

# An Epidemiological Analysis of Terrorist Attacks in the Nordic and Baltic Countries from 1970 through 2020

Harald De Cauwer;<sup>1</sup> Fredrik Granholm;<sup>2</sup> Amir Khorram-Manesh;<sup>3</sup> Dennis G. Barten;<sup>4</sup> Derrick Tin;<sup>5</sup> Luc J. Mortelmans;<sup>6</sup> Francis Somville;<sup>7</sup> Gregory R. Ciottone<sup>8</sup>

1. Faculty of Medicine and Health Sciences, University of Antwerp, Wilrijk, Belgium; Department of Neurology, Sint-Dimpna Regional Hospital, Geel, Belgium
2. Swedish Air Ambulance (SLA), Mora, Sweden
3. Institute of Clinical Sciences, Department of Surgery, Sahlgrenska Academy, Gothenburg University, Sweden; Gothenburg Emergency Medicine Research Group (GEMREG), Sahlgrenska Academy, Gothenburg, Sweden; Institute of Health and Care Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden
4. Department of Emergency Medicine, VieCuri Medical Center, Venlo, the Netherlands
5. Department of Emergency Medicine, Beth Israel Deaconess Medical Center, Boston, Massachusetts; Harvard Medical School, Boston, Massachusetts
6. Center for Research and Education in Emergency Care, University of Leuven, Leuven; REGEDIM, Free University Brussels, Brussels; Department of Emergency Medicine, ZNA Camp Stuivenberg, Antwerp, Belgium
7. Department of Emergency Medicine, Sint-Dimpna Regional Hospital, Geel, Belgium; Faculty of Medicine and Health Sciences, University of Antwerp, Wilrijk, Belgium
8. Director, BIDMC Disaster Medicine, Beth Israel Deaconess Medical Center; Associate Professor, Harvard Medical School, Boston, Massachusetts, USA

## Correspondence:

Dr. Harald De Cauwer  
Department of Neurology  
AZ St Dimpna, J.B Stessenstraat 2  
2440 Geel, Belgium  
E-mail: [harald.decauwer@ziekenhuisgeel.be](mailto:harald.decauwer@ziekenhuisgeel.be)

## Abstract

**Background:** Russia's annexation of Crimea in 2014, and the recent Russo-Ukrainian war that started in 2022, were triggers that radically changed the perception of security in the Nordic and Baltic countries. The on-going Russian hybrid war has resulted in a renewed global interest in the safety and security of many countries (eg, the Nordic-Baltic Eight). The prospective North Atlantic Treaty Organization (NATO) membership of Finland and Sweden may drastically change the regional military and political landscape.

The objective of this study was to identify and characterize all documented terrorist attacks in this region as reported to the Global Terrorism Database (GTD) from 1970 through 2020.

**Methods:** The GTD was searched using the internal database functions for all terrorism incidents in the Nordic-Baltic states: Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, and Sweden.

Temporal factors, location, target type, attack and weapon type, perpetrator type, number of casualties, and property value loss were collated. Results were exported into an Excel spreadsheet for analysis.

**Results:** There were 298 terrorism-related incidents from 1970 through 2020. Most attacks occurred in Sweden, followed by Norway and Finland. No entries were recorded for the Baltic states prior to their independency in 1991. The 298 incidents resulted in a total of 113 fatalities and 277 injuries.

Facility/infrastructure attacks were the most frequently identified attack type (35.0%), followed by bombings and explosions (30.9%). Armed assaults were responsible for 80 fatalities and 105 injuries, followed by bombings/explosions with 15 fatalities and 72 injuries. The predominant target types were immigrants and refugee shelters (64/298 incidents). In only 33.6% of the incidents, perpetrators were known. Right-wing assailants represented the largest group, accounting for 27 incidents.

**Conclusion:** From 1970 through 2020, there were 298 terrorist attacks in the Nordic-Baltic Eight. Sweden accounted for 50% of incidents.

The profile of terrorist attacks was very diverse, as were the perpetrators and targets. Every country had its own incident characteristics. The surge of right-wing extremism must be closely monitored.

**Conflicts of interest/funding:** The author(s) declare none. The authors state no financial disclosure.

**Keywords:** Counter-Terrorism Medicine; hybrid war; mass migration; right-wing extremism; terrorism; warfare

## Abbreviations:

GTD: Global Terrorism Database  
GTI: Global Terrorism Index  
NCT: Nationellt Centrum för Terrorhotbedömning [National Center for Terror Threat Analysis]  
PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses  
START: Study of Terrorism and Responses to Terrorism

**Received:** March 10, 2023

**Revised:** April 18, 2023

**Accepted:** April 29, 2023

doi:[10.1017/S1049023X23005794](https://doi.org/10.1017/S1049023X23005794)

© The Author(s), 2023. Published by Cambridge University Press on behalf of the World Association for Disaster and Emergency Medicine. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.



De Cauwer H, Granholm F, Khorram-Manesh A, Barten DG, Tin D, Mortelmans LJ, Somville F, Ciottone GR. An epidemiological analysis of terrorist attacks in the Nordic and Baltic countries from 1970 through 2020. *Prehosp Disaster Med.* 2023;38(3):401–408.

## Introduction

The on-going Russo-Ukrainian war has resulted in a renewed global interest in the safety and security of the Nordic and Baltic states. Finland being a new member and Sweden being a prospective member of the North Atlantic Treaty Organization (NATO; Brussels, Belgium) may drastically change the regional military and political landscape.

Geographically and historically, there are both similarities and differences between the Nordic (Denmark, Finland, Iceland, Norway, and Sweden) and Baltic (Estonia, Latvia, and Lithuania) states.<sup>1–3</sup>

The first and second World Wars affected the individual countries differently, but the Nordic countries continued to share much of the social and economic development after 1945. The Baltic countries were occupied by the Soviet Union until 1991, when the Nordic-Baltic relations again intensified.<sup>4</sup>

The past 20 years have seen growing differences within the region with regards to social inequality, migration, and trends in certain types of violent crime. In this aspect, Sweden has had a quicker increase in income inequality, together with a considerably higher migration, and the highest rate of crime-related shootings and bombings.<sup>5–7</sup>

Climate change and the competition between the Great Powers have put the region in the geopolitical spotlight with hybrid warfare activities.<sup>8</sup>

For example, Russia's annexation of Crimea in 2014 was a trigger that radically changed the perception of security in the Baltic countries. Since then, there rises the future possibility of a hybrid war progressing into conventional war and a repeat of the Crimea scenario throughout the Baltic regions. The threat from Russia's policy relying upon the strategic concept of rebuilding the sphere of influence in the countries of the former Union of Soviet Socialist Republics is what connects the internal security of many countries.<sup>9,10</sup>

The objective of this study was to identify and characterize all documented terrorist attacks in the eight states forming the Nordic-Baltic region as reported to the Global Terrorism Database (GTD) from 1970 through 2020.

## Methods

A database search of the GTD was performed by using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standard.<sup>11</sup>

The GTD is an open-source database containing over 209,000 global terrorism incidents that occurred in the period from 1970–2020. The GTD is maintained by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland (Baltimore, Maryland USA).<sup>12,13</sup>

The GTD defines a terrorist attack as follows: “*The threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation.*”<sup>12</sup>

To be considered for inclusion in the GTD, the following three attributes must all be present:

1. The incident must be intentional;
2. The incident must entail some level of violence or immediate threat of violence; and
3. The perpetrators of the incidents must be subnational (ie, state terrorism is not included).

Additionally, to be included in the database, two out of three of the following criteria must be present:

1. The act must be aimed at attaining a political, economic, religious, or social goal;
2. There must be evidence of an intention to coerce, intimidate, or convey some other message to a larger audience than the immediate victims; and/or
3. The action must be outside the context of legitimate warfare activities.

An extensive description of their origin and the data collection methodology can be found in the GTD codebook on the START web site.<sup>12,13</sup>

The full dataset of the GTD was searched for terrorist attacks that occurred in Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, and Sweden: the so-called Nordic-Baltic Eight. The Faroe Islands are not listed in the GTD. As the Baltic states only proclaimed and gained independence in September 1991, incidents prior to this date are lacking. The authors searched for incidents in the capitals of the three Baltic states prior to independence, but likewise, there were no extra entries. Due to the loss of index cards from 1993 in the GTD database, the full data of incidents from this year are unavailable. However, country-level statistics for 1993, including the number of incidents, the number of fatalities, and the number of injuries, are available in the appendix of the GTD Codebook.<sup>13</sup>

Cases in which there was insufficient information on the number of fatalities/injured and/or the target type were further explored using reviews of gray literature. Even if this resulted in no extra information on casualty number, it was decided to include the incidents as there was still information about the types of targets, perpetrator, attack, and/or weapon.

Finally, incidents coded as “Doubt Terrorism Proper” were excluded.<sup>13</sup>

Data collected per incident included temporal and spatial factors, location (country, world region), type of target, attack and weapon type, perpetrator type, number of casualties, and value of property damage.

Each entry was reviewed manually by the lead researcher (HDC) for inclusion or exclusion. A second author (DB) reviewed each entry, as well as the excluded incidents. In case of doubt or discrepancies, a third and fourth author (LM/DT) advised on the final decision. All collected data were exported into Excel spreadsheets (Microsoft Corporation; Redmond, Washington USA) and analyzed descriptively. Chi-squared tests were applied to evaluate the trends of incidents over time and the differences in casualties, conducted with a significance level of  $P < .05$ .

## Results

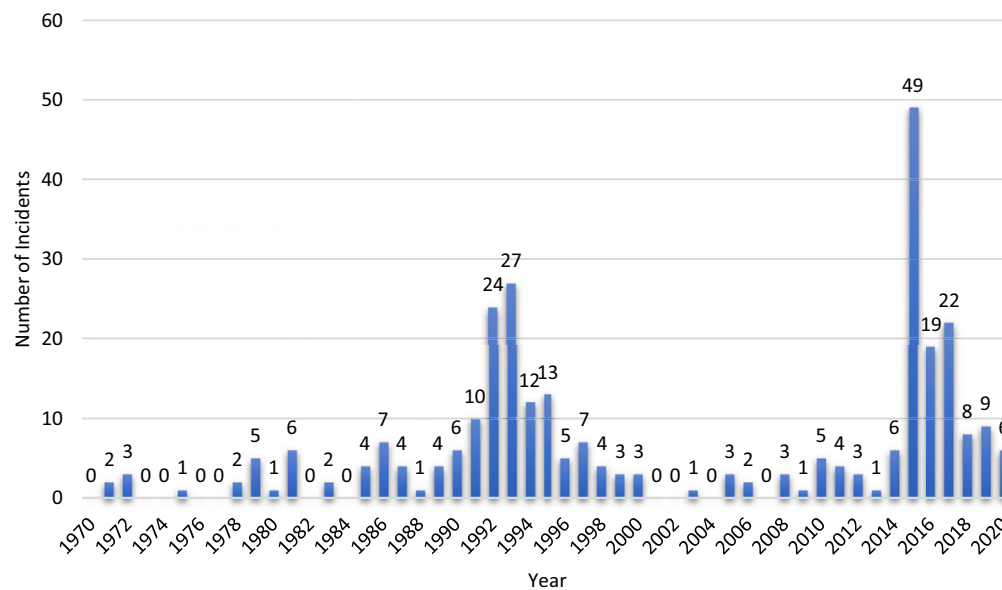
From 1970 through 2020, the GTD contained 286 incidents that occurred in one of the eight Nordic-Baltic states. After manual

Country	Number of Entries by Search Term "Country"	Duplicates	Incidents with Doubtful Terrorism	Entries from 1993 in Codebook	Final Number Included
Denmark	45	-1	-3	6	47
Estonia	15	0	-1	5	19
Finland	25	0	-2	0	23
Iceland	4	0	0	0	4
Latvia	17	0	-2	1	16
Lithuania	10	0	0	3	13
Norway	24	0	-4	7	27
Sweden	146	0	-2	5	149
<b>Total</b>	<b>286</b>	<b>-1</b>	<b>-14</b>	<b>27</b>	<b>298</b>

De Cauwer © 2023 Prehospital and Disaster Medicine

**Table 1.** PRISMA Selection of Incidents in the GTD, Two Exclusion Steps, and Final Set of Entries from 1993 from a Separate List in the GTD Codebook

Abbreviations: PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses; GTD, Global Terrorism Database.



De Cauwer © 2023 Prehospital and Disaster Medicine

**Figure 1.** Number of Incidents per Year from 1970 through 2020.

Note: There were no registered incidents in 1970.

review of the incidents, 14 incidents that were probably not terrorism-related and one duplicate were excluded. An additional 27 entries were found in the separate list of incidents that happened in 1993, available in the GTD Codebook. A final number of 298 incidents was considered eligible for further analysis (Table 1).

#### Events per Country

With 149 (50%) out of 271 attacks, the most frequently affected country was Sweden (Table 1). Denmark ranked second with 47 (15.8%) attacks, followed by Norway with 27 (9.0%) attacks (Table 1), all Nordic states. The total number of incidents that occurred in the Nordic states was 250. The three Baltic states accounted for only 48 terrorist incidents.

#### Events per Year and Decade

The number of incidents per year are shown in Figure 1. The years with the most incidents were, in declining order, 2015 ( $n = 49$ ), 1993 ( $n = 27$ ), 1992 ( $n = 24$ ), 2017 ( $n = 22$ ), and 2016 ( $n = 19$ ).

There was a distinct pattern between the Nordic and Baltic states. Because the Baltic states have only been independent since 1991, there were no entries for the first two decades. In these countries, most incidents were registered in the nineties. This contrasts with the Nordic states where most incidents occurred in the last decade (2011–2020), 2015 through 2017 being the most eventful (Table 2; Figure 1). The highest number of attacks per year in one country was observed in Sweden in 2015 ( $n = 35$ ), dominated by a series of attacks against immigrants or (planned) facilities for housing refugees.

A chi-square test to evaluate the difference in the number of attacks per decade showed a significant difference in the number of attacks:  $X^2 = 1002$ ;  $P < .00001$  (Appendix A).

#### Number of Victims

During the five decades of this analysis, 298 incidents resulted in 113 fatalities and 277 injuries. Four perpetrators were killed during an incident, and three other assailants were injured (Table 3). The

Country	1971-1980	1981-1990	1991-2000	2001-2010	2011-2020	Total
Denmark	5	15	17	2	8	41
Estonia	0	0	17	0	2	14
Finland	0	1	3	1	18	23
Iceland	0	2	0	0	2	4
Latvia	0	0	15	0	1	15
Lithuania	0	0	11	0	2	10
Norway	1	3	13	3	7	20
Sweden	8	13	32	9	87	144
<b>Total</b>	<b>14</b>	<b>34</b>	<b>108</b>	<b>15</b>	<b>127</b>	<b>298</b>

De Cauwer © 2023 Prehospital and Disaster Medicine

Table 2. Number of Terrorist Attacks per Decade and per Country

Country	Total Fatalities	Total Injured	Killed Perpetrators	Injured Perpetrators
Denmark	4	74	0	1
Estonia	3	14	1	0
Finland	2	14	0	1
Iceland	0	0	0	0
Latvia	1	1	0	0
Lithuania	2	4	0	0
Norway	79	89	0	0
Sweden	22	81	3	1
<b>Total</b>	<b>113</b>	<b>277</b>	<b>4</b>	<b>3</b>

De Cauwer © 2023 Prehospital and Disaster Medicine

Table 3. Number of Fatalities and Injured per Country, 1970-2020

two incidents listed in the GTD causing the most casualties occurred the same day in Norway (July 22nd, 2011) when Anders Breivik first lit the fuse in his vehicle-borne improvised explosive device, parked in Oslo, killing eight people and injuring another 15. Afterwards, an even more devastating attack occurred when the same assailant opened fire on a Youth Camp on the Island of Utøya. This second attack caused 69 fatalities, including teenagers. Another 60 people were injured.<sup>14,15</sup>

#### Attack Types and Weapon Types

Facility/infrastructure attacks were the most frequently identified attack type (n = 104; 35.0%), followed by bombings and explosions (n = 92; 30.9%); Table 4. As a result of this, the predominant weapon types were incendiary (n = 107; 35.9%), explosives (n = 91; 30.5%), and firearms (n = 29; 9.7%). Other weapon types were less common (Table 4).

In only three incidents, chemical poisoning was used. In one attack in Stockholm, Sweden in 1979, the ambassador to Zaire was killed, possibly by political enemies of the ambassador, who was the brother of Zaire's President Mobutu Sese Seko.<sup>16</sup>

Two other attacks – causing no victims – were related to the Jaffa orange poisoning with mercury, where ultimately 31 poisoned oranges were found in six European countries. The attack was claimed in the name of the Arab Revolutionary Army, a pro-Palestine terror group.<sup>17-19</sup>

Armed assaults were responsible for most of the casualties, followed by bombings/explosions (Figure 2). The number of casualties per weapon type correlated with the attack type: the use of firearms caused the most casualties, while explosives caused the

Attack Type	Number	Weapon Type	Number
Armed Assault	34	Chemical	3
Assassination	14	Explosives	91
Bombing/Explosion	92	Explosives, Firearms	1
Bombing/Explosion, Armed Assault	1	Explosives, Vehicle	1
Facility/Infrastructure Attack	104	Firearms	29
Hijacking	5	Incendiary	107
Hostage Taking	2	Melee	7
Unarmed Assault	3	Melee, Incendiary	1
Unknown	43	Other	2
		Unknown	54
		Vehicle	2

De Cauwer © 2023 Prehospital and Disaster Medicine

Table 4. Number of Incidents per Attack Type and Weapon Type for All Eight Countries

second highest human toll (Figure 3). As previously mentioned, in the Utøya armed assault type attack, firearms were used causing an unprecedented number of casualties in the Nordic-Baltic states.

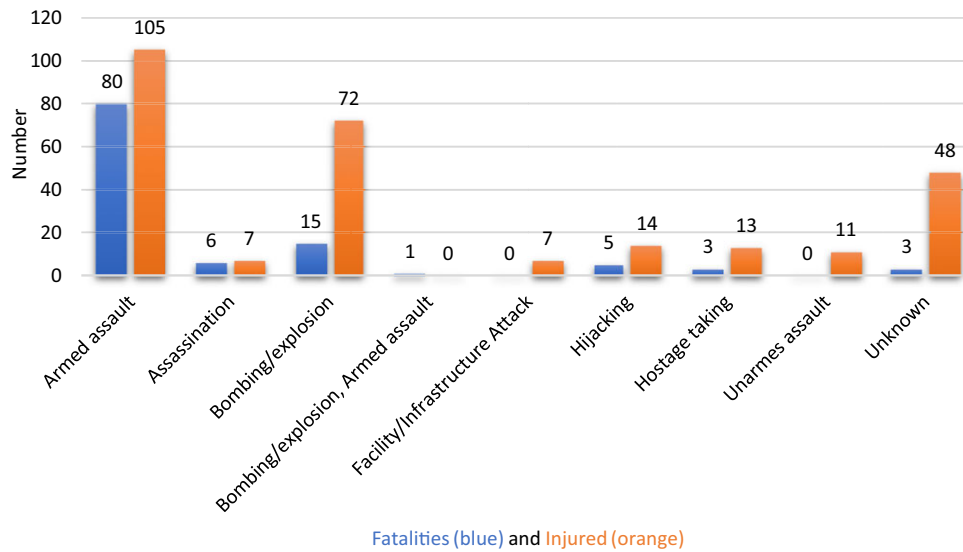


Figure 2. Fatalities and Injured per Attack Type.

De Cauwer © 2023 Prehospital and Disaster Medicine

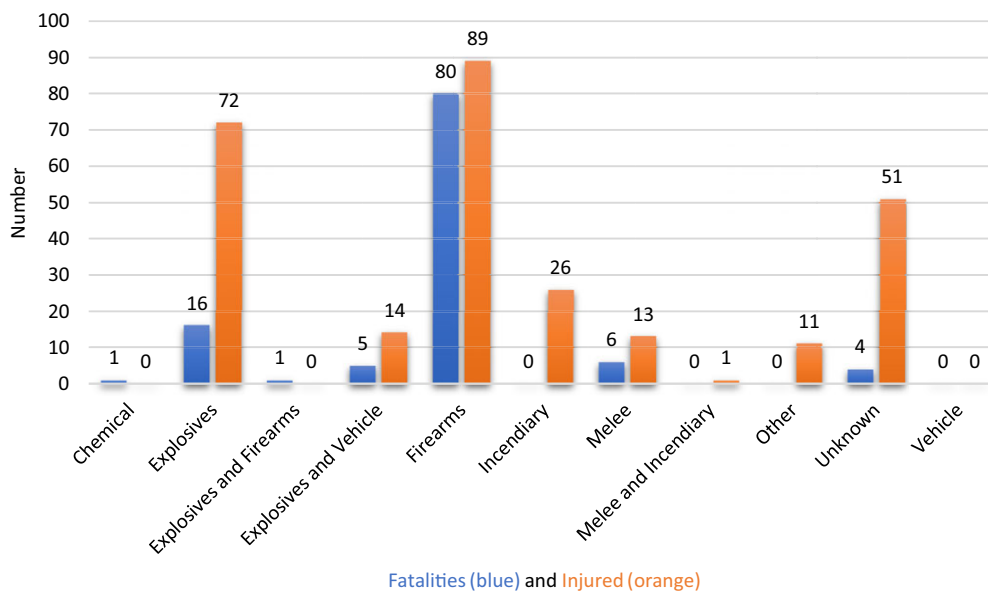


Figure 3. Fatalities and Injured per Weapon Type.

De Cauwer © 2023 Prehospital and Disaster Medicine

*Target Type and Perpetrator Type*

In this series, very different factions were active, aiming at different targets (Table 5). Private citizens and property were the most frequent target, followed by governmental targets, both diplomatic and general, religious figures/institutions, and business. Other target types were less frequent (Table 5).

Further manual analyses of the targets revealed that 29 houses of worship were attacked. Diplomatic targets consisted mainly of embassies.

The predominant targets were immigrants and refugee shelters (n = 64 incidents). Thirteen entries were from politicians and political parties. Two cartoonists and one writer were targeted.

Foreign targets listed in this series represented Jewish, Turkish, Kurdish, British, Iranian, American, and German assets.

Telecommunication masts were the newest target in 2020 as revealed in an earlier study on COVID-19-related terrorist attacks.<sup>20</sup> In this series, only one such an attack in Finland, probably related to a conspiracy theory regarding the link between 5G radio waves and the COVID-19 pandemic, was listed.

In this series, only one hospital was targeted. In fact, in 1987, a lone wolf detonated one pipe bomb in the basement of Glostrup Hospital, and police removed a non-detonated bomb in Herlev Hospital, Denmark.<sup>21</sup>

Various perpetrator groups and concomitant motives were mentioned in the GTD. These are listed in Table 5. Unfortunately, in 198 (66.4%) incidents, perpetrators were unknown.

Right-wing assailants were predominant in those incidents a perpetrator was registered, and accounted for 27 incidents: 19 in

Target Type	Number	Perpetrator Type	Number
Airports and Aircraft	14	Anarchists	4
Business	26	Animal Rights Extremists	3
Educational Institution	4	Anti-Immigrant Extremists	3
Food or Water Supply	2	Anti-Iranian Government Protesters	4
Government (Diplomatic)	30	Anti-LGBT Extremists	1
Government (General)	24	Anti-Muslim Extremists	12
Journalists & Media	5	Anti-Soviet Protesters	1
Maritime	1	Anti-War	1
Military	4	Communist Extremists	3
Mixed targets	7	Conspiracy Theory Extremists	1
Police	7	Fascist Extremists	2
Private Citizens & Property	101	Kurdish Extremists	7
Religious Figures/Institutions	28	Left-Wing Extremists	1
Telecommunication	1	Muslim Extremist	19
Terrorists/Non-State Militia	1	Neo Nazi Extremists	21
Tourists	1	Right-Wing Extremists	2
Transportation	10	Separatist Extremists	14
Unknown	32	Unknown	198
		White Supremacists	2

De Cauwer © 2023 Prehospital and Disaster Medicine

**Table 5.** Target Type and Perpetrator Type  
Abbreviation: LGBT, lesbian, gay, bisexual, and transgender.

Sweden, five in Norway, two in Latvia, and one in Lithuania. Muslim extremists were active in Sweden (nine incidents), Denmark (six incidents), Norway (three incidents), and Lithuania (one incident). Kurdish extremists were active in Norway, Sweden, Denmark, and Finland, and mainly targeted Turkish assets/embassies. Anarchists were only active in Norway in 1995 in a series of four incidents. The three attacks by animal rights extremists occurred in Sweden, Finland, and Iceland.

Of these attacks of different perpetrator types, 36 attacks were carried out by lone actors.

### Discussion

The Nordic-Baltic Eight score low on the 2021 Global Terrorism Index (GTI). The GTI is a composite measure made up of four indicators: incidents, fatalities, injuries, and property damage. World-wide, Afghanistan (9.11) and Iraq (8.51) have the top scores. In Europe, Greece, the United Kingdom, Germany, France, and Russia show the highest scores (all >4.0). Of the Nordic-Baltic Eight, Sweden (1.66), Norway (1.11), and Finland (1.01) have the highest scores, followed by Lithuania (0.83) and Denmark (0.29). Three Nordic-Baltic states even have a score of 0.0 (Estonia, Latvia, and Iceland).<sup>22</sup>

The three Baltic states share a tumultuous history of being occupied by other nations, declaring independence after the first World War, and being re-occupied by the Soviet Union following the second World War until September 1991. The absence of registered incidents in these countries in the first two decades of the GTD listings could be a result of lower press freedom and open reporting of incidents during Russian government. An analogue study on Eastern European terrorism faced the same difficulties, as all information contained in the GTD reflects what is reported in multiple independent open-access sources.<sup>23</sup>

In the Baltic states, terrorist activity declined in the last two decades, resulting in the current low scores on the GTI.

The 2011 Norway attacks, which killed 77 victims, is considered by many to be a turning point in the resurgence of white supremacy terrorism in Western countries.<sup>24</sup>

The Nordic states are no exception to this. Even more, right-wing assailants play an important role in this series. Immigrants and refugee shelters (n = 64 incidents) were a major target type.

In 2022, the yearly terror threat assessment from Nationellt Centrum för Terrorhotbedömning ([National Center for Terror Threat Analysis] NCT) in Sweden showed that the major threats were from right-wing and Islamic extremists. The report also stated that the risk of terror attacks may increase due to the increasing polarization in society.

There is greater diversity in Sweden compared to other included countries. Mass refugees have been welcomed to Sweden already in the seventies from Vietnam, the eighties from Chile, the nineties from former Yugoslavia, and in 2015 from Afghanistan.

Mass migration in the nineties created violence between the same nationals and also reactions from right-wing factions. The migration of a massive group of young Afghanis in 2015 was the second largest in Europe after Germany (around 150,000 persons). This also created open discussion among people and promoted a new right-wing party in the parliament.

Not surprisingly, in Sweden, 2015 ranked sky high in the GTD by a series of attacks against immigrants or (planned) facilities for housing refugees.

In tandem with this trend, there has been growing social inequality, and during the last decade, a dramatic increase in certain types of violent crime like shootings and bombings. The NCT report also mentions the risk of terror attacks within the hybrid warfare paradigm in Sweden.

An interesting fact is that Sweden has by far the most people travelling to join Jihadi terrorist groups from 2012–2016. It is estimated that this also relates to large immigration from the Middle East and Africa in the past two decades. On the other hand, a Jihadi-inspired lone actor killed five and injured 14 in a vehicle attack in central Stockholm in 2017.<sup>6,7,25</sup>

During Christmas time in 2010, Sweden also saw an Islamic terrorist attack in the form of a suicide bomber in central Stockholm. The suicide bomber only killed himself, but according to experts from the United States Federal Bureau of Investigation (FBI; Washington, DC USA), the bomb had the potential to kill at least 40 people.<sup>26</sup>

Looking at the results of the terrorism index of other countries, the common point is the diversity in people, culture, and religion. Diversity and an increasing number of refugees in an economically severe situation create a fertile soil for all kinds of extremism, both right-wing and Islamic. It also opens up for influence of other states within the hybrid warfare paradigm.<sup>5,8,9,27–29</sup> Although the Nordic-Baltic Eight score low on the GTI, prehospital emergency services and emergency departments in this area should closely monitor the changing patterns of target types and perpetrator types. This includes evaluating the internal sociocultural unrest (eg, the development of gun violence among young males in Sweden), and increasing polarization in society with regards to immigration and criminality.<sup>30</sup>

Recent studies revealed a gradual increase in attacks against COVID-19-related and health care-related targets.<sup>20,31,32</sup>

These events, and the apparent increase of secondary attacks aimed at emergency systems, pose a world-wide future risk for Emergency Medical Service systems and hospitals.<sup>33</sup>

External risks also require equal attention (eg, the Russian hybrid war, the fake news, anti-government and anti-science narrative, and the rising concerns of cyberattacks against hospitals). Counter-Terrorism Medicine will gain influence and importance, as the threats show a steady uptrend.<sup>34–37</sup>

### Limitations

The GTD is the most comprehensive, up-to-date, open access, and reliable database of terrorist incidents.<sup>38</sup>

The database, and therefore also this study, are however subject to several limitations. The data of events in the earlier decades are not complete and under-reported in the period from 1970–1989.<sup>13,39</sup> The rise in the number of attacks since 2000 could be partly explained by this.

The loss of data in 1993 has no significant role on the results of this series for the Nordic states. As the nineties were roaring in the Baltic states, that gained independency just at the start of the decade, the loss of data from 1993 could be worse as it most likely lacks a number of incidents. The unavailability of data prior to 1991 from the Baltic states was already discussed earlier.

All information contained in the GTD reflects what is reported in multiple independent open-access sources. Therefore, not all incidents may be included in the GTD. Only high-quality sources are used. This creates a possible selection bias and is no guarantee as what the validity of the database information is concerned.<sup>12,13</sup>

Furthermore, an under-estimation of the consequences of a terrorist incident might result from the GTD's standard practice to report the lowest number of casualties when news articles provide conflicting information.<sup>13</sup>

Trends over time should be interpreted with caution because of these limitations.<sup>13</sup>

Conversely, the GTD is a key source for global data on terrorism incidents and is evaluated as the most complete record of terrorist attacks in recent decades.<sup>38</sup>

Attempted but unsuccessful attacks are included in the GTD. However, threats, conspiracies, or the planning of attacks are not. State terrorism, although showing an increase in recent years, is not listed in the GTD.<sup>36</sup>

### Conclusion

Terrorist attacks in the Nordic-Baltic Eight are less frequent than in other countries or regions. Sweden accounted for the majority of terrorist attacks (50%). Every country had its own unique incident characteristics, related to the sociocultural, geographical, and political history, evolving during the 51-year period of this study sample, with serious turmoil in the early nineties in the Baltic states and the rise of right-wing extremism in the Nordic states. It is anticipated that the number of public health emergencies will increase due to climate change, regional wars, and mass migration.

### References

- NATO Parliamentary Assembly. NATO PA recommends strengthening of eastern flank defenses, welcomes membership applications of Sweden, Finland. <https://www.nato-pa.int/news/nato-pa-recommends-strengthening-eastern-flank-defences-welcomes-membership-applicationsNATO-pa.int/news>. Published May 30, 2022. Accessed February 1, 2023.
- Baltic Countries Turning Nordic. The Norwegian American Web Site. <https://www.norwegianamerican.com/baltic-countries-turning-nordic/>. Accessed February 1, 2023.
- How Nordic is Estonia? An overview since 1991. Aarhus University, Nordics info Web Site. <https://nordics.info/show/artikel/how-nordic-is-estonia-an-overview-since-1991>. Accessed February 1, 2023.
- Nordic-Baltic Cooperation (NB8). Republic of Estonia. Ministry of Foreign Affairs Web Site. <https://www.vm.ee/en/international-relations-estonian-diaspora/regional-cooperation/nordic-baltic-cooperation-nb8>. Accessed March 1, 2023.
- Sweden: Inequality in Sweden grows much faster than in the Nordics overall. Nordregio Magazine Web Site. <https://nordregio.org/nordregio-magazine/issues/state-of-the-nordic-region-2020/sweden-inequality-in-sweden-grows-much-faster-than-in-the-nordics-overall/>. Accessed March 1, 2023.
- Sprängningar och skjutningar - polisens arbete [Explosions and shootings - the work of the police]. The Swedish Police/Polisen Web Site. <https://polisen.se/om-polisen/polisens-arbete/sprangningar-och-skjutningar/>. Accessed March 1, 2023.
- Nationellt Centrum för Terrorhotbedömning [National Center for Terrorism Threat Assessment]. Swedish Security Service/Säkerhetspolisen Web Site. <https://www.sakerhetspolisen.se/verksamheten/kontraterrorism/nationellt-centrum-for-terrorhotbedomning.html>. Accessed March 1, 2023.
- Hybrid Warfare in the Baltics: Threats and Potential Responses. Rand Corporation Web Site. [https://www.rand.org/pubs/research\\_reports/RR1577.html](https://www.rand.org/pubs/research_reports/RR1577.html). Accessed February 13, 2023.
- Baltic States versus Russian Hybrid Threats. Warsaw Institute Web Site. <https://warsawinstitute.org/baltic-states-versus-russian-hybrid-threats/>. Accessed March 1, 2023.
- Russia's Hybrid War Against Poland. The Jamestown Foundation Web Site. <https://jamestown.org/program/russias-hybrid-war-against-poland/>. Accessed February 13, 2023.
- Moher D, Liberati A, Tetzlaff J, Altman DG; PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *BMJ*. 2009;339:b2535.

12. National Consortium for the Study of Terrorism and Responses to Terrorism (START). Overview of the GTD. <https://www.start.umd.edu/gtd/about/>. Accessed July 24, 2022.
13. National Consortium for the Study of Terrorism and Responses to Terrorism (START). *Global Terrorism Database Codebook: inclusion criteria and variables*. Baltimore, Maryland USA: University of Maryland; 2019. <https://www.start.umd.edu/gtd/using-gtd/>. Published 2019. Accessed July 24, 2022.
14. Global Terrorism Database. [www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=201107220012](http://www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=201107220012). Accessed January 11, 2023.
15. Global Terrorism Database. [www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=201107220011](http://www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=201107220011). Accessed January 11, 2023.
16. Global Terrorism Database. [www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=197912200010](http://www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=197912200010). Accessed January 11, 2023.
17. Global Terrorism Database. [www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=197801150012](http://www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=197801150012). Accessed January 21, 2023.
18. Global Terrorism Database. [www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=197801150011](http://www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=197801150011). Accessed January 21, 2023.
19. Food Terrorism and Intentional Adulteration. Grainger Know How Web Site. <https://www.grainger.com/know-how/industry/food-and-beverage/kh-food-terrorism-and-intentional-adulteration>. Accessed January 14, 2023.
20. De Cauwer H, Barten DG, Tin D, et al. Terrorist attacks against COVID-19-related targets during the pandemic year 2020: a review of 165 incidents in the Global Terrorism Database. *Prehosp Disaster Med*. 2022;38(1):1–7.
21. Sygehusbomberne i Glostrup og Herlev [The hospital bombers in Glostrup and Herlev]. Nyheder Web Site. <https://nyheder.tv2.dk/finans/nyheder/article.php/id-8188061>. Accessed January 21, 2023.
22. Terrorism Index. Trading Economics Web Site. <https://tradingeconomics.com/country-list/terrorism-index>. Accessed January 31, 2023.
23. Tin D, Barten DG, Goniewicz K, Burkle FM, Ciottoni GR. An epidemiological analysis of terrorism-related attacks in Eastern Europe from 1970 through 2019. *Prehosp Disaster Med*. 2022;37(4):468–473.
24. Tin D, Barten DG, De Cauwer H, Mortelmans LJ, Ciottoni GR. Terrorist attacks in Western Europe: a Counter-Terrorism Medicine analysis. *Prehosp Disaster Med*. 2022;37(1):19–24.
25. Global Terrorism Database. [www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=201704070038](http://www.start.umd.edu/gtd/search/IncidentSummary.aspx?gtid=201704070038). Accessed January 21, 2023.
26. Stockholm blasts: Sweden probes “terrorist attack”. BBC News Web Site. <https://www.bbc.com/news/world-europe-11978389>. Accessed February 14, 2023.
27. Bornschieer S. National Political Conflict and Identity Formation: The Diverse Nature of the Threat from the Extreme Left and the Extreme Populist Right. In: Fuchs D, Klingemann HD, (eds). *Cultural Diversity, European Identity, and the Legitimacy of the EU*. Cheltenham: Edward Elgar; 2011.
28. Almeida D, (ed). *The Impact of European Integration on Political Parties: Beyond the Permissive Consensus*. 1st ed. England, UK: Routledge; 2015:135.
29. Boreus K. Nationalism and discursive discrimination against immigrants in Austria, Denmark, and Sweden. In: Wodak R, KhosraviNik M, Mral B, (eds). *Right-Wing Populism in Europe: Politics and Discourse*. London, England: Bloomsbury Academic; 2013: 293–307.
30. Sturup J, Rostami A, Mondani H, et al. Increased gun violence among young males in Sweden: a descriptive national survey and international comparison. *Eur J Crim Policy Res*. 2019;25:365–378.
31. Ulmer N, Barten DG, De Cauwer H, et al. Terrorist attacks against hospitals: worldwide trends and attack types. *Prehosp Disaster Med*. 2022;37(1):25–32.
32. McNeilly B, Jasani G, Cavaliere G, Alfalasi R, Lawner B. The rising threat of terrorist attacks against hospitals. *Prehosp Disaster Med*. 2022;37(2):223–229.
33. Schmeitz CTJ, Barten DG, van Barneveld KKY, et al. Terrorist attacks against Emergency Medical Services: secondary attacks are an emerging risk. *Prehosp Disaster Med*. 2022;37(2):185–191.
34. Granholm F, Tin D, Ciottoni GR. Not war, not terrorism, the impact of hybrid warfare on emergency medicine. *Am J Emerg Med*. 2022;62:96–100.
35. Khorram-Manesh A, Burkle FM Jr., Civilian population victimization: a systematic review comparing humanitarian and health outcomes in conventional and hybrid warfare. *Disaster Med Public Health Prep*. 2022;17:e192.
36. De Cauwer HG, Somville F. Health care organizations: soft target during COVID-19 pandemic. *Prehosp Disaster Med*. 2021;36(3):344–347.
37. Ransomware Attacks on Hospitals Have Changed. American Hospital Association Web Site. <https://www.aha.org/center/cybersecurity-and-risk-advisory-services/ransomware-attacks-hospitals-have-changed>. Accessed March 1, 2023.
38. Ritchie H, Hassel J, Appel C, Roser M. Terrorism. OurWorldInData.org. <https://ourworldindata.org/terrorism>. Published 2013. Accessed August 21, 2022.
39. de Almeida MM, von Schreeb J. Human stampedes: an updated review of current literature. *Prehosp Disaster Med*. 2019;34(1):82–88.

### Appendix A. Number of Incidents per Decade, 1971–2020.

	Number of Incidents		Chi-Square Value	P Value
	Observed	Expected		
1971 – 1980	14	59.6	1002	P < .00001
1981 – 1990	34	59.6		
1991 – 2000	108	59.6		
2001 – 2010	15	59.6		
2011 – 2020	127	59.6		
Total No. of Incidents	298			

De Cauwer © 2023 Prehospital and Disaster Medicine

Note: The result is significant at P < .05.