



# Understanding extremist ideas: The mediating role of psychological well-being in the relationship between family functioning and extremism

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## ABSTRACT

The family environment plays an important role in radicalization and the development of extremism in individuals. However, this relationship has been insufficiently explored in the psychological literature. The aim of this study was to determine how and why the central dimensions of family functioning, specifically adaptability and cohesion, influence extremist beliefs and attitudes in young adults. The sample comprised 286 Saudi university students. Several measures were used to assess participants' perceived family adaptability and cohesion, psychological well-being, and level of extremism. The latter was measured via an instrument developed by the authors. The results of factor and correlation analyses of the adaptability and cohesion subscales ( $r = 0.88$ ,  $p < .01$ ) suggested a unidimensional role of the family functioning variable, rather than two separate variables. A new factor of family coordination also emerged. The results indicated that family functioning was negatively related to extremism ( $r = -0.14$ ,  $p < .01$ ). Participants who reported more balanced family functioning had lesser extremist beliefs. Moreover, a positive correlation between family functioning and psychological well-being ( $r = 0.25$ ,  $p < .01$ ) was found. The relationship between family functioning and extremism was fully mediated by psychological well-being, suggesting an indirect effect of family functioning on extremism ( $\beta = -0.094$ ,  $p < .01$ ). This study provides a framework for understanding extremism and radicalization antecedents. The findings have important theoretical and practical implications for understanding and preventing extremism through family-based interventions.

## 1. Introduction

The world has been witness to innumerable terror attacks. The radicalization of young people to active extremism has been increasing and has become a major problem worldwide (Campelo, Oppetit, Neau, Cohen, & Bronsard, 2018; Rolling & Corduan, 2018). For example, between 2012 and 2015, thousands of young Muslims left their countries to join militant organizations involved in the Syrian civil war (Neumann, 2015). The Islamic State has been successful at recruiting large numbers of young people using such means as offering a sense of belonging and camaraderie to attract them (Juergensmeyer, 2018). Teenagers and preteens aged 12 to 19 have been involved in Western terrorist attacks (Simcox, 2017). Given the susceptibility of younger people to radicalization, it is important to look at factors that might play a role, of which family functioning and family members have been identified as important (Muna, 2020).

The adoption of radical ideologies is often traced back to one's most meaningful social environment, the family system. A study conducted by the Saudi Ministry of Interior found that one quarter of the interviewed extremist detainees had joined Jihad through family ties (Atran, 2011). Similarly, it has been reported in a study of a terrorist cell that 14% of members had a family relative in that cell (Sageman, 2004). In an Italian study, one in four young people who joined a radical group had at least one relative in the group (Porta, 1995). Similarly, among bombing attack perpetrators in the West, members of the same families were predominant (Scremin, 2020). So, the question that arises is: does family facilitate radicalization? Researchers have claimed that family influences radicalization indirectly. It has been argued that family conflicts and poor family relations, which in turn might prevent the parents from recognizing early signs of radicalization (van San, Sieckelincx, & de Winter, 2013). Furthermore, in interviews with former radicals and radicalized family members, Sikkens (2018) reported that parenting

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contributed indirectly to radicalization when parents failed to communicate effectively with their children about radical issues. In fact, many youth who join radical groups have troubled relationships with their families and join as a substitute for family figures, particularly father figures (Bjorgo & Carlsson, 2005). Therefore, family functioning is a promising path through which youth radicalization might be tackled.

The family also presents the most meaningful tool for intervention in preventing radical attitudes and beliefs (Sikkens & Sieckelink, 2017). Nevertheless, although there is significant research on family and radicalization, there is scarce empirical research (Scremin, 2020). A natural progression of this work is to explore the possible mediating mechanisms underlying the relationship between family functioning dimensions and extremism. Psychological well-being could indeed play a mediating role in the association between these two variables as it has been linked to both family functioning (Ahmad, Nasreen, Batool, & Khalid, 2021) and radicalization (Feddes, Mann, & Doosje, 2015).

Thus, this study aimed to examine the role that family functioning, specifically family adaptability and cohesion, plays with respect to the emergence of extremism in individuals, with the possible mediating role of psychological well-being in a sample of Saudi university students.

## 2. Literature review

In response to the existence of global terrorism, a growing body of psychological research on radicalization and extremism has emerged.

### 2.1. Extremism

Terrorism derives from extremism, which has both cognitive and behavioral aspects (Cherney, Belton, Norham, & Milts, 2020). Radicalization is concerned with radical beliefs and constitutes the cognitive aspect, and violent extremism constitutes the behavioral aspect, which is the consequence of those beliefs (Horgan & Braddock, 2010). Schmid (2014) defined extremism as the imposition of one's own ideologies, beliefs, and values on other people in order to control their civil and human rights. The terms radicalization and extremism will be used interchangeably in this paper.

It has been proposed that psychological distress (a state of emotional suffering or unpleasant feelings associated with stressors and lack of coping mechanisms) is related to extreme political ideologies. According to the significance-quest theory, people become radicalized because of their need for significance, to have an important impact by supporting a cause they consider meaningful (Kruglanski et al., 2014). Distressing social and psychological circumstances (e.g., poverty, war, injustice) can act as stimuli for people to seek purpose through strong and explicit ideological opinions. Young people often feel excluded from participation in decision-making, struggle to find jobs, and are politically and economically marginalized. Feeling "left out," they may seek groups and ideologies they can associate with and find a sense of belonging (Bjorgo & Carlsson, 2005). Radicalization can be defined as "changes in beliefs, feelings, and behavior in the direction of increased support for a political conflict. Radicalization can involve the movement of individuals and groups to legal and nonviolent political action (activism) or illegal and violent political action (radicalism)" (McCauley & Moskalenko, 2017, p. 82). During the radicalization process, young people may be strongly influenced by the way their parents react toward extreme ideals (Sikkens, van San, Sieckelink, & de Winter, 2018). Adolescents and young adults are especially prone to "push" and "pull" factors that can further lead to radicalization. "Push" factors can be seen as obstacles that young people have to overcome in everyday life, such as poverty, child-parent conflict, loneliness, and identity crisis, that push adolescents and young adults toward radicalization (Schmid, 2013). However, people are also attracted by the positive sides of radical group membership ("pull" factors), especially adolescents and young adults who crave a sense of stability and structure. These highly-structured groups with clearly defined roles and responsibilities give them a sense of purpose and

identity (Hogg & Adelman, 2013). The group values shape young people's perceptions and the way they make important moral decisions which have significant impact on their lives (Yusof, Kaur, Dalib, Ramli, & Awang-Hashim, 2021).

### 2.2. Family functioning

There are many models of family functioning, such as the family competence model (Beaver & Hampson, 1990), the McMaster model (Epstein, Ryan, Bishop, Miller, & Keitner, 2003), and the Circumplex Model (Olson, Russell, & Sprenkle, 1989). These models offer useful tools for understanding the complexity of family-level dimensions, such as adaptability and cohesion.

The Circumplex Model was conceptualized and developed by Olson et al. (1989) and is derived from family theory models and family therapy approaches. The main hypothesis derived from this model is that balanced families will have more positive functioning than unbalanced families. A pioneering study by Clarke (1984) focused on non-clinical families and families whose members had various mental health problems and symptoms (schizophrenia, high neuroticism, and families who had been undergoing family therapy). The study was conducted using the Family Adaptability and Cohesion Evaluation Scale (FACES II), a self-report scale that quantifies the adaptability and cohesion dimensions. They found that there was a significantly higher level of balanced families in the non-clinical (control) group and a significantly higher level of unbalanced families in the clinical group. A similar trend was found by Du et al. (2014), who reported that clinical families had poor family functioning compared to non-clinical (control) families.

Family functioning plays an important role in variables such as school adjustment, psychosocial adaptation, and psychological well-being. In a sample of children between 6 and 16 years old, Gaspar et al. (2021) found that perceptions of positive family functioning were associated with better well-being of the children. On the other hand, problems in family functioning and parent-child interactions often predicted chronic externalizing and internalizing problems in children and adolescents. Interactions that are mutually hostile, lacking affection, extremely permissive, or characterized by an authoritarian parenting style present risk factors for the development of psychopathology in children (Hollenstein, Granic, Stoolmiller, & Snyder, 2004). Childhood internalizing and externalizing problems, such as anxiety, depression, suicidal ideation, lack of problem-solving skills, and aggression, are often related to parental rigidity, which results in a lack of functional interactions with a child's caregiver (Rothbart, Ziaie, & O'Boyle, 1992; Weinstein, Van Meter, Katz, Peters, & West, 2015). Deviant child behavior can lead to parental disengagement which can further reinforce problematic behaviors, whereas balanced family cohesion, adaptability, and appropriate communication contribute to higher levels of well-being (Demo & Acock, 1988).

### 2.3. Family functioning and radicalization

Individuals who were shown to be susceptible to radicalization had often experienced childhood emotional neglect or an absence of parenting (Muna, 2020). In their case studies, Bazex and Mensat (2016) noted that among the French jihadists who went to fight in Syria, there were high rates of parental separation, absence of a father figure, or failure of the family to provide adequate resources for identity formation of their children. Post, Sprinzak, and Denny (2003) also reported that among 35 Middle Eastern incarcerated terrorists, their parents supported their cause or did nothing to prevent their children from radicalization. The same study reported that some parents had socialized their children with radical beliefs from a young age. Bigo, Laurent, Guittet, and Ragazzi (2014) stated that unstable family situations may strengthen the radicalization process. Prior research has reported that in some cases, parents were not aware of their children's susceptibility to

radicalism and were not able to handle strong ideals or potential radicalization (van San, et al., 2013).

Disley, Weed, Reding, Clutterbuck, and Warnes (2011) claimed that having positive ties with family members and friends outside of a gang or radical group was related to desistance from these groups. Likewise, Sampson and Laub (1993) and Graham and Bowling (1995) reported that support by family members, friends, and partners was related to the motivation to desist from crime. Having positive bonds with family members who do not share their ideologies may bring radicals to question their beliefs (Altier, Thoroughgood, & Horgan, 2014). It has also been reported that terrorists who remained in contact with family were more likely to quit their terrorist behaviors (Jacobson, 2008). Therefore, it is well conceivable to hypothesize that family functioning as represented by family cohesion and family adaptation are related to extremism.

Hypothesis 1: Family adaptability and cohesion are related to extremism

#### 2.4. Psychological Well-Being as a mediator

Further research is required to examine more closely the links between psychological well-being, family functioning styles, and extremism. It has been suggested that the relationship between psychological distress and radical political beliefs is much less direct than often thought to be (Malka, Lelkes, & Holzer, 2017). Psychological well-being represents a multi-faceted construct that can't be equated with the mere absence of psychopathology. It comprises several measurable elements, such as autonomy, ability to fulfill goals (Ryff, 1989), happiness (Pollard & Lee, 2003), and life satisfaction (Diener & Suh, 1997). Therefore, it is a broader concept than psychological distress. It would be extremely useful to gain insights into how psychological well-being contributes to or impedes extremism in young adults. This population is particularly among the most vulnerable to sympathize with various radical ideas (Bhui & Dinos, 2012). Previous research has established that psychological well-being was associated with family functioning (Ahmad et al., 2021; Kazarian, 2005; Shek, 1997) and the process of radicalization (Coppock & McGovern, 2014; Feddes et al., 2015; Rohr, 2017).

Hypothesis 2: Family adaptability and cohesion are related to psychological well-being

Hypothesis 3: The relationship between family adaptability and cohesion and extremism is mediated by psychological well-being

### 3. Materials and methods

#### 3.1. Study design and sample

The design of the study was cross-sectional. The sample comprised 286 students (88 males, 198 females) enrolled in a Saudi university, ranging in age from 17 to 53, with a mean of 23.3 (SD = 5.1). Questionnaires were distributed via email and social media platforms, namely WhatsApp, Telegram, and Twitter.

#### 3.2. Ethics

Participation of students was voluntary and participants were told they could withdraw from the research whenever they chose to. The participants were informed of the research's aims and objectives. Confidentiality and anonymity of participants were assured. Participants were asked to be as honest as possible in answering the questions.

#### 3.3. Measures

The English versions of the scales used in the study were adapted and translated using the back-translation method. They were translated into Arabic and then back-translated to English by the authors and two professional English-Arabic translators who are professors in the English Centre of King Abdulaziz University.

##### 3.3.1. Demographics

A series of demographic questions were used to collect participants' sociodemographic data including gender, age, monthly income level, marital status, and parents' education.

##### 3.3.2. Family adaptability and cohesion Evaluation scale (FACES III)

The Family Adaptability and Cohesion Evaluation Scale (FACES III) (Olson, Portner, & Lavee, 1985) assessment instrument measures two central dimensions of the Circumplex Model: adaptability is the extent of change that is possible in a family, and cohesion is the degree of separation or connectedness among family members. The scale was developed in the Family Social Science Department at the University of Minnesota, and provides a classification of four general types of families: extreme, mid-range, moderately balanced, and balanced. The scale items were designed to be completed by children above 12 years of age. The instrument is composed of 20 Likert-type scale items of which 10 odd-numbered items measure cohesion and 10 even-numbered items measure adaptability. Participants are asked about their feelings and thoughts about family functioning in response to the 20 statements and to decide on a scale from 1 (almost never) to 5 (almost always) how often the statement applies to their families. The Circumplex type score is obtained by computing the sum score for cohesion and adaptability separately. It is important to accentuate that scores on the adaptability and cohesion dimensions are interpreted as, for example, "very flexible" and "very connected" rather than "chaotic" and "enmeshed." Reasonable internal consistency, with Cronbach's alpha for cohesion at 0.77 and 0.62 for adaptability, was reported, as well as 0.68 for the total scale for nonclinical samples (Olson et al., 1985). Cronbach's alpha for clinical samples was 0.85 for cohesion, 0.69 for adaptability, and 0.81 for the overall FACES III instrument. Furthermore, high test-retest reliability ( $r = 0.80$ ) was reported for non-clinical samples. Satisfactory construct validity was reported as there is a high correlation of the items within each scale with the score for each dimension (Olson et al., 1985).

##### 3.3.3. Psychological Well-Being scale

The Psychological Well-Being Scale was developed by Ryff (1989). Both a 42-item scale and an 18-item scale are available for use by researchers. The longer version of the scale has been used with American adults of all ages with different sociodemographic backgrounds, including college students (Gloria, Castellanos, Scull, & Villegas, 2009; Karwacinski, 2017). It is designed to measure six theoretically distinct dimensions of positive psychological functioning: autonomy (self-determination and independence), environmental mastery (creating or choosing an environment that suits one's personal needs, beliefs, and values), personal growth (openness to personal development), positive relations with others (having meaningful relationships), purpose in life (finding meaning in one's actions), and self-acceptance (having a positive attitude about one's self in general). The original shorter version of scale consists of 20 items, whereas the 18-item version was created for use in large-scale surveys. Participants' responses are based on a 7-point Likert-type scale from 1 (strongly agree) to 7 (strongly disagree). The total score represents the sum of the scores of the 18 items. Negatively scored responses were reversed in the scoring process so that high scores indicated high ratings on the dimensions assessed. The scale has demonstrated sound internal consistency. Cronbach's alpha coefficients for the 20-item scale were autonomy, 0.86; environmental mastery, 0.90; personal growth, 0.87; positive relations with others, 0.91; purpose in life, 0.90; and self-acceptance, 0.93 (Friedman, 2014). The scale

items were developed based on theory-based definitions of low and high scorers for every dimension of well-being, assuring high correlations between individual items (Ryff, 1989).

### 3.3.4. Intellectual extremism scale

The Intellectual Extremism Scale was used to assess the extremism variable in participants. This scale was developed by the authors based on the notion of naive realism, which Griffin and Ross (1991) defined as the belief that one's own ideas are the only true representation of the world. The bias of naive realism has consequences of extremist attitudes (Dono, Alzate, Seoane, & Sabucedo, 2018), and irrational absolute beliefs and intolerance have been linked to extremist behaviors (Ellis, 1986). The Personal Construct Theory (PTC) (Kelly, 1955) was also consulted prior to developing this scale. This theory postulates that people are good at constructing their own view of reality, and Winter and Feixas (2019) pointed out that this may be a precedent of radical views about the world.

The Intellectual Extremism Scale measures extremist intent rather than active extremism. The scale consists of 10 items and displays adequate internal consistency. On a five-point Likert-type scale, participants rated how characteristic each statement was for them. A higher score on the scale indicated a higher level of extremism.

## 4. Results

The IBM SPSS Statistics 22 and IBM SPSS AMOS 23 software were used to conduct the descriptive, correlation, factorial, and reliability analyses, as well as SEM (structural equation modeling) and bootstrapping procedure.

### 4.1. Characteristics of the sample

Of the sample students, 82.3% were single and 17.7% were married. 50.5% reported a monthly income of 9000 RS or more, 14.5% 6000–8999 RS, 20.5% 3000–5999 RS, and 14.5% reported monthly income < 3000 RS. 58.7% of participants' mothers had a higher level of education (master's or Ph.D. or college graduate), 33.3% of participants' mothers had graduated from high school, and 8% were listed as uneducated. 48.8% of participants' fathers had a higher level of education, while 46.6% of participants' fathers had graduated from high school, and 4.6% were reported as uneducated.

### 4.2. FACES III factor analysis

An exploratory factor analysis of FACES III was conducted to evaluate the cross-cultural adaptation of the instrument. Factor analysis was done using maximum likelihood extraction with oblique rotation (oblimin) since adaptability and cohesion are considered distinct yet correlated constructs. The factor analysis produced two factors. However, the majority of items (referring to both cohesion and adaptability) loaded on Factor 1, whereas three items loaded on Factor 2 (>0.03), of which two belonged to the cohesion subscale and one originally belonged to the adaptability scale.

Five items (item 11, 12, 14, 15, and item 19) were eliminated due to problematic cross-loadings (absolute difference in loadings of < 0.02) (Stamper & Masterson, 2002) as well as an additional two items because their extraction communalities were lower than 0.3 (item 2 and item 3).

The factor analysis failed to yield a distinct factor for each of the two constructs (adaptability and cohesion) suggesting the factors were tapping into highly similar dimensions. Also, the examination of the scales' intercorrelations supported this finding since the adaptability and cohesion scales were significantly positively correlated ( $r = 0.88$ ;  $p < .01$ ). These findings are in line with those of Alexander, Johnson, and Carter (1984). Therefore, instead of treating these variables as independent, they were treated as a unidimensional construct – family functioning, which distinguishes between balanced and unbalanced

**Table 1**

Reliability analysis of all measures.

Variables	k	M(SD)	$\alpha$
Coordination	3	9.04(2.82)	0.73
Family functioning	10	21.75(4.9)	0.92
Psych. well-being	18	89.75(12.52)	0.72
Extremism	5	8.81(3.92)	0.78

Note: k = Number of items,  $\alpha$  = Alpha reliability.

**Table 2**

Descriptive statistics, distribution tests, and multicollinearity diagnostics.

Variables	Mean SD	Skewness (SE)	Kurtosis (SE) VIF
Family coordination	9.04 2.82	-0.245(0.145)	-0.461(0.289) 1.314
Family functioning	21.75 4.9	-0.862(0.145)	0.370(0.289) 1.398
Psych. well-being	89.75 12.52	-0.382 (0.145)	-0.109(0.289) 1.142
Extremism	8.81 3.92	1.441(0.145)	1.579(0.289) -

family functioning. In order to do that, so as to address the potential multicollinearity issue, the variables were combined by adding the scores and dividing by 2 to create a composite score for family functioning (Olson et al., 1985). Although these two subscales are typically used to measure related yet distinct dimensions of family functioning, the acceptable internal consistency coefficients (Cronbach's alpha) for the combined scales (0.92) strongly supported the summation of both subscales' items into one scale.

The three items that loaded on Factor 2 ("When our family gets together for activities, everybody is present," "We shift household responsibilities from person to person," and "Family members consult other family members on their decisions") may be interpreted as a family coordination construct. According to Reiss and Oliveri's (1983) theory of the family construction of social reality, high coordination in a family reflects treating each member equally and perceiving the family as a unit. The internal consistency for the proposed scale was 0.73, which also supported using the sum of these three items' scores as a separate measure of family coordination.

### 4.3. Intellectual extremism scale factor analysis

In order to estimate the factor structure of the newly developed Intellectual Extremism Scale, the maximum likelihood method with varimax rotation was utilized. The initial step of the analysis revealed a two-factor structure. However, as only one item (6) had factor loading on the second factor > 0.3, it was decided to proceed with a one-factor solution. After dropping low factor loading items and items that suffered from cross-loading (items 7, 8, and 9) and low communalities (items 4 and 10), the one-factor structure accounting for 44% of variance was established (presented in Appendix B).

### 4.4. Reliability analysis

Reliability analysis was conducted to evaluate the internal consistency of all the measures before performing further data analysis. The Cronbach's alpha coefficients were all > 0.70, indicating relatively high internal consistency of the measures used (see Table 1).

### 4.5. Descriptive and correlation analyses

Descriptive statistics of the variables alongside distribution tests (skewness and kurtosis with standard errors) and variance inflation factors (VIF) were also evaluated before proceeding with analyses (presented in Table 2).

As Table 2 shows, skewness and kurtosis values were within the range of +/-2, indicating an acceptable range of normality of the data (George & Mallery, 2010). Moreover, VIF values did not exceed 4.0,

**Table 3**  
Correlations between study variables.

Variable	1	2	3	4	5
1 Family coordination					
2 Family functioning	0.48**				
3 Psychological well-being	0.25**	0.34**			
4 Extremism	0.01	-0.14**	-0.33**		
5 Age	0.19**	0.18**	0.08	-0.11	

\*\* p < .01; column heading numbers correspond to the numbered variables in the row headings.

**Table 4**  
Standardized estimates of direct and indirect effects of the study variables on extremism.

Extremism		
Direct effects	B	SE
Gender	-0.143*	0.479
Age	-0.107	0.057
Marital status	0.053	0.760
Monthly income	-0.010	0.200
Mother's education	0.103	0.241
Father's education	-0.036	0.252
Family functioning	-0.028	0.047
Psychological well-being	-0.322**	0.019
Indirect effects	Point estimate (SE)	95% BCa CI
FF → PWB → EX	-0.094(0.028)	[-0.159 – -0.048]

Note: \*\*p < .01; FF = family functioning; PWB = psychological well-being; EX = extremism, BCa CI = Bias-corrected and accelerated confidence intervals.

suggesting there was no problematic multicollinearity (Hair, Black, Babin, & Anderson, 2009).

Since the main aim of this study was the exploration of possible mediating effects of psychological well-being on the relationship between family functioning as the independent variable and extremism as the dependent variable, the zero-order bivariate correlations between relevant variables were evaluated (Pearson correlation coefficients) as the first step of hypotheses testing. Table 3 presents the correlations between the relevant variables.

In accordance with Hypothesis 1, family functioning negatively correlated with extremism (p < .01). There was a moderate positive correlation between family functioning and family coordination (p < .01).the positive correlation between family functioning and psychological well-being (p < .01) supported Hypothesis 2. The correlation between family coordination and extremism was insignificant.

4.6. Mediation modeling

The hypotheses were further tested via structural equation modeling (SEM) using the SPSS AMOS software. Unlike traditional multiple regression analysis, SEM is more suitable for complex models with multiple paths. The SEM model exhibited excellent fit indices ( $\chi^2 = 67.165, p < 0.001; RMSEA = 0.03; SRMR = 0.02; CFI = 0.96; TLI = 0.97$ ).

Preacher and Hayes' (2004) bootstrap procedure was followed to test the Hypothesis 3, that is, that the relationship between family adaptability and cohesion on the one hand and extremism on the other is mediated by psychological well-being. This procedure is a non-parametric technique that may be helpful in avoiding small sample size problems and does not require normal distribution of the data. It also allows for the control of covariates. The percentile bootstrap confidence intervals (CI) were based on 5000 bootstrap samples, as suggested by Preacher and Hayes (2004). Determination of effects was established by 95% bias-corrected confidence intervals.

The results shown in Table 4 suggested that there was a significant negative direct effect of psychological well-being on extremism (p < .01)

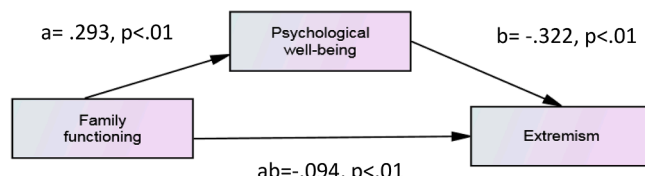


Fig. 1. The mediating role of psychological well-being in the relationship between family functioning and extremism. Note: a and b = direct pathways. ab = indirect pathway (product of a & b).

while controlling for demographic variables (gender, age, marital status, monthly income, mother's education, and father's education). There was a significant negative indirect effect of family functioning on extremism through psychological well-being; a CI interval is considered significant if it doesn't contain 0.

The data for the indirect (ab) pathway between family functioning and extremism as a product of direct effects between (a) family functioning and psychological well-being and (b) psychological well-being and extremism are presented in Fig. 1.

5. Discussion

This study was conducted in order to explore the proposed mediating effect of psychological well-being on the association between two central dimensions of family functioning – adaptability and cohesion – and extremism, as our knowledge of this relationship is largely based on very limited data. It was hypothesized that extremism would be higher in individuals with perceived low family adaptability and cohesion. To begin with, it must be stated that the evidence for two supposedly independent dimensions, namely family adaptability and family cohesion, was not found as the correlation between these two variables is significant and very high. Also, the factor analysis did not replicate Olson's (2000) findings. Instead, analytic work suggested that a unidimensional conception of the family functioning construct was more appropriate. Moreover, an unexpected factor of family coordination emerged. Family coordination was moderately related to family functioning, suggesting that these two concepts are somewhat similar yet distinct. It is plausible that the concepts that relate to family dynamics, interactions, and activities are perceived differently in Saudi Arabia than in Western countries. In Guan and Li's (2017) study, Saudi Arabian participants valued family cohesion and harmony more than their United States counterparts and were more likely to use collaboration, accommodation, and compromise as coping strategies when a conflict in a family arises. Thus, this may be why family coordination emerged as a significant dimension in this study. Our results indicated that family functioning was negatively correlated with extremism, which supported Hypothesis 1. Our findings are consistent with the literature indicating that feelings of detachment and alienation from one's family and rigid rules and roles within the family may be linked to seeking comfort in identifying with extreme ideals and beliefs (Muna, 2020).

This is also in line with the findings of Campelo, Oppetit, Neau, Cohen, and Bronsard (2018). In their review of factors associated with radicalization, they found that family dysfunction was among them. Prior research has shown that poor family structure and poor parenting were risk factors for radicalization (Bazex & Mensat, 2016; Rolling & Corduan, 2018) and Bjørge & Carlsson (2005) assert that unstable family situations facilitate the process of radicalization. The findings of our study echo those of prior research in indicating that family should be another target of programs for deradicalization. Bjørge (2009) argued that it would be difficult for extremists to desist if they did not maintain contact with their families. In response to such findings, some European countries have targeted families to address radicalization (Gielen, 2015), indicating that families should play a role in deradicalization programs. In the Netherlands, for example, parents were involved in an action plan to counter extremism in their children (Sikkens &

Sieckelinck, 2017). In Saudi Arabia also, programs for deradicalization are family-centered; specifically, an attempt is made to help radicals find a spouse as a means to desistance (Lankford & Gillespie, 2011; Mullins, 2010).

Moreover, family functioning was positively associated with psychological well-being, which supported Hypothesis 2. This lends support to previous findings in the literature indicating that the quality of family relationships has an important influence on well-being through psychological, psychosocial, behavioral, and physiological pathways, enhancing self-esteem, optimism, and overall mental health (Symister & Friend, 2003). Balanced family interactions and functioning may also promote healthy coping mechanisms and encourage adaptive beliefs and behaviors as the main positive family coping mechanisms include social and spiritual support, enhanced self-esteem, and feelings of acceptance. On the other hand, negative coping mechanisms, such as self-blame, detachment, and disconnection, may lead to emotional distress (Martínez-Montilla, Amador-Marín, & Guerra-Martín, 2017).

Further, family functioning has a significant indirect effect on extremism through a mediator – psychological well-being. These results further strengthen our third hypothesis that the link between family functioning and extremism is mediated by psychological well-being. A person who perceives their family functioning and dynamics as balanced is more likely to feel accepted, loved, and understood and, in turn, is better able to overcome crises and psychological distress. This is in line with the findings by Anwar and Wildan (2018) that poor family well-being was correlated with radicalization, and with Melacarne (2021) who claimed that family and parental systems can play an important role in preventing radicalism. Hence, it is plausible that improving family functioning and parenting styles could help reduce radical intent and beliefs in young individuals.

These findings are a step forward in understanding the complex relationship between the variables included in the model. First, some light is shed on a family's psychological role in radicalization. Few empirical studies have addressed the question of family background variables to explain extremist political beliefs, attitudes, and behaviors (Scremin, 2020). It has been postulated that disconnection and alienation from one's family might lead to an increased radicalization risk (Wali, 2013). In their search for identity, young people may turn to radical groups in which they can experience a sense of belonging. Socialization is also a key factor in understanding the processes that promote radicalization, as many extremists experienced a lack of structure with extremely limited emotional support during their upbringing (Horgan & Braddock, 2010). This study complements previous findings by proposing that healthy family functioning has a significant effect on these processes. Secondly, we identified the psychological mechanisms through which family functioning is related to extremism. The perception of balanced relationships in one's family contributes to psychological well-being that is, in turn, associated with decreased radical tendencies and extremism. These associations were consistent even after controlling for variables that were shown to have a significant effect on extremism in previous studies: gender (Kimmel, 2018) and family income (Vijaya, Wilent, Cathcart, & Fiorellini, 2018).

### 5.1. Implications

This research demonstrates the impact of positive family functioning on psychological well-being which, in turn, contributes to resilience against extremism. This suggests that family functioning should be a focus for programs to reduce extremist intent and consequent violent extremism. Further, since parents can be blind to early signs of radicalization (van San, Sieckelinck, & de Winter, 2013), it is important to plan training for parents to teach them effective communication with their children, particularly with respect to engaging their children in discussions of radicalism and guiding them on the right path. This could also be facilitated by better family functioning since communication is easier when the family is cohesive (Schrodt, 2005). Thus, effective

parental coping and communication skills are crucial for the prevention of youth radicalization.

The main idea is that programs to enhance family functioning can strengthen a family's positive influence on children's behavior and decision-making skills, as well as mitigate the impact of peer pressure as it has been argued that this is one of the drivers to extremism (Becker, 2021). Families that provide a warm and supportive environment may reduce the appeal of radicalization. It is further advised that practitioners use an evidence-based approach to identify specific risk and protective factors within the family. One of the approaches for minimizing risks associated with maladaptive belief systems is rational emotive behavioral education, which has been shown to be effective in preventing radical attitudes. The aim is to teach students, parents, and teachers mental health-enhancing skills and behaviors that promote tolerance and empathy (Trip, Bora, Marian, Halmajan, & Drugas, 2019).

This study's findings may also support extremism-prevention strategies by emphasizing the importance of family-based intervention practices by authorities. Early intervention at the community level may be the key to countering extremism in the young. Families should have the necessary psychosocial support in their community to help their children develop non-violent and adaptive attitudes.

### 5.2. Limitations of the study

This research has several limitations that should be addressed in further studies. First and foremost, the factor analyses failed to distinguish between the supposedly independent family cohesion and adaptability dimensions. Instead, a one-dimensional factor model was shown to be more appropriate. It is crucial for future research to investigate the validity of the adaptability and cohesion scales. Further, the design of the study was cross-sectional, hence, no causal conclusion can be made. Future research should therefore use longitudinal designs.

Second, perception of these constructs may be different in Western and Eastern societies. Different cultures have different norms, values, and beliefs, which influence the way family interactions and dynamics are perceived (Hall & Hall, 1990). Saudi Arabians show much more obedience to their parents than people in the United States and China as there is a strong emphasis on conformity among families (Guan & Li, 2017). It is crucial to explore cultural diversity in the meaning assigned to assessment instruments' questions regarding family functioning, psychological well-being, and extremism, as well as cultural differences in response styles regardless of the content. A factor that could influence response styles is agreeableness, which can cause a response bias in the way respondents tend to select positive answers. This phenomenon, known as acquiescence bias or agreement bias, has been shown to have a strong influence on the validity of research (Baron-Epel, Kaplan, Weinstein, & Green, 2010) and could be prominent among Saudi Arabian participants. Therefore, future research should account for such factors. Further, cross-national surveys are needed to investigate the possible differences in different populations. This would also contribute to assessing and improving the discriminant validity and reliability of the FACES III instrument since it is not known how these differences could affect the data.

Third, our sample was homogenous in terms of education, monthly income, and parents' education: all of the participants were highly educated, their family income was rather high on average, as over 50% reported a monthly income of 9000 RS or more, and more than half of the participants' parents had a higher level of education (college graduate, master's or Ph.D.). It can be postulated that participants with this type of socioeconomic background have a different perception of their families' interactions and overall well-being since it has been indicated that families who report low income and low levels of parental education suffer from greater psychological distress (Duncan & Gunn, 1997).

Further, the sample in the present study was relatively small, which could make the detection of associations and differences harder, as relatively small samples are not necessarily representative of the entire

**Table A1**  
Item loadings and factors of the modified FACES III scale using oblimin rotation.

Item	Factor 1	Factor 2
1. Family members ask each other for help.	0.549	
2. <i>In solving problems, the children's suggestions are followed.</i>		
3. <i>We approve of each other's friends.</i>		
4. Children have a say in their discipline.	0.793	
5. We like to do things with just our immediate family.	0.824	
6. Different persons act as leaders in our family.	0.914	
7. Family members feel closer to other family members than to people outside the family.	0.720	
8. Our family changes its way of handling tasks.	0.803	
9. Family members like to spend free time with each other.	0.791	
10. Parent(s) and children discuss punishment together.	0.623	
11. <i>Family members feel very close to each other.</i>		
12. <i>The children make the decisions in our family.</i>		
13. When our family gets together for activities, everybody is present.		0.642
14. <i>Rules change in our family.</i>		
15. <i>We can easily think of things to do together as a family.</i>		
16. We shift household responsibilities from person to person.		0.841
17. Family members consult other family members on their decisions.		0.616
18. It is hard to identify the leader(s) in our family.	0.542	
19. <i>Family togetherness is very important</i>		
20. It is hard to tell who does which household chores.	0.590	
Eigenvalue	6.3	1.4
% of variance	44.95%	7.7%
% of cumulative variance	44.95%	52.65%

The items in italic are items that were deleted because of low factor loading or low communalities.

population.

This study also used a self-report methodology which has several limitations since respondents often have a tendency to present themselves in their best light. Also, they could possibly misinterpret the survey questions and not assess themselves accurately. Therefore, we recommend including other-reports in future studies to make the data more objective. Furthermore, the study dealt with extremist beliefs which do not necessarily indicate extremist intent; future research should use both passive and active extremism indicators.

Finally, we identified only one mediator in our model. It would be beneficial to investigate other mechanisms through which the relationship between family functioning and extremism is mediated. It is possible that variables such as family conflict, self-appraisal (evaluation), and coping strategies could affect the association between these factors as well as have a direct effect on the radicalization process. Also, it is plausible that parents with more radical ideology influence their children's attitudes through intergenerational transmission of ideology (Sikkens et al., 2018).

## 6. Conclusion

This study's findings have important implications for understanding how and why family functioning affects extremism. The study provides evidence that family functioning is negatively related to extremism. Participants who reported more balanced family functioning tended to have lesser extremist beliefs. Also, the relationship between family functioning and extremism is indirect and fully mediated by psychological well-being. Psychological well-being has a direct influence on extremist attitudes. Higher levels of psychological well-being implicate lower levels of extremism. Therefore, this research adds to a growing body of literature on mechanisms underpinning extremism and radicalization.

**Data Accessibility statement:** The data that support the findings of this study are available from the corresponding author upon reasonable request.

### CRedit authorship contribution statement

**Enas ObaidAllah Sarour:** Funding acquisition, Conceptualization, Methodology, Data curation, Writing – original draft, Writing – review &

**Table B1**

Item loadings and factors of the intellectual extremism scale using varimax rotation.

Items	Factor 1
1. There is no such thing as middle solutions or half-solutions.	0.870
2. It is difficult for an individual to adopt new ideas that contradict what he embraces.	0.637
3. Those who disagree with me in my thoughts and beliefs should be avoided and boycotted.	0.558
4. <i>I am not convinced by the opinions of those whose thoughts are completely different than ours, even if they seem to me to be true.</i>	
5. To defend the ideas of the people it is legitimate to resort to the use of force	0.633
6. There is only one correct philosophy that governs human behavior.	0.567
7. <i>I consider every sect as wrong except my own sect.</i>	
8. <i>It is wrong and immoral to live peacefully side by side with our opponents.</i>	
9. <i>There is only one way to live the good and correct life.</i>	
10. <i>Trying to find common solutions with those whose thoughts are completely different than ours is a waste of time.</i>	
Eigenvalue	2.714
% of variance	44%
% of cumulative variance	44%

The items in italic are items that were deleted because of low factor loading or low communalities.

editing. **Mogeda El Sayed El Keshky:** Methodology, Visualization, Investigation, Supervision, Formal analysis, Validation, Writing – original draft, Writing – review & editing.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Appendix

See Tables A1 & B1

## References

- Ahmad, S., Nasreen, L., Batool, S., & Khalid, S. (2021). Family functioning and psychological well-being: The mediating role of coping strategies during Covid-19 lockdown in Pakistan. *Polish Psychological Bulletin*, 52(2), 162–171. <https://doi.org/10.24425/ppb.2021.137259>.
- Alexander, B. B., Johnson, S. B., & Carter, R. L. (1984). A psychometric study of the Family Adaptability and Cohesion Evaluation Scales. *Journal of Abnormal Child Psychology*, 12(2), 199–207. <https://doi.org/10.1007/BF00910663>
- Altier, M. B., Thoroughgood, C. N., & Horgan, J. G. (2014). Turning away from terrorism: Lessons from psychology, sociology, and criminology. *Journal of Peace Research*, 51(5), 647–661. <https://doi.org/10.1177/0022343314535946>
- Anwar, M. K., & Wildan, M. (2018). Family well-being and radicalism in digital era. In *Proceedings of the Borneo International Conference on Education and Social Sciences (BICES)* (pp. 142–149). <https://doi.org/10.5220/0009017901420149>
- Atran, S. (2011). Who becomes a terrorist today? *The ethics and efficacy of the global war on terrorism*, 2(5), 45–58. [https://doi.org/10.1057/9781137001931\\_5](https://doi.org/10.1057/9781137001931_5)
- Baron-Epel, O., Kaplan, G., Weinstein, R., & Green, M. S. (2010). Extreme and acquiescence bias in a bi-ethnic population. *European Journal of Public Health*, 20(5), 543–548. <https://doi.org/10.1093/eurpub/ckq052>
- Bazex, H., & Mensat, J. Y. (2016). Qui sont les djihadistes français? Analyse de 12 cas pour contribuer à l'élaboration de profils et à l'évaluation du risque de passage à l'acte. *Annales Medico-Psychologiques*, 174(4), 257–265. <https://doi.org/10.1016/j.amp.2015.12.011>
- Beaver, R. W., & Hampson, R. B. (1990). *Successful families: Assessment and intervention* (1st ed.). Norton & Co Inc.
- Becker, M. H. (2021). When extremists become violent: Examining the association between social control, social learning, and engagement in violent extremism. *Studies in Conflict and Terrorism*, 44(12), 1104–1124. <https://doi.org/10.1080/1057610X.2019.1626093>
- Bhui, K., & Dinoo, S. (2012). Psychological process and pathways to radicalization. *Journal of Bioterrorism & Biodefense*, 5. <https://doi.org/10.4172/2157-2526.s5-003>
- Bigo, D., Laurent, B., Guitte, E.-P., & Ragazzi, F. (2014). *Preventing and countering youth radicalisation in the EU*. Retrieved from [http://www.europarl.europa.eu/RegData/etudes/etudes/etudes/2014/509977/IPOLLIBE\\_ET\(2014\)509977\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/etudes/2014/509977/IPOLLIBE_ET(2014)509977_EN.pdf).
- Björge, T. (2009). Processes of disengagement from violent groups of the extreme right. In T. Björge, & J. G. Horgan (Eds.), *Leaving terrorism behind: Individual and collective disengagement* (pp. 30–48). Routledge. <https://doi.org/10.4324/9780203884751>.
- Björge, T., & Carlsson, Y. (2005). Early intervention with violent and racist youth groups. NUPI.
- 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>
- Cherney, A., Belton, E., Norham, S. A. B., & Milts, J. (2020). Understanding youth radicalisation: An analysis of Australian data. *Behavioral Sciences of Terrorism and Political Aggression*, 1–23. <https://doi.org/10.1080/19434472.2020.1819372>
- Clarke, J. P. (1984). *The family types of schizophrenics, neurotics, and "normals"*. University of Minnesota.
- Coppock, V., & Mcgovern, M. (2014). "Dangerous Minds"? Deconstructing counter-terrorism discourse, radicalisation and the "psychological vulnerability" of Muslim children and young people in Britain. *Children and Society*, 28(3), 242–256. <https://doi.org/10.1111/chso.12060>
- Demo, D. H., & Acock, A. C. (1988). The impact of divorce on children. *Journal of Marriage and Family*, 50(3), 619–648. <https://doi.org/10.2307/352634>
- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social Indicators Research*, 40(1–2), 189–216. <https://doi.org/10.1023/a:1006859511756>
- Disley, E., Weed, K., Reding, A., Clutterbuck, L., & Warnes, R. (2011). Individual disengagement from Al Qa'ida-influenced terrorist groups: A rapid evidence assessment to inform policy and practice in preventing terrorism. Retrieved from [http://www.rand.org/content/dam/rand/pubs/technical\\_reports/2012/RAND\\_TR785.pdf](http://www.rand.org/content/dam/rand/pubs/technical_reports/2012/RAND_TR785.pdf).
- Dono, M., Alzate, M., Seoane, G., & Sabucedo, J. M. (2018). Development and validation of the monopoly on truth scale. *A measure of political extremism*. *Psicothema*, 30(3), 330–336. <https://doi.org/10.7334/psicothema2017.423>
- Du, N., Ran, M. S., Liang, S. G., Situ, M. J., Huang, Y., Mansfield, A. K., & Keitner, G. (2014). Comparison of family functioning in families of depressed patients and nonclinical control families in China using the Family Assessment Device and the Family Adaptability and Cohesion Evaluation Scales II. *Annals of Clinical Psychiatry*, 26(1), 47–56.
- Duncan, G. J., & Gunn, J. B. (1997). Consequences of growing up poor. Retrieved from <http://www.jstor.org/stable/10.7758/9781610448260>.
- Ellis, A. (1986). Fanaticism that may lead to a nuclear holocaust: The contributions of scientific counseling and psychotherapy. *Journal of Counseling & Development*, 65(3), 146–151. <https://doi.org/10.1002/j.1556-6676.1986.tb01262.x>
- Epstein, N. B., Ryan, C. E., Bishop, D. S., Miller, I. W., & Keitner, G. I. (2003). The McMaster model: A view of healthy family functioning. In F. Walsh (Ed.), *Normal family processes: Growing diversity and complexity* (pp. 581–607). [https://doi.org/10.4324/9780203428436\\_chapter\\_21](https://doi.org/10.4324/9780203428436_chapter_21).
- Feddes, A. R., Mann, L., & Doosje, B. (2015). Increasing self-esteem and empathy to prevent violent radicalization: A longitudinal quantitative evaluation of a resilience training focused on adolescents with a dual identity. *Journal of Applied Social Psychology*, 45(7), 400–411. <https://doi.org/10.1111/jasp.12307>
- Friedman, E. (2014). Psychological well-being inventory. In A. C. Michalos (Ed.), *Encyclopedia of quality of life and well-being research*. <https://doi.org/10.1108/rr-06-2015-0143>.
- Gaspar, T., Gomez-Baya, D., Trindade, J. S., Botelho Guedes, F., Cerqueira, A., & de Matos, M. G. (2021). Relationship between family functioning, parents' psychosocial factors, and children's well-being. *Journal of Family Issues*, 1–18. <https://doi.org/10.1177/0192513X211030722>
- George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference. 11.0 update*. Boston: Allyn & Bacon.
- Gielen, A. (2015). Supporting families of foreign fighters. A realistic approach for measuring the effectiveness. *Journal for Deradicalization*, 2, 21–48.
- Gloria, A. M., Castellanos, J., Scull, N. C., & Villegas, F. J. (2009). Psychological coping and well-being of male Latino undergraduates. *Hispanic Journal of Behavioral Sciences*, 31(3), 317–339. <https://doi.org/10.1177/0739986309336845>
- Graham, J., & Bowling, B. (1995). Young people and crime. *Home Office*. <https://dera.ioe.ac.uk/17550/1/a3814uab.pdf>.
- Griffin, D. W., & Ross, L. (1991). Subjective construal, social inference, and human misunderstanding. *Advances in Experimental Social Psychology*, 24(C), 319–359. [https://doi.org/10.1016/S0065-2601\(08\)60333-0](https://doi.org/10.1016/S0065-2601(08)60333-0)
- Guan, X., & Li, X. (2017). A cross-cultural examination of family communication patterns, parent-child closeness, and conflict styles in the United States, China, and Saudi Arabia. *Journal of Family Communication*, 17(3), 223–237. <https://doi.org/10.1080/15267431.2017.1293062>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). Pearson. <https://doi.org/10.1016/j.ijpharm.2011.02.019>
- Hall, E. T., & Hall, M. R. (1990). *Hidden differences: Doing business with the Japanese*. NY: Anchor.
- Hogg, M. A., & Adelman, J. (2013). Uncertainty-Identity theory: Extreme groups, radical behavior, and authoritarian leadership. *Journal of Social Issues*, 69(3), 436–454. <https://doi.org/10.1111/josi.12023>
- Hollenstein, T., Granic, I., Stoolmiller, M., & Snyder, J. (2004). Rigidity in parent-child interactions and the development of externalizing and internalizing behavior in early childhood. *Journal of Abnormal Child Psychology*, 32(6), 595–607. <https://doi.org/10.1023/B:JACP.0000047209.37650.41>
- Horgan, J., & Braddock, K. (2010). Rehabilitating the terrorists?: Challenges in assessing the effectiveness of de-radicalization programs. *Terrorism and Political Violence*, 22(2), 267–291. <https://doi.org/10.1080/09546551003594748>
- Jacobson, M. (2008). Why terrorists quit: Gaining from Al-Qa'ida's losses. *CTC Sentinel*, 1(8).
- Juergensmeyer, M. (2018). Thinking sociologically about religion and violence: The case of ISIS. *Sociology of Religion: A Quarterly Review*, 79(1), 20–34. <https://doi.org/10.1093/socrel/srx055>
- Karwacinski, B. (2017). The influence of cognitive and psychological well-being factors on freshmen community college student GPA: A prediction model (Andrews University). <https://doi.org/10.32597/dissertations/1624>
- Kazarian, S. S. (2005). Family functioning, cultural orientation, and psychological well-being among university students in Lebanon. *Journal of Social Psychology*, 145(2), 141–154. <https://doi.org/10.3200/SOCP.145.2.141-154>
- Kelly, G. (1955). *The psychology of personal constructs*. New York: W. W. Norton & Company.
- Kimmel, M. (2018). Healing from hate: How young men get into—and out of—violent extremism. *University of California Press*. <https://doi.org/10.1525/9780520966086>
- Kruglanski, A. W., Gelfand, M. J., Bélanger, J. J., Sheveland, A., Hetiarachchi, M., & Gunaratna, R. (2014). The psychology of radicalization and deradicalization: How significance quest impacts violent extremism. *Political Psychology*, 35(SUPPL.1), 69–93. <https://doi.org/10.1111/pops.12163>
- Lankford, A., & Gillespie, K. (2011). Rehabilitating terrorists through counter-indoctrination: Lessons learned from the Saudi Arabian program. *International Criminal Justice Review*, 21(2), 118–133. <https://doi.org/10.1177/1057567711407333>
- Malka, A., Lelkes, Y., & Holzer, N. (2017). Rethinking the rigidity of the right model. In *The Politics of Social Psychology* (1st ed., pp. 126–146). Psychology Press. <https://doi.org/10.4324/9781315112619-8>
- Martínez-Montilla, J. M., Amador-Marín, B., & Guerra-Martín, M. D. (2017). Family coping strategies and impacts on family health: A literature review. *Enfermería Global*, 16(3), 576. <https://doi.org/10.6018/eglobal.16.3.255721>
- McCauley, C., & Moskaleiko, S. (2017). Understanding political radicalization: The two-pyramids model. *American Psychologist*, 72(3), 205–216. <https://doi.org/10.1037/amp0000062>
- Melacarne, C. (2021). *Prospettive teoriche per prevenire i processi di micro-radicalizzazione*. Rivista Italiana Di Educazione Familiare: Il ruolo della famiglia e dei contesti parentali. <https://doi.org/10.36253/rief-10537>
- Mullins, S. (2010). Rehabilitation of Islamist terrorists: Lessons from criminology. *Dynamics of Asymmetric Conflict*, 3(3), 162–193. <https://doi.org/10.1080/17467586.2010.528438>
- Muna, W. (2020). Family-Based networks: soft policy tools in countering radicalisation to violent extremism. In R. Khan & Z. Yu (Eds.), *Terrorism and developing countries*. <https://www.intechopen.com/chapters/68962>
- Neumann, P. R. (2015). *Foreign fighter total in Syria/Iraq now exceeds 20,000; surpasses Afghanistan conflict in the 1980s*. In ISCR Insights: Retrieved from <http://icr.info/>



- 2015/01/foreign-fighter-total-syriairaq-now-exceeds-20000-surpasses-afghanistan-conflict-1980s/.
- Olson, D. H., Portner, J., & Lavee, Y. (1985). *FACES III (Family Adaptation and Cohesion Scales)*. St. Paul, MN: University of Minnesota.
- Olson, D. H. (2000). Circumplex model of marital and family systems. *Journal of Family Therapy*, 22, 144–167. <https://doi.org/10.1111/1467-6427.00144>
- Olson, David H., Russell, C. S., & Sprenkle, D. H. (1989). *Circumplex model: Systemic assessment and treatment of families*. <https://doi.org/10.4324/9781315804132>.
- Pollard, E. L., & Lee, P. D. (2003). Child well-being: A systematic review of the literature. *Social I*, 61(1), 59–78. <https://doi.org/10.1023/A:1021284215801>
- Porta, D. Della. (1995). Left-wing terrorism in Italy. In M. Greshaw (Ed.), *Terrorism in Context* (p. 139). University Park, PA: Pennsylvania State University Press.
- Post, J., Sprinzak, E., & Denny, L. (2003). Terrorism and political violence The terrorists in their own words: Interviews with 35 incarcerated Middle Eastern terrorists. *Terrorism and Political Violence*, 15(1), 171–184. <https://doi.org/10.1080/09546550312331293007>
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717–731. <https://doi.org/10.3758/BF03206553>
- Reiss, D., & Oliveri, M. E. (1983). The family's construction of social reality and its ties to its kin network: An exploration of causal direction. *Journal of Marriage and the Family*, 45(1), 81. <https://doi.org/10.2307/351297>
- Rohr, E. (2017). Terror, fundamentalism, and male adolescence. *Psychoanalytic Psychotherapy*, 31(4), 343–354. <https://doi.org/10.1080/02668734.2017.1345001>
- Rolling, J., & Corduan, G. (2018). Radicalization, a new adolescent symptom? *Neuropsychiatrie de l'Enfance et de l'Adolescence*, 66(5), 277–285. <https://doi.org/10.1016/j.neudef.2017.10.002>
- Rothbart, M. K., Ziaie, H., & O'Boyle, C. G. (1992). Self-regulation and emotion in infancy. *New Directions for Child and Adolescent Development*, 55, 7–23. <https://doi.org/10.1002/cd.23219925503>
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081.
- Sageman, M. (2004). *Understanding terror networks*. University of Pennsylvania Press.
- Sampson, R. J., & Laub, J. H. (1993). *Crime in the making: Pathways and turning points through life*. Cambridge: Harvard University Press.
- Schmid, A. P. (2013). Radicalisation, de-radicalisation, counter-radicalisation: A conceptual discussion and literature review. *The International Centre for Counter-Terrorism – The Hague*, 4(2). <https://doi.org/10.19165/2013.1.02>.
- Schmid, A. P. (2014). Violent and Non-Violent Extremism: Two Sides of the Same Coin? *The International Centre for Counter-Terrorism – The Hague*, 5(5). <https://doi.org/10.19165/2014.1.05>.
- Schrodt, P. (2005). Family communication schemata and the circumplex model of family functioning. *Western Journal of Communication*, 69(4), 359–376. <https://doi.org/10.1080/10570310500305539>
- Scremin, N. (2020). Family matters: A preliminary framework for understanding family influence on Islamist radicalization. *Studies in Conflict and Terrorism*. <https://doi.org/10.1080/1057610X.2020.1841242>
- Shek, D. T. L. (1997). The relation of family functioning to adolescent psychological well-being, school adjustment, and problem behavior. *Journal of Genetic Psychology*, 158(4), 467–479. <https://doi.org/10.1080/00221329709596683>
- Sikkens, E. (2018). *Relating to radicalism: Family and upbringing experiences in radicalization and de-radicalization*. Utrecht University.
- Sikkens, E., & Sieckelincx, S. (2017). Parental influence on radicalization and de-radicalization according to the lived experiences of former extremists and their families. *Journal for Deradicalization*, 12, 192–226.
- Sikkens, E., van San, M., Sieckelincx, S., & de Winter, M. (2018). Parents' perspectives on radicalization: A qualitative study. *Journal of Child and Family Studies*, 27(7), 2276–2284. <https://doi.org/10.1007/s10826-018-1048-x>
- Simcox, R. (2017). The Islamic State's Western teenage plotters. Retrieved from *CTC Sentinel*, 10(2), 21–26 <https://ctc.usma.edu/the-islamic-states-western-teenage-plotters/>.
- Stamper, C. L., & Masterson, S. S. (2002). Insider or outsider? How employee perceptions of insider status affect their work behavior. *Journal of Organizational Behavior*, 23(8), 875–894. <https://doi.org/10.1002/job.175>
- Symister, P., & Friend, R. (2003). The influence of social support and problematic support on optimism and depression in chronic illness: A prospective study evaluating self-esteem as a mediator. *Health Psychology*, 22(2), 123–129. <https://doi.org/10.1037/0278-6133.22.2.123>
- Trip, S., Bora, C. H., Marian, M., Halmajan, A., & Drugas, M. I. (2019). Psychological mechanisms involved in radicalization and extremism. A rational emotive behavioral conceptualization. *Frontiers in Psychology*, 10, Article 437. <https://doi.org/10.3389/fpsyg.2019.00437>.
- van San, M., Sieckelincx, S., & de Winter, M. (2013). Ideals adrift: An educational approach to radicalization. *Ethics and Education*, 8(3), 276–289. <https://doi.org/10.1080/17449642.2013.878100>
- Vijaya, R. M., Wilent, A., Cathcart, J., & Fiorellini, R. (2018). Economic underpinnings of violent extremism: A cross country exploration of repeated survey data. *World Development*, 109, 401–412. <https://doi.org/10.1016/j.worlddev.2018.05.009>
- Wali, F. (2013). *Radicalism unveiled*. Routledge. <https://doi.org/10.4324/9781315603520>
- Weinstein, S. M., Van Meter, A., Katz, A. C., Peters, A. T., & West, A. E. (2015). Cognitive and family correlates of current suicidal ideation in children with bipolar disorder. *Journal of Affective Disorders*, 173, 15–21. <https://doi.org/10.1016/j.jad.2014.10.058>
- Winter, D. A., & Feixas, G. (2019). Toward a constructivist model of radicalization and deradicalization: A conceptual and methodological proposal. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.00412>
- Yusof, N., Kaur, A., Dalib, S., Ramli, R., & Awang-Hashim, R. (2021). Group identity and extremism: The reflective experiences of youths regarding persuasive communication. *Children and Youth Services Review*, 120, Article 105743. <https://doi.org/10.1016/j.childyouth.2020.105743>