, children, LGBTIQ+ individuals, migrants and asylum seekers, ethnic and racial minorities.

The Index takes as the primary methodological reference for human rights measurement the OHCHR guide on human rights indicators. A questionnaire, designed to collect information about compliance with international standards, its implementation and impact on rights holders, based on the specific measurement objectives of the Index, includes the following types of indicators:

- Structural: reflecting a country's legal and policy framework in accordance with human rights, international treaties, instruments, and standards.
- Process: measuring the state's efforts to implement human rights commitments through public policies, regulations, programs, budgets, protocols, among others.
- Outcome: capturing groups' actual and/or perceived enjoyment of human rights and reflecting the impacts of the two indicators above.

### Participatory survey and validation procedure

The Index questionnaire included several steps to ensure a participatory approach. Firstly, the OMCT Secretariat drafted the Index methodology and questionnaires in line with international human rights standards, following multiple rounds of internal review by staff. After this process, the team conducted several bilateral meetings with key OMCT partners, renowned anti-torture experts, and organisations developing similar indexes. The objective was to initiate a first validation process of the methodology, identifying gaps in the questionnaire and the implementation process.

At a second instance, the Secretariat organised a Global Torture Index expert meeting in Geneva, involving a broader audience of partners and experts working in torture advocacy,

research, statistics, and decision-making bodies to discuss the Index in depth. The meeting included participation of experts and practitioners from across the globe to ensure that diverse views and systems were considered. The aim was to discuss the drafted methodology, questionnaire, and thematic pillars and identify ways to overcome implementation challenges. After this discussion, the questionnaire was thoroughly reviewed through thematic workshops.

Lastly, following the thematic workshops and methodology adaptations, the Index has been tested in 7 countries (2023) and an additional 14 countries (2024). At the end of this process, the OMCT Secretariat held meetings with the partners involved in the piloting to adjust the questionnaire, where applicable. The OMCT has also established an Index Steering Committee, which plays a key role in guiding the implementation of the Index, providing strategic direction, and overseeing progress to ensure transparency and accountability. The Committee is composed of eight members representing all five global regions.

### Index visualisation

The Index is a human rights measurement tool, and thus, for each country, the following key quantitative indicators are calculated:

- 7 thematic scores for each thematic pillar of torture and ill-treatment (score ranging from 0 to 100)
  - 1 aggregate torture and ill-treatment score, based on a weighted average of the seven pillars (score ranging from 0 to 100)
  - 1 expert-based data transparency and access to information scale, with the proportion of missing data per country to assess data reliability and transparency.
- Each of the above scores reflects the general level of compliance, implementation, and enjoyment of the right to be free from torture and other ill-treatment with a holistic approach. The scores range from 0 to 100, with 100 being the best possible (highest compliance with human rights standards surrounding the right to be free from torture and other ill-treatment) and 0 being the worst.
- Overall scores constitute the basis for the interactive online map on the Global Torture Index landing page, which will be published on June 25, 2025. The raw score will not be published in the first years, but rather five categories ranging from ‘very high’ to ‘low’ risk per country identified on a heat map using different colours, to allow users to easily and visually compare the level of compliance per country and to identify systemic issues.
- The Index webpage will include:
- Classification of risk levels across the seven thematic pillars.
  - Ten tailored recommendations provided for each country.
  - Highlighting good practices from governments and/or civil society actors.
  - Inclusion of survivor testimonies and storytelling.
  - Acknowledgement of organisations that collaborated on the Index.
  - Access to related resources and articles published on the OMCT website.

*Figure 1. OMCT members and partners participated in the first Global Torture Index meeting in Geneva (January 2023)*





### Data challenges

While developing and testing the index methodology, we encountered several challenges related to data collection, comparison, and analysis. Some of these are the complexity in measuring torture and other forms of ill-treatment and how to categorise the data (e.g. those based on perception, judgment, etc). Moreover, in some contexts and countries, there is a lack of accurate and trusted information, figures and sources on torture, as well as a lack of understanding of the broad concept of torture by some actors. During the elaboration and implementation of the Index, we take these challenges into high consideration so that they have as little negative impact as possible. It is important to highlight that during the first three years, the Index methodology is adjusting and evolving by integrating a regular learning and review process to identify possible gaps and/or areas of improvement. This process is done with the expertise and support of the Index Steering Committee, OMCT staff, members and partners, anti-torture experts and academia.

### The right of access to information's key role in the index

#### *What is the Right of Access to Information?*

Protecting the right of access to information is vital for ensuring the transparency and accountability of public institutions—cornerstones of participatory democracy and good governance. This right empowers civil society organisations, journalists, and individuals to scrutinise the conduct of public bodies, expose human rights violations, and foster informed public debate. It enhances participation in decision-making and strengthens the democratic process. Also referred to as the right to information, it is a fundamental attribute of the freedom of expression. Greater openness and transparency build trust and confidence in pub-

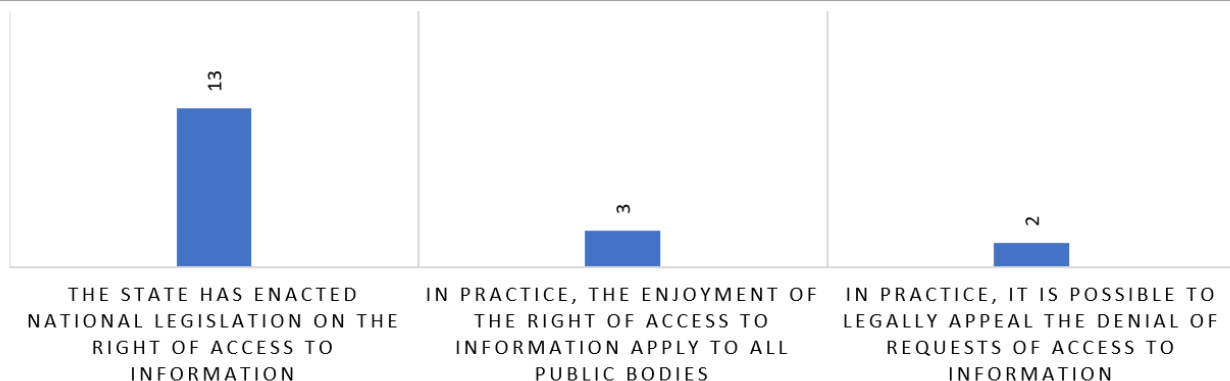
lic authorities while serving as powerful tools to combat corruption and misinformation, empowering citizens and human rights defenders to safeguard rights and prevent abuses. Enabling vulnerable groups to exercise their rights more effectively becomes a vehicle for promoting equality and justice.

Access to information constitutes a vital safeguard against torture and other ill-treatment. Prisons and other places of detention are, by definition, out of the public eye. Thus, authorities have an obligation to produce, publish, and disseminate data, regulations, and documents related to prisons' management, the rights and treatment of detainees, and remedies available, among other things. Major gaps in access to information in prisons were laid bare in the context of the management of the COVID-19 pandemic.

#### *Lessons learned from the Global Torture Index implementation*

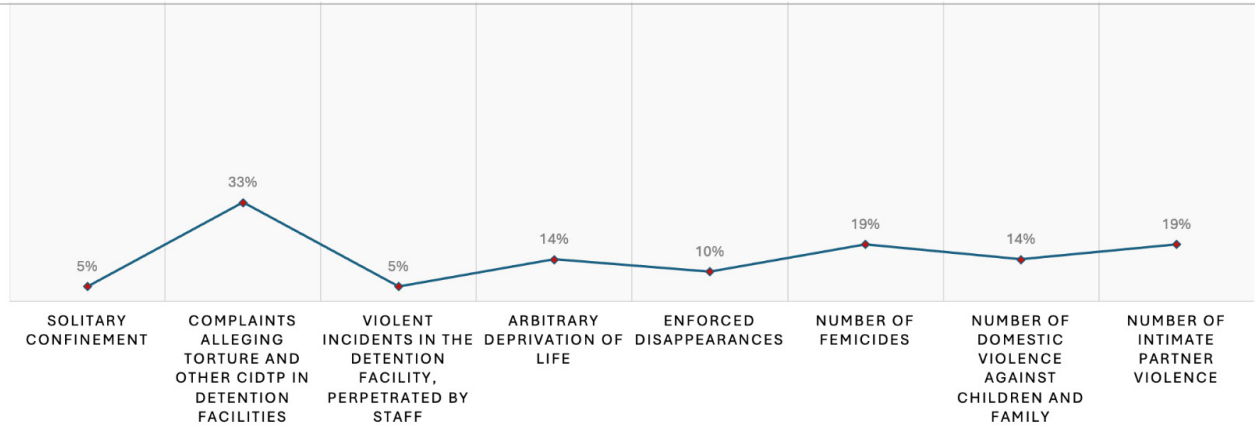
Within the pilot phase of the Global Torture Index implementation in 2024, we have confirmed the existence of serious challenges in access to information in all 21 measured countries, from all regions. The Index serves as a tool for identifying data gaps by highlighting the (un)availability of information across specific countries, both in the absence of a specific legislation and in the lack of availability, in practice, of data regarding number of cases of torture and investigations, protocols used by law enforcement, type of weapons used, oversight mechanisms in public offices, among others. In the figures below you will find some findings identified in the 21 countries measured in 2024: Bahrain, Belarus, Colombia, Congo, El Salvador, Ethiopia, Hungary, India, Italy, Kyrgyzstan, Libya, Mexico, Moldova, Nigeria, Pakistan, the Philippines, the Russian Federation, Spain, Togo, Tunisia and Türkiye.

**Figure 2.** *Right of access to information: Index pilot phase in 21 countries.*





**Figure 3.** Information available to the public: Index pilot phase in 21 countries



**Figure 4.** Challenges in Accessing Information and Data Gaps in Monitoring Torture and Ill-Treatment.



Even if there is a national law on access to information, many of these fail to meet international or regional standards due to the following issues:

- Overly broad or vaguely framed exemptions, not following international standards' definitions.
- The law is not accessible in all national languages.
- Lack of disaggregated data.
- Lack of independent oversight mechanisms.
- Inadequate or non-existent appeals mechanisms.



In practice, there are **barriers that hamper the access of the information**, including:

- Poor record-keeping.
- Inadequate capacity and resources.
- Inadequate training for public officials to handle information requests.
- Insufficient resources to respond effectively.
- Released or requested information may be delayed or incomplete.



Several challenges and gaps are recognised in the collection and dissemination of information related to the implementation of obligations set forth in the **Convention against Torture** and other instruments regulating criminal justice systems. In many countries, there is a lot of opacity when it comes to crucial data affecting persons deprived of liberty, their families and the general public, such as statistics regarding deaths in custody, number of persons that have contracted infectious diseases, regulations and restrictions in place. Beyond the deprivation of liberty context, information is often scarce when it comes to data on excessive use of force by law enforcement officials, disciplinary and criminal sanctions against law enforcement officials, among others.



**Data gaps and inadequate definitions of torture, ill-treatment and other human rights violations in line with international standards**, prevent the Index from fully reflecting specific challenges, risk factors, trends in the analysed countries as they are frequently hidden. This situation poses a big challenge and hampers the completeness of results, elaboration of tailored advocacy strategies and the identification of trends.

Human rights defenders (HRDs) and civil society organisations (CSOs) within their work on documentation of human rights violations and advocacy rely on data published either by governments, international organisations, victims, or other actors such as the NPM, NHRI, academia, etc. They need to access public information to publish reports, support victims, engage in dialogue with governments and denounce abuses. By accessing data on torture and ill-treatment, civil society can identify patterns of violations, groups and contexts most affected as a prevention tool, types of weapons and/or techniques that are causing more harm so as to revise laws, and protocols on the use of force and their implementation by law enforcement officials. We can also understand how the justice system is dealing with the investigation and trials of cases of torture and ill-treatment, with a focus on groups such as women and children, as well as identifying if victims' redress is adequate.

Every state has the obligation to fulfil the right to information by producing and regularly publishing statistical information that would enable the general public, civil society organisations and human rights defenders to:

- Hold human rights violations and perpetrators to account
- Formulate and add weight and evidence to submissions and human rights claims, for example, to submissions to the UN and regional human rights mechanisms, to provide contextual data.
- Publish and analyse statistics without fear of reprisal
- Measure and demonstrate human rights issues and identify trends.
- Track progress and/or regression, including early warning.
- Advocate for the compliance with international human rights and statistical standards, including the United Nations Principles for Official Statistics, for their data collection, storage and dissemination of statistical information and analysis.

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# Personal sufferings for criticism over WHO Regional Director Nominee

S M Yasir Arafat<sup>1</sup>

Dear Editor-in-Chief:

Sheikh Hasina, former Prime Minister of Bangladesh from 2009 to August 2024, has faced criticism regarding electoral manipulation, sheer corruption, embezzlement, torture of political opposition, and human rights violations such as extrajudicial killings (a report indicated 2597 persons were killed in 13 years of Hasina regime), enforced disappearances in “Aynagar” (House of Mirrors) (Ahasan, 2023). She has been accused of restricting freedom of speech, censoring the press, and manipulating the judiciary for political gain (United Nations, 2025).

The “July Mass Uprising (Monsoon Revolution)” led to the ousting of Sheikh Hasina after 15 years in power. The protests began in July 2024 with students demonstrating against a quota system for civil service jobs (Human Rights Watch, 2025; United Nations, 2024). The government’s violent crackdown on protesters resulted in at least 1400 deaths, thousands of injuries, and more than 11,700 arrests (United Nations, 2025; TBS Report, 2024; The Guardian, 2024; Human Rights Watch, 2025).

As an active mental health researcher living in Dhaka, Bangladesh, I used to share important recent research papers and significant social issues affecting the community’s mental health in my social media profiles. On September 23, 2023, I shared a status on my Facebook profile (Fig. 1) mentioning a paper published in The Lancet criticising Saima Wazed’s nomination for World Health Organization (WHO) Regional Director for South-East Asia. As the daughter of Sheikh Hasina, her nomination raised concerns about nepotism and political influence in the selection process. Critics questioned her qualifications, noting her background in autism advocacy rather than extensive public health experience (Burki, 2023). This situation led to questions about the transparency and fairness of the selection process (Buse et al., 2024).

1 Department of Psychiatry, Bangladesh Specialized Hospital, Dhaka, Bangladesh.

Correspondence to: [arafatdmc62@gmail.com](mailto:arafatdmc62@gmail.com)

On September 27, while I was in the morning ward round, I was called to attend my college office (Enam Medical College, Savar, Dhaka). My principal and vice principal informed me that my status was noticed by Sheikh Hasina, who ordered the Directorate General of Health Services (DGHS) to take action by that day and send proof of action via WhatsApp. My Principal suggested I resign from the job. I declined to do so. After about an hour, my institute sent me a termination letter without mentioning the reason for termination.

This turned my world upside down. It created sudden uncertainty in every aspect of my life. It took away my sleep, my peace, my academic writing, and my clinical practice due to the perceived and real threat of enforced disappearance, even extra-judicial killing (United Nations, 2025; Ahasan, 2023). My colleagues informed me to send my family to my village swiftly, change my mobile phone, and hide in a safer place with concerns of enforced disappearance, as there were such incidents. My colleagues were afraid of being connected with me to avoid harassment due to my incidents, and none of them protested it.

Benar News investigated the issue and inquired of the principal, vice-principal, and Chairman. After the investigation, the institute reinstated my job on September 30, 2023. Then, I expressed my safety concerns to the principal, and later, I finally resigned due to my perceived intimidation and fear of enforced disappearance.

Figure 1. Screenshot of a Facebook status.



The event raises fundamental concerns about human rights, such as freedom of speech and workplace safety. Furthermore, it resulted in an acute stress reaction to a psychiatrist working in a medical college setting in Bangladesh with immense fear of forced disappearance. The event set an example of an extreme lack of freedom of speech, even sharing a scientific paper, when it goes against the family members of former Prime Minister Sheikh Hasina. It has created fear among other community members and has fostered a culture of fear so that people dare not protest. Secondly, it revealed extreme job insecurity. They sacked me within an hour without considering any aspects of labour law. Thirdly, although it did not happen, some of my colleagues raised concerns related to my enforced disappearance based on their collective memory during the Hasina regime in Bangladesh.

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