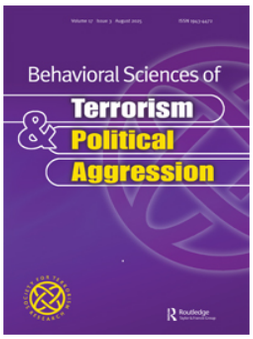

Routledge
Taylor & Francis Group

Behavioral Sciences of Terrorism and Political Aggression

ISSN: 1943-4472 (Print) 1943-4480 (Online) Journal homepage: www.tandfonline.com/journals/rirt20

Risk and protective factors in the radicalization process of the 17-A terrorist cell

Irene González, Reyes Rodríguez, Roberto M. Lobato, Encarnación Hidalgo-Tenorio, Pol C. Aritzeta, David Sànchez & Manuel Moyano

To cite this article: Irene González, Reyes Rodríguez, Roberto M. Lobato, Encarnación Hidalgo-Tenorio, Pol C. Aritzeta, David Sànchez & Manuel Moyano (18 Jul 2025): Risk and protective factors in the radicalization process of the 17-A terrorist cell, Behavioral Sciences of Terrorism and Political Aggression, DOI: 10.1080/19434472.2025.2523590

To link to this article: https://doi.org/10.1080/19434472.2025.2523590

BEHAVIORAL SCIENCES OF TERRORISM AND POLITICAL AGGRESSION
https://doi.org/10.1080/19434472.2025.2523590

Risk and protective factors in the radicalization process of the 17-A terrorist cell

Irene González [a], Reyes Rodríguez [a], Roberto M. Lobato [b], Encarnación Hidalgo-Tenorio [c], Pol C. Aritzeta[d], David Sànchez[d] and Manuel Moyano [a]

[a]Departamento de Psicología, Universidad de Córdoba, Córdoba, Spain; [b]Departamento de Ciencias de la Salud, Universidad de Burgos, Burgos, Spain; [c]Departamento de Filologías Inglesa y Alemana, Universidad de Granada, Granada, Spain; [d]General Information Police Station, Mossos d'Esquadra, Catalonia, Spain

ABSTRACT

A key focus area for strengthening and enhancing the prevention and detection of violent radicalization processes lies in fostering a deeper understanding of their underlying mechanisms and contributing factors. To this end, a study was undertaken to identify the risk and protective factors associated with the violent radicalization process of the 17-A cell members responsible for the attacks in Barcelona and Cambrils on August 17 and 18, 2017. Using information from the archives of the Catalan Police – Mossos d'Esquadra (PG-ME), which informed the preparation of the 'Ramblas Case' report, a deductive-inductive analysis was performed to assess the presence or absence of these factors. Additionally, a network analysis was also conducted to determine the relationships among these factors. The findings revealed a predominance of risk factors, particularly psychological and attitudinal/subjective beliefs, over protective factors, such as sociodemographic and criminogenic variables. This imbalance hindered the prevention of radicalization within the cell. These findings offer valuable insights into the dynamics of radicalization, and lay the groundwork for future applied developments in risk assessment tools.

ARTICLE HISTORY
Received 23 December 2024
Accepted 18 June 2025

KEYWORDS
Risk factors; protective factors; radicalization; violent extremism; 17-A cell

Radicalization leading to violent extremism is a complex and dynamic process that encompasses both cognitive and behavioral dimensions (Khalil et al., 2022; Klausen et al., 2020; McCauley & Moskalenko, 2008). Over the past decades, significant progress has been made in understanding this phenomenon, resulting in a broad range of literature that explores the factors behind violent extremism and terrorism (Horgan, 2008; Lobato & García-Coll, 2022; Moyano, 2019). It is widely agreed that there is no single pathway or definitive cause; instead, radicalization seems to emerge from an imbalance between risk and protective factors.

Scientific literature has identified several factors that help explain the processes leading to extremist ideologies and that may predispose individuals to radicalization.

CONTACT Irene González irgojim@gmail.com Calle San Alberto Magno s/n Poniente Sur, 14071 Cordoba, Spain
Supplemental data for this article can be accessed online at https://doi.org/10.1080/19434472.2025.2523590.

Common risk factors include social marginalization, alienation, a sense of injustice, limited economic opportunities, and psychological vulnerability (Horgan, 2008; Lobato & García-Coll, 2022; Moyano & Trujillo, 2013). These factors do not operate in isolation; on the contrary, they are interrelated and can exacerbate each other. A significant risk factor is discrimination at both individual and collective levels. Recent work by Ohls et al. (2023) shows that experiences of humiliation or exclusion can make individuals more prone to join groups that provide identity, belonging, and justification for violence. On the other hand, protective factors are essential in mitigating these risks. The literature emphasizes that strong family and community ties, psychosocial support, and engagement in prosocial activities (Campelo et al., 2018; Desmarais et al., 2017; Emmelkamp et al., 2020) can help counter feelings of isolation and alienation, reducing the likelihood of seeking validation from extremist groups. Moreover, research on social resilience demonstrates that robust social bonds serve as a buffer against radicalization. For instance, Wolfowicz et al. (2020a, 2020b, 2021) indicate that individuals with a strong sense of belonging to their community or family support network are less likely to embrace extremist ideologies.

Despite existing research on risk and protective factors (Campelo et al., 2018; Desmarais et al., 2017; Emmelkamp et al., 2020; Ohls et al., 2023; Wolfowicz et al., 2020a, 2020b, 2021), empirical studies remain a relatively small proportion of the available knowledge (Schuurman, 2020). This gap underscores the lack of robust evidence regarding the various factors associated with radicalization to support the development of effective policies and interventions (Sarma, 2017). In addition, identifying the factors that explain why some individuals radicalize, while others do not, remains critical; it can actually be a vital step toward uncovering causal mechanisms (Rutter, 2005), and fostering evidence-based intervention and prevention strategies (Bhui et al., 2012).

In this study, we aimed to collect risk and protective factors and to test their presence and absence among members of a terrorist cell. We focus on the terrorist cell responsible for the attacks in Barcelona and Cambrils on August 17 and 18, 2017 (the 17-A cell), aiming to provide a detailed analysis of the risk and protective factors present in group's violent radicalization process.

Risk and protective factors

Although some studies have explored the risk factors associated with the radicalization process within this terrorist cell (e.g. González et al., 2022a), to the best of our knowledge, no comprehensive analysis has been conducted on both the risk and protective factors present during the violent radicalization of each member of the cell. It is important to note that the impact of these factors can differ markedly among individuals, given the myriad possible combinations of influences. This variability has driven efforts to identify risk and protective factors that may either increase or decrease an individual's or group's vulnerability to radicalization (Lobato & García-Coll, 2022; Moyano, 2019).

Some studies have tried to classify the complex set of influences behind radicalization using the concepts of push and pull factors (Altier et al., 2017, 2022; Cherney et al., 2021; Horgan et al., 2017; Vergani et al., 2018). Push factors refer to external conditions (often structural, political, or socioeconomic) that may drive individuals toward radicalization and violent extremism, while pull factors represent the appealing aspects of extremist groups, such as ideological incentives or the promise of group belonging. Despite the

comprehensive treatment of these factors in various reviews (e.g. Vergani et al., 2018), there remains no meta-analysis, to our knowledge, that systematically evaluates the significance and impact of these push and pull factors in the context of radicalization.

Other authors argue that the understanding of radicalization processes is aided by the integration of psychological and criminological perspectives, as these disciplines help to identify factors that can potentially contribute to violent extremism (Desmarais et al., 2017; Jahnke et al., 2022; LaFree et al., 2018; Lösel et al., 2018). To this end, variables derived from criminological theories such as social learning theory (Akers, 1998), social control theory (Gottfredson & Hirschi, 1990), or strain theories (Agnew, 1992) have been examined. These frameworks have proven useful in differentiating between violent and nonviolent extremist behaviors, demonstrating that certain risk and protective factors throughout an individual's life can contribute to the pathway toward violent extremism.

However, despite existing research on risk and protective factors across various domains (Campelo et al., 2018; Desmarais et al., 2017; Emmelkamp et al., 2020; Ohls et al., 2023; Wolfowicz et al., 2020a, 2020b, 2021), further investigation is needed to better understand how these factors contribute to the radicalization process (Lobato & García-Coll, 2022; Moyano, 2019). Unfortunately, most studies have prioritized risk factors, often neglecting the equally important role of protective factors (Lösel et al., 2018; Ohls et al., 2023; Smith, 2018).

Meta-analytic evidence of risk and protective factors

A systematic review and meta-analysis by Wolfowicz et al. (2021) aimed to address some of these research gaps by adopting a comprehensive approach to identify both risk and protective factors associated with radicalization. This review provides a thorough understanding of the relative magnitude of effects on cognitive and behavioral radicalization. The authors classified factors into five dimensions (Wolfowicz et al., 2021): (a) sociodemographic factors, encompassing attributes such as age, gender, education, marital status, employment, and religion; (b) experiential/attitudinal factors, tied to theories of strain, relative deprivation, integration, trust, and discrimination; (c) psychological/personality traits, including concepts like significance quest, thrill-seeking, and other psychological and personality-related traits; (d) criminogenic factors, related to influences from radical peers and networks; and (e) attitudinal/subjective beliefs, reflecting individual perspectives. The study also examined the effects of these dimensions in relation to risk and protective factors across various outcomes, including radical attitudes, intentions, and behaviors. The findings revealed that, although sociodemographic factors are the most extensively studied, their influence is relatively minor compared to other factors. Similarly, attitudinal and experiential factors were found to have a limited impact on reducing risk through interventions. Conversely, traditional criminogenic and psychological factors exhibited stronger effects, suggesting a more direct and significant association with the radicalization process.

It has been observed that some empirical research has explored whether specific attitudes, intentions, or behaviors may help explain an individual's susceptibility to radicalization. Due to the challenges in directly assessing radical behaviors, attitudes (and, particularly intentions) have often been used as dependent variables or proxies of

radical behaviors (Helmus et al., 2013). Along these lines, theories such as Ajzen and Fishbein (1980) theory of reasoned action further examine the links between attitudes, intentions, and behavior. The authors posit that intentions closely mirror actual behaviors, noting that these intentions are influenced by attitudes along with factors such as social norms and perceived control. Consequently, the theory argues that if an individual holds positive attitudes toward radicalization or political violence (and, if social norms and perceived control align) these attitudes could foster radical intentions, which may ultimately manifest as radical behaviors (Clubb, 2015).

Nevertheless, as noted earlier, the ways in which radicalization is measured vary. Due to ethical concerns and difficulties in accessing specific samples (Helmus et al., 2013), most studies have assessed radicalization in terms of cognitive processes rather than actual behaviors. Consequently, radical attitudes and intentions are the most frequently used indicators in the literature (Braddock & Dillard, 2016; McCauley & Moskalenko, 2017). While this approach has its limitations, theories such as the theory of planned behavior (Ajzen, 1991) demonstrate that intentions are the cognitive process most closely linked to behavior and the best predictor of it. Since intentions are influenced by attitudes and other factors (such as social norms and perceived control), they effectively capture the progression from radical attitudes to radical intentions, which, in turn, may result in radical behaviors (Clubb, 2015). Therefore, although radical attitudes and intentions are not the sole pathways to violent radicalization (Khalil et al., 2022; McCauley & Moskalenko, 2008), we have both theoretical and empirical support for using these variables as proxies for radical behavior. However, other possibilities exist, where intentions and attitudes do not necessarily lead to radical behavior (McCauley & Moskalenko, 2008). For this reason, future studies should delve deeper into this relationship between risk and protective factors.

Using similar reasoning, we can assume that the factors fostering radical attitudes and intentions also influence radical behaviors. Although the meta-analysis by Wolfowicz et al. (2021) did not examine the impact of certain risk and protective factors on radical behaviors, this omission is largely due to the scarcity of studies that directly link these factors to radicalization. This gap in the literature arises from ethical concerns and the difficulty of accessing relevant samples (Helmus et al., 2013), making it challenging to determine the precise impact of these factors on radical behavior.

Based on these insights, the present study has two main objectives: (1) to identify the risk and/or protective factors that may have contributed to the radicalization process of the members of the cell responsible for the attacks in Barcelona and Cambrils on August 17 and 18, 2017; (2) to determine the most prevalent factors among the cell members.

Description of the 17-A terrorist cell

The cell was formed in the town of Ripoll, located in central Catalonia, and comprised ten members: the leader (an imam) and nine young men. Except for one member, all were young individuals of Maghrebi origin, part of the so-called second generation (Reinares & García-Calvo, 2018). They were aged between 17 and 28 at the time of the attacks and were residents of the same town (Ripoll). Additionally, familial ties (with four pairs of siblings) and friendships within the group helped foster cohesion and control among its members.

The cell was established between late 2014 and early 2015, following the arrival of its leader, Abdelbaki Es Satty, in Ripoll (Audiencia Nacional, 2021). Acting as an imam in a local prayer hall, Es Satty served as the group's recruiter, indoctrinating its members with a distorted interpretation of sacred texts, allegedly inspired by the Salafi-jihadist doctrine of Takfir-wal-Hijra (González et al., 2022a; Irujo, 2017; Trujillo et al., 2018). As a result of the radicalization process, the cell ultimately carried out a series of attacks.

On August 17, 2017, one of the members drove a van at high speed down the pedestrian thoroughfare of La Rambla in Barcelona, deliberately targeting pedestrians. In the early hours of August 18, five members drove a smaller vehicle to the town of Cambrils (Tarragona), where they rammed a police checkpoint before attacking individuals on the beachfront with knives. The attacks resulted in 16 fatalities and numerous injuries (Igualada, 2021).

The cell members displayed the typical sociodemographic characteristics commonly observed among individuals convicted of terrorism-related offenses during this period and within this context (García-Calvo et al., 2020; TE-SAT Europol, 2018, 2020; Vicente, 2023). Specifically, they were young men of Spanish nationality and Maghrebi origin, most of them belonging to the second generation, aged between 20 and 34, socialized in Western environments, and with only a rudimentary understanding of Islam (García-Calvo et al., 2020; Jalloul, 2018). Notably, between 2013 and 2017, a period that coincides with the cell's formation, the recruitment and indoctrination of children and adolescents had a significant impact in Spain, with at least 36 cases involving minors reported during this period (Vicente, 2018).

Method

Materials

For this research, information was gathered from the archives of the General Information Department (CGINF) of the Mossos d'Esquadra Police (PG-ME). These records were used in the investigation and preparation of the police report for the 'Case Ramblas,' under the jurisdiction of the Central Investigative Court No. 4 of the National Court (DP 60/2017). Additionally, complementary police documentation related to the investigation, spanning from 1998 to 2017, was also included. The extracted data consisted of 200 police statements, 50 interviews conducted with family members, friends, and others in the subjects' environment, 123 pieces of technological evidence, 25 physical pieces, 18 virtual pieces, and other supplementary reports associated with the individuals.

Data were obtained from both witnesses with firsthand experience of the events investigated by the PG-ME in relation to the cell, as well as from other individuals under investigation (e.g. perpetrators, collaborators). These statements, collected without the witnesses being sworn in, were provided throughout the criminal investigation phase and were documented through interviews, later formalized in records or proceedings attached to police reports. The reports are categorized as witness statements (testimony on behalf of the accused) or suspect statements (testimony from suspects or defendants). The interviews were semi-structured in nature with the objective of gathering complete and accurate accounts while protecting the rights of the accused; interviewees were explicitly instructed to avoid speculation or fabrication. The interviews addressed multiple

areas: personal and contextual background (e.g. personal, family, friendship, educational, and employment data); individual vulnerabilities (related to age, dysfunctional family systems, personality or mental health issues, difficulties in adapting to social reality, religious searching, unawareness of personal vulnerability to recruitment, circumstantial factors preceding radicalization, and personal crises); elements of coercive persuasion (e.g. the presence of a radicalizing agent, isolation strategies, control and manipulation of information, control over personal life, emotional abuse, indoctrination into absolute or Manichean belief systems, and the imposition of unique authority); observable changes during the radicalization process (e.g. employment, economic situation, leisure activities, physical appearance, social relationships, religious behavior); and group characteristics (e.g. group size, presence of subgroups, role identification, high cohesion, ingroup overestimation, closed-mindedness, pressure toward uniformity, and illusion of unanimity). All data processing ensures that the rights and freedoms of individuals – particularly the right to personal data protection – are upheld regardless of nationality or residence. It is important to emphasize that the documents analyzed constitute legal materials characterized by strict investigative procedures designed to ensure objectivity and impartiality.

Analytical procedure

Two distinct procedures were applied to analyze the data. First, a deductive-inductive analysis was conducted to assess the presence and absence of risk and protective factors. Second, a network analysis was performed to establish the relationships between these factors (i.e. co-occurrence). Following ethical standards for this type of research, the analysis protocol received approval from the Bioethics Research Committee at the University of Córdoba (Ref. CEIH-22-38).

Risk and protective factors. First, the risk and protective factors identified by Wolfowicz et al. (2021) were taken into account. Factors with similar definitions were consolidated, while those that did not align with the characteristics of the analyzed materials were excluded. Additionally, some factors from the systematic review by Ohls et al. (2023) were incorporated, including four risk factors and four protective factors. Furthermore, the description of certain factors was expanded using insights from other studies (e.g. Schumpe et al., 2020). To address this, certain factors that were less rigorous or lacked accurate descriptions were expanded. For example, in the sociodemographic dimension's protective factors, we provide descriptions for advanced age and academic performance. In the criminogenic dimension, we define the factor of teacher bonding. Likewise, in the criminogenic dimension, we introduced a description of the factor of teacher bonding. For the risk factors in the sociodemographic dimension, we included a definition for the factor welfare recipient; and, a definition for the factors 'political religious extremism', in the attitudinal factors related to subjective beliefs. In the psychological dimension, we also offered a definition for 'in-group connectedness'. Furthermore, the lack of conceptual unity for some factors, such as the 'low attachment to life' factor, occasionally made their coding more difficult. Methodologically, some factors presented some challenges, such as the alcohol use factor, which revealed paradoxical situations. Some people who participated in the police investigation (i.e. family members, friends, neighbors, acquaintances) claimed that the members were consumers, while some cell members, as well as family

members, denied this information. These factors were coded as inconclusive. All factors were included in the analysis, regardless of their statistical significance. Once the factors were agreed upon, definitions for each were developed based on those established in previous studies (Ohls et al., 2023; Wolfowicz et al., 2021). Next, a deductive-inductive content analysis was performed using all available materials (Vaismoradi et al., 2013). The analysis began with a deductive approach, using and building upon the factors established by Wolfowicz et al. (2021) and Ohls et al. (2023). However, as new factors emerged during the process, they were inductively incorporated into the categorization or existing categories were reformulated accordingly. With the final categorization, a coding sheet was created to organize the selected factors, consisting of 68 risk factors and 26 protective factors. The factors were grouped and classified into five dimensions: (a) sociodemographic factors; (b) experiential/attitudinal factors; (c) attitudinal factors related to subjective beliefs; (d) criminogenic factors; and (e) psychological factors (see description in Appendix 1).

The content analysis employed a typological categorical approach (Saldaña, 2013; Vaismoradi et al., 2013), with the following categories for recording: Present, Absent, Unknown, and Inconclusive. Thus, the following coding scheme was applied: if the factor was *present*, it was coded as 1; if the factor was *absent*, it was coded as 0; if the factor was *unknown*, it was coded as 2; and if the factor was *inconclusive*, it was coded as 3. Factors were identified with varying degrees of intensity, while in others, only their presence or absence could be determined. For factors exhibiting gradation, they were dichotomized as either present or absent. For example, within the protective factors, in the sociodemographic dimension, we identify two factors: education was categorized as present, if the individual had completed secondary or higher education; and absent, if they had only primary education or none; and academic performance was categorized as present, when it was high or medium (i.e. the individual passed courses without significant difficulties); and absent, if it was low due to academic struggles. Likewise, in the criminogenic dimension, we identify two factors: teachers bonding, which was categorized as present, if the relationship was strong; and as absent if, the relationship was weak; and non-radical social contacts, which was coded as present when there was a high level of interaction with non-violent individuals, and as absent when such interaction was minimal.

Regarding risk factors with gradation, in the sociodemographic dimension we identify two factors, prayer frequency, which was coded as present when it was high or medium (i.e. five or more prayers daily) and as absent when it was low (fewer than five prayers); and worship attendance, which was coded as present, if it was high or medium (more than five visits a day); and as absent, if it was low (fewer than five visits a day). In the attitudinal dimension, we identify the factor of commitment to a cause, which was present when the individual exhibited strong engagement and dedication, and absent when their involvement was moderate or low. Finally, in the criminogenic dimension, we identify online activity, which was categorized as present, if it exceeded three or four hours daily; and absent, if it was below this threshold.

It should be noted that factors labeled as 'unknown' or 'inconclusive' do not imply their absence but rather reflect a lack of sufficient empirical evidence in the materials to establish their presence or absence. Specifically, 'unknown' factors refer to cases where the available evidence did not provide enough information to make a

determination, while 'inconclusive' factors refer to those instances with contradictory evidence regarding their presence.

When coding the risk and protective factors using the recording sheet, a systematic process was followed to determine whether each factor was present or absent in the analyzed documents. Additionally, the investigators noted examples for each factor. It should be noted that the possibility of multiple pieces of evidence supporting the same factor for each cell member was not taken into account. Instead, the presence or absence of each factor was recorded only once per member. Since the factors were not mutually exclusive, the same material could be assigned to multiple factors. Additionally, some factors overlapped, such as anxiety or depression, which was also coded under the mental health factor. Similarly, prayer frequency or worship attendance could also be coded under religiosity, and low self-control could overlap with anger/hate. Finally, care was taken to ensure that the data extraction was individualized for each member, focusing exclusively on information available prior to the commission of the criminal acts.

To ensure the reliability of the analytical process, several measures were implemented (Cohen et al., 2017). The data coding was carried out individually by two researchers specialized in the field, who systematically evaluated all the material and performed the systematic recording. In cases where consensus could not be reached, a third coder was consulted to resolve discrepancies and achieve agreement. This subgroup of researchers met periodically to discuss and resolve any discrepancies in the coding. Once the materials were coded and the factors identified, the software Jamovi 2.3.28 (The Jamovi Project, 2025) was used to analyze the frequencies and percentages of each factor.

Relationships between risk and protective factors. After establishing the system of categories of risk and protective factors and their frequencies, the co-occurrence of these factors was analyzed, specifically the presence of two or more categories within the same individual. To achieve this, a semantic network analysis was conducted, including all co-occurrences, to explore the relationships between categories simultaneously (Christensen & Kenett, 2023). This approach enabled the identification of the most central risk and protective factors, as well as the detection of relevant relational patterns based on the principles of matrix theory (Diestel, 2010).

The elements of the graph consisted of two components: nodes, which represent each risk or protective factor, and edges, which indicate the connections between two factors. These links were bidirectional (undirected) and represented the number of times two categories co-occurred within the same individual. To visualize the structure of the network, the ForceAtlas2 algorithm was used. This algorithm is based on the attraction of nodes with a higher number of associations and the repulsion of those with fewer associations (Cherven, 2015; Emmons et al., 2016; Jacomy et al., 2014). The following conventions were applied when interpreting the network: (1) each node or circle represents a factor (either risk or protection); (2) the thickness of the edges indicates the strength of the relationship between each pair of factors; (3) the size of each node reflects its degree of centrality, meaning the number of connections with other factors – larger nodes have more connections; and (4) the position of the nodes shows their proximity, determined by the strength of their relationships.

Subsequently, a set of metrics was calculated both at the network level and at the node level to quantify the overall complexity of the radicalization structures and identify the most relevant nodes according to the information source (Newman, 2005; Park & Leydesdorff, 2013). At the network level, two different indices were calculated: density and centrality. Density refers to the number of relationships between nodes displayed in the network compared to the total possible relationships between nodes. This measure ranges from 0 to 1, with values closer to 1 indicating a more complex structure with high interconnections between the nodes. The centrality index, based on the network degree, is the ratio between the actual sum of differences and the maximum possible sum of differences. This index ranges from 0 to 1, with higher values indicating the presence of central nodes and lower values suggesting a more balanced network.

At the node level, several indices were also calculated: strength, betweenness, and closeness. Strength is a weighted measure of the number of relationships between a specific node and other nodes in the network. Nodes with higher values are more strongly connected to other nodes in the network. Betweenness for a specific node is the fraction of the shortest paths between pairs of vertices in a network that pass through that specific node. Higher values highlight nodes that lie between others, facilitating the flow of information. Finally, the closeness index represents the shortest path distance between a node and all other reachable nodes, indicating how quickly information can spread from a given node to others in the network. Higher values indicate faster information diffusion. These analyses were performed using the Gephi 0.10.1 software (Bastian et al., 2009).

Results

Risk and protective factors

The following displays five figures representing the risk factors grouped into five dimensions: sociodemographic factors, experiential/attitudinal factors, attitudinal/subjective belief factors, criminogenic factors, and psychological factors. In addition, the outcomes (attitudes, intentions, and behaviors) for each factor have been marked within each dimension (see Appendix 1).

In the sociodemographic factors dimension, 10 out of the 16 identified risk factors have percentages greater than 50%. Notable among those are young age (80%), male gender (100%), immigrant status (90%), unemployment (60%), low socioeconomic status (70%), welfare recipient (70%), religious upbringing (80%), prayer frequency (90%), worship attendance (90%), and religiosity (100%). The results indicate that most members were under 25 years old (80%), within the stages of adolescence and emerging adulthood, except for two over 28 years old, including the group leader. Furthermore, the cell was composed entirely of men (100%), with the majority being of migrant origin (90%) from Morocco, except for one member who was born in Spain (Melilla). According to data from the Statistical Institute of Catalonia (IDESCAT) as of January 1, 2017, the immigrant population in the municipality of Ripoll was 1,146, accounting for 10.30% of the total population. This positions them within the so-called second generation of young Spaniards of Maghrebi origin, specifically the 1.5 generation, referring to individuals born abroad who arrived in Spain at the age of 12 years or younger (Aparicio & Portes, 2021).

Moreover, half of the members were unemployed (50%). It should be added that registered unemployment in the municipality of Ripoll on August 1, 2017, was 513 people unemployed, accounting for 9.72% of the total population (Observatori del Treball, 2017). In addition, the majority (70%) belonged to a low socioeconomic status, which may explain why a significant percentage were recipients of social assistance (70%). According to data from the report prepared by the Consorci de Benestar Social del Ripollès (2017), the municipality of Ripoll provided social aid to 271 families, with 228 of those cases involving children and adolescents at social risk. Additionally, the results indicate that most families raised their children with a religious (Muslim) upbringing (80%). Nonetheless, this does not mean that the remaining 20% did not receive such an education; rather, there was insufficient empirical evidence in the consulted materials to confirm the presence of this factor. The data underscore the importance of religious (Muslim) upbringing within families as a key element of intergenerational transmission to be maintained among descendants. Furthermore, the religiosity factor was universally shared by all members (100%), as evidenced by a high prayer frequency (90%) and regular worship attendance (90%) for the attitudes outcomes. Figure 1 visualizes the data for the sociodemographic factors dimension.

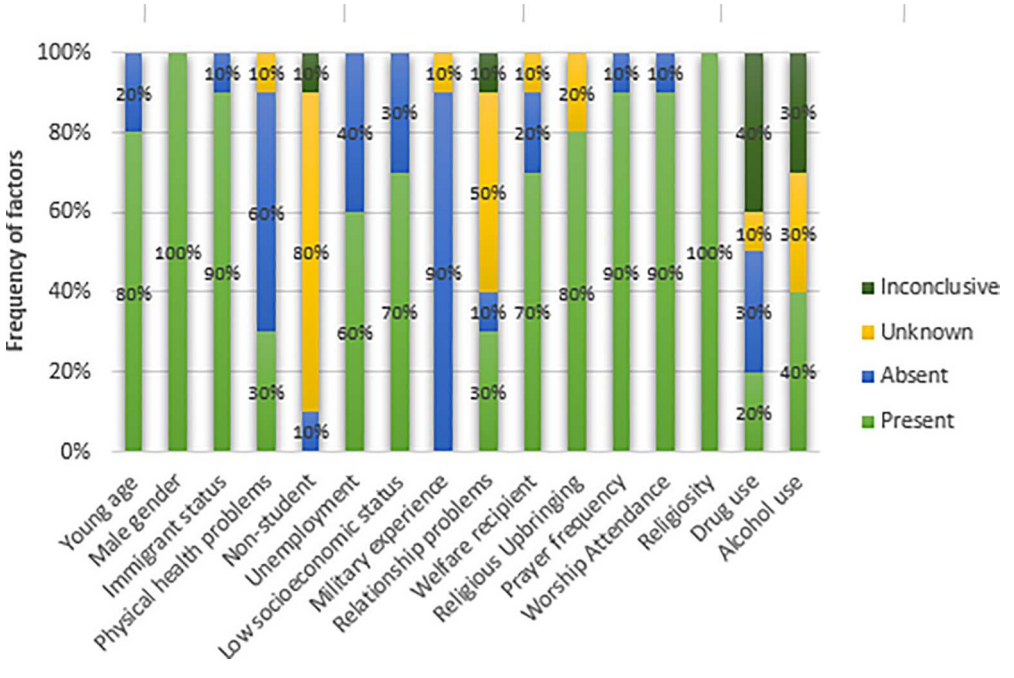

Figure 1. Sociodemographic risk factors.

In the experiential/attitudinal factors dimension, 8 out of the 11 risk factors show a significant presence: experiences of discrimination and/or relative deprivation (60%), experiences of violence (60%), being a perpetrator of violence (80%), life events (80%), navigating between two cultures (70%), online contact with extremists (50%), violent media exposure (90%), online posting (50%).

The results indicate that over half of the members (60%) felt discriminated against or unfairly treated by society. In addition, while a similar proportion (60%) had been victims of various forms of violence (whether familial, school-related, or institutional), a high percentage (80%) adopted maladaptive behaviors by perpetrating violence against others. Furthermore, a considerable proportion (80%) had experienced potentially traumatic life events (e.g. moving residence, abuse, parental separation, job loss, school failure) throughout their life trajectories for the attitudes outcomes. These experiences were accompanied by identity conflict (70%), as members struggled to reconcile the cultural divide between Muslim and Western values. The data indicate that although nearly all participants had been exposed to violent media (90%), only half had engaged in online contact with extremists (50%). This suggests that the radicalization process primarily took place offline, through family and friendship networks established outside the group. Similarly, only half of the participants shared political or radical content online (50%) in relation to attitudinal and behavioral outcomes. The data for the experiential/attitudinal factors dimension can be visualized in Figure 2 below.

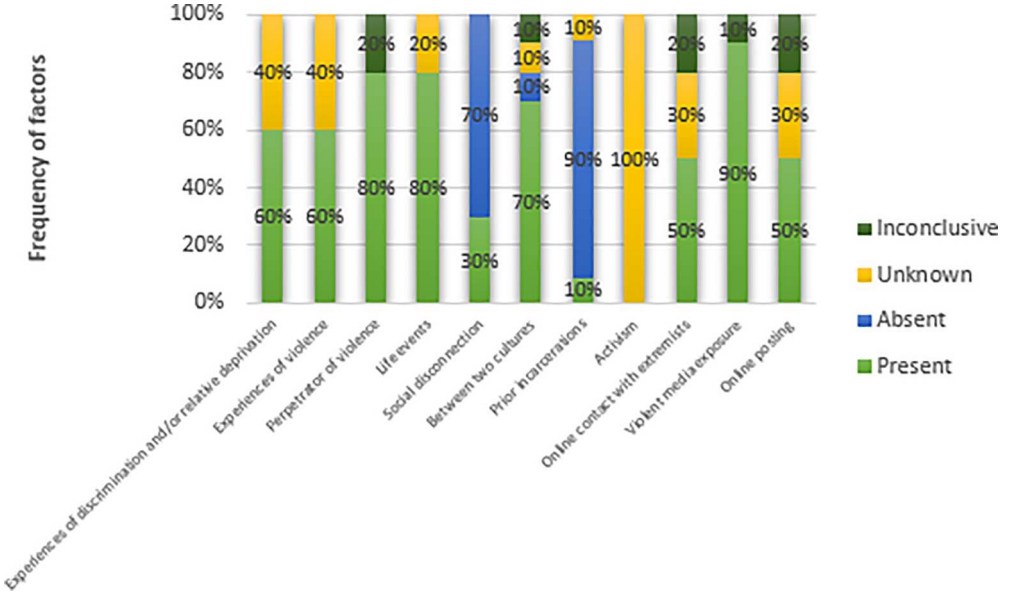

Figure 2. Experiential/attitudinal risk factors.

In the attitudinal factors/subjective beliefs dimension, 9 out of the 11 risk factors show a greater presence: segregationist attitudes (100%), collective relative deprivation (70%), West vs. Islam (100%), anti-democratic attitudes (100%), radical attitudes (100%), commitment to a cause (90%), political-religious extremism (100%), in-group superiority (80%), and prejudice toward those who are different (90%).

The results indicate that all members (100%) displayed segregationist attitudes, categorizing people into ethnic groups (Muslims vs. non-Muslims) for the attitude outcomes. Additionally, a significant percentage (70%) had experienced feelings of collective relative deprivation, perceiving their group (Muslims) as disadvantaged and unfairly treated by society (Western). At the same time, all of them believed that their culture and religion

(Islam) were under attack and threatened by the West. Furthermore, they all had adopted anti-democratic (100%) and radical (100%) attitudes, supporting or justifying violence, along with a high level of commitment to the cause (90%), which was reflected in a high degree of political-religious extremism (100%). Similarly, the data reveal that most of them (80%) exhibited a sense of ingroup superiority (Muslims) over the outgroup (Westerners), as well as pronounced prejudice and rejection toward those who were different (90%). The data for the attitudinal factors/subjective beliefs dimension can be visualized in Figure 3.

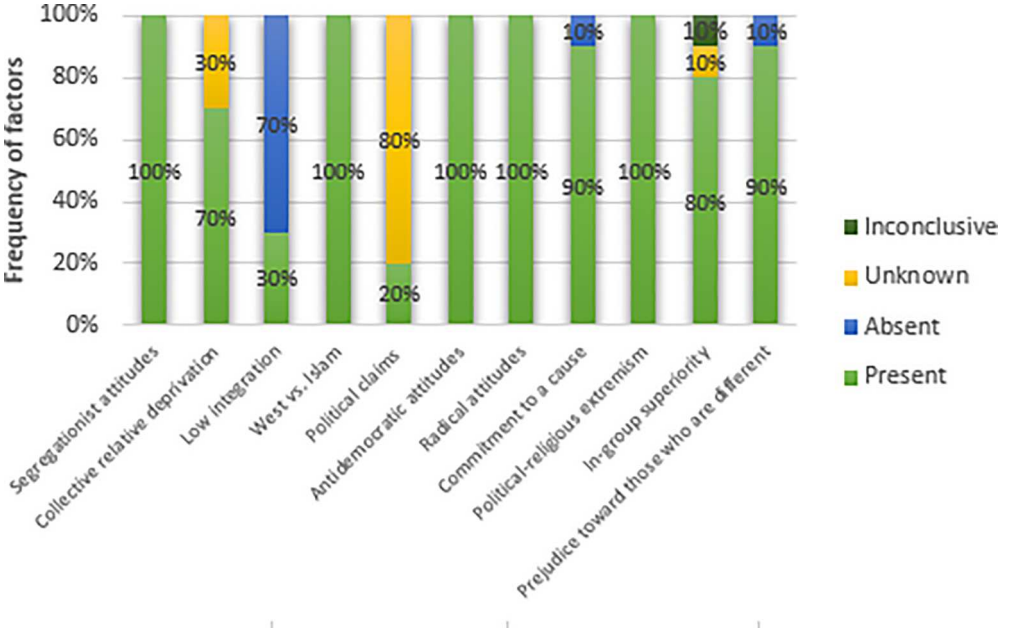

Figure 3. Attitudinal/subjective belief risk factors.

In the criminogenic factors dimension, 10 out of the 11 risk factors, show a high presence: moral neutralizations (90%), outgroup dehumanization (80%), deviant/radical peers (100%), criminal history or Police background (50%), Police contact (50%), association with similar peers (90%), juvenile delinquency (50%), radical family background (80%), low self-control (70%), and thrill-seeking (90%).

The results indicate that most members exhibited legitimizing factors for violent action, such as moral neutralizations (90%), and disinhibiting factors like dehumanization of the outgroup (80%). The data also show the attitude outcomes that all the members had been in contact with deviant/radical peers who either supported or participated in violent activities. Likewise, half of the members had a police record (50%) and had contacted law enforcement within the past 12 months, which means that they were identified, reported, or arrested. According to data from the police force Mossos d'Esquadra, the number of arrests in the municipality of Ripoll in 2017 was 51. While the members appeared to adapt to their social context, the results show that almost all of them primarily interacted with peers of similar backgrounds (90%), predominantly from the same

origin (Morocco) for attitudes outcomes. On the other hand, half of the members (50%) had been engaged in juvenile delinquency such as theft and assault, and a significant percentage (80%) had family members who were cognitively or behaviorally radicalized, family and friendship ties established within the ingroup. Additionally, a high percentage (70%) exhibited low self-control, manifested in impulsive behaviors or quick tempers; additionally, 90% demonstrated thrill-seeking through risky activities pursued for enjoyment without regard for the consequences. These activities included juvenile delinquency, reckless driving, illegal drug use, risky sexual behaviors, extreme sports such as climbing, and watching or participating in fights. The data for the criminogenic factors dimension can be visualized in Figure 4.

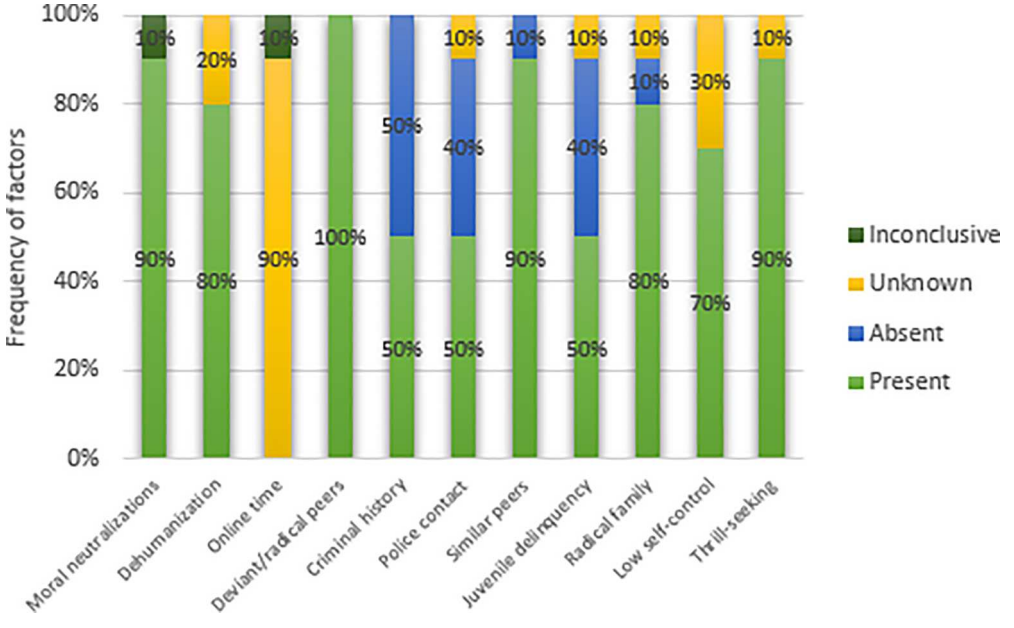

Figure 4. Criminogenic risk factors.

In the psychological factors dimension, 12 out of the 19 risk factors show a high presence: symbolic and/or realistic threat (90%), in-group connectedness (100%), uncertainty (50%), in-group identity (100%), obsessive passion (90%), willingness to self-sacrifice (70%), machoism (50%), authoritarianism/fundamentalism (90%), and anger/hate (80%), significant quest (100%), need for cognitive closure (80%) and negative affect (60%).

The results indicate that most of them experienced a strong sense of symbolic threat (90%), perceiving the survival of the ingroup (Muslims) as being endangered by the outgroup (Western society); additionally, a high level of in-group connectedness (100%) was observed among the members in the intentions outcomes. The data also reveal that half of the members experienced personal uncertainty, characterized by episodes of anxiety when confronting events perceived as potentially harmful or threatening (e.g. terrorist attacks). Furthermore, the results show that all the members shared an in-group identity (100%) shaped by a strong religious influence, with nearly all (90%) exhibiting obsessive

behaviors related to specific norms, values, and activities, as well as a significant willingness to self-sacrifice (70%) for the attitudes and intentions outcomes.

On the other hand, the data indicate that half of the sample displayed machoism behaviors, as well as authoritarianism/fundamentalism (90%), characterized by submission to authority and aggression toward external groups. A large proportion exhibited anger or hate (80%), particularly in situations involving frustration or resentment toward a particular issue or circumstance. All participants showed a high quest for significance and a high percentage showed a strong tendency toward cognitive closure. Additionally, most participants exhibited high levels of negative affect. The data for the psychological factors dimension can be visualized in Figure 5.

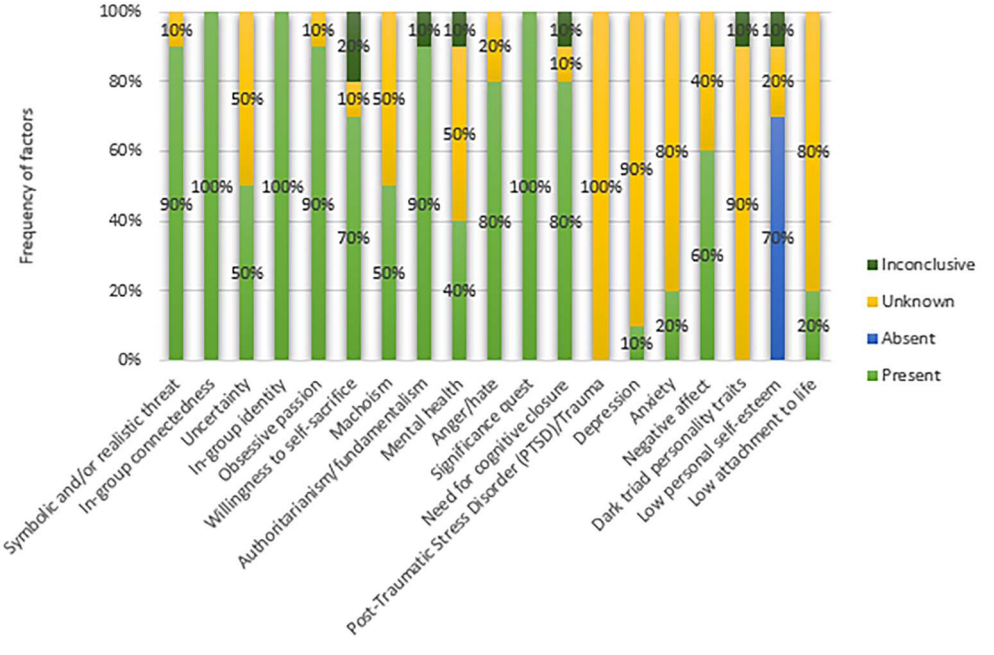

Figure 5. Psychological risk factors.

Below, we present the findings on protective factors, organized into five distinct dimensions as illustrated in the accompanying figures: sociodemographic factors, experiential/attitudinal factors, attitudinal/subjective belief factors, criminogenic factors, and psychological factors. In addition, the outcomes associated with each factor (namely, attitudes, intentions, and behaviors) are delineated within each dimension (see Appendix 1).

In the sociodemographic dimension, among the seven protective factors identified, secondary or higher education (90%) and employed (50%) stand out. The data suggest that attitudes, intentions, and behaviors outcomes of the majority of the young individuals had completed compulsory secondary education (90%), while half of the sample (50%) was employed. Furthermore, the results highlight an early integration of young people into the labor market (50%), mostly through temporary and low-paying jobs, with only a small percentage of members having access to well-paying and stable occupations. Figure 6 illustrates the data for the sociodemographic factors dimension.

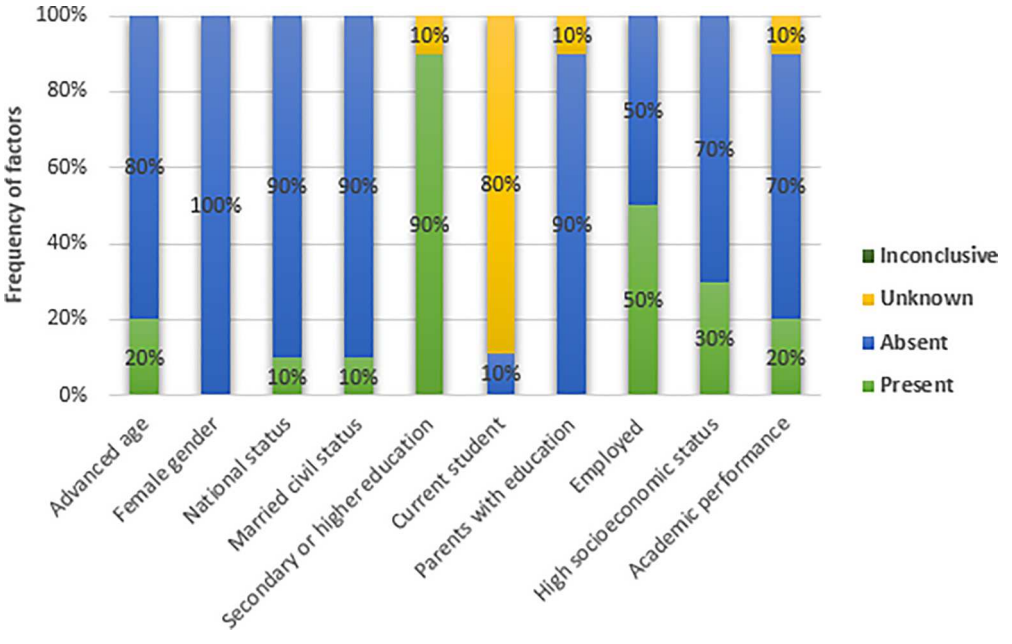

Figure 6. Sociodemographic protective factors.

In the experiential/attitudinal factors dimension, social integration emerges as a prominent protective factor, with 60% of them exhibiting this trait. The results indicate that a significant percentage of the young individuals demonstrated a positive and participatory attitude toward the society they belonged to. Figure 7 visualizes the data for this dimension.

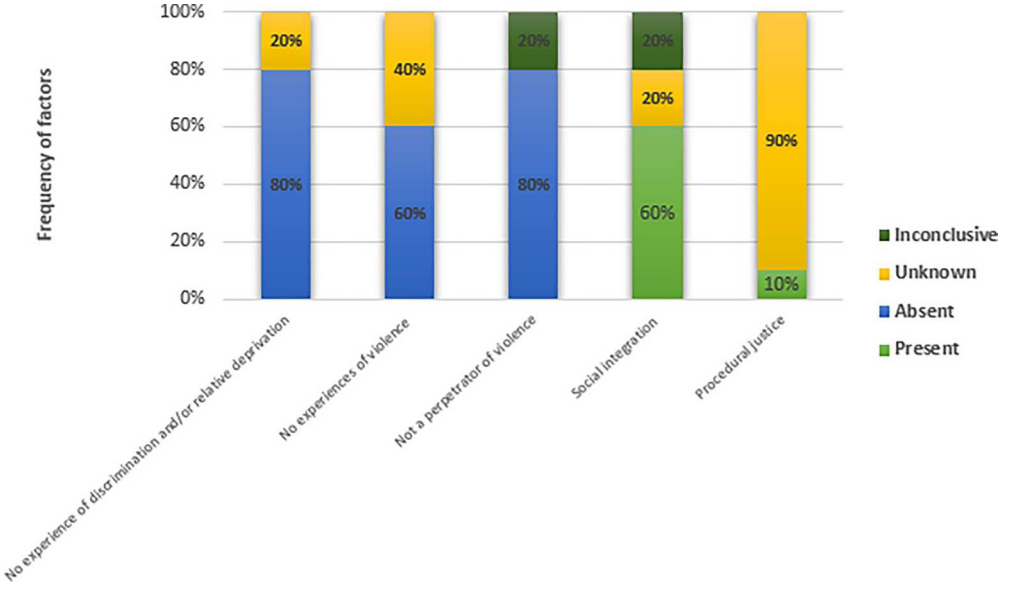

Figure 7. Experiential/attitudinal protective factors.

In the attitudinal/subjective belief factors dimension, social support stands out as a protective factor, albeit with a low percentage of 10%. The results indicate a very limited incidence for this dimension, attributable to the smaller proportion of protective factors identified and the low percentage observed. This suggests that social support (10%) may not have functioned effectively as a protective factor among the members. The data for the attitudinal/subjective belief factors dimension can be visualized in Figure 8 below.

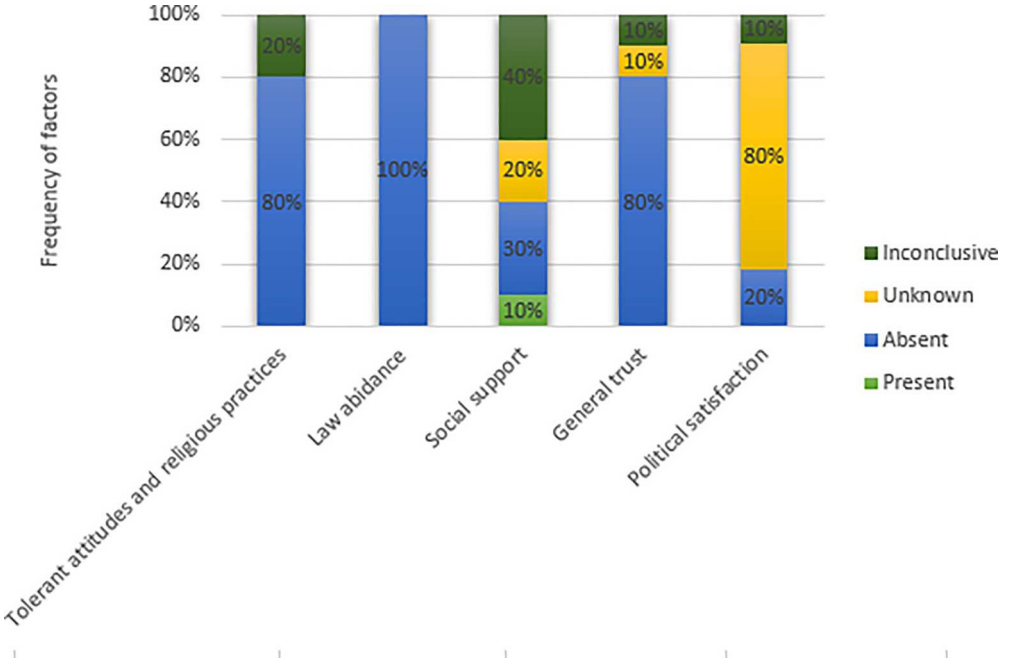

Figure 8. Attitudinal/subjective belief protective factors.

In the criminogenic factors dimension, two protective factors stand out: outgroup friends (100%) and non-radical social contacts (70%). The data reveal the attitudes and intentions outcomes that all the members maintained an extensive social network and a considerable number of contacts with individuals outside the group. Additionally, 70% had no difficulties forming social relationships with others in their environment. The data for the criminogenic factors dimension can be visualized in Figure 9 below.

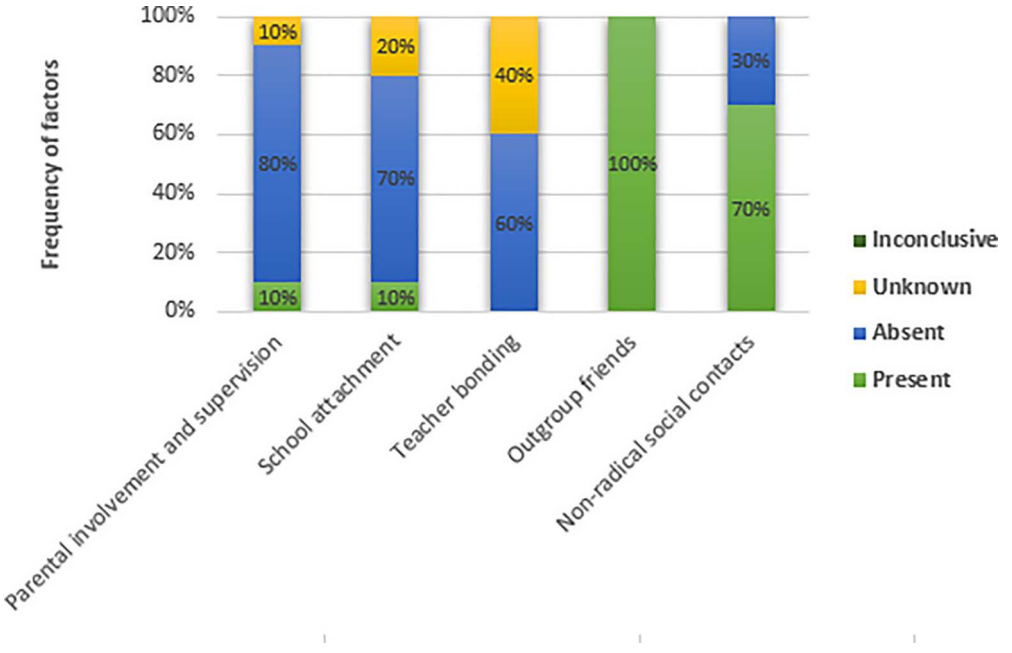

Figure 9. Criminogenic protective factors.

In the psychological factors dimension, high personal self-esteem (70%) is the sole protective factor identified. The results indicate that a significant number of members (70%) exhibited high personal self-esteem, reflected in a positive self-image. Figure 10 illustrates the data for this dimension.

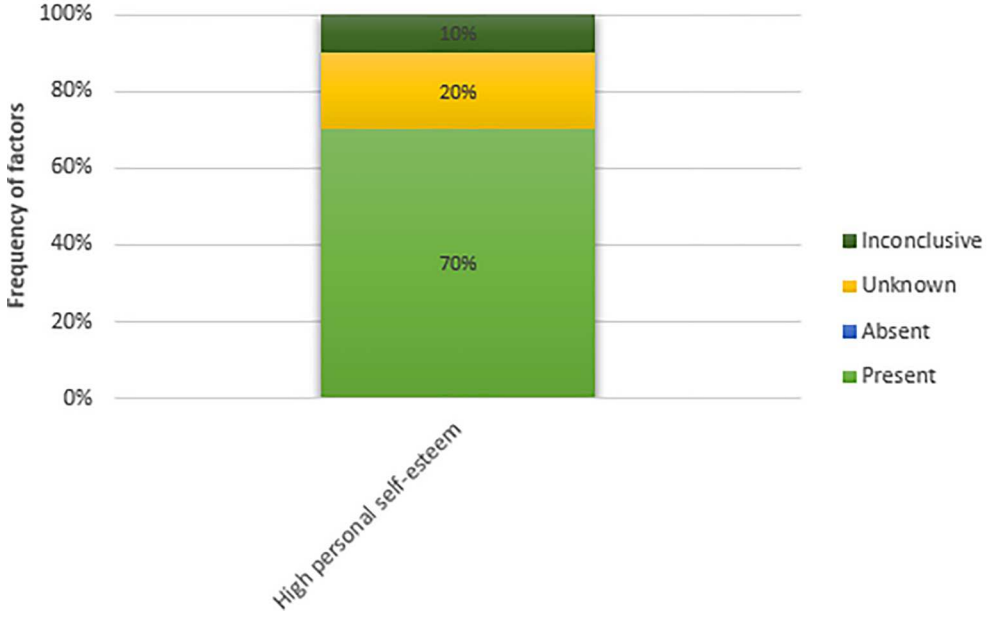

Figure 10. Psychological protective factors.

Relationships between risk and protective factors

The analysis of the relationships between risk and protective factors was conducted using a network analysis derived from the co-occurrence matrix obtained through content analysis. The final network is visualized in Figure 11. The graph included 94 nodes, with 18 factors excluded due to their zero frequency and co-occurrence, indicating their absence in the sample. These excluded factors are: no experiences of discrimination and/or relative deprivation, no experiences of violence, not being a perpetrator of violence, tolerant attitudes, religious practices, law adherence, general trust, female gender, political satisfaction, teacher-student relationship, not being a student, having military experience, activism, current student status, high time spent online, parents with education, post-traumatic stress disorder (PTSD)/trauma, dark triad personality traits (narcissism, machiavellianism, and psychopathy), and low personal self-esteem. After these exclusions, the final network comprises 76 factors and 2,563 edges.

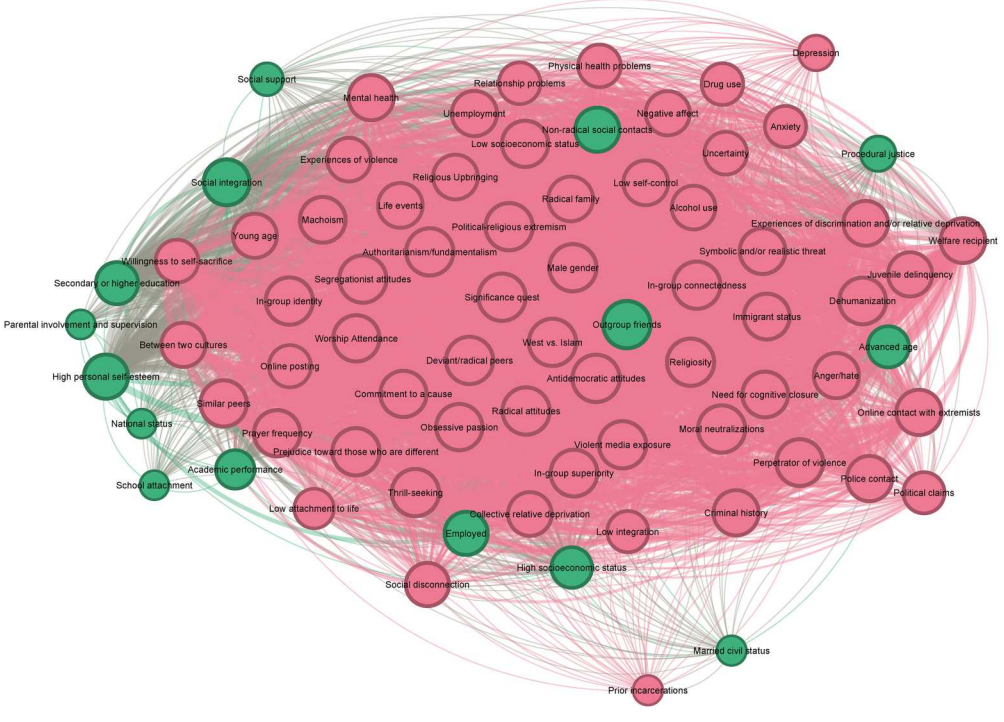

Figure 11. Co-occurrences of risk (red) and protective (green) factors among the members of the cell.

At the network level, the density ($D = 0.90$) and centrality ($C = 0.94$) indices showed that the observed network exhibited a complex structure characterized by a high number of relationships between the nodes. Furthermore, the network was essentially balanced, indicating that the nodes were equally important throughout the network.

Regarding the centrality indicators, 17 nodes exhibited a higher degree of centrality. Among them, there was only one protective factor (i.e. outgroup friends) and 16 risk factors (i.e. male gender, religiosity, violent media exposure, segregationist attitudes, West vs. Islam,

undemocratic attitudes, radical attitudes, political-religious extremism, prejudice against others, moral neutralizations, deviant/radical peers, thrill-seeking, group cohesion, negative in-group identity, authoritarianism/fundamentalism, and significance quest). These factors had frequencies of 9 (violent media exposure, prejudice against others, moral neutralizations, thrill-seeking, and authoritarianism/fundamentalism) and 10 (outgroup friends, male gender, religiosity, segregationist attitudes, West vs. Islam, undemocratic attitudes, radical attitudes, political-religious extremism, deviant/radical peers, group cohesion, negative in-group identity, and significance quest); the latter were also the factors with the highest intermediary and closeness centrality. Conversely, the factors with the lowest degree of centrality were 6 protective factors (i.e. nationality, parental control and involvement, school attachment, marital status, prior incarcerations, and social support and procedural justice) and 2 risk factors (i.e. prior incarcerations and depression), which had the lowest frequency as they were present only in one of the cell members. These factors also showed the lowest intermediary and closeness centrality. Overall, protective factors exhibited more peripheral positions, while risk factors were more centrally positioned, with the exception of outgroup friends.

Discussion

One of the priority action areas for prevention and early detection of violent radicalization involves studying the risk and protective factors contributing to these processes. Based on this premise, the aim of this study was to identify the risk and protective factors present in the violent radicalization process of the 17-A cell members. To achieve this, available documentation on the ten cell members was analyzed to determine the presence or absence of the most relevant factors. Through a deductive-inductive analysis of the factors, the results reveal the presence of both risk and protective factors among the 17-A cell members across the five evaluated dimensions: (1) sociodemographic, (2) experiential/attitudinal, (3) subjective attitudes/beliefs, (4) criminogenic, and (5) psychological.

First, regarding risk factors, the results reveal their presence in all five evaluated dimensions, with 61 out of the 68 analyzed factors identified. In the sociodemographic dimension, the most prominent risk factors were male gender, immigrant status, prayer frequency, worship attendance, religiosity, and religious upbringing. These findings are consistent with previous research, which suggests these typical sociodemographic characteristics commonly observed among individuals convicted of terrorism-related offenses during this period and within this context (García-Calvo et al., 2020; TE-SAT, 2018, 2020; Vicente, 2023).

Regarding religious factors (i.e. prayer frequency, religiosity, and religious upbringing), these can transform into mechanisms of identity resistance. In this context, religious identification is not merely a matter of faith but serves as a reaffirmation of one's identity in response to a society perceived as hostile (Çelik, 2015). However, some scholars argue that religiosity can also function as a protective factor (Herrenkohl et al., 2005; Lösel & Farrington, 2012; Regnerus & Elder, 2003), acting as a source of personal meaning by providing structure, moral guidance, and community support, thereby enhancing psychological well-being, and fostering resilience in the face of social challenges (Ajrouch & Kusow, 2007). Nevertheless, although sociodemographic variables have been extensively examined, their impact appears relatively modest compared to other dimensions – particularly psychological factors – a finding consistent with Wolfowicz et al. (2021).

Within the experiential/attitudinal dimension, violent media exposure emerged as the most prevalent factor among members, where online contact was established with religious references (sheikhs, imams, influencers, etc.) as well as with extremist narratives that spread a message based on a partial and biased version of the sacred texts. It should be noted that, according to the Significance Quest Theory (Kruglanski et al., 2013), during violent radicalization, an individual's perception can be manipulated through the use of persuasive propaganda where cognitions are manipulated and behavior is shaped. However, only half of the participants shared political or radical content online, which may be due to limited access to technology, for example, some relied on internet cafes to connect to the internet for activities such as purchasing flights to Morocco, searching for jobs, or preparing personal resumes. In addition, it was not until 2016–2017, that some started using messaging apps such as WhatsApp, particularly its voice messaging features. It also highlights the presence of the 'between two cultures' factor (Muslim vs. Western) among the members. In this sense, some studies have shown that 'integrated' Muslims are the most vulnerable to identity threats in the face of prejudice or discrimination in society (Fleischmann & Phalet, 2016).

In the subjective attitudes/beliefs dimension, key risk factors were segregationist attitudes, collective relative deprivation, West vs. Islam, undemocratic attitudes, radical attitudes, commitment to a cause, political-religious extremism, and prejudice against others. The results show the presence of collective relative deprivation through unfair treatment and perceived threat toward Islam. This is supported by other research suggesting that perceived structural disadvantages and feelings of hostility toward Islam are associated with radical attitudes, which is in line with the results obtained in this dimension (Basra & Neumann, 2016; Ohls et al., 2023). Furthermore, the results also show a sense of superiority of the ingroup over the outgroup, which translates into distancing from people in the surrounding group.

In the criminogenic factors dimension, the prominent risk factors were moral neutralizations, deviant/radical peers, similar peers, and thrill-seeking. This observation aligns with Akers (1998) social learning theory, which posits that the adoption of deviant attitudes and behaviors is significantly influenced by, and learned through, the attitudes observed within an individual's social network (family, teachers, and friends), which serves as role models. This suggests that the radicalization process primarily took place offline, through family and friendship networks established outside the group. These findings align with previous research, such as Vicente (2023), which notes that despite the growing role of online environments in radicalization, 73.3% of individuals who radicalized in Spain before the age of 18 initially established face-to-face contact with radicalizing agents. Finally, in the psychological factors dimension, where risk factors were more prevalent at the group level, key factors included symbolic and/or realistic threat, group cohesion, in-group identity, obsessive passion, authoritarianism/fundamentalism, and significance quest. The results indicate the presence among the majority of members of a symbolic or realistic threat to the ingroup (Muslims). Some authors suggest that humiliating and degrading situations toward individuals or the ingroup can increase feelings of uncertainty and ambiguity aversion (Webber et al., 2018). This is consistent with the reported data, as half of the members experienced personal uncertainty (anxiety episodes) before facing events perceived as potentially harmful. The results also show the presence of an ingroup religious identity among members and an obsessive passion

behavior. According to meta-analytic research (Wolfowicz et al., 2021), ideological obsessive passion (OP) is one of the most important psychological factors associated with violent activism. In addtion, the results highlights the presence of a significance quest among all members. This is consistent with the theoretical framework proposed by Kruglanski et al. (2019), which suggests that the road of radicalization begins with the activation of the quest for significance. Thus, the need for significance has been linked to several factors present in this dimension, such as symbolic and/or realistic threat perception (Stephan & Stephan, 2000), negative affect (Chen et al., 2020), uncertainty, and the need for cognitive closure (Webber et al., 2018). Also noteworthy in this dimension is the 'dark triad' indicator that appeared for the group leader figure. With caution, although it is not a conclusive indicator from a clinical perspective, there are witnesses close to the individual who speak of traits compatible with this indicator, since they define him as a person who is 'reserved, deceptive, and cold-blooded, even when he feels threatened'. Finally, it should be noted that in general, the risk factors with the highest presence were found within the dimensions of subjective attitudes/beliefs, as well as psychological factors.

Second, regarding protective factors, the results indicate their presence across all five evaluated dimensions; specifically, 15 out of 26 factors analyzed were identified. The most prominent protective factors in each dimension are as follows: in the criminogenic dimension, outgroup friendships stood out. The members maintained a high number of relationships outside the group and demonstrated active participation in the community. These findings are consistent with prior research suggesting that a robust social network that opposes violence can serve as a buffer against radicalization (Bhui et al., 2014; Ellis et al., 2015), although in this case, it seems that it was not enough to avoid the radicalization process. In the sociodemographic dimension, secondary or higher education was highlighted. Good school performance or attainment of higher education not only has a direct protective effect (Farrington, 1994) but also has a buffering protective effect in the presence of other risks (Werner & Smith, 1992). This can be supported by social control theory (Laub & Sampson, 2003), which suggests that contextual factors such as the family, school or peer group constitute a dominant source of control and consequently deterrence of delinquency. In the psychological protective factor, we found that the members exhibited a high level of self-esteem, reflecting personal empowerment. Although some previous studies have suggested that high self-esteem can serve as a buffer against perceived threats (Greenberg et al., 1986; Hastings & Shaffer, 2004) as well as improve self-management behaviors levels of social adjustment (Inglés et al., 2017) in the case, again, it seems clear that these protective factors (non-radical friends and education) were not strong enough or were overlapped by the risk factors, since radical behaviors did occur. Finally, in the experiential/attitudinal dimension, it is worth highlighting the social integration indicator, where more than half of the members showed an 'apparent' integration. Some studies emphasize the importance of social integration and inclusion as a fundamental aspect in the prevention of radicalization, mainly among young people (Ohls et al., 2023); however, in this case, it does not seem to have had a significant influence on balancing the risk factors.

Notably, certain risk and protective factors were either absent or inconclusive across nearly all dimensions. In particular, the most frequently absent protective factors were associated with the sociodemographic, subjective attitudes/beliefs, and criminogenic

dimensions. These results highlight the need to address absent protective factors to provide greater protection and resilience to individuals. As for the risk factors, the absent and inconclusive factors showed a lower presence, which may indicate a higher risk. Regarding the inconclusive risk factors, they were mainly found in the socio-demographic, experiential/attitudinal, and psychological dimensions. The results do not suggest that these factors were entirely absent, but rather that the available information was insufficient to confirm their presence. This underscores the methodological need for improved data collection on certain factors, particularly those related to psychological constructs that are challenging to objectify in an accurate and valid manner, which underlines the complexity of measuring psychological attributes in general (González et al., 2022a).

Regarding the relationship between risk and protective factors, the network analysis showed that risk factors (except for one protective factor, outgroup friends) were more central. In other words, risk factors were more commonly shared among the members of the cell than protective factors. Furthermore, these results suggest the greater importance and presence of risk factors, compared to protective factors. This could perhaps be interpreted as an indication of the potential causes that facilitated the violent radicalization of the members. The predominance of risk factors, coupled with their prevalence among many of them, may have weakened the impact of the protective factors, particularly those not shared by all cell members. Regarding outgroup friends, despite being a protective factor shared by them all, it appears to have been insufficient to prevent violent radicalism. This finding aligns with the study by Vicente (2023), which suggests that social ties with non-radical agents may be insufficient if they are not as strong as the ties with radical agents.

This research employs an innovative approach that bridges the existing bibliography (Ohls et al., 2023; Wolfowicz et al., 2021) with empirical evidence from real cases. The integration of judicial and police documents, alongside various secondary sources, not only provides a more objective foundation for analysis but also strengthens the study's conclusions. Thus, this research enabled the rigorous operationalization of the most relevant risk and protective factors identified in recent systematic reviews and meta-analyses, culminating in a comprehensive classification of the factors present in the radicalization process of the cell members.

While protective factors against extremism and radicalization have received less attention compared to risk factors (Lösel et al., 2018; Ohls et al., 2023), particularly in the context of youth (Campelo et al., 2018; Emmelkamp et al., 2020), this study identified both risk and protective factors. This dual focus enables a more thorough and balanced risk assessment, particularly for young populations who are especially vulnerable to extremism and violent radicalization (Campelo et al., 2018).

Moreover, the research aligns with existing empirical evidence highlighting the complexity of the processes leading to radicalization, which lack a singular trajectory or path (Horgan, 2008). This underscores the multifactorial nature of radicalization and the importance of understanding it in all its complexity (e.g. Khalil et al., 2022; Moyano & Trujillo, 2013). Therefore, the research emphasizes the need to consider the interplay of multiple factors in the radicalization process and advocates for preventive interventions that address its various dimensions (González et al., 2022b).

In the applied field of violent extremism prevention, several tools are currently available to professionals and researchers, including the Extremism Risk Guidelines (ERG 22+; Lloyd & Dean, 2015), the Islamic Radicalization tool (IR46; Van der Heide et al., 2019), the Terrorist Radicalization Assessment Protocol-18 (TRAP-18; Meloy & Gill, 2016), and the Multi-Level Guidelines (MLG; Cook, 2014). While some of these tools have been developed with considerable care and methodological rigor, further progress needs to be made on their scientific basis and on obtaining empirical evidence (Scarcella et al., 2016), particularly in light of the hybrid and evolving nature of contemporary radicalization processes (Ahmed et al., 2021). A common limitation is their reliance on a nominal scale approach, wherein the mere presence or absence of each factor is given equal weight. This can hinder the ability to differentiate between varying levels of risk and may result in overly broad or inappropriately targeted interventions (Klausen et al., 2016; Silke, 2014). Moreover, there is a recognized need for longitudinal empirical research (Ohls et al., 2023) that offers greater methodological robustness, conceptual clarity, and a more systematic evidence base to enhance the reliability of risk assessments and the effectiveness of corresponding interventions (Jensen et al., 2016; Sageman, 2014).

This study aims to make a modest empirical contribution to the ongoing discussion on risk and protective factors, drawing on validated evidence. In this context, a recording sheet was developed to organize information using validated factors, allowing for a more structured and context-aware approach. Rather than replacing existing tools, this contribution aims to complement them by incorporating both risk and protective elements, which may support more balanced and preventive perspectives. Additionally, attention to cultural, social, and political contexts helps ensure greater relevance in diverse settings. In addition, such an empirical approach can help reduce subjectivity in assessments, prevent critical omissions, and minimize the influence of personal biases. Ultimately, this can enhance our capacity to manage increasingly dynamic and complex threats by enabling earlier identification of potential violence and mitigating its harmful consequences in today's globalized context.

Although the research allowed for the identification of the risk and protective factors present in the violent radicalization process of the 17-A cell members, certain limitations must be considered. First, the sample size was small, limited to the members of a single terrorist cell. Therefore, generalization of the results is not possible. Second, while the meta-analysis by Wolfowicz et al. (2021) proved to be a useful reference framework that allowed for the classification of risk and protective factors, the definition of some factors posed difficulties for their use and interpretation. To address this, factors from other studies were incorporated, and descriptions of certain factors that were less rigorous or lacked description were expanded. Similarly, there was a lack of factors addressing behavioral changes in individuals or those close to them (parents, siblings, etc.), such as alterations in habits, routines, or even personal appearance (Khalil et al., 2022). There was also an absence of factors that accounted for leadership strategies or possible manipulation dynamics applied by the group leader or the members (González et al., 2022a). Furthermore, we classified each factor strictly as either a risk or protective factor, based on the sources we consulted. However, we recognize that some factors can act as both, depending on the context and how they are interpreted. Several systematic reviews have pointed out that the evidence for some factors is mixed or even contradictory (Jahnke et al., 2022; McGilloway et al., 2015; Scarcella et al., 2016; Wolfowicz et al.,

2020b, 2021). This suggests that the same factor might have different effects depending on the study setting, population, measurement tools, or other variables. In our study, we only looked at whether these factors were present or not, so we can't say how they actually influenced the outcome. For instance, factors like socioeconomic status, education, unemployment, religiosity, self-esteem, family-related factors, social integration, and social connectedness have shown mixed results in the literature.

Future research should address these methodological aspects to improve the classification of factors and enhance their interpretation. Third, the meta-analysis on which we rely differentiates between three possible outcomes: attitudes, intentions, and radical behaviors. Testing the effects of the factors evaluated on each of them is not possible given the information available to us. Given this limitation and the fact that many factors are not necessarily unrelated to behavioural outcomes but rather have not been investigated, and their relationship remains unexplored, it was decided to include all factors regardless of the outcome. Therefore, rather than a limitation, the presence of these factors among the members of the cell seems to indicate that their impact on behaviour is plausible, and future research should address this relationship. Fourth, although a wide variety of materials were analyzed, potential biases in the information collection process (such as social desirability bias or retrospective bias in the statements from members, family members, and people in their environment) should be taken into account, as these can distort memories and impact the accuracy of the narratives. Therefore, reliance on secondary data may have generated inaccuracies, inconsistencies, or missing data (Freilich & LaFree, 2016). Likewise, the documents collected were based on an indirect retrospective evaluation of the subjects' behavior, which may have implied some loss of information. In addition, it is important to emphasize that risk and protective factors coded as absent or inconclusive do not necessarily indicate their absence, but rather reflect the insufficiency of available information to confirm their presence. Fifth, it is important to note that, although the authors employed a flexible operationalization of risk and protection factors – treating intentions as a close proxy for behavior, which in turn is influenced by attitudes –, the results did not allow distinguishing among attitudes, intentions, and behaviors. Additionally, it was not possible to determine interactions that existed among the factors, as the protective factors did not exhibit measurable effects. Future experimental research should address the relationship between these factors and behavioral outcomes more directly. Finally, given that this study adopts a descriptive approach, the causal effects of the identified factors have not been established. Consequently, while the study successfully identified the presence or absence of these factors, it did not assess the magnitude of their impact on the radicalization process, nor did it determine the relative importance of each factor.

In conclusion, this research systematically examined the risk and protective factors associated with the radicalization process, offering a comprehensive classification of the dimensions and factors involved. The findings highlight the multidimensional nature of radicalization, with risk factors (particularly psychological and attitudinal/subjective beliefs) being significantly more prevalent among the cell members than protective factors such as sociodemographic and criminogenic elements. This imbalance may have facilitated the radicalization process. The identification of these underlying factors

underscores the critical importance of early intervention strategies aimed at mitigating the risk of violent extremism.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This research is part of the CAMINS project, developed by the General Information Police Station of Mossos d'Esquadra and the research group HUM-1084 'Conflict and Human Security'.

Notes on contributors

Irene González Jiménez is a PhD candidate at the Universidad de Córdoba, Spain, and a member of the Conflict and Human Security (HUM-1084) research group. Her main interest research area is Forensic Psychology, Social Psychology and Behavioural Sciences.

Reyes Rodríguez Lora is a PhD candidate at the Universidad de Córdoba, Spain, and a member of the Conflict and Human Security (HUM-1084) research group. Her line of research focuses on radicalization, violent extremism and groups of psychological abuse.

Roberto M. Lobato is an Assistant Professor in the Department of Health Sciences at the Universidad de Burgos, Spain. His line of research focuses on social identity, radicalization processes, political violence, and terrorism.

Encarnación Hidalgo-Tenorio, is a Professor of English Linguistics at the Universidad de Granada, Spain. Her research centers on corpus-assisted Critical Discourse Analysis, with a focus on representation and power dynamics in public discourse.

Pol C. Aritzeta is a sergeant in the Catalan Police – Mossos d'Esquadra assigned to the General Information Police Station. His line of work involves coordinating programs for the prevention of violent radicalization processes in the educational, child protection, community, police, and criminal execution in prisons.

David Sànchez is the deputy chief of the intelligence and counterterrorism general office of Catalan Police – Mossos d'Esquadra. He is the director of programs for the prevention and detection of violent radicalization processes, and a promoter of lines of research with the aim of understanding violent extremism.

Manuel Moyano Pacheco is Professor of Social Psychology at the Universidad de Cordoba and head of the research group HUM-1084 'Conflict and Human Security'.

ORCID

Irene González http://orcid.org/0000-0002-8251-6320
Reyes Rodríguez http://orcid.org/0009-0007-7066-8398
Roberto M. Lobato http://orcid.org/0000-0003-4152-7020
Encarnación Hidalgo-Tenorio http://orcid.org/0000-0002-9750-8016
Manuel Moyano http://orcid.org/0000-0001-6745-0936

References

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, *30*(1), 47–87. https://doi.org/10.1111/j.1745-9125.1992.tb01093.x

Ahmed, A., Annovi, A., Di Liddo, A., Grinyer, P., Lynch, C., Mainone, D., Rosato, R., Varga, A., & Wulf, V. (2021). *Methodologies and tools for risk assessment on radicalization and violent extremism* (Deliverable D6.1, PARTICIPATION Horizon 2020).

Ajrouch, K. J., & Kusow, A. M. (2007). Racial and religious contexts: Situational identities among Lebanese and Somali Muslim immigrants. *Ethnic and Racial Studies*, *30*(1), 72–94.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.

Akers, R. (1998). *Social learning and social structure: A general theory of crime and deviance*. Northeastern University Press.

Altier, M. B., Boyle, E. L., & Horgan, J. G. (2022). Terrorist transformations: The link between terrorist roles and terrorist disengagement. *Studies in Conflict & Terrorism*, *45*(9), 753–777. https://doi.org/10.1080/1057610X.2019.1700038

Altier, M. B., Boyle, L. E., Shortland, N. D., & Horgan, J. G. (2017). Why they leave: An analysis of terrorist disengagement events from eighty-seven autobiographical accounts. *Security Studies*, *26*(2), 305–332. https://doi.org/10.1080/09636412.2017.1280307

Aparicio, R., & Portes, A. (2021). Los nuevos españoles: La incorporación de los hijos de inmigrantes. *Bellaterra Edicions*.

Audiencia Nacional. (2021). *Sentencia: 00015/21. Sumario No 5/2018. Juzgado Central de Instrucción N °4*. https://www.larepublicacheca.cat/wp-content/uploads/2021/05/sentencia.pdf

Basra, R., & Neumann, P. R. (2016). Criminal pasts, terrorist futures: European jihadists and the new crime-terror nexus. *Perspectives on Terrorism*, *10*(6), 25–40. https://icsr.info/wp-content/uploads/2016/10/ICSR-Report-Criminal-Pasts-Terrorist-Futures-European-Jihadists-and-the-New-Crime-Terror-Nexus.pdf

Bastian, M., Heymann, S., & Jacomy, M. (2009). Gephi: An open source software for exploring and manipulating networks. In *International AAAI Conference on Weblogs and Social Media*.

Bhui, K., Everitt, B., & Jones, E. (2014). Might depression, psychosocial adversity, and limited social assets explain vulnerability to and resistance against violent radicalisation? *PLoS ONE*, *9*(9), e105918. https://doi.org/10.1371/journal.pone.0105918

Bhui, K. S., Hicks, M. H., Lashley, M., & Jones, E. (2012). A public health approach to understanding and preventing violent radicalization. *BMC Medicine*, *10*, 16. https://doi.org/10.1186/1741-7015-10-16

Braddock, K., & Dillard, J. P. (2016). Meta-analytic evidence for the persuasive effect of narratives on beliefs, attitudes, intentions, and behaviors. *Communication Monographs*, *83*(4), 446–467. https://doi.org/10.1080/03637751.2015.1128555

Campelo, N., Oppetit, A., Neau, F., Cohen, D., & Bronsard, G. (2018). Who are the European youths willing to engage in radicalisation? A multidisciplinary review of their psychological and social profiles. *European Psychiatry*, *52*, 1–14. https://doi.org/10.1016/j.eurpsy.2018.03.001

Çelik, Ç. (2015). Having a German passport will not make me German: Reactive ethnicity and oppositional identity among disadvantaged male Turkish second-generation youth in Germany. *Ethnic and Racial Studies*, *38*, 1646–1662. https://doi.org/10.1080/01419870.2015.1018298

Chen, Y., Li, L., & Ybarra, O. (2020). Symbolic threat increases negative self-conscious emotions: Experimental evidence. *Journal of Pacific Rim Psychology*, *14*. https://doi.org/10.1017/prp.2020.3

Cherney, A., Putra, I. E., Putera, V. S., Erikha, F., & Magrie, M. F. (2021). The push and pull of radicalization and extremist disengagement: The application of criminological theory to Indonesian and Australian cases of radicalization. *Journal of Criminology*, *54*(4), 407–424. https://doi.org/10.1177/26338076211034893

Cherven, K. (2015). *Mastering Gephi network visualization*. Packt Publishing Ltd.

Christensen, A. P., & Kenett, Y. N. (2023). Semantic network analysis (SemNA): A tutorial on preprocessing, estimating, and analyzing semantic networks. *Psychological Methods*, *28*(4), 860–879. https://doi.org/10.1037/met0000463

Clubb, G. (2015). De-radicalization, disengagement and the attitudes-behavior debate. In C. Kennedy-Pipe, G. Clubb, & S. Mabon (Eds.), *Terrorism and political violence* (pp. 258–266). Sage.

Cohen, L., Manion, L., & Morrison, K. (2017). Coding and content analysis. In L. Cohen, L. Manion, & K. Morrison (Eds.), *Research methods in education* (pp. 668–685). Routledge.

Consorci de Benestar Social del Ripollès. (2017). *Memòria* 2017. Memoria_CBSR_2017_COMARCAL.pdf
Cook, A. N. (2014). *Risk assessment and management of group-based violence*.
Desmarais, S. L., Simons-Rudolph, J., Brugh, C. S., Schilling, E., & Hoggan, C. (2017). The state of scientific knowledge regarding factors associated with terrorism. *Journal of Threat Assessment and Management*, *4*(4), 180–209. https://doi.org/10.1037/tam0000090
Diestel, R. (2010). *Graph theory*. Springer.
Ellis, B. H., Abdi, S., Horgan, J., Miller, A., Saxe, G., & Blood, E. (2015). Trauma and openness to legal and illegal activism among Somali Refugees. *Terror and Political Violence*, *27*(5), 857–883. https://doi.org/10.1080/09546553.2013.867849
Emmelkamp, J., Asscher, J. J., Wissink, I. B., & Stams, G. J. J. (2020). Risk factors for (violent) radicalization in juveniles: A multilevel meta-analysis. *Aggression and Violent Behavior*, *55*, 101489. https://doi.org/10.1016/j.avb.2020.101489
Emmons, S., Kobourov, S., Gallant, M., Börner, K., & Dovrolis, C. (2016). Analysis of network clustering algorithms and cluster quality metrics at scale. *PLoS ONE*, *11*(7), e0159161. https://doi.org/10.1371/journal.pone.0159161
Europol. (2018). *European Union terrorism situation and trend report 2018 (TE-SAT)*. Publications Office of the European Union. https://www.europol.europa.eu/cms/sites/default/files/documents/tesat_2018_1.pdf
Europol. (2020). *European Union terrorism situation and trend report 2020 (TE-SAT)*. Publications Office of the European Union. https://www.europol.europa.eu/activities-services/main-reports/european-union-terrorism-situation-and-trend-report-te-sat-2020
Farrington, D. P. (1994). Protective factors in the development of juvenile delinquency and adult crime. In *Sixth Scientific Meeting of the Society for Research in Child and Adolescent Psychopathology*, London, England.
Fleischmann, F., & Phalet, K. (2016). Identity conflict or compatibility: A comparison of Muslim minorities in five European cities. *Political Psychology*, *37*(4), 447–463. http://www.jstor.org/stable/44132901
Freilich, J. D., & LaFree, G. (2016). Measurement issues in the study of terrorism: Introducing the special issue. *Studies in Conflict & Terrorism*, *39*(7–8), 569–579. https://doi.org/10.1080/1057610X.2016.1140998
García-Calvo, C., Reinares, F., & Vicente, Á. (2020). National extraction, geographical origin and migratory ancestry among jihadists in Spain. *Studies in Conflict & Terrorism*, *46*(6), 798–823. https://doi.org/10.1080/1057610X.2020.1792740
González, I., Moyano, M., Lobato, R. M., & Trujillo, H. M. (2022a). Evidence of psychological manipulation in the process of violent radicalization: An investigation of the 17-A cell. *Frontiers in Psychiatry*, *13*, 789051. https://doi.org/10.3389/fpsyt.2022.789051
González, I., Moyano, M., Lobato, R. M., & Trujillo, H. M. (2022b). Analysis of the radicalisation of the 17-A terrorist cell: An empirical approach using the 3N model. *International Journal of Social Psychology*, *37*(3), 529–553. https://doi.org/10.1080/02134748.2022.2096259
Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford University Press.
Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of the need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 189–212). Springer-Verlag.
Hastings, B. M., & Shaffer, B. A. (2004). Self-esteem, authoritarianism, and democratic values in the face of threat. *Psychological Reports*, *95*(1), 311–316. https://doi.org/10.2466/pr0.95.1.311-316
Helmus, L., Hanson, R. K., Babchishin, K. M., & Mann, R. E. (2013). Attitudes supportive of sexual offending predict recidivism: A meta-analysis. *Trauma, Violence & Abuse*, *14*(1), 34–53. https://doi.org/10.1177/1524838012462244
Herrenkohl, T. I., Tajima, E. A., Whitney, S. D., & Huang, B. (2005). Protection against antisocial behavior in children exposed to physically abusive discipline. *Journal of Adolescent Health*, *36*(6), 457–465. https://doi.org/10.1016/j.jadohealth.2003.09.025
Horgan, J. (2008). From profiles to pathways and roots to routes: Perspectives from psychology on radicalization into terrorism. *The Annals of the American Academy of Political and Social Science*, *618*(1), 80–94. https://doi.org/10.1177/0002716208317539

Horgan, J., Altier, M. B., Shortland, N., & Taylor, M. (2017). Walking away: The disengagement and de-radicalization of a violent right-wing extremist. *Behavioral Sciences of Terrorism and Political Aggression*, *9*(2), 63–77. https://doi.org/10.1080/19434472.2016.1156722

Idescat. (2017). *Institut d'Estadística de Catalunya [Statistic Institute of Catalonia]. Població estrangera a 1 de gener per municipis*. https://www.idescat.cat/pmhestrangera/%22?t=2017&b=6&nac=c14&geo=com%3A31#Plegable=geo

Igualada, C. (2021). International links and the role of the Islamic State in the Barcelona and Cambrils attacks in 2017. *Perspectives on Terrorism*, *15*(4), 65–75. https://www.jstor.org/stable/27044236

Inglés, C. J., Aparisi, D., Delgado, B., Torregrosa, M. S., & García-Fernández, J. M. (2017). Sociometric types and academic self-concept in adolescents. *Psicothema*, *29*(4), 496–501. https://doi.org/10.7334/psicothema2016.54

Irujo, J. M. (2017). El imam aleccionó a los terroristas en la corriente más clandestina del salafismo [The imam taught terrorists in the most clandestine stream of Salafism]. *El País*. https://elpais.com/politica/2017/08/24/actualidad/1503585337_048149.html.

Jacomy, M., Venturini, T., Heymann, S., & Bastian, M. (2014). Forceatlas2, a continuous graph layout algorithm for handy network visualization designed for the Gephi software. *PLoS One*, *9*(6), e98679. https://doi.org/10.1371/journal.pone.0098679

Jahnke, S., Abad Borger, K., & Beelmann, A. (2022). Predictors of political violence outcomes among young people: A systematic review and meta-analysis. *Political Psychology*, *43*(1), 111–129. https://doi.org/10.1111/pops.12743

Jalloul, H. (2018). Realidad, ideología y terminología: entre la radicalización, la violencia política y el terrorismo yihadista. *Revista de Estudios de Seguridad Internacional*, *4*, 99–121. https://doi.org/10.18847/1.8.7

The Jamovi Project. (2025). *Jamovi (Version 2.6)* [Computer Software]. https://www.jamovi.org

Jensen, M., La Free, G., James, P., Atwell-Seate, A., Pisoiu, D., Stevenson, J., & Tinsley, H. (2016). *Final report: Empirical assessment of domestic radicalization (EADR)*. Report to the National Institute of Justice, Office of Justice Programs, US Department of Justice. The National Consortium for the Study of Terrorism and Responses to Terrorism. https://www.ncjrs.gov/pdffiles1/nij/grants/250481.pdf.

Khalil, J., Horgan, J., & Zeuthen, M. (2022). The Attitudes-Behaviors Corrective (ABC) model of violent extremism. *Terrorism and Political Violence*, *34*(3), 425–450. https://doi.org/10.1080/09546553.2019.1699793

Klausen, J., Campion, S., Needle, N., Nguyen, G., & Libretti, R. (2016). Toward a behavioral model of "homegrown" radicalization trajectories. *Studies in Conflict & Terrorism*, *39*(1), 67–83. https://doi.org/10.1080/1057610X.2015.1099995

Klausen, J., Libretti, R., Hung, B. W. K., & Jayasumana, A. P. (2020). Radicalization trajectories: An evidence-based computational approach to dynamic risk assessment of "homegrown" jihadists. *Studies in Conflict & Terrorism*, *43*(7), 588–615. https://doi.org/10.1080/1057610X.2018.1492819

Kruglanski, A. W., Bélanger, J. J., Gelfand, M., Gunaratna, R., Hettiarachchi, M., Reinares, F., Saroglou, V., Agostino, L., Moughrabieh, A., & Sharvit, K. (2013). Terrorism—A (self) love story: Redirecting the significance quest can end violence. *American Psychologist*, *68*(7), 559–575. https://doi.org/10.1037/a0032615

Kruglanski, A. W., Bélanger, J. J., & Gunaratna, R. (2019). *The three pillars of radicalization: Needs, narratives, and networks*. Oxford University Press.

LaFree, G., Jensen, M. A., James, P. A., & Safer-Lichtenstein, A. (2018). Correlates of violent political extremism in the United States. *Criminology*, *56*(2), 233–268.

Laub, J., & Sampson, R. (2003). *Shared beginnings, divergent lives: Delinquent boys to age 70*. Harvard University Press.

Lloyd, M., & Dean, C. (2015). The development of structured guidelines for assessing risk in extremist offenders. *Journal of Threat Assessment and Management*, *2*(1), 40–52. https://doi.org/10.1037/tam0000035

Lobato, R. M., & García-Coll, J. (2022). *La encrucijada entre la radicalización y la desradicalización: Teorías, herramientas y aspectos aplicados [The crossroads between radicalization and deradicalization: Theories, tools and applied aspects]*. *Los Libros de la Catarata*.

Lösel, F., & Farrington, D. P. (2012). Direct protective and buffering protective factors in the development of youth violence. *American Journal of Preventive Medicine*, *43*(2), S8–S23.
Lösel, F., King, S., Bender, D., & Jugl, I. (2018). Protective factors against extremism and violent radicalization: A systematic review of research. *International Journal of Developmental Science*, *12*(1–2), 89–102. https://doi.org/10.3233/dev-170241
McCauley, C., & Moskalenko, S. (2008). Mechanisms of political radicalization: Pathways toward terrorism. *Terrorism and Political Violence*, *20*(3), 415–433. https://doi.org/10.1080/09546550802073367
McCauley, C., & Moskalenko, S. (2017). Understanding political radicalization: The two-pyramids model. *American Psychologist*, *72*(3), 205–216. https://doi.org/10.1037/amp0000062
McGilloway, A., Ghosh, P., & Bhui, K. (2015). A systematic review of pathways to and processes associated with radicalization and extremism amongst Muslims in Western societies. *International Review of Psychiatry*, *27*(1), 39–50. https://doi.org/10.3109/09540261.2014.992008
Meloy, J. R., & Gill, P. (2016). The lone-actor terrorist and the TRAP-18. *Journal of Threat Assessment and Management*, *3*(1), 37–52. https://doi.org/10.1037/tam0000061
Moyano, M. (2019). *Radicalización terrorista: Gestión del riesgo y modelos de intervención [Terrorist radicalization: Risk management and intervention models]*. Síntesis.
Moyano, M., & Trujillo, M. H. (2013). *Radicalización islamista y terrorismo: Claves Psicosociales [Islamist radicalization and terrorism: Psychosocial keys.]*. Editorial Universidad de Granada.
Newman, M. (2005). A measure of betweenness centrality based on random walks. *Social Networks*, *27*(1), 39–54. https://doi.org/10.1016/j.socnet.2004.11.009
Observatori del Treball i Model Productiu. (2017). *Atur per comarques i municipis*. https://observatoritreball.gencat.cat/web/.content/generic/documents/treball/estadistica/atur_comarques_i_municipis__premsa/2017/arxius/Atur_per_municipis_201708.pdf
Ohls, I., Hosseini, D. S., Spasojevic, A., Brandes, F., Bajwa, R., Ahmed, K., & Allroggen, M. (2023). A systematic review of the risk and protective factors for processes associated with islamist radicalization and extremism. *Terrorism and Political Violence*, *36*(8), 1027–1047. https://doi.org/10.1080/09546553.2023.2243349
Park, H. W., & Leydesdorff, L. (2013). Decomposing social and semantic networks in emerging "big data" research. *Journal of Informetrics*, *7*(3), 756–765. https://doi.org/10.1016/j.joi.2013.05.004
Regnerus, M. D., & Elder, G. H. (2003). Religion and vulnerability among low-risk adolescents. *Social Science Research*, *32*(4), 633–658. https://doi.org/10.1016/S0049-089X(03)00027-9
Reinares, F., & García-Calvo, C. (2018). *Un análisis de los atentados terroristas en Barcelona y Cambrils* [An analysis of the terrorist attacks in Barcelona and Cambrils]. *Real Instituto Elcano*. https://www.realinstitutoelcano.org/analisis/un-analisis-de-los-atentados-terroristas-en-barcelona-y-cambrils/
Rutter, M. (2005). Environmentally mediated risks for psychopathology: Research strategies and findings. *Journal of the American Academy of Child and Adolescent Psychiatry*, *44*(1), 3–18. https://doi.org/10.1097/01.chi.0000145374.45992.c9
Sageman, M. (2014). The stagnation in terrorism research. *Terrorism and Political Violence*, *26*(4), 565–580. https://doi.org/10.1080/09546553.2014.895649
Saldaña, J. (2013). *The coding manual for qualitative research*. Sage.
Sarma, K. M. (2017). Risk assessment and the prevention of radicalization from nonviolence into terrorism. *American Psychologist*, *72*(3), 278–288. https://doi.org/10.1037/amp0000121
Scarcella, A., Page, R., & Furtado, V. (2016). Terrorism, radicalisation, extremism, au-thoritarianism and fundamentalism: A systematic review of the quality and psycho-metric properties of assessments. *Public Library of Science One*, *11*, 1–19. https://doi.org/10.1371/journal.pone.0166947
Schumpe, B. M., Bélanger, J. J., Moyano, M., & Nisa, C. F. (2020). The role of sensation seeking in political violence: An extension of the Significance Quest Theory. *Journal of Personality and Social Psychology*, *118*(4), 743–761. https://doi.org/10.1037/pspp0000223
Schuurman, B. (2020). Research on terrorism, 2007–2016: A review of data, methods, and authorship. *Terrorism and Political Violence*, *32*(5), 1011–1026. https://doi.org/10.1080/09546553.2018.1439023
Stephan, W. G., & Stephan, C. W. (2000). An integrated threat theory of prejudice. In S. Oskamp (Ed.), *Reducing Prejudice and Discrimination* (pp. 23–45). Lawrence Erlbaum Associates.
Silke, A. (2014). Risk assessment of terrorist and extremist prisoners. In S. Andrews (Ed.), *Prisons, terrorism and extremism: Critical issues in management, radicalisation and reform* (pp. 108–121). Routledge.

Smith, A. G. (2018). *Risk factors and indicators associated with radicalization to terrorism in the United States: What research sponsored by the National Institute of Justice tells us*. US Department of Justice, Office of Justice Programs, National Institute of Justice. https://www.ojp.gov/pdffiles1/nij/251789.pdf

Trujillo, H. M., Alonso, F., Cuevas, J. M., & Moyano, M. (2018). Evidencias empíricas de manipulación y abuso psicológico en el proceso de adoctrinamiento y radicalización yihadista inducida [Empirical evidence of psychological manipulation and abuse in the process of induced jihadist radicalization and indoctrination]. *Revista de Estudios Sociales*, *66*, 42–54. https://doi.org/10.7440/res66.2018.05

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences*, *15*(3), 398–405. https://doi.org/10.1111/nhs.12048

Van der Heide, L., Van der Zwan, M., & Van Leyenhorst, M. (2019). *The practitioner's guide to the galaxy: A comparison of risk assessment tools for violent extremism*. International Centre for Counter-Terrorism.

Vergani, M., Iqbal, M., Ilbahar, E., & Barton, G. (2018). The three Ps of radicalization: Push, pull and personal. A systematic scoping review of the scientific evidence about radicalization into violent extremism. *Studies in Conflict & Terrorism*, *43*(10), 854–854. https://doi.org/10.1080/1057610X.2018.1505686

Vicente, Á. (2018). Fórmulas utilizadas para la radicalización y el reclutamiento yihadista de menores en España [Formulas used for radicalization and jihadist recruitment of minors in Spain]. *Real Instituto Elcano*, *76*, 76–94.

Vicente, Á. (2023). Social ties and jihadist participation: A mixed-methods approach to the differential recruitment of radicalized youth in Spain. *Terrorism and Political Violence*, *35*(4), 988–1006. https://doi.org/10.1080/09546553.2021.1989415

Webber, D., Babush, M., Schori-Eyal, N., Vazeou-Nieuwenhuis, A., Hettiarachchi, M., Bélanger, J. J., Moyano, M., Trujillo, H. M., Gunaratna, R., Kruglanski, A. W., & Gelfand, M. J. (2018). The road to extremism: Field and experimental evidence that significance loss-induced need for closure fosters radicalization. *Journal of Personality and Social Psychology*, *114*(2), 270–285. https://doi.org/10.1037/pspi0000111

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Cornell University Press.

Wolfowicz, M., Litmanovitz, Y., Weisburd, D., & Hasisi, B. (2020a). Protocol: Cognitive and behavioral radicalization: A systematic review of the putative risk and protective factors. *Campbell Systematic Reviews*, *16*(3), e1102. https://doi.org/10.1002/CL2.1102

Wolfowicz, M., Litmanovitz, Y., Weisburd, D., & Hasisi, B. (2020b). A field-wide systematic review and meta-analysis of putative risk and protective factors for radicalization outcomes. *Journal of Quantitative Criminology*, *36*(3), 407–447. https://doi.org/10.1007/s10940-019-09439-4

Wolfowicz, M., Litmanovitz, Y., Weisburd, D., & Hasisi, B. (2021). Cognitive and behavioral radicalization: A systematic review of the putative risk and protective factors. *Campbell Systematic Reviews*, *17*(3), e1174. https://doi.org/10.1002/cl2.1174