

A Systematic Review of Risk and Protective Factors among Female Violent Extremists

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Abstract

Background: Women are often portrayed in the common sense as nonviolent. If they do engage in terrorist activities, women are assumed to be passive agents, supporting their extremist husband, caring for their children, supporting the organization, or contributing to recruitment. The assumption that women merely follow their husband or dream to become brides of IS fighters is incorrect. This systematic review aims to analyze the existing literature on risk and protective factors in female violent extremists, in order to inform gender-specific counterterrorism policies.

Methods: Inclusion criteria encompassed studies containing data on risk and protective factors of female violent extremist behavior towards persons/property or a willingness to engage in violent extremist behavior. Methodological quality assessment included checklists for qualitative and quantitative studies.

Results: Following the systematic review process, 26 studies were included. Demographic factors, mental health problems, personal and family problems, significance loss, revenge, religious motivations, family involvement, coercion, gender inequality, and group solidarity emerged as contributors to female violent extremism. Conversely, desistance was associated with prosocial environments, personal status, maturation, future perspectives, and negative experiences with terrorism involvement. In addition, certain criminological theories were identified as valuable tools for understanding women's involvement.

Discussion: With respect to possible biases, it was found that the included studies were mostly based on a small sample size or secondary source data. Moreover, several studies drew on identical data of suicide bombers from an Israeli prison. Understanding the risk and protective factors present in female violent extremists is essential for counterterrorism interventions of this specific group. Addressing personal vulnerabilities should be a first step in establishing effective deradicalization programs and successful reintegration. More empirical research with bigger sample sizes, and specified to the diverse ideologies, is needed to distinguish actual risk and protective factors.

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Introduction

Terrorism and violent extremism have a long history and a worldwide impact. Both threats contain ideological motives for breaking the law, but unlike terrorists, violent extremists do not always commit a terrorist act (Inspectie Justitie en Veiligheid, 2017; Tosini, 2007). In this

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systematic review, violent extremism refers to the justification of violent extremist behavior towards persons/property or the willingness to engage in violent extremist behavior. The history of women participating in terrorist organizations around the world is long and well established (Von Knop, 2007). Since the early 20th century, Palestinian females have been active in the Israeli-Palestinian conflict (Kirk, 2023). Nevertheless, these women were portrayed in media coverage as passive actors and/or victims of terror conducted by male terrorist fighters (Kirk, 2023). This misconception has led to a disproportionate focus on men in terrorism research (Ness, 2005). Recently, studies have emerged, indicating that women take more active positions in terrorism, such as propaganda, recruitment, combat operations and suicide bombing (Kirk, 2023; Sjoberg & Wood, 2015). As for the latter, half of all suicide bombers are women (Laster & Erez, 2015; Turner, 2016). Moreover, about 13% of international citizens who have joined Islamic State (hereafter: IS) were women (Cook & Vale, 2018; Peresin, 2015). They were engaged in raising and educating children and were active in conveying the jihadist ideology (Von Knop, 2007). Women also proved effective in performing terrorist attacks (Kvakhadze, 2018). Research on violent extremist women is necessary because of their increased (active) involvement in terrorist activities (Von Knop, 2007). Gaining more insight into women at risk can contribute to the prevention of future violent extremism by women (Wolfowicz et al., 2020a, 2020b).

Studies on violent extremism and terrorism increasingly focus on improving risk assessment and understanding risk and protective factors, which may lead to substantiated deradicalization strategies (Wolfowicz et al., 2020a, 2020b). Despite the growth of terrorism research, empirical studies represent only a small percentage of the existing knowledge (Schuurman, 2018; Silke, 2008), leading policymakers to develop deradicalization strategies which effectiveness is hardly known (Davis, 2014; Neumann & Kleinmann, 2013). Recently, a systematic review of risk assessment methodologies of individuals at risk of committing extremist or terrorist offenses revealed that even when using a more scientific approach (e.g., Extremisms Risk Guidelines [ERG22+]), the risk factors identified during assessment do not always correlate directly to terrorism or violent extremism, and other factors may be missed (Scarcella et al., 2016). This can lead to false positive and false negative outcomes regarding individuals who are at high or low risk for future attacks (Scarcella et al., 2016). Few

empirical studies have investigated specific characteristics of women involved in violent extremism (Burgh et al., 2020). Therefore, a systematic review was performed to map personal and situational risk and protective factors in a female violent extremist (hereafter: FVE) population. A better understanding of the role and involvement of women is essential for counterterrorism officials to respond appropriately to and prevent radicalization of women (Yon & Milton, 2019).

Methods

This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021).

Selection criteria (see Appendix A)

Types of studies

Studies were included in this review if they contained data on risk and protective factors in FVE. Furthermore, only studies in which the violence was ideologically motivated were included. Literature reviews were excluded to increase the study homogeneity and make accurate comparisons. To avoid publication biases, also relevant studies in gray literature (including books, congress papers, theses and dissertations, research reports and statements) were searched. There were no time limits for this review.

Population

This review included studies investigating FVE and studies investigating a combined male/female sample, but only when data on women could be differentiated from those on men. Studies investigating only male populations were excluded. Studies looking at political and activist groups such as republicans, democrats or black lives matters (Chabrol et al., 2020), were not included. No limitations were placed on age, race, or religion/ideology` (e.g., left-wing, right-wing, jihadi, far-right).

Types of outcome measures

To be included, the dependent variable(s) in the studies need to be in line with the definition of violent extremist behavior, namely (the justification of) violent extremist behavior towards persons/property or a willingness to engage in violent extremist behavior. Therefore, studies that describe outcomes that preceded actual violent behavior, such as justifying extremist violence, were included. In addition, studies that focused on one particular type of extremism (e.g., far-right, far-left, religious/ethnically motivated, nationalist/separatist motivated VE) were also included in this review. Studies that focused on factors that reduce the likelihood of involvement in or support of extremist violent acts (protective factors), and studies that addressed risk factors, were also included. Studies including other forms of violence, like non-extremist violence, were beyond the scope of this review and were therefore excluded. Studies with a broader underlying attitude (such as social dominance) were not eligible.

Types of risk and protective factors

A risk factor must increase the likelihood of radicalization or terrorism (Kraemer et al., 1997). A protective factor is associated with a decreased likelihood of negative outcomes or a reduction of a risk factor's impact (Simpson, 2020). For this review, studies that describe all types of factors that have a positive or negative association with one of the earlier mentioned outcomes were included. This implies that studies describing factors at the personal and situational level were comprised in the review, including static and dynamic risk or protective factors that fall under domains such as socio-demographic, psychological, economic, cultural factors.

Controls/sample

There is no specific control group defined.

Settings

There are no limitations to settings.

Language

Only studies and gray literature written in English were included in the review.

Search strategy

The following databases were consulted in January 2022 to search relevant literature: PubMed (MEDLINE+), Embase, PsychINFO, Social Science Citation Index (Web of Science), Scopus (for citation tracking), Cochrane Library and Google Scholar. Furthermore, the 'Journal for Deradicalization' and 'Perspectives on Terrorism' were browsed, because these journals are open access, focus on articles about terrorism in particular or were not covered by the databases. Finally, gray literature was searched in the abovementioned databases to decrease the risk of publication bias.

The following search terms were used:

- 1. political radic* OR extrem* OR violent extrem* OR violent radical* OR ethno* violen* OR terror* OR radical* OR homegrown OR home-grown OR sympath* OR extreme left OR far-left OR left-wing OR radical left OR left wing OR anarchist OR extreme right* OR far-right OR right-wing OR radical right OR white supremacy OR Neo-Nazi OR nationalist OR white-supremacist OR jihad* OR foreign fighter* OR ideologic* violen* OR islam* OR salaf* OR religious attack* OR religious violen* OR suicide attack* OR suicide bomber**
- 2. AND female* OR women OR woman OR gender*
- 3. AND risk factors OR protective factors OR risk assessment* OR psychological needs OR need for cognition OR factor* OR predictor* OR vulnerab* OR foci OR anteced* OR path OR pathway* OR related with OR trigger* OR key event* OR turning point* OR life event* OR driver* OR driving force* OR desire? OR quest? OR ((need OR needs) ADJ3 (sensation OR adventur* OR belong* OR certainty OR significance OR justice OR identity OR excitement OR individual* OR person* OR psychological* OR closure OR cognit*))*
- 4. 1 AND 2 AND 3*

Two independent reviewers (first and second author) searched each database, journal and gray literature (*cf. supra*), screened studies by title and abstract (level 1) and reviewed the full text (level 2) to assess eligibility. Inconsistencies in assessment (15 papers after level 1 and 11 papers after level 2) were discussed by these two reviewers until consensus was reached. The percentage agreement for the inter-rater reliability (IRR) in level 1 was 99.9% and in level 2 there was an inter-rater agreement of 91.4% ($K=.833$). In the quality assessment level, there was an IRR of 90.6% ($K=.608$). Personal bias was minimized as both researchers went through the stages of the systematic review (selection criteria, search terms, level 1 and 2 screening) independently. References of the selected papers were searched for additional relevant studies.

Quality assessment and data extraction

To assess the methodological quality of the included literature, checklists for qualitative and quantitative studies were prepared based on (1) the JBI Critical Appraisal Checklists for Qualitative and Quantitative Research (Lockwood et al., 2015) and (2) the Critical Appraisals Skills Program (CASP, 2018) (see Appendix B). The studies were rated between 0 and 18, with higher scores indicating higher methodological quality. Quality assessments were performed independently by the first and second author. In two cases, dialogue consensus was needed about inclusion. Decisions about the cut-off for exclusion were made *a priori* (Aromataris & Munn, 2020) and agreed upon by the raters. The cut-off score in this review was 10 out of 18, and five studies were excluded from the final literature corpus. The most common quality issues were lack of reflection on biases and limitations, lack of data-analysis, or lack of ethical approval. After the quality assessment, data extraction for all identified studies was done by the first and second author and the extracted data were cross-checked by them to ensure accuracy and reduce study bias (see Appendix C). Table 1 gives an overview of the study characteristics.

Table 1. Study description and results

Source	Study objectives	Country, year, setting	Sampling method	Population characteristics	Risk factors/motives	Protective factors	Quality assessment score
Berko & Erez (2005)*	Influence individual motivation to self-sacrifice and access to/support organization on suicide bombers' lives	Israeli prison, June 2003 - February 2005	In-depth interviews	2 men, 5 women; aged: 16-28 y.o.; Palestinian security prisoners; Muslim	<ul style="list-style-type: none"> - Third grade to second year of university - Celibate time first arrest - Family with traditional roles - Low socioeconomic status (SES) - Social identity as Palestinians - Revenge - Brothers involved in terrorism - Rebel gender restrictions and force - Ideological persuasion and prospects gratifying afterlife 	-Family members (especially mothers)	13.5
Berko & Erez, (2007)*	Gender-based influences on participation in terrorism	Israeli prison; February 2004 - January 2006	In-depth interviews	14 women; aged: 15-27 y.o. (M=21); Palestinian security prisoners; Muslim	<ul style="list-style-type: none"> - 11th grade to university bachelor degree - Single, no children - Large families with traditional roles - Loss of beloved ones (father) - Limited contact with men outside family - Social identity as Palestinians - Revenge - Rebel patriarchal regime/gender restrictions - Personal or familial problems - Reputation - Coercion (n=1) - Seeking meaning/status 	<ul style="list-style-type: none"> - Desire normative lifestyle - High price for terrorism, but no social recognition - abandonment family, shamed themselves and loved ones - Not seen as full member of terrorist organization - Contribution national struggle is not part of their life/identity -Mothers-to-be -Family object terrorism 	14
Berko et al.,	Understanding pathways,	Israeli prison;	In-depth interviews	26 women; 16 committed a security	<i>Security offenders</i> -High school to bachelor's degree	n.m.	13

(2010)*	motivations and experiences of women engaged in terrorism	February 2004 - December 2006		offense; aged 15-30 y.o. (M=23), Muslim, security offenders	(M=12 years of education) - Single, never married, no children - Traditional, large family - Little knowledge Jewish culture - Expressed hatred of Jews + revenge - Role of women in Palestine - Contribution to Palestinian cause - Sense of singularity - Gender equality - Involvement parents (n=1) - Religion - Sense of purpose in life - Escape marital circumstances - Coercion (n=1)		
Bloom, (2011)	Examine the conditions that really influence female violent extremists	Cases from Ireland, Caucasus, Israel, India, Singapore and Belgium from 1990 to 2010	Interviews, secondary sources	Case selection of 6 women; age and origin unknown, violent extremist offenders	<ul style="list-style-type: none"> - Young age - Ideology of paradise or self-sacrifice - Perceived injustice, threats or discrimination - Revenge - Coercion - Peer pressure/ relationships - Exposure to violence - Redemption - Revenge - Respect and rape 	Education Nuanced thinking about political ideology Labour Contact with family members	13
Brugh, (2020)	Characteristics and activities of women involved in jihadi-inspired terrorism	Secondary dataset: Western Jihadism Project, early 90s -	Dataset of 5718 individuals (n=405 women)	405 women involved in jihadism-inspired terrorism; M= 22.52 y.o.; Muslim.	<ul style="list-style-type: none"> - Most completed high school - About half had no recent employment - Criminal history (n=7) and drug-offenses (n=5) - 1/3 converted to Islam; linked to 	n.m.	15.5

		September 2017			terrorist organization		
Erez & Berko, (2007)*	Investigating involvement of Palestinian women in terrorism and response Israeli justice system.	Israeli prison; February 2004 - November 2006	In-depth interviews	16 Palestinian female security prisoners; aged: 15-30 y.o., Muslim	<ul style="list-style-type: none"> - Education range: high school to bachelor's degree - Single, no children - Large, traditional family - Loss of beloved ones (father) - Coercion (n=2) - Involvement parents (n=1) - Revenge - Religious indoctrination - Rewards for sacrifices - Pride and self-importance - Traditional rules of gender conformity 	- Family object terrorism (n=15)	14
Erez & Laster (2020)*	Evaluation of choices made by women and organizational benefits and costs of involving Palestinian women in terrorist activism	Israeli prison	In-depth interviews and information military court case files and prison records	14 incarcerated Palestinian women; aged: 18-29 y.o.; Muslim	<ul style="list-style-type: none"> - University (n=2) - Unmarried - Revenge and religion - Romantic involvement/desire to marry jihadist man - Coercion - Need for excitement and escape controlling environment - Ideology - Seeking significance (unique) - Contributing national cause 	n.m.	17
Gonzalez et al., (2014)	Investigating role of gender and ideological associations in terrorist perpetrators	Open-source data far-right and environmental/animal	Dataset analysis	14 Far-right women; aged: 16-71 y.o. (M=27); white, non-Latino, Caucasians; 16 ECO (ecological or environmental)	<i>Far-right</i> <ul style="list-style-type: none"> - Ideology - Criminal history (n=1) - Single or dating/cohabiting - Part of (informal) group or acted with others 	n.m.	13.5

		rights extremists, 1990-2012, U.S. Extremist Crime Database		/ALF (Animal Liberation Front) women; aged: 18-64 y.o. (M=30); compared to men and non-extremists	- Involvement friend (n=2) <i>ECO/ALF</i> - Ideology - Criminal history (n=2) - Part of (in) formal group or acted with others - Involvement friend (n=11)		
Jacques & Taylor, (2008)	Analyzing motivations and recruitment of female suicide terrorists	Open-source data from (non-)Western media sources	Internet searches	30 female suicide terrorists; aged: 15-46 y.o. (M=27.2) and 30 male suicide terrorists; most involved in Israeli-Palestine conflict	- Personal motives (social outsider, end life, unhappy; family or money problems) - Revenge - Negative events (e.g., killing family member) - Religious/nationalistic reasons	n.m.	15.5
Jacques & Taylor, (2013)	Examining backgrounds and social experiences of female terrorists to test conflicting accounts of etiology offending	Open-source data from (non-)Western media sources; dated from 1922-2004	Bibliographic databases and Internet searches	222 female terrorists, aged: 12-66 y.o. (M=22.6) and 269 male terrorists	- Secondary or tertiary education; - 53% employed or full-time education - Single (n=39); married (n=42) - 4% immigrants - 3% converted to a particular religion or different strain - 30% raised in activist families	n.m.	16.5
Koehler, (2021)	Investigating personal experiences of former female left-wing terrorists	Germany and the U.S.; 70s-90s	Open-source search of relevant literature and library	13 autobiographies of women who were active in left-wing terrorist organizations in Germany and U.S.	- Desire to act, making difference in capitalist society - Attracted to soldier's identity - Contribute as much as men - Achieve personal credibility and authenticity for yourself and social	n.m.	15

			databases		<ul style="list-style-type: none"> environment - Moral appeal international events - Affected/learned about injustice - Suffering and conflict in the world - Moral superiority - Feelings of loneliness - Desire to belong - Seeking meaning/purpose 		
Kortam, (2017)	Case study social construction radicalization process in a French young jihadi woman	France; November 2007	Interview	French woman; converted to Islam; travelled to Syria	<ul style="list-style-type: none"> - Parental conflict; divorced parents - Father with gambling problems; - Young age - Smoking hash, drinking - School drop out - Intimate partner violence - Prostitution - Early pregnancy - Suicide attempt - Admission psychiatry - Seeking attention/meaning 	n.m.	11
Kvakhadze, (2020)	Research on motivational qualities of women who left the Caucasus for Syria	Caucasus	10 semi-structured interviews with relatives of foreign fighters	Caucasian women; travelled to Syria; Muslim	<ul style="list-style-type: none"> - Involvement partner - Muslim majority in conservative region - Some cases coercion - Prestige under Jihadism/Sharia life - Religion - Family problems - Domestic violence 	n.m.	11.5
Maskivker, (2015)	Exploring why people become terrorists and addressing root causes	Chechnya, Palestine and Sri Lanka	Purposive, availability sampling, documented cases provided	Female suicide bombers (FSB); aged: 19-29 y.o.; demographic variables different for each case	<ul style="list-style-type: none"> - Self-redemption via cognitive dissonance mechanisms of transmutation (personal experiences and background culture) - Feelings of lost reputations - Seeking social status through FSB 	n.m.	14.5

			personal and anecdotal information		- Frustrations gender norms and patriarchy		
Nuraniyah, (2018)	Examining motivations and processes of female radicalization into IS	Indonesia, June 2015 - July 2017	Interviews, and virtual ethnography	25 women; aged: 20-45 y.o.; 18 moderate Muslims	<ul style="list-style-type: none"> - Married (n=15), divorced (n=5), unmarried (n=5) - Cognitive opening (48% divorced/broken homes) - Personal problems (relationship problems, perceived discrimination) - Socioeconomic and political grievances (feelings of injustice, poverty) - Religious seeking and frame alignment (sense of spiritual void; alienation from gateway groups; caliphate dream (hope and purpose)) - Majority high school diploma - Families or schools with violent jihadi record (n=4) 	n.m.	13.5
O'Rourke, (2009)	Interaction between individual motivations and terrorist group strategies	Global analysis, 1981-July 2008, no specific setting	Case study; both primary (martyrdom videos, interviews) as secondary (press reports, scholarship) data	5 women; different origins; aged: 17-38 y.o.	<ul style="list-style-type: none"> - Group solidarity - Resenting social norms - Loss of beloved ones - Feelings of hopelessness - Relationship problems (divorced, single, widowed) - Infertility (n=1) - Rape (n=1) - Drug use (n=1) 	n.m.	10.5

Peresin et al. (2021)	Explain and compare motivations and expectations for traveling to war zone and feelings/aspirations after return + insights in life under ISIS regime	Females from the Western Balkan	Interviews	34 women; Muslim at birth	<ul style="list-style-type: none"> - Religions motivations (perform traditional family-oriented roles/duties) - Joined together with husband/children - Perceived discrimination and disappointment - Converts to Islam - Ideological indoctrination by IS - Early marriage - Unknown about IS-conflict - Traumatic events - Practicing religion before departure - Low SES - Well educated - Unemployed department time 	- Negative experiences life under IS (after return)	12.5
Reiter et al. (2021)	Explore root factors common to (de)radicalization and how they manifest	n.m.	Self-selection or recruitment social media, selection by researcher + subsampling based on earlier (de)radicalization processes	4 women and 1 man; Islamist/Salafist	<ul style="list-style-type: none"> - Social surroundings - Exclusion (lack of social bonds) - Seeking (social) status and purpose - Creating social identity 	<ul style="list-style-type: none"> - Prosocial surroundings - Acceptance/inclusion - Sufficient personal status/self-image - Structure and stability - Disillusionment of knowledge Islam - Maturing out (mid to late 20s) 	15.5
Shapiro & Maras,	Examining how women in the	U.S. acts between	Court documents,	31 U.S. women; M=31 y.o.	<ul style="list-style-type: none"> - Involvement friends/family - Internet use 	n.m.	15.5

(2019)	U.S. acquired, maintained and acted to radicalization to religious terrorism for IS through social learning theory	2009- 2017	press releases, reports available open-access websites		<ul style="list-style-type: none"> - Identity struggles - Need to belong - Perceived injustice - Sympathy for and vulnerability - Relationship seeking 		
Weenink, (2015)	Exploring presence of behavioral problems and disorders + analyzing if behavioral histories offer clues to police in how to approach them	February- November 2014, global search	117 men, 23 women	M women=21 y.o.; 26% registration HKS (police system)	<ul style="list-style-type: none"> - Young age - Behavioral problems and disorders (n=11) - Serious problem behavior or mental health problems (n=5) - Diagnosed disorders (n=2) - Criminal history (26%: 5 times higher than general female population in the Netherlands under 22) 	n.m.	12
Van de Wetering et al. (2018)	Explaining disengagement women from extreme right groups in terms of social identity work: analyzing self-image in different social contexts and situations	Spring 2015- Summer 2016, exit programs operating in Germany	Subjects registered in German exit programs, two stages of analysis	No demographic variables, praxeological approach informed by biography theory	<ul style="list-style-type: none"> - Womanhood in extreme right groups (supporter, active roles, relationship with important member) - Seeking status and recognition - Need to belong 	<ul style="list-style-type: none"> - Stigmatization (self and children) by non-extremists - Self-image as good person - Deception that misled the true and good self - New boyfriend or family members - Exposure to violence, manipulation/exploitation, constant verification, and catalytic others 	14
Warren,	Preventing	45	300 women	≤ 25 y.o. (61.5%);	- Young age	n.m.	17

et al. (2020)	terrorism through violence risk assessments and examining relevance of risk and protective factors	countries, active between 1970 - 2018	involved in 58 distinct violent extremist groups	white/Caucasian (54,7%)	<ul style="list-style-type: none"> - Married (40%) - High school to college degrees - Religion - Moral emotions - Family history - Seeking social identity, social interaction, and collective cognitive structure - Militant thinking - Use of internet 		
Webber et al. (2017)	Analysis of motivational backgrounds 219 suicide attackers, searching evidence significance quest	Global analysis	786 open-source reports suicide attackers motivations coded in significance loss and gain	13.2% female; mostly Palestinian, Arab, and Arab-Palestinian	<ul style="list-style-type: none"> - Significance quest motive mediated by gender, age, education - Women more driven by significance loss (family death, relationship conflict) than significance gain 	n.m.	15
Yon & Milton, (2019)	Comparing radicalized females to radicalized male counterparts on recruitment, radicalization process and ideologies	U.S., 1948- 2016	1867 individuals (violent and non-violent), 10% women (n=182)	M=32.76 y.o.; most women far-left ideology	<ul style="list-style-type: none"> - About half is married - High school, college, and graduate school - About 40% engaged in violence (planning or commission attack) - Compared to males: females were younger, more likely to be divorced, married, separated, or widowed, with a higher level of schooling 	n.m.	13
Saltman & Smith, (2015)	Expand upon previous research by answering who is being	Largest database on Western females	Online self-identification as IS	Western female migrants to IS, English-speaking, in-depth information on	<ul style="list-style-type: none"> - Push factors (feeling isolated in the Western world, feeling that Muslim community is persecuted, anger/frustration and sadness for this 	n.m.	11.5

	radicalized, why women decide to depart for Syria and how radicalization process can be stopped	joining IS, social media material on over 100 females in 15 countries, after May 2014.	participants , interviews with 2 former Islamist extremists working as mentors	7 (resident) females	perceived persecution and lack of action) - Pull factors (sisterhood, belonging, utopia and religious seeking)		
Schweitzer, (2008)	Investigating personal and environmental factors that drive Palestinian women to commit suicide attacks	Israeli prisons	In-depth interviews	17 women, aged: 17-44 y.o.; suicide mission often first experience with violent acts	-Difficult personal circumstances/ personal trauma -Nationalist grievances or duty; desire to harm Israelis -Involvement family member -Revenge -Religion/faith -Combination desire for personal revenge and nationalistic and religious terms -Coercion (n=1) -Most completed high school -Single	n.m.	11

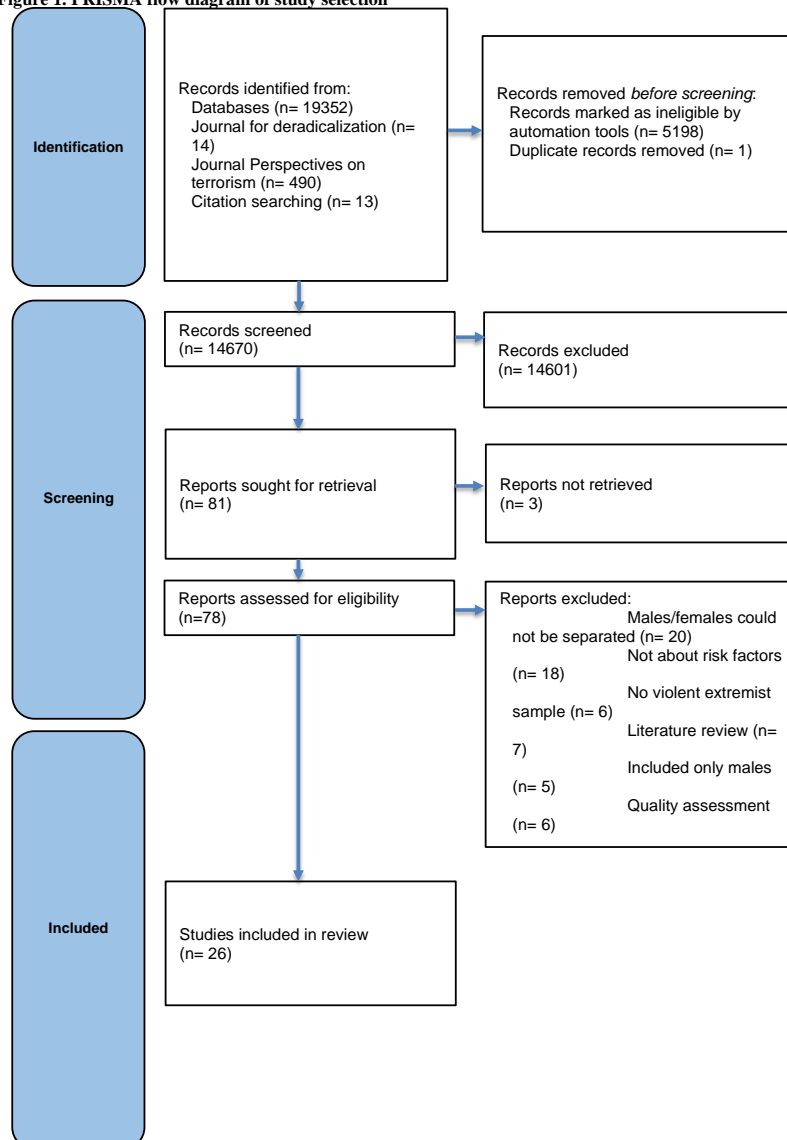
Note: Studies with an asterisk (*) used similar data from an Israeli prison.

Results

Final corpus of literature

The first search yielded 19,869 studies (of which 1491 included gray literature); 504 studies were added through the ‘Journal of Deradicalization’ and ‘Perspectives on Terrorism’, and 13 via reference list searches. After removing duplicates, 14,670 studies were screened, of which 32 ultimately met the inclusion criteria. After critical review, six studies were excluded. The final corpus contains 26 studies, all of which described risk and/or protective factors. Figure 1 provides an overview of the systematic search process.

Figure 1. PRISMA flow diagram of study selection



Personal risk factors***Demographic factors***

Studies in Palestinian populations show that many FVE grew up in large and traditional families (Berko & Erez, 2007; Berko et al., 2010; Erez & Berko, 2007). About half of the women lost their father later in life (Berko & Erez, 2007; Erez & Berko, 2007). Also in Indonesia it was found that 48% of FVE came from broken families (Nuraniyah, 2018). Moreover, Kortam (2017) described a case of a FVE who grew up in a house with fighting parents, who later divorced. Besides ‘broken homes’, many FVE were exposed to some kind of violence when growing up (Bloom, 2011). In sum, the absence of the father and exposure to violence contributed to the ease with which women were recruited for violent extremist acts (Berko & Erez, 2007). Further, only a few studies specifically mention the economic background of FVE. In Palestina, low socioeconomic status was correlated with female suicide bombing. Also in Indonesia, high poverty rates and socio-economic grievances were associated with FVE (Nuraniyah, 2018).

Also, several studies suggest that radicalization starts in adolescence and young adulthood (Bloom, 2011; Saltman & Smith, 2015; Warren et al., 2020; Weenink, 2015). In general, adolescence is a period of identity achievement, sensation seeking, new adventures and often romanticizing the journey to join IS (Saltman & Smith, 2015). Some adolescents even reported an identity crisis, in which they did not fully identify themselves as Moroccan, nor as European (Bloom, 2011). However, radicalization is not limited to adolescence or emerging adulthood (Weenink, 2015). In fact, several studies show that FVE often starts around the age of 30 (Shapiro & Maras, 2019; Yon & Milton, 2019).

Furthermore, the majority of FVE completed secondary or tertiary education (Brugh, 2020; Jacques & Taylor, 2013; Yon & Milton, 2019). A minority had a bachelor's degree (Berko & Erez, 2005; 2007; Berko et al., 2010) and a more recent study shows that 14.3% had a university education (Erez & Laster, 2020).

Finally, most studies showed that many FVE were unmarried and had no children (Berko & Erez, 2005; Berko et al., 2010; Erez & Laster, 2020; Gonzalez et al., 2014; Saltman & Smith, 2015; Warren et al., 2020). The only exception was seen in Caucasian women where most of the women were married before leaving for Syria (Kvakhadze, 2020).

Criminal history

Weenink (2015) described that 26% of FVE in the Netherlands had a criminal history, which is five times higher than in the general Dutch female population of the same age. However, only 1.7% of the Western FVE population had a criminal history (Brugh, 2020). Moreover, between 7.1% and 12.5% of FVE had a criminal record (Gonzalez et al., 2014).

Behavioral and mental health problems

FVE may suffer from behavioral and mental health problems, such as learning disabilities, substance abuse (e.g., alcohol, cannabis), school drop-out, attempted suicide, and admission to a psychiatric hospital (Bloom, 2011; Kortam, 2017). A Dutch study analyzing police files showed a similar picture of women traveling to Syria (Weenink, 2015). In 47.8% of the cases, women had a behavioral problem or disorder (Weenink, 2015). Research showed that antisocial characteristics or tendencies in behavior were relatively common (90.7%) in FVE (Warren et al., 2020). Furthermore, developmental immaturity, identity struggles and vulnerability were described as risk factors for FVE (Shapiro & Maras, 2019; Warren et al., 2020). In addition, feelings of hopelessness and disappointment in society led women to become engaged in IS (O'Rourke, 2009; Peresin et al., 2021).

Personal and family problems

Several studies cite terrorism as an opportunity to solve personal or family problems (Berko & Erez, 2007; Bloom, 2011; Jacques & Taylor, 2008; Nuraniyah, 2018; Sweitzer, 2008). Personal problems, such as relationships problems, early pregnancy, financial problems, and unhappiness were mentioned as possible risk factors for FVE (Bloom, 2011; Jacques & Taylor, 2008). Domestic violence between both parents (Kvakhadze, 2020) and escaping from family-imposed prenuptial agreements, such as a ban on desired relationships (Berko et al., 2010), were also described as risk factors for FVE.

Significance loss and revenge

The loss of a loved one is seen as a risk factor for FVE (Bloom, 2011; Jacques & Taylor, 2008; O'Rourke, 2009). Female suicide bombers in particular were often driven by a

loss of significance or meaning (e.g., death of family member, relationship conflict) (Webber et al., 2017) and the urge for revenge for the death of a relative (Berko & Erez, 2005; 2007; Bloom, 2011; Erez & Berko, 2007; Erez & Laster, 2020; Jacques & Taylor, 2008; Maskivker, 2015). Some had a desire to take revenge on Jews for resin sustained by the loss of their loved ones (Berko et al., 2010; Erez & Berko, 2007).. . Furthermore, FVE were also driven by revenge for personal traumas, like abuse, assault or rape (Bloom, 2011). Moreover, restoring a lost reputation and removing feelings of shame are important risk factors for female suicide bombing (Maskivker, 2015). Finally, anger and frustration due to a lack of international recognition and action for the perceived threat to the Muslim society (Saltman & Smith, 2015) are triggers for FVE.

Ideological persuasion

Another risk for FVE is ideological persuasion, often announced through propaganda (Berko & Erez, 2005; Berko et al., 2010; Erez & Berko, 2007; Jacques & Taylor, 2008; Peresin et al., 2021; Saltman & Smith, 2015; Warren et al., 2020). An ideology is often supportive of their actions and a reward for their sacrifices (Berko et al., 2010; Erez & Berko, 2007). Some women want to live the ‘caliphate dream’ (Kvakhadze, 2020; Nuraniyah, 2018) and fulfill their duty as Muslim women (Warren et al., 2020). Propaganda highlights the need for women and their mandatory religious duty to contribute to this Utopian state (Saltman & Smith, 2015). FVE reported ideology as a common motivation (Gonzalez et al., 2014). Although some Caucasian women who went to Syria were motivated by the prestige that FVE enjoyed in local communities and the possibility of pursuing a Sharia lifestyle, most Caucasians came from highly conservative regions with a Muslim-majority. According to Kvakhadze (2020), escaping from Westernized and Islamophobic society was not a common risk in women. About a third of FVE converted to Islam from another religion or became religious (Brugh, 2020). Only 2% converted to Islam during or after their radicalization (Jacques & Taylor, 2013).

Belonging, meaning or purpose

Enhancement of social meaning (Berko & Erez, 2005) and restoring reputation while maintaining respect (Berko et al., 2010) are cited as risk factors for FVE. The search for meaning can also take shape in femininity, family protection and the desire to fulfill traditional family-oriented roles (Maskivker, 2015; Peresin et al., 2021). A search for meaning, purpose and more freedom in life was reported by many FVE (Bloom, 2011; Koehler, 2021; Reiter et al., 2021; Saltman & Smith, 2015; Van de Wetering et al., 2018). Suicide bombers in particular reported the search for significance and fame as driving factors (Bloom, 2011). Participation in VE and terrorism was seen as a service to the community and a noble act that gave meaning to their lives and boosted a feeling of self-fulfillment (Berko & Erez, 2005; 2007; Berko et al., 2010; Koehler, 2021). Most women reported a sense of exceptionalism and self-satisfaction through involvement in a national cause (Berko et al., 2010; Erez & Berko, 2007; Erez & Laster, 2020). Some women felt valuable because their efforts responded to the propaganda appeal that more women were needed, including to train the next generation of FVE (Saltman & Smith, 2015).

Involvement of family members or partner

The involvement of a family member (Berko & Erez, 2005; Bloom, 2011; Peresin et al., 2021; Saltman & Smith, 2015; Shapiro & Maras, 2019; Sweitzer, 2008) or intimate partner in terrorist activities is a risk factor for FVE (Erez & Laster, 2020). In Palestinian society, parents were actively involved in the recruitment in 7.1% (Erez & Berko, 2007) to 12.5% (Berko et al., 2010) of the cases. Also, research into Western and non-Western media sources showed that 30% of FVE grew up in activist families (Jacques & Taylor, 2013). (Erez & Laster, 2020). There was often a peer pressure to join terrorist organizations together (Bloom, 2011).

Coercion

Coercion seemed to be a less common risk factor in Palestinian FVE, with rates ranging from six to 20% (Berko & Erez, 2005; 2007; Berko et al., 2010; Erez & Berko, 2007; Erez & Laster, 2020; Sweitzer, 2008). Some relatives of Caucasian women who went to Syria

mentioned that they were forced by husbands (Kvakhadze, 2020). Also Bloom (2011) mentioned that some women were even kidnapped into the organization.

Situational risk factors

Gender (in)equality and societal norms

Rebelling against a strict patriarchal regime and resisting gender restrictions are described as risk factors for FVE (Berko & Erez, 2005; 2007; Bloom, 2011). Maskivker (2015) endorsed that suppression by a controlling attitude of their male relatives may influence women to go on suicide missions. Also Bloom (2011) reported that women often engaged in suicide bombing out of desperation/last resort. Women were seen as second class citizens and were driven by a psychological motive to strive for gender equality (Bloom, 2011). Other work indicated that engagement in FVE could also be seen as an opportunity to have romantic unsupervised associations with young men (Berko & Erez, 2005; 2007; Laster & Erez, 2020), or as a license for experiencing excitement and thrills that Palestinian women are normally not allowed to have (Berko & Erez, 2007; Berko et al., 2010). For instance, the specifics of a terrorist act enable women to push traditional rules of gender conformity (Erez & Berko, 2007).

Group solidarity

FVE often experience a feeling of discrimination and injustice (Bloom, 2011; Nuraniyah, 2018; Peresin et al., 2021; Shapiro & Maras, 2019; Warren et al., 202). They are often a(n) (ethnic) minority group within Western societies and are likely to experience some form of discrimination or violence (Saltman & Smith, 2015). Feelings of exclusion, lack of social bonds, distance from Western society causing an ‘us versus them’ perspective, may ensure that women felt like they didn’t fit in society (Bloom, 2011; Reiter et al., 2021; Saltman & Smith, 2015; Shapiro & Maras, 2019). Women then find a new identity in political Islam, where doors to money, work, psychological support, and a husband are opened (Bloom, 2011). Besides, FVE often experience feelings of loneliness and a desire to belong, for example, to a sisterhood under IS territory (Koehler, 2021; Saltman & Smith, 2015; Van

de Wetering et al., 2018). In line with this, studies showed that most FVE were linked to a(n) (informal) group or organization (Brugh, 2020; Gonzalez et al., 2014).

Protective factors

Of the 26 included studies, seven studies hypothesized protective factors for FVE.

Prosocial surrounding and inclusion

A prosocial environment, acceptance, inclusion, structure, and stability are possible protective factors for FVE (Reiter et al., 2021). Furthermore, relatives (especially mothers) were important in detecting precursors of behavior and may raise objections to future involvement in terrorism (Berko & Erez, 2005; Bloom, 2011; Erez & Berko, 2007). Besides, having relatives or a (new) spouse can be seen as a turning point in FVE (Bloom, 2011; Van de Wetering et al., 2018).

Personal status and maturing out

Also, a self-image of being a good person and sufficient personal status are possible protective factors for FVE (Reiter et al., 2021; Van de Wetering et al., 2018). Furthermore, age seemed to play a role in deradicalization. Reiter et al. (2021) noted that women may deradicalize after adolescence as they age (mid to late 20s).

Negative experiences and future perspective

Palestinian women feel that they have paid a high price for their involvement in FVE without receiving the desired social recognition (Berko & Erez, 2007). They believe that they have abandoned their families and thereby disgraced themselves and their loved ones. Furthermore, it appeared that women from the Western Balkans often had negative experiences with life in IS territory (Peresin et al., 2021). These negative experiences could be disillusionment or disappointment with the level of knowledge that IS members were found to have about Islam (Reiter et al., 2021) as well as manipulation, exploitation, and constant verification or pressure of the IS regime (Van de Wetering et al., 2018). These experiences could be seen as protective factors against future participation.

In retrospect, many women saw their VE involvement as a departure from their predestined role as caregivers and expectant mothers. Having a future perspective of a normative lifestyle (marrying and having children) and experiencing a sense of belonging and stability may lead to desistance of FVE (Berko & Erez, 2007; Bloom, 2011). However, this systematic literature review gives an overview of risk and protective factors in FVE in general, there are some differences between the specific ideologies of FVE that need to be highlighted. First of all, most jihadi and far-right women were unmarried before departure to the caliphate (Berko & Erez, 2005; Berko et al., 2010; Erez & Laster, 2020; Gonzalez et al., 2014; Saltman & Smith, 2015; Warren et al., 2020). Previous criminal antecedents were high in environmental extremists and jihadi women in the Netherlands (see Gonzalez et al., 2014; Weenink, 2015). For far-right and ecological FVE the ideology was a strong push factor to engage in VE (Gonzalez et al., 2014). Furthermore, left- and right-wing extremists and jihadi women were often driven by the search for meaning and purpose (Koehler, 2021; Reiter et al., 2021; Saltman & Smith, 2015; Van de Wetering et al., 2018). Group solidarity was in particular important to jihadi (Nuraniyah, 2018; Peresin et al., 2021; Shapiro & Maras, 2019; Warren et al., 202) and left- and right-wing extremists (Koehler, 2021; Van de Wetering et al., 2018). Studies show that in most cases they had social bonds with existing groups/organizations (see Brugh, 2020; Gonzalez et al., 2014). Looking at the protective factors, this systematic review did not find specific differences between the subsamples of FVE.

Comparison to other populations

In several studies, FVE were compared to their male counterparts, the general (female) population (in the Netherlands), and/or women involved in non-extremist crimes.

Comparison general population

Compared to the general female and male population in the Netherlands, Dutch FVE were five times more involved in criminal activities (Weenink, 2015).

Comparison non-extremist criminal women

In comparison to non-extremist women, FVE were older (Gonzalez et al., 2014) and had a substantially higher level of education (Berko et al., 2010). FVE came from relatively stable families and grew up with more personal resources and less abuse than women involved in non-extremist crime. Their background provided them with more human capital to deal with problems (Berko et al., 2010). However, FVE reported situational and specific problems, such as the inability to marry the man of their choice or the loss of a loved one during military hostilities. FVE were driven by the belief that their contribution to the national cause would bring honor to themselves and their families. The expectation of reward in the afterlife was also prominent (Berko et al., 2010). In contrast, non-extremist criminal women grew up with physical, mental, or sexual abuse and extreme marginalization, which caused irreparable damage to their honor, self-image and self-esteem. This, combined with absent/weak fathers or protectors and strained family relationships, made them vulnerable to the pressure to participate in crimes that often came from male influencers (Berko et al., 2010). Furthermore, FVE and non-extremist criminal women differed significantly in their exposure to and views of Western Culture and Israeli society. Having grown up in Israel or having lived together with Jews, non-extremist criminal women had greater exposure to, and identification with, beliefs of Western culture and Israeli society. They did not express interest in the Israel-Palestine conflict and showed no grievances toward Israelis (Berko et al., 2010). exposure to and views of Western Culture and Israeli society. Having grown up in Israel or having lived together with Jews, non-extremist criminal women had greater exposure to, and identification with, beliefs of Western culture and Israeli society. They did not express interest in the Israel-Palestine conflict and showed no grievances toward Israelis (Berko et al., 2010).

Comparison male violent extremists

Compared to male violent extremists (hereafter: MVE), studies found mixed results when comparing age and education with that of FVE. Some studies concluded that FVE were older than MVE (Jacques & Taylor, 2008; O'Rourke, 2009), younger than MVE (Weenink, 2015), or found no difference in age, educational level, and being single (Jacques & Taylor,

2013). The conversion rates and criminal histories of FVE and MVE were approximately equal (Jacques & Taylor, 2013). Furthermore, women and men showed no differences in feelings of loneliness, persecution as a Muslim community, anger, and grief. However, women received more discriminatory comments (Saltman & Smith, 2015) and were more likely to experience and compensate for (social) exclusion and had more difficulty building a social identity than men (Reiter et al., 2021).

Significant differences in motives between male and female VE were found (Erez & Laster, 2020; Jacques & Taylor, 2008). Men focused more on ideological factors than women (Erez & Laster, 2020; Jacques & Taylor, 2008). In addition, gender status, peer social status improvements, and monetary rewards were more common risk factors in men than in women (Erez & Laster, 2020). Revenge was most important in women (Jacques & Taylor, 2008; Bloom, 2011).

In addition, women were more often motivated by the desire to conform to the bourgeois values of society (O'Rourke, 2009). Women were three and a half times more likely than men to be motivated by an experienced significant loss (e.g., death of a relative) or relationship problems (Webber et al., 2017). Finally, Yon and Milton (2019) found that females were less likely than men to engage in military activities or activities related to planning or commissioning violent attacks executed by terrorist organizations.

Discussion

The purpose of the present systematic review was to gain insight into personal and situational risk and protective factors in FVE to prevent and/or tackle violent extremism in women. After an extensive systematic search, 25 studies providing data on these factors were included in the final corpus. In the following paragraphs, we discuss the main findings, study-limitations, and implications for future research and practice.

Summary of the results

Our literature search has shown various individual differences in personal and situational risk and protective factors. However, we also identified general patterns related to

FVE. For example, FVE often feel controlled by their parents or male counterparts. They seek a way out and idealize women's autonomy in the caliphate (see Berko et al., 2010; Bloom, 2011). In addition, FVE report distrust in Western society and values and weak social bonds with family and friends before departure (Reiter et al., 2021). This finding is supported by the Social Bonds Theory (Hirschi, 1969), which suggests that delinquency, and thus violent extremism, increases when individual ties to society are weak. It is therefore plausible that women are attracted to the emanating sisterhood and utopia of the caliphate to obtain freedom, (social) inclusion and a sense of purpose (e.g., Saltman & Smith, 2015; Shapiro & Maras, 2019). Furthermore, FVE seek to develop a self- and social identity in (violent) extremist organizations (see Bloom, 2011). In this regard, the Social Identity Theory (Tajfel et al., 1979), in which belonging to a group is associated with pride and self-esteem, can also provide an explanatory framework for FVE (see also Saltman & Smith, 2015). Moreover, women are motivated to violent extremism if a family member, friend or partner is also involved (Berko & Erez, 2005; Bloom, 2011; Jacques & Taylor, 2013; Peresin et al., 2021; Saltman & Smith, 2005; Shapiro & Maras, 2019). Another motivation for FVE is revenge (Jacques & Taylor, 2008). Relatedly, revenge after the loss of a family member was an important motivation in female suicide bombers (Berko & Erez, 2005; 2007; Bloom, 2011; Erez & Berko, 2007; Erez & Laster, 2020; Jacques & Taylor, 2008; Maskivker, 2015). Finally, FVE are often characterized by a certain family structure (e.g., unmarried, childless) (Berko & Erez, 2005; Berko et al., 2010; Erez & Laster, 2020; Gonzalez et al., 2014; Warren et al., 2020) or they come from a broken family (Berko & Erez, 2007; Kortam, 2017; Nuraniyah, 2018). Unlike their male counterparts, gender inequality and strict patriarchal regimes are situational risk factors associated with FVE. Through involvement in violent extremism, women hope to get rid of traditional (gender) roles (Erez & Berko, 2007). According to Bloom (2011), these risk factors for FVE can be divided into four broad categories (4 R's): redemption, revenge, relationship and respect. Women seek revenge for the death of a close family member, redemption for past sins, have a relationship with a known insurgent of jihadi or seek respect of their community (Bloom, 2011).

In addition to factors that are more common in FVE, there exists an overlap in (personal) risk factors with MVE. Adolescence and emerging adulthood are developmental

periods when young people are at risk of adopting extremist thoughts and actions. Adolescence is characterized by the search for identity, belonging and vulnerability to (peer) influences (Saltman & Smith, 2015; Shapiro & Maras, 2019; Warren et al., 2020). The search for identity is not limited to young violent extremists but is a critical task for all adolescents (see Erikson, 1968). Moreover, the participation in extremist groups can bring a sense of meaning, self-fulfillment, and self-importance to both MVE and FVE, as they believe it serves a higher purpose (Berko & Erez, 2005; 2007; Berko et al., 2010; Bloom, 2011; Erez & Berko, 2007; Erez & Laster, 2020; Koehler, 2021).

Along with risk factors, several plausible protective factors for FVE have been identified. For example, social inclusion and involvement of relatives are important buffering factors (Van de Wetering et al., 2018), because strong prosocial bonds deter individuals from delinquent behavior (see Hirschi, 1969). Aging and a positive self-image and (social) status may counter violent extremism in both women and men (Reiter et al., 2021; Van de Wetering et al., 2018). Negative experiences with the IS regime, disappointments, feelings of having paid a high price and prospects of a normative lifestyle are factors that been related to FVE disengagement (Berko & Erez, 2007; Peresin et al., 2021; Reiter et al., 2021; Van de Wetering et al., 2018). These findings suggest that strain can work both ways. On the one hand, stress and frustrations due to gender inequality and controlling attitudes arise from the social environment (Berko & Erez, 2005; 2007; Berko et al., 2010; Erez & Berko, 2007), which can push women towards violent extremism. On the other hand, negative experiences under IS, failure to meet the expectations of active participation and a Utopian society, are assumed to be major factors in women's deradicalization process, which may cause strain, pushing women back into a normative lifestyle (Berko & Erez, 2007; Peresin et al., 2021). In order to better prevent and counter (F)VE, a more comprehensive and gender-sensitive approach, with attention to possible harmful gender stereotypes, is necessary (Eggert, 2020; Wdzięczak, 2022). Future research should get a clear picture of the process of disengagement and deradicalization of women, and step aside from a 'one kind fits all-approach' (Eggert, 2020).

Limitations

Although a thorough search was conducted by two independent researchers, several study limitations should be addressed. With respect to possible biases, it was found that the included studies were mostly based on a small sample size or secondary source data. This could cause a risk of generalization of conclusions. Moreover, several studies used the same data on suicide bombers from an Israeli prison (Berko & Erez, 2005; 2007; Berko et al., 2010; Erez & Berko, 2007; Erez & Laster, 2010). There is a risk of adding up the risk factors described in these studies and thus attaching more weight to these factors. In addition, this review has included all FVE, making it difficult to link specific factors to specific movements within FVE. Furthermore, some relevant studies or book(s) (chapters) may not have been included in the systematic review due to their unavailability or inaccessibility. Finally, only peer-reviewed studies and gray literature with an English abstract were included, meaning that foreign-language studies, regardless of their relevance, were excluded from this review.

Implications for practice and prevention

Compared to men, women differ in their socio-economic background, recruitment, motivation, and role in terrorism-related activities. Policymakers should therefore consider gender-specific dynamics in the radicalization process to achieve effective counter-terrorism interventions.

Often deradicalization programs are built upon an ideological motive, and less on personal vulnerabilities, such as social and emotional struggles (e.g., perceived inequality, injustice and discrimination) that FVE experience. Therefore, interventions should be more idiosyncratic, and must pay attention to social inclusion by offering support in finding hobbies (sport and lifestyle activities), side jobs and other social activities. This implies that the need to belong and the desired sisterhood of FVE can also be fulfilled closer to home, and offers women alternatives to joining the militants (Bloom, 2011). Authorities should grant women positions of leadership, as these women serve as role models and cause other women to aspire to something more positive than violence (Bloom, 2011). Such interventions may lead to a more successful resocialization as prosocial environments, (restoring) social bonds, and future perspectives, are recurrent desistance factors in FVE. In order to accomplish this, it is

important that scholars share findings with policymakers, analysts and the military, to ensure that they learn lessons of the past (Bloom, 2011).

Furthermore, adolescence is a developmental phase of identity building in which individuals are vulnerable to VE ideas. Therefore, prevention mechanisms should be implemented at a young age, targeting a broad cohort (Saltman & Smith, 2015). Interventions should be age-related and focus on, for example, media literacy and competence skills that make young people aware of both offline and online extremist content (terrorist propaganda). ‘Extreme dialogue’ is an example of a more direct strategy in which counter-narratives are provided in classrooms (Saltman & Smith, 2015). This is beneficial, as school awareness may foster resilience and strengthen anti-extremist attitudes (Gansewig & Walsch, 2022). Experts on experience, like female exit-ers, could be effective in preventing and countering violent extremism (P/CVE) as they usually have milieu specific insights and (negative) personal experiences with the caliphate (Koehler et al., 2023). However, the credibility of female exit-ers depends on several factors, such as the intention of leaving, (change in) ideology, personal characteristics, and genuine expertise (see Koehler et al., 2023). Therefore, female exit-ers must be subjected to professional support and training, and work together on P/CVE with police officers and social workers whose credibility was recently proved (Koehler et al., 2023). Besides that, mentorship and housing support would also help youth to stay on the straight and narrow (Saltman & Smith, 2015). The mentors are intended to share personal experiences and nuance radical thinking, that would lead to deradicalization (Saltman & Smith, 2015). Literature shows that pairing up a mentor with a same-sex client is more effective, as it takes away certain boundaries to speak more freely (e.g., Saltman & Smith, 2015). Also, relatives, especially mothers, may have a controlling function, because they detect precursors of behavior more easily and may object to future VE involvement of their offspring (Berko & Erez, 2005; Erez & Berko, 2007). For that reason, it would be helpful to inform and support parents in their role in CVE.

Next to mentorship and family support, the role of qualified psychologists should be highlighted in one-to-one counseling or group sessions. In the latter, individuals may learn from the experiences of others and receive professional guidance (Saltman & Smith, 2015).

In general, policy should respond to the 4 R's (redemption, revenge, relationship and respect) with 3 D's: delegitimize, deglamorize and demobilize. Delegitimize violence means that violence is sanctioned neither by Qur'an nor by Hadith. Deglamorizing includes showing FVE that it is corrupt and hypocritical. To ensure (that women are no longer involved in shooting, we should demobilize them. By eliminating the immediate source of violence from the community while simultaneously undermining its legacy, the cycle of violence might finally break (Bloom, 2011).

Future research

A better understanding of the risk and protective factors influencing the radicalization process in FVE also requires research into the turning points in the lives of these women. Although several studies (e.g., Reiter et al., 2021; Saltman & Smith, 2015; Warren et al., 2020; Weenink, 2015) argue that radicalization starts at an early age and decreases after adolescence, there is no consensus in the literature on whether radicalization is limited to certain life stages, such as adolescence, or can occur throughout the lifespan (Moffitt, 1993; 2018).

Future research should also concentrate on other FVE (e.g., attempted travelers, recruiters) and studies conducted in other countries and languages to investigate the generalizability of the results. In addition, more research into the role of society on FVE would be in place. As rebelling against gender restrictions in a patriarchal regime can be a motivation for female suicide bombing (Berko & Erez, 2005; 2007; Bloom, 2011; Maskivker, 2015), the question arises to what extent changing these norms would decrease the risk of suicide attacks.

Several researchers also addressed the trend of online radicalization (e.g., Saltman & Smith, 2015; Shapiro & Maras, 2019). Youth who frequently surf the web might be more exposed to propaganda of extremist or radical groups. Therefore, further research should acknowledge the specific risk factors (e.g., vulnerability, network accessibility) of online recruitment. Finally, women play a crucial role in the effectiveness of counter-narratives and can reach a broad audience (Saltman & Smith, 2015). Relatedly, experts by experience can be important in bringing forward negative experiences and disappointments in former FVE.

Therefore, research on counter-narratives specifically aimed at women would be helpful. Results show a broad profile of FVE which makes it difficult to set up a general deradicalization program. Future research should focus on identifying certain risk and protective factors for the subsamples of FVE. Besides, this review has shown that suicide bombers are often driven by other (psychological) motives, such as the idea of fame (for themselves and their family) and gender equality. Therefore, future research should also distinguish risk and protective factors for women's participation in VE. At last, a recent comprehensive literature review, examining 17 data points (e.g., authorship, publications, research focus) on women and terrorism, concludes that the state of the art lacks a focus on the process after joining a terrorist group (Margolin & Cook, 2024). Therefore, future research should focus more on the processes of disengagement, deradicalization and rehabilitation and reintegration of women (Eggert, 2020; Pearson et al., 2020; Wdzięczak, 2022). There should be specific attention to comprehensive approaches to counter violent extremism (Eggert, 2020), who are community-orientated (Wdzięczak, 2022) and have an adequate reaction to community fears (Pearson et al., 2020).

Conclusion

In conclusion, the present systematic review has provided a detailed overview of the literature concerning vulnerability and protective factors in FVE. To effectively counter the threat of terrorism in women, it is crucial to understand different pathways towards radicalization and deradicalization. Further research is needed into how and when these risk and protective factors are relevant in (de)radicalization. As the road to violent extremism differs strongly in women over continents, so does the road to desistance. Effective, (gender-)specific deradicalization programs should be a focal point of attention for policymakers.

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Appendix

Appendix A. Screening/selection tool

Review question: Which risk and protective factors are present in female violent extremists?		
	Include	Exclude
Population	<input type="radio"/> Female or combined (male/female)	<input type="radio"/> Only male or combined when female cannot be differentiated from male
Outcomes	<input type="radio"/> Violent extremists <input type="radio"/> (Justification of) violent extremist behavior towards persons/property or a willingness to use violent behavior	<input type="radio"/> Other forms of violence than violent extremism <input type="radio"/> Other forms of violence (e.g., domestic violence)
Design	<input type="radio"/> Risk factors <input type="radio"/> Protective factors <input type="radio"/> Studies included primary data	<input type="radio"/> Factors that do not increase or decrease the likelihood of involvement or support of violent extremist acts <input type="radio"/> Broader underlying attitude (such as social dominance)
Language	<input type="radio"/> Empirical studies <input type="radio"/> At least an English abstract	<input type="radio"/> Manuscripts without empirical data <input type="radio"/> No English abstract
Overall decision	<input type="radio"/> Included	<input type="radio"/> Excluded
Notes:		

Appendix B. Critical appraisal checklists

Quantitative research checklist	
Name author(s): Study title: Year: Reviewer:	
1. Was there a clear statement of the aims of the research	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
2. Is a quantitative methodology appropriate?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
3. Was the research design appropriate to address the aims of the research?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:

4. Was the recruitment strategy appropriate to the aims of the research?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
5. Was the data collected in a way that addressed the research issue?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
6. Has the researcher sufficiently reflected on methodological limitations and biases?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
7. Have ethical issues been taken into consideration?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
8. Was the data analysis sufficiently rigorous?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
9. Is there a clear statement of findings?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
10. How valuable is the research? Do the results of this study fit with other available evidence?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
11. Is there external validity in the form of generalization to a defined population (in casu female violent extremists)?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:
12. Is there internal reliability by using the same measuring instruments and/or researchers throughout the entire process? When working with different, independent researchers, did they come to the same conclusion based on the same data?	<input type="radio"/> Yes <input type="radio"/> Can't tell <input type="radio"/> No Comments:

13. Is the research transparent (justification of methodological choices, analysis strengths and weaknesses)?	0 Yes 0 Can't tell 0 No Comments:
14. Was the inter-rater reliability scored in the case of multiple investigators (external reliability)?	0 Yes 0 Can't tell 0 No Comments:
15. Is there agreement between the methods and research questions?	0 Yes 0 Can't tell 0 No Comments:
16. Is there agreement between research methodology and representation of data (analysis)?	0 Yes 0 Can't tell 0 No Comments:
17. Is there a clear description of outcome measures, and are they appropriate (valid and reliable)?	0 Yes 0 Can't tell 0 No Comments:
18. Is there a connection between the conclusion of the research and the analysis, interpretation and/or data?	0 Yes 0 Can't tell 0 No Comments:
Overall score:	0 Include 0 Exclude

Qualitative research checklist	
Name author(s):	
Study title:	
Year:	
Reviewer:	
1. Was there a clear statement of the aims of the research	0 Yes 0 Can't tell 0 No Comments:
2. Is a qualitative methodology appropriate?	0 Yes

	<input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
3. Was the research design appropriate to address the aims of the research?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
4. Was the recruitment strategy appropriate to the aims of the research?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
5. Was the data collected in a way that addressed the research issue?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
6. Has the relationship between researcher and participants been adequately considered?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
7. Have ethical issues been taken into consideration?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
8. Was the data analysis sufficiently rigorous?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
9. Is there a clear statement of findings?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
10. How valuable is the research?	<input type="checkbox"/> Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No Comments:
11. Is there external validity in the form of	<input type="checkbox"/> Yes

theoretical generalization?	0 Can't tell 0 No Comments:
12. Is there internal reliability by using the same measuring instruments and/or researchers throughout the entire process? When working with different, independent researchers, did they come to the same conclusion based on the same data?	0 Yes 0 Can't tell 0 No Comments:
13. Is the research transparent (justification of methodological choices, reflection biases)?	0 Yes 0 Can't tell 0 No Comments:
14. Was the inter-rater reliability scored in the case of multiple investigators (external reliability)?	0 Yes 0 Can't tell 0 No Comments:
15. Is there agreement between the methods and research questions?	0 Yes 0 Can't tell 0 No Comments:
16. Is there agreement between research methodology and representation of data (analysis)?	0 Yes 0 Can't tell 0 No Comments:
17. Is the "voice" of participants expressed?	0 Yes 0 Can't tell 0 No Comments:
18. Is there a connection between the conclusion of the research report and the analysis, interpretation and/or data?	0 Yes 0 Can't tell 0 No Comments:
Overall score:	0 Include 0 Exclude

Appendix C. Data extraction form

Study (authors, year):					
Study objectives:					
Study design:					
County:					
Year (study was conducted):					
Setting:					
Inclusion criteria:					
Exclusion criteria:					
Sampling method:					
Population characteristics:					
N	Gender	Age	Ethnicity	Ideology	Other relevant characteristics
	M: F:				
	M: F:				
	M: F:				
	M: F:				
	M: F:				
Risk/protective factors:					
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Conclusion/recommendation authors:					
Important remarks:					
References to check:					

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