Systematic Review on the Outcomes of Primary and Secondary Prevention Programs in the Field of Violent Radicalization

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Abstract

Since 2001, attacks attributed to extremist movements or "lone actors" have intensified and spread around the world, prompting governments to invest significant sums of money into preventing violent radicalization. Nonetheless, knowledge regarding best practices for prevention remains disparate, and the effectiveness of current practices is not clearly established. Consequently, we conducted a systematic review on the outcomes of primary and secondary prevention programs in the field of violent radicalization. Of the 11,836 documents generated, 33 studies published between 2009 and 2019 were eligible for inclusion as they comprised an empirical (quantitative or qualitative) evaluation of a prevention initiative using primary data. The majority of these studies evaluated programs targeting violent Islamist or "general" radicalization. Negative or iatrogenic effects mostly stemmed from programs aimed at specific ethnic or religious groups or focusing on surveillance and monitoring. Positive effects were noted in programs aimed at improving potential protective factors against violent radicalization. However, the reviewed studies had numerous limitations (i.e., weak experimental designs, small/biased samples, unclear definitions, incomplete methodological sections, and conflicts of interests) that hinder one's confidence in their conclusions. Also, many studies lacked a logic model, failed to differentiate between intermediate and final outcomes, and often did not assess for negative outcomes. Encouragingly, however, some of the most methodologically sound studies contained results attesting to the effectiveness of improving protective factors against violent radicalization.

Keywords: Radicalization, Extremism, Violent, Systematic Review, Prevention, Programs, Primary, Secondary, Guidelines

Introduction

Between 2001 and 2014, planned and executed attacks attributed to extremist movements or lone actors have intensified and spread across many parts of the world (START, 2019), amplifying the fears of local populations and prompting governments to invest significant

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sums of money in preventing and countering violent radicalization and extremism.[2] These efforts now constitute a significant development in North-Western countries and have led to the increased involvement of institutions outside the traditional national security sphere, including the mental health, education, and community sectors, as well as the legal and prison systems.

Despite these important investments, current knowledge regarding best practices in terms of prevention remains disparate, and the effectiveness of currently used practices has not yet been clearly established (Feddes & Galluci, 2015; Horgan & Braddock, 2010; Koehler, 2017; Koehler & Fiebig, 2019). Even though the evaluation literature has been growing rapidly in the last two years (Schuurman, 2020), of the large body of studies related to violent radicalization and terrorism, very few are empirical outcome evaluations of PVE programs put in place by governments, institutions, or organizations (Christmann, 2012; Silke et al., 2021; Veldhuis & Kessels, 2013). Moreover, many evaluations are not publicly accessible, for example, reports conducted internally by and for governmental agencies on programs they funded (Horgan & Braddock, 2010; Koehler, 2017). This means that significant sums of money are currently being invested in programs whose effectiveness and potential side effects are relatively unknown. Further, the quality and reliability of the available studies on the subject remain unassessed (Burke, 2013; Rabasa et al., 2010).

The rapid deployment of prevention initiatives, often motivated by the urgency of the situation and without a deep understanding of the phenomenon, poses significant social, scientific, and ethical problems. The implementation of prevention programs without adequate knowledge about their potential outcomes and impact may ultimately be counterproductive, stigmatizing, and lead to greater harms than benefits (Koehler, 2017; Romaniuk, 2015). Currently, available information regarding the effectiveness of most programs is generally a matter of opinion rather than empirical evidence. In addition, many

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[2] The distinction between preventing violent extremism (PVE) and countering violent extremism (CVE) is not always obvious. Efforts to counter violent extremism could fall under the umbrella of prevention depending on the author and situation, and vice versa. Because of that, authors tend to use both terms interchangeably or combine them (PVE/CVE). We agree with the suggestion of colleagues that the literature might be better served by classifying efforts to fight violent radicalization and extremism in terms of primary, secondary, and tertiary prevention (Harris-Hogan et al., 2016; Koehler, 2020). Therefore, in the current report, the term PVE will be used to represent both preventing and countering violent extremism, as well as all levels of prevention (primary, secondary, tertiary).

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studies claim to be "evaluations" despite not meeting the basic standards expected of such studies (Koehler, 2017; Silke, 2001).

The Importance of Evidence-Based Best Practice Guidelines

The field of violent radicalization is at a crucial intersection between the following: a) a recognized social need for addressing its rise among vulnerable populations; b) an increase in demands for evidence-based guidelines on online and offline prevention/intervention efforts, especially given the substantive investments made by national, regional, and inter-governmental actors; and c) the availability of empirical evidence, which, however, has not yet been sufficiently generated, appraised, and integrated into practice guidelines. Moreover, because violent radicalization is a low-occurrence and context-dependent phenomenon (its antecedents, evolution, and dynamics vary appreciably between locations), there can be too much heterogeneity for models to fit well within local contexts. The field also lacks best practice guidelines that are empirically grounded, with practitioners currently relying on local expertise and case-by-case results to design and implement PVE programs. A focus on guidelines that are flexible and adaptable rather than pre-set models is therefore preferable, allowing the context to drive the work. Such guidelines are especially relevant given the relative infancy of PVE practice in most countries and contexts.

An evidence-based best practice guideline is a recommendation that a) aims to optimize client care and well-being by helping practitioners and clients make the most appropriate decisions for specific situations; b) is informed by a systematic review of the evidence; and c) includes an appraisal of the balance of benefits and harms in comparison to other care options (Graham et al., 2011; Pacini et al., 2016). In North America, guidelines are also used to assess the quality and outcomes of implemented interventions and to consequently allocate resources as needed. Moreover, evidence-based best practice guidelines have been reported to improve the quality of care (Wallen et al., 2010).

Guideline development often relies on systematic reviews as a starting point. A systematic review collects and analyzes quantitative and qualitative empirical studies on a particular research question through an exhaustive search using explicit, accountable, and

highly robust methods (Cooper, 2017; Gough et al., 2012). The ultimate goal of a systematic review is to provide a reliable synthesis of trustable evidence that can be used to develop guidelines for research, policy, and practice (Pettigrew & Roberts, 2006). Guidelines not based on systematic reviews may be misleading or cause harm because they can be grounded in biased or questionable evidence (Lim et al., 2008).

Systematic Reviews in the Field of PVE

Several literature reviews on violent radicalization have been published over the past decade, but very few were about prevention programs or systematic in their approach. Indeed, the vast majority of these reviews—some published by major international consortia—are theoretical in nature and present a more or less exhaustive portrait of the various conceptual, theoretical, and/or empirical writings concerning the possible causes of violent radicalization (e.g., Borum, 2012; Chistmann, 2012; Dalgaard-Nielsen, 2010; Doosje et al., 2016; King & Taylor, 2011; McGilloway et al., 2015; Rahimullah et al., 2013; Schmid, 2013). The knowledge integrated by these reviews is disparate and focuses on different forms of radicalization among different populations.

Other existing reviews are traditional literature reviews or narrative reviews of PVE programs (e.g., Davies, 2018; Feddes & Galluci, 2015; Holmer et al., 2018; Kudlacek et al., 2017; Radicalisation Awareness Network [RAN], 2019; Samuel, 2018; Stephens et al., 2019). Thus, they are summaries of publications and/or descriptions of research around a common theme and, as such, tend to be selective by necessity and subsequently often subjective and susceptible to bias (Jackson, 1980).

To our knowledge, seven systematic reviews have focused on PVE programs (Andersson Malmros, 2018; Bellasio et al., 2018; Christmann, 2012; Gielen, 2019; Madriaza & Ponsot, 2015). The first, published by the Youth Justice Board for England and Wales (Christmann, 2012), examines PVE program results but covers only two tertiary prevention programs established for young people involved in the English justice system, making its scope limited. The second, published by the International Centre for the Prevention of Crime (Madriaza & Ponsot, 2015), is a typological review that provides a detailed classification of

the different PVE programs and strategies, but it does not systematically and critically review their results, nor does it examine the quality and reliability of the associated evidence. The third, by Gielen (2019), is a realist review of PVE evaluation studies that is impressive in scope and prudent in its conclusions, as it only groups the results of evaluation studies that are comparable. However, a realist review—in contrast to a fully-fledged systematic review—does not ponder studies according to their methodological quality and is neither standardized nor reproducible. The fourth, published by the RAND Corporation (Bellasio et al., 2018), is a systematic review of PVE strategies, policies, and programs implemented in the Netherlands and abroad. However, being focused on evaluation methods and design rather than results, it does not provide recommendations for clinicians, only for researchers and program evaluators. Furthermore, its geographical scope is limited. The fifth, by the Segerstedt Institute (Andersson Malmros, 2018), is a fully-fledged systematic review of PVE programs, but it was only presented in a short conference, and the full report is yet to be published. The sixth, by Silke et al. (2021), summarizes post-2017 research on tertiary prevention programs. Even though it is methodologically solid and integrates key findings in a coherent model of deradicalization, it exclusively covers recent tertiary PVE program evaluations. The seventh, by Jugl et al. (2020), constitutes a meta-analysis of outcome evaluations of primary, secondary, and tertiary PVE programs. However, by nature of being a meta-analysis, it only included quantitative evaluations, which may obfuscate important conclusions stemming from the numerous qualitative analyses conducted in the field. In sum, currently available systematic reviews of PVE studies have methodological limitations, are restricted in scope, do not adequately cover primary and secondary PVE programs, or are centered on research rather than practice, thereby decreasing their usefulness for developing evidence-based best practice guidelines—especially for primary and secondary prevention.

Objectives

To our knowledge, there has been little aggregation of the available evidence regarding the effectiveness and potential side effects of PVE programs, and currently available systematic reviews do not properly assess the quality of the literature in a formal and structured way. To

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address this knowledge gap, we conducted a systematic review of the literature on the effectiveness of prevention programs in the field of PVE. Following a quick overview of the literature, it became clear that the goals and outcomes of primary/secondary and those of tertiary prevention programs were very disparate: They do not target the same populations, take place in different environments (e.g., schools vs. prisons), and focus on different risk and protective factors. This prompted us to treat results on primary and secondary prevention programs separately from those of tertiary prevention programs but to use a common method for both reviews. The current study focuses on primary and secondary PVE programs.

The goals of our systematic review were as follows: a) to describe the outcomes of primary and secondary PVE programs in terms of preventing and/or reducing the risk of violent radicalization; b) to identify specific program modalities associated with a higher chance of success or failure for the targeted populations; and c) to assess the quality of the literature in order to identify knowledge gaps and which studies should be given more (or less) weight in the interpretation of results. The results of this review aimed to provide a reliable, trusted, and valid knowledge base for the development of evidence-based guidelines that will speak to practitioners, researchers, and deciders from multiple sectors. This was achieved by integrating evidence on a) right-wing, extreme-left, religious-based, and "single-issue" (e.g., misogyny) violent radicalization; b) outcomes classified by prevention levels; and c) benefits/harms, costs, transferability, and community-related implementation issues when mentioned by the authors.

Methods

The systematic search strategy was based on the Campbell Collaboration review methods (https://www.campbellcollaboration.org). The Campbell Collaboration is one of the leading organizations when it comes to setting systematic review guidelines, particularly in the social and human sciences. In accordance with their guidelines, the steps outlined below were followed.

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Step 1: Develop the Logic Model and Formulate Key Questions

1.1: Develop the Logic Model

A number of authors have noted the advantages of applying public health models (Caplan, 1964) to PVE program analyses (Bjørgo, 2013; Harris-Hogan et al., 2016; Koehler, 2020; Stares & Yacoubian, 2007; Weine et al., 2017). Firstly, these models provide a framework for the review and analysis of a host of embedded push and pull factors that are situated at all levels of an individual's ecosystem (Schmid, 2013). In turn, this framework offers a solid basis upon which to categorize the expected vs. achieved individual and societal outcomes of PVE programs. Second, they can be used to map PVE programs into clusters of services using the primary, secondary, and tertiary levels of public health models (see Figure 1) (Harris-Hogan et al., 2016). Such models can, therefore, help to organize and categorize very different areas of programming that contain specific assumptions, programming elements, and goals. Third, they provide crucial information on the gaps in inter-agency and multidisciplinary team coordination, as well as on the obstacles and facilitators to community engagement—a key element for the success of PVE efforts. Furthermore, public health models provide robust methodologies for the design of evidence-based best practice guidelines, as generated by collaborations such as Campbell, Cochrane, NICE, and PRISMA.

Figure 1

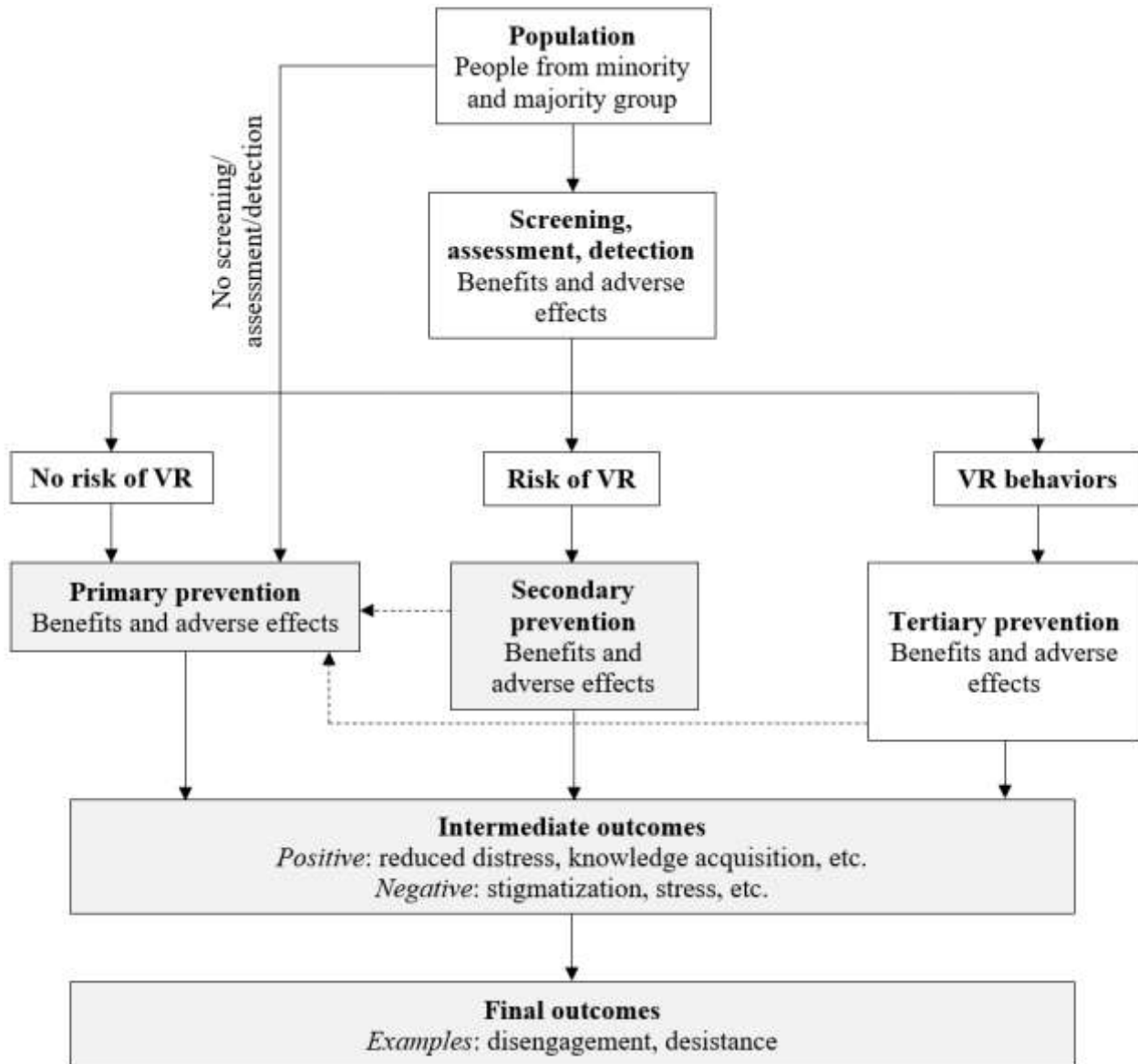*Levels of Prevention in Public Health*

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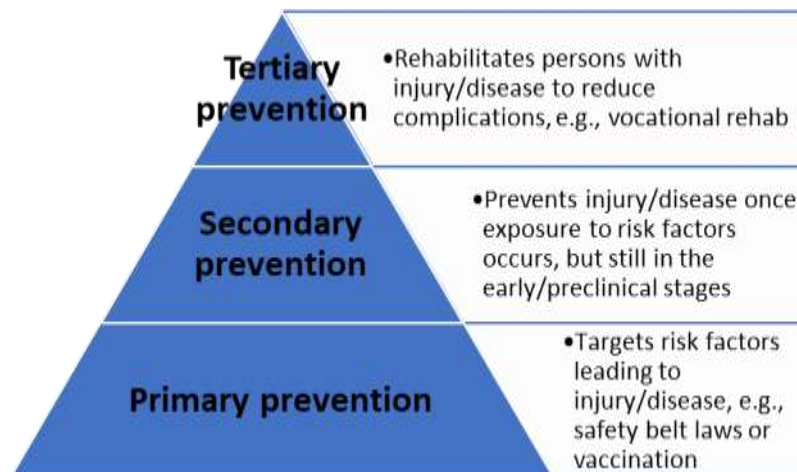
A logic model is a summary diagram that maps out a target population in conjunction with an intervention and all its anticipated outcomes (Baxter et al., 2014). Logic models are considered best practices in program evaluation studies, as they uncover theories of change. That is, they inform the processes of how and why an intervention succeeds, fails, or leads to a given outcome (Weiss, 1998). They also document the links between short-, middle-, long-term, and final outcomes, both expected and unexpected (Pottie et al., 2011; Rogers, 2008). As such, logic models are increasingly integrated into systematic review methodology, particularly reviews of program evaluation studies, as can be seen in Campbell Collaboration review methods. In this context, logic models have numerous advantages: a) they enable the identification of the target population; b) they help to operationalize key definitions; c) they help to posit links between concepts and variables; d) they enable the formulation of the main review questions; e) they structure the search strategy, codification of studies, and analysis of evidence; f) they frame the interpretation of evidence; g) they support guidelines' development based on evidence-based best practices; and h) they help to identify gaps in the literature and future research priorities (Anderson et al., 2011; Pottie et al., 2011). In summary, logic models have the potential to make systematic reviews and the recommendations they generate more transparent to decision makers (Anderson et al., 2011; Wallace et al., 2012). With the precision of analyses they offer, systematic reviews based on logic models of intervention help move conclusions beyond the often repeated "more evidence is needed" (Baxter et al., 2014).

Our logic model (see Figure 2) classifies programs that aim to counter violent radicalization into tiers of prevention according to the public health model. Primary prevention programs are designed for members of the general population who are not at risk or are not identified as at risk of violent radicalization. The goal of these programs is to prevent violent radicalization before it happens by targeting an entire population (Brantingham & Faust, 1976). In the context of PVE, primary prevention programs encompass initiatives ranging from openness towards others programs disseminated in schools and universities to counter-narratives displayed on radio or television (e.g., radio broadcasts sponsored by the United States Agency for International Development; Aldrich, 2014).

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Figure 2

The PVE Logic Model

In our literature review, we found multiple instances of programs targeting non-at-risk members of specific populations, based mostly on the religious or ethnic backgrounds of individuals. We labeled these programs "targeted primary prevention programs" because they target a specific population not clearly identified as at risk of radicalization (e.g., Diamond targeting Muslims; Feddes et al., 2015). This was found to have implications as to their side effects (e.g., stigmatization).

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Secondary prevention programs, in turn, are directed towards populations that are identified as somehow vulnerable to violent radicalization and extremism. This assumption can be rooted in valid and reliable assessment procedures (although very few are empirically validated; Scarcella et al., 2016) or in information suggesting that such populations are at risk (e.g., if they were exposed to extremist discourses; Liht & Savage, 2013). These programs mostly aim to prevent violent behavior or attachment to extremist ideologies among individuals identified as vulnerable but not yet violent.

Finally, tertiary prevention programs, or intervention/disengagement/deradicalization programs, target individuals who already are on a path towards radicalization, have committed acts of political violence, or have joined a violent extremist group. They focus on reintegrating the individual into society and making them give up violence. They can also promote ideological changes. As mentioned previously, results concerning the outcomes of tertiary PVE programs will be presented in a separate paper.

Prevention programs, whether they are primary, secondary, or tertiary, can have both beneficial and adverse effects, and these can be intended or not by the program providers. These effects can lead to changes (positive and/or negative) in attitudes and behaviors associated with violent radicalization (e.g., openness towards others). These, in turn, have an effect on the desired final outcome (e.g., disengagement from a path towards radicalization).

1.2: Formulate Key Questions

Based on the logic model, we formulated the main question to guide our systematic review strategy: "What are the main recommendations for prevention practice, program implementation, and program evaluation that can be generated from the literature regarding primary and secondary prevention in the field of violent radicalization?" This main question, in turn, implies multiple specific questions: a) Who are the populations included in primary and secondary PVE programs? b) What is the content of these programs? c) How were the outcomes of these programs defined and measured? d) What are the intermediate and final positive outcomes? e) What are the intermediate and final negative outcomes? f) What mechanisms do authors use to explain these outcomes? g) What are the implementation and cost issues, if reported?

Step 2: Set Admissible Evidence

2.1: Set Definitions

Violent Radicalization

One of the major recurring limitations within the empirical literature on violent radicalization is the lack of any consensus regarding definitions. Most of these terminology issues stem from the fact that terms such as radicalization, terrorism, and violent extremism have been used interchangeably; terrorism and violent radicalization refer to an outcome or a method of political violence, while radicalization describes a process or a state of being (Hafez & Mullins, 2015). Most existing definitions also tend to focus on religious-based violent radicalization (e.g., Khosrokhavar; 2014; Silber & Bhatt, 2007). Recent definitions of violent radicalization (e.g., Hafez & Mullins, 2015) highlight a more holistic understanding of the phenomenon by integrating systemic, anthropological, psychosocial, and socio-political dimensions, which echoes Heitmeyer's (2002) work on social disintegration whereby violent radicalization is viewed as the product of individual experiences and social conditions that generate social grievances (Alava et al., 2017). Ecosystemic definitions (e.g., Schmid, 2013), in opposition to "us vs. them" rhetoric, describe violent radicalization as an escalation of confrontational tactics where violence is considered as the only or most efficient means of defending one's (or the group's) cause. In an attempt to integrate these different definitions, we define violent radicalization as a "non-linear process by which an individual or group (including a state) undergoes systemic transformations (e.g., behavioral, socio-economical, psychological, identity-based, political, and/or ideological) that lead them to support or facilitate the use of violence towards an individual or a group in order to further their cause and bring about individual or societal changes."

Operationalization of Violent Radicalization

In addition to the conceptual definition of violent radicalization adopted in this systematic review, we also rely on McCauley and Moskalenko's (2009) operationalization of manifestations of violent radicalization. These authors provide a distinction between political activism (participation in legal and non-violent political actions) and violent radicalization

(political actions that are specifically violent and/or illegal). Thus defined, violent radicalization may manifest itself as expressions of violent attitudes, participating in violent activities, or taking part in acts of political violence in order to defend the interests of one's group (or of oneself) through the attack, persecution, or elimination of members of the outgroups. Violent radicalization outcomes thus include hate-based emotions, attitudes, discourses (and their propagation), as well as the perpetration of actual physical violence.

2.2: Set Inclusion/Exclusion Criteria

Because the field is characterized by heterogeneous studies, designs, and outcome measures, we adopted inclusion and exclusion criteria that maximize inclusiveness, thereby increasing the likelihood of locating studies that use different conceptual frameworks and/or methods. In addition to improving generalizability and consistency, this approach enables triangulation of evidence. The following criteria laid the rules for the evidence we considered admissible: a) written in English or French (languages spoken by members of the research team); b) had to include an evaluation, from primary data, of any kind of primary or secondary PVE initiative; c) if this condition was met, we did not impose any restriction for study design, type, or method; and d) studies with ethically questionable access to primary data were excluded. We included studies published until June 2019, when the last bibliographic search was conducted.

Assessing the quality of the available literature is one of the many goals of systematic reviews. Thus, we were purposely exhaustive in what we considered eligible as it allowed us to critique the state of the literature as it is. Step 5 contains more details on the procedure we used to assess the quality of studies.

Step 3: Search the Literature and Update Searches

In consultation with a library science expert, we developed a search strategy that aimed to target an array of bibliographic databases and grey literature resources. Wherever possible, we made use of controlled vocabulary terms from database thesauri and adapted the strategy by the database to make full use of its features. To reduce "publication bias" (Bernard et al., 2014), we conducted a thorough search for grey literature by searching the Web, using

Google for studies, reports, electronic journals, conference proceedings, and other relevant documents. Even though tertiary PVE program outcomes are beyond the scope of the current article, the search for primary, secondary, and tertiary PVE programs was done simultaneously, as they share multiple keywords.

In addition to the documents identified using the search strategy outlined above, we compared our results with the studies of seven literature/systematic reviews on PVE programs published at the time of our last bibliographic search: Andersson Malmros (2018), Bellasio et al. (2018), Davies (2018), Gielen (2019), Kudlacek et al. (2017), RAN (2019), and Samuel (2018). Each eligible English or French document that we had not identified was added to our database. We did the same for studies figuring in the Impact Europe PVE intervention database (http://www.impact.itti.com.pl/index#/inspire/search).
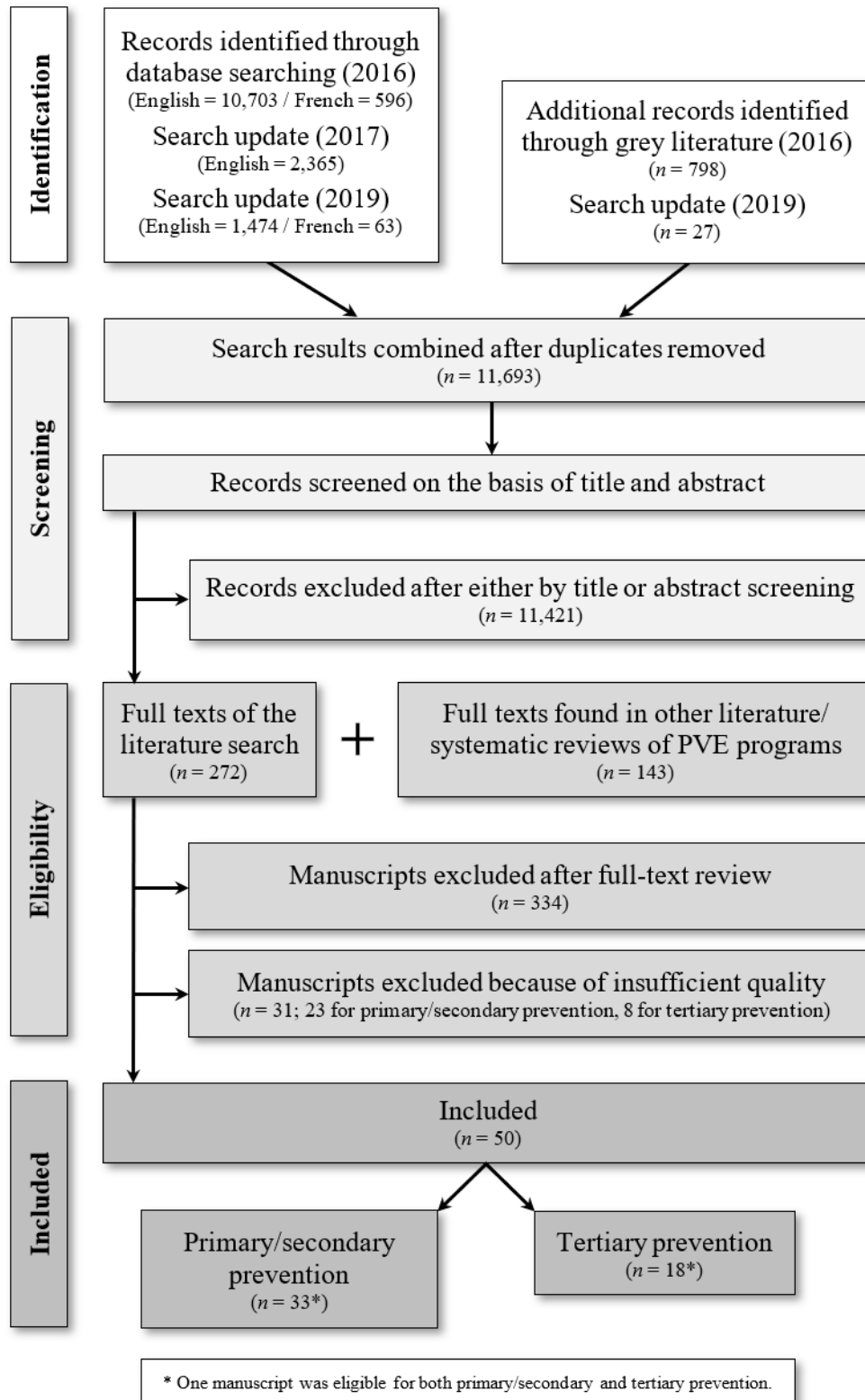
If a set of authors published multiple papers using the same sample, analyses, and objectives (e.g., a government report later published in a scientific journal), only the latest version was retained. The complete list of examined databases, as well as sample search statements from our database and Google searches, can be found in Appendix A.

Step 4: Select Admissible Evidence for Inclusion in the Review

To select admissible evidence studies, five research assistants screened the titles and abstracts of documents identified in the literature search. To ensure that inter-rater agreement was adequate, Fleiss' kappa (Fleiss, 1971) was computed. Results showed the inter-rater agreement (K = .64) for the selection of eligible studies was moderate to substantial (Landis & Koch, 1977). Next, the teams reviewed and cross-reviewed the full-text documents for final eligibility. We used the PRISMA (http://www.prisma-statement.org) template to record the results of the literature searches in a flowchart (see Figure 3).

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Figure 3

PRISMA Statement

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Step 5: Assess the Quality of Studies

Leading systematic review organizations, such as the Campbell Collaboration and Cochrane, have highlighted the challenges of assessing the quality of studies in fields where research is very diverse in terms of design, samples, tools, and outcomes. For the purposes of this review, the quality of studies was assessed with a modified version of the Appraisal of Guidelines for Research & Evaluation II (AGREE II; Brouwers et al., 2010), which was adapted to fit the state of the literature in the field of PVE. The "Quality of Study Assessment tool" can be found in Appendix B and comprised 10 items worth one point each. These items cover a) the clarity of concepts, variables, and research questions/hypotheses; b) the amount of methodological detail (e.g., sample description) and the validity of the strategy; c) the robustness of the collected evidence; d) disclosure of limitations and potential conflicts of interest; and e) whether authors discussed the implications for practice or future research.

We decided to weight each item equally (one point each) due to the heterogeneity of studies in this field, as well as the lack of clear guidelines on methodological quality assessment when studies comprise different designs and come from both official and grey literature. This approach increased the flexibility of the tool and the scope of studies that could be included. For example, we found grey literature reports with very solid methodological designs that contained very few details about the sample and statistical analyses because of the nature of the report. If we had given too much weight to sample description and presentation of methods, such studies would have been excluded despite containing robust evidence. However, studies that met too few of these criteria (quality rating of 3/10 or less) were excluded from the systematic review as they provided excessively unreliable evidence. Note that the quality rating of each study must not be interpreted as a quantitative measure but rather as a qualitative rating of the presence/absence of basic methodological criteria for sound scientific research.

Step 6: Gather Information from Studies

We developed coding sheets to extract data and information from each selected study. Once completed, these sheets provided information on the following: a) conflicts of interest; b) program location and objectives; c) sample characteristics; d) methodological design; e)

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measures related to the program (e.g., user satisfaction); f) outcomes potentially influenced by the program (e.g., change in radicalized behaviors/attitudes, self-esteem); g) results in terms of positive and negative outcomes; h) limitations; and i) recommendations for practice, policy, or future research. All data from studies were then integrated into summary of evidence tables.

Step 7: Integrate Results and Interpret the Evidence

We initially tried to structure the aggregation of evidence by types of outcomes (changes in attitudes, behaviors, program satisfaction, etc.), but outcomes were so heterogeneous that the task proved impossible to complete with parsimony. We thus conducted parallel aggregations of evidence according to a) program location/country; b) program name; and c) whether outcomes were mostly positive, negative, or mixed. This ensured that each study would be listed only once.

Once positive and negative effects were catalogued, the systematic review team rated each study to determine whether outcomes of the prevention program were mostly positive, negative, or mixed (according to authors). For an outcome to be considered "mostly positive," authors had to report exclusively positive effects, or substantially more positive than negative outcomes (and inversely for "mostly negative" outcomes). If a program led to both positive and negative outcomes, without a clear preponderance of either type, it was labeled as "mixed." If a program had neither positive nor negative outcomes, it was sorted in "mostly negative," because on balance, such program outcomes do not justify the associated cost/resource allocation.

Step 8: Write the Report

We synthesized the accumulated evidence as follows: a) the key findings that emerged from the literature; b) the degree of trust in each finding (i.e., the robustness of studies, assessed qualitatively and through the Quality of Study Assessment tool); c) the generalizability and applicability of findings; and d) the limitations of existing knowledge and research gaps. Finally, we used a narrative synthesis method to integrate the results (Moher et al., 2009).

Results

The current study relates the outcomes of primary and secondary PVE programs. Of the 11,836 studies generated from the searches, 56 were eligible for this review as they included an empirical evaluation of a primary or secondary prevention initiative using primary data.[3] Of these, 23 were of too low methodological quality (score of 3/10 or less on the Quality of Study Assessment tool) to be included. This indicates multiple problems in the state of the literature, which will be discussed in the later sections. For those wishing to consult the list of eligible but excluded studies, see Appendix C.

The 33 primary and secondary prevention studies assessed the outcomes of 31 different programs in 15 countries (UK [$k = 16$], USA [$k = 4$], The Netherlands [$k = 3$], Afghanistan [$k = 1$], France [$k = 2$], Kenya [$k = 2$], Somalia [$k = 2$], Australia [$k = 1$], Belgium [$k = 1$], Iraq [$k = 1$], Germany [$k = 1$], Mali [$k = 1$], Scotland [$k = 1$], Sweden [$k = 1$], Tunisia [$k = 1$]).[4] The total number of participants was 6,520, with sample sizes ranging from five (Madriaza et al., 2018; Manby, 2010b) to 1,446 (Swedberg & Reisman, 2013). The mean number of participants was 210.32 ($SD = 396.0$). The studies were published between 2009 and 2019.

Table 1 presents each of the 33 retained evaluations, listed by a) geographic location, b) types of outcomes, and c) program name. Most of the studies ($k = 24$) evaluated programs targeting violent Islamist radicalization. Nine studies assessed the outcomes of "general" prevention programs, that is, programs that do not address a specific type of radicalization but rather openness towards others, respect, civic education, etc. Only one study assessed programs was aimed at violent far-right radicalization. None targeted far-left or single-issue violent radicalization.

Among the 33 studies, 18 reported mostly positive outcomes, seven identified mixed outcomes (both positive and negative), and eight found mostly negative outcomes. Of note, all negative assessments were related to initiatives under Prevent, the UK's national PVE

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[3] In our systematic review, the classification of programs as primary, targeted primary, or secondary prevention was done according to the sample of the study. Thus, there may be discrepancies between how authors describe the program they are assessing and our classification of these programs.
[4] Two studies (Christiaens et al., 2018; Swedberg & Reisman, 2013) were conducted in multiple countries, explaining the disparity between the number of studies (k) and countries.

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strategy. On average, primary and secondary prevention programs seemed more effective than targeted primary prevention programs. These initiatives seemed to yield more negative than positive outcomes and were overall less successful than other types of prevention. However, this result is inevitably linked to the multiple negative assessments of Prevent, a strategy encompassing multiple targeted primary prevention programs.

Table 1

Retained Evaluations of Primary and Secondary Prevention Programs, Listed by a) Geographic Location, b) Types of Outcomes, and c) Name

Types of outcomes	Programs	*n*	Methodological design	Type of violent radicalization	Type of prevention
Africa					
Mostly positive	Being Kenyan Being Muslim, Kenya (Savage et al., 2014)	24	Quantitative	Islamist	Secondary
	Trans-Sahara Counter Terrorism Partnership-based programs, Mali (Aldrich, 2014)	200	Quantitative	Islamist	Primary
	Search for Common Ground: Bottom-Up Approach to Countering Violent Extremism, Tunisia (Bala, 2017)	10	Qualitative	Islamist	Primary
	Somalia Youth Livelihoods Program, Somalia; Garissa Youth Program, Kenya; and Kenya Transition Initiative Eastleigh Program, Kenya (Swedberg & Reisman, 2013)	1,446	Mixed methods	Islamist	Primary
Mixed	Somali Youth Leaders Initiative, Somalia (Mercy Corps, 2016)	812	Mixed methods	Islamist	Primary
Mostly negative	-	-	-	-	-
Asia					
Mostly positive	Break the ISIS Brand Counter Narrative Project, Iraq (Speckhard et al., 2018)	N/A[a]	Mixed methods	Islamist	Primary, secondary
Mixed	Introducing New Vocational Education and Skills Training, Afghanistan (Mercy Corps, 2015)	729	Mixed methods	Islamist	Primary
Mostly negative	-	-	-	-	-
Australia					
Mostly positive	More Than a Game, Australia (Johns et al., 2014)	39	Mixed methods	Islamist	Targeted primary
Mixed	-	-	-	-	-
Mostly negative	-	-	-	-	-
Europe					
Mostly positive	Being Muslim Being British, UK (Liht & Savage, 2013)	81	Quantitative	Islamist	Secondary

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Types of outcomes	Programs	*n*	Methodological design	Type of violent radicalization	Type of prevention
	Being Muslim Being Scottish, Scotland (Boyd-MacMillan, 2016)	21	Mixed methods	Islamist	Targeted primary
	BOUNCEUp, Belgium, France, Germany, The Netherlands, and Sweden (Christiaens et al., 2018)	151	Mixed methods	General	Secondary
	Diamond, The Netherlands (Feddes et al., 2015)	46	Quantitative	Islamist	Targeted primary
	Diamond, The Netherlands (Scientific Approach to Formulate Indicators & Responses to Radicalisation [SAFIRE], 2013)	46	Mixed methods	Islamist	Targeted primary
	Prevent [Citizenship Programme], UK (Manby, 2010a)	9	Mixed methods	General	Secondary
	Prevent [Pathways into Adulthood], UK (Manby, 2010b)	5	Mixed methods	Islamist	Secondary
	Prevent [Pilot Parenting Project], UK (Manby, 2009a)	7	Mixed methods	General	Primary
	Prevent [Theatre Project], UK (Manby, 2009b)	6	Mixed methods	General	Secondary
Mixed	Advisory Directorate for Youth, Women, and Imams' Active Development, UK (Sheikh et al., 2012)	82	Qualitative	Islamist	Targeted primary, secondary
	48 programs under Prevent, UK (Hirschfield et al., 2012)	104	Qualitative	Islamist	Targeted primary, secondary
	Prevent [Film Project], UK (Manby, 2009c)	9	Mixed methods	General	Secondary
	Vivre-Ensemble, France (Madriaza et al., 2018)	5	Quantitative	General	Secondary
Mostly negative	Prevent, UK (Bowie & Revell, 2018)	8	Qualitative	Islamist	Targeted primary, secondary
	Prevent, UK (HM Government, 2011a–d)	1,158	Mixed methods	Islamist	Targeted primary, secondary
	Prevent, UK (Joyce, 2018)	38	Mixed methods	Islamist	Targeted primary, secondary
	Prevent, UK (Kundnani, 2009)	32	Qualitative	Islamist	Targeted primary, secondary
	Prevent, UK (Kyriacou et al., 2017)	9	Mixed methods	Islamist	Targeted primary, secondary
	Prevent, UK (Lakhani, 2012)	56	Qualitative	Islamist	Targeted primary, secondary
	Prevent, UK (Younis & Jadhav, 2019)	16	Qualitative	Islamist	Targeted primary, secondary
	Prevent [Pathfinder], UK (McDonald & Mir, 2011)	1,149	Qualitative	Islamist	Targeted primary, secondary
North America					
Mostly positive	LAPD iWatch, USA (Castillo, 2015)	18	Qualitative	General	Primary, secondary
	Redirect Method, USA (Helmus & Klein, 2019)	N/A[b]	Quantitative	Far right, Islamist	Secondary

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Types of outcomes	Programs	n	Methodological design	Type of violent radicalization	Type of prevention
	WORDE, USA (Williams et al., 2016)	179	Quantitative	General	Primary
Mixed	See Something, Say Something, USA (Campbell III, 2011)	25	Qualitative	General	Primary
Mostly negative	-	-	-	-	-

Note. [a, b] Speckhard et al. (2018) and Helmus and Klein (2019) assessed the impact of online counternarrative campaigns. Because the number of individuals reached by these campaigns (e.g., number of clicks, likes, comments) cannot be compared to "traditional" participants of a study, they were excluded from the participant count.

The summary of evidence tables, available in the supplementary materials online, synthesize the current state of evidence regarding the benefits, harms, and costs (when documented) of primary and secondary PVE programs. They contain the following information about each program: a) the name and country where the program was executed; b) objectives of the program; c) sample characteristics; d) methodological details; e) positive outcomes; f) negative outcomes; g) the balance of outcomes (overall positive, negative, or mixed); h) limitations identified by authors; i) limitations not mentioned by authors but identified by our team; and j) a study quality score (/10). The general integration and synthesis of the results of the 33 studies are presented below.

Discussion

The current article comprises a systematic review of the effectiveness of primary and secondary prevention programs in the field of violent radicalization. Compared to similar literature or systematic reviews, the current study has notable advantages. First, it is relatively up to date, as it includes manuscripts published until June 2019. Second, it contains program evaluation studies from around the globe rather than one specific region (despite the overrepresentation of studies about the UK's Prevent programs). Third, in addition to aggregating evidence, it critically appraises it and weighs key findings accordingly. Fourth, because one of its objectives was to lay the groundwork for the development of evidence-based best practice guidelines, it relays conclusions relevant for clinical practice in addition to those for future research and program evaluation.

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Key Findings

1) Programs That Target Specific Community Groups Are Counterproductive

Based on available evidence, programs that target a specific ethnic or religious group—in this case, Muslim communities—generate more negative/iatrogenic effects than benefits (Bowie & Revell, 2018; HM Government, 2011a–d; Kundnani, 2009; Kyriacou et al., 2017; Lakhani, 2012; McDonald & Mir, 2011; Younis & Jadhav, 2019). Although some programs led to positive outcomes (More Than a Game [Johns et al., 2014], Being Muslim Being Scottish [Boyd-MacMillan, 2016], and Diamond [Feddes et al., 2015; SAFIRE, 2013]), most were viewed negatively—not only by the minority communities they target but also by stakeholders and personnel working for the program. They were described as mostly counterproductive, resulting in negative consequences such as stigmatization, discrimination, suspiciousness, and fear of being monitored. These negative consequences are especially problematic because they have been documented in the literature as risk factors for violent radicalization, mainly in connection to how extremist movements in Western countries mobilize grievances centered around discrimination and racism to create an "us vs. them" mentality to justify action (Piazza, 2011). Furthermore, the negative impacts of these programs seemed to persist over time.

Most of these negative outcomes came from evaluations of the UK's Prevent strategy. However, Prevent has not been a fixed strategy over the years and has comprised several different local programs, some of which are included in this systematic review. The first version of Prevent (2007–2011) explicitly focused on Muslim communities and was considered as a major factor for stigmatizing that community (Busher et al., 2019; Kundnani, 2009; Romaniuk, 2015). Indeed, most of the negatively slanted studies in our review assessed components of the initial Prevent strategy. In 2011, the strategy was broadened to include all forms of extremism in order to avoid stigmatizing the Muslim community (Busher et al., 2019). Consolidated in 2015 with the "Counter Terrorism and Security Act" (the Prevent Duty act), this shift in strategy also legally obliged local authorities from different social sectors to become involved in the prevention of terrorism: a move which was interpreted as a call for imposed denunciation (Busher et al., 2019; Elwick & Jerome, 2019). Unfortunately,

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studies in our review about the second phase of Prevent found the same iatrogenic effects as those highlighted in the first phase, despite efforts to renew the strategy (Bowie & Revell, 2018; Kyriacou et al., 2017; Younis & Jadhav, 2019).

The core mistake of targeted primary prevention programs is the conflation of religious background or ethnicity with the risk of violent radicalization. The assumption of risk in the absence of empirically validated indicators may lead to feelings of discrimination and stigmatization for the targeted communities. In contrast, several secondary prevention programs that were tailored to address Islamist radicalization were not viewed with suspicion, as they were adapted to individuals who were actively courted by Islamist extremist groups or were already on a trajectory towards violent radicalization.

Of note, studies that highlighted the negative aspects of targeted primary prevention programs often failed to distinguish the opinions of individuals participating in the program from those of community members or stakeholders. Therefore, it is unclear if the negative outcomes were truly experienced by participants or if external observers had negative opinions about a program they potentially did not fully understand or experience. However, even when taking this limitation into consideration, there is currently insufficient evidence to conclude that prevention programs specifically targeting an ethnic or religious group in the absence of other risk factors should be further encouraged. Stakeholders still wishing to implement these types of programs should be wary of potential iatrogenic effects and plan for the continued assessment and monitoring of such effects over the course of the program.

2) Programs That Focus on Surveillance Are Counterproductive

Based on available evidence, programs that focus on surveillance methods (monitoring and control) in education, healthcare, or via the use of hotlines[5] generate more negative/iatrogenic effects than benefits (Bowie & Revell, 2018; Joyce, 2018; Kyriacou et al., 2017; Lakhani, 2012; Younis & Jadhav, 2019). Similar to targeted primary prevention programs, surveilled participants declared negative outcomes such as fear of being spied upon, self-censorship, and stigmatization of Muslim communities. Furthermore, these programs create climates of distrust and suspicion by encouraging practices that infringe on

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[5] We are referring here to surveillance hotlines for reporting "suspicious activity" of neighbors rather than hotlines for families or individuals in need of psychosocial help.

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freedom of thought and expression. Indeed, the programs were seen as actively worsening the university experiences of UK Muslim students, with staff hesitating to put them into action.

3) Programs Based on Community Policing Face Implementation Challenges and Have Not Been Properly Assessed for Effectiveness

Studies assessing the outcomes of police-community partnerships have produced mixed findings, likely due to problems with research design, methods, and measures (Castillo, 2015; McDonald & Mir, 2011; Sheikh et al., 2012). Most evaluation studies have only collected participant satisfaction rates and the subjective perceptions of police officers, stakeholders, and community partners. As expected, these programs tended to be more positively perceived by police officers and stakeholders, who reported feelings of empowerment, acknowledgment, and mutual trust. These findings provided little insight into a program's real capacity to prevent violent radicalization, particularly considering that these views were in stark contrast with those of targeted community members, who declared trust issues with the police and feelings of discrimination.

These programs were also hampered by several implementation challenges. For example, most of the programs targeted Muslim populations, which increases the general suspicion regarding these communities and may increase stereotypes and stigmatization. Furthermore, such programs were viewed as a form of ethnic or religious profiling by members of minority communities, especially because of previous tense relations with security agencies. This finding is of particular importance given the legacy of post-9/11 security measures, the trust gap among racialized communities and law enforcement, and the pre-existing negative perceptions that newcomer communities may have of the police.

Thus, at present, there is insufficient evidence to determine the efficacy of community policing programs for the prevention of violent radicalization, mainly due to the lack of proper evaluative studies and inconclusive or biased outcome measures (e.g., program designer satisfaction).

4) Primary and Secondary Prevention Programs Seem to Be Effective in Improving Potential
Protective Factors Against Violent Radicalization

Evaluation studies report that primary and secondary prevention programs are effective in improving personal, interpersonal, or psychosocial characteristics that have been reported as potential protective factors against violent radicalization. Positive effects were documented in general prevention programs (Madriaza et al., 2018; Manby, 2009a–c, 2010a; Williams et al., 2016) as well as those focusing on Islamist radicalization (Boyd-MacMillan, 2016; Feddes et al., 2015; Hirschfield et al., 2012; Johns et al., 2014; Liht & Savage, 2013; Manby, 2010b; Mercy Corps, 2015, 2016; SAFIRE, 2013; Savage et al., 2014; Swedberg & Reisman, 2013). These programs enabled improvements on civic engagement, employability, openness towards others (or integrative complexity), teamwork skills, self-control, conflict management/communication skills, knowledge of violent radicalization dynamics, empathy, self-esteem, sense of identity, critical thinking, and religious knowledge.

However, improvement in general protective factors cannot be assumed to be effective in reducing the risk of violence or finding oneself on a violent radical trajectory. For example, although some programs were successful in improving employability and civic engagement, such improvements did not correlate with a decrease in support towards extremist groups or the use of violence for political motives (Mercy Corps, 2015; Swedberg & Reisman, 2013). Similarly, two evaluation studies reporting improvements in sense of identity, openness towards others, empathy, self-esteem, and conflict resolution skills found no accompanying decrease in violent radical attitudes (Madriaza et al., 2018; SAFIRE, 2013).

These findings emphasize the need to distinguish between a program's impact on intermediate outcomes (e.g., self-esteem, psychological distress) and its impact on final outcomes (e.g., an individual's risk of acting out). Several studies that reported improvements in intermediate outcomes did not measure final outcomes. Thus, even though such programs may achieve the objectives they set out for themselves, it remains unknown if they were truly successful in reducing the risk of extremist violence. Caution is therefore warranted when interpreting studies that report highly positive results without assessing final outcomes or potential iatrogenic effects. Such studies will paint a better picture of the program they assess, not because it is actually better but because of confirmation biases not present in more

methodologically robust evaluations. For example, Mercy Corps (2015) employed a very robust methodological design, assessed negative and final outcomes, and found nuanced results indicating that employability programs improve employability but do not lower radical attitudes. Such a finding does not mean that Introducing New Vocational Education and Skills Training is less effective than programs for which "better" results have been found. Thus, readers should be aware that the overall outcome of the program—as we report it—is not a true measure of effectiveness but rather a conflation of methodological rigor, author/sample biases, and, of course, effectiveness. Furthermore, research in this field has not yet definitively identified all the protective and risk factors that increase the risk of extremist violence, although meta-analyses are starting to come out (e.g., Wolfowicz et al., 2020). As such, a number of early prevention efforts may have been based on untested assumptions.

However, it is important to highlight that some programs were successful in improving both intermediate and final outcomes. Being Muslim Being British (Liht & Savage, 2013), Diamond (Feddes et al., 2015), specific programs under Prevent (Hirschfield et al., 2012), and, to some extent, Somali Youth Leaders Initiative (Mercy Corps, 2015) all led to improvements in protective factors while lowering violent radical attitudes, susceptibility to recruitment, or risk of acting out in a politically violent way. In addition, these studies tended to be among those using the best methodological designs. The findings are encouraging and broadly support the use of programs that aim to improve resilience to violent extremism by targeting intermediate outcomes such as protective and risk factors (Harris-Hogan, 2020). From a public health perspective, the use of such programs is in line with the World Health Organization recommendations for violence prevention, which emphasize the importance of broadly targeting the social determinants of violence. At the macrosocial level, this approach may reduce risk and improve resilience for a large number of individuals potentially at risk of violent radicalization, depending on changes in life circumstances. Improved general protective factors provide long-term benefits against social polarization and delinquency, which themselves constitute potential risk factors for the rise of violent radicalization at the societal level.

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5) Our Systematic Review Found Scarce but Encouraging Evidence on Counternarrative Campaigns

The current systematic review found only three eligible counternarrative program evaluations (Aldrich, 2014; Helmus & Klein, 2019; Speckhard et al., 2018). These studies reported mostly positive results: a) Aldrich (2014) found that individuals exposed to radio programs focused on peace and tolerance were more likely to engage civically; b) according to Helmus and Klein (2019), the Redirect Method made users looking for extremist content on Google click on counternarrative ad videos at a rate that was similar to what regular Google ads achieve; and c) Speckhard et al. (2018) observed that a video countering ISIS propaganda on Facebook achieved its intended outcome for most viewers, that is, to evoke disdain for ISIS, to gather solidarity for the fight of Iraqi people against ISIS, and to increase knowledge about PVE. However, none of these studies measured the impact of exposure to counternarrative campaigns and violent radical attitudes and behaviors, thereby curtailing the positive conclusions reached by authors.

The limited number of counternarrative studies found in this systematic review is likely the result of our search strategy not being tailored to identify counternarrative campaigns. Readers particularly interested in such campaigns may wish to consult a recently published systematic review exclusively on this topic by Carthy et al. (2020).

6) There Is Nearly No Evidence on the Outcomes of Primary and Secondary Prevention Programs for Right-Wing, Left-Wing, and Single-Issue Violent Radicalization

Of the 33 studies reviewed, none evaluated primary or secondary prevention programs targeting left-wing or single-issue violent radicalization, and only one targeted the far right. Twenty-four studies analyzed programs targeting violent Islamist radicalization, while nine targeted violent radicalization in general. Notably, the number of terrorist incidents in the United States motivated by far-right ideology more than quadrupled between 2016 and 2017 (Jones, 2018). During the same period, far-right attacks increased by 43% in Europe (Jones, 2018). Despite this rise, nearly no empirical evaluations exist of primary and secondary prevention programs targeting far-right radicalization. This lack of evidence suggests that either some prevalent types of radicalization do not receive appropriate consideration by

researchers, funders, and program developers or that evaluations that have been conducted were not made available to the public.

7) There Is Not Enough Evidence Regarding Monetary Aspects and Implementation Successes of Primary and Secondary Prevention Programming

Multiple implementation challenges were highlighted by evaluation studies, especially those focusing on the Prevent program (Bowie & Revell, 2018; Hirschfield et al., 2012; HM Government, 2011a–d; Joyce, 2018; Sheikh et al., 2012). Such studies mentioned poor management and coordination by decision-makers, lack of appropriate training for staff members, unrealistic timetables, trouble connecting with potential partners because of Prevent's reputation, poor use and lack of funding, and guidelines not adapted to the context. Consequently, in some cases, staff were hesitant to put Prevent into action. Implementation challenges of other programs were also reported. BOUNCEUp, a train-the-trainers program, found that even though participants appreciated the program, less than 20% went on to publicize and implement BOUNCE into their milieus (Christiaens et al., 2018). Finally, Madriaza et al. (2018) mentioned that the data collection of the first Vivre-Ensemble cohort was compromised because lack of disclosure from the staff concerning the program's objectives made participants reluctant to disclose undesirable information.

In sum, apart from Prevent, data is currently scarce concerning the implementation challenges of PVE programs. This obfuscates the avenues by which such programs may be improved in the future. Studies rarely mention facilitators, implementation successes, budget management issues, or the sustainability and transference of practices after project completion. Furthermore, none of the reviewed studies mentioned the costs of program or evaluation research, making it difficult to improve resource allocations in relation to expected outcomes. These are key concerns in terms of funding, dissemination, and replication. For example, a successful but resource-intensive prevention program may not necessarily be applicable in a low-resource setting.

However, we are aware that the lack of information on implementation may be due to restrictive publication criteria, notably article length, which limits the number of pages that

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can be used to discuss these issues. Grey literature, namely organization reports, may be more useful than official literature in this regard.

Limitations of Studies

Considering the preceding discussion, we agree with our colleagues (Christmann, 2012; Feddes & Gallucci, 2015; Horgan & Braddock, 2010; Koehler, 2017; Koehler & Fiebig, 2019; Lum et al., 2006; Silke, 2001; Silke et al., 2021; Veldhuis & Kessels, 2013) that reliable empirical data on prevention programs for violent radicalization is currently limited. Our systematic review reaches similar conclusions, highlighting the lack of sound empirical evidence regarding the effectiveness of primary and secondary PVE programs. Importantly, the Quality of Study Assessment tool's goal was not to criticize correlational designs or studies without control groups but rather to ensure that basic methodological details were provided (objectives, sample size, statistical analyses, limitations, etc.). Despite this leniency, 41% ($k = 23/56$) of the reviewed studies did not achieve a score of more than 3 on the 10-point scale—a worryingly low figure considering its design. This suggests that many programs have been advertised as effective without having been properly evaluated (or without having published a formal report of the evaluation for us to trust its results sufficiently).

The reviewed quantitative studies generally suffered from weak experimental designs (e.g., no pre-/post-measures, no control variables, no control group, no random allocation), small or biased samples, and heterogeneity of definitions, measures, and outcomes (see also Koehler, 2016; Mastroe & Szmania, 2016; Williams, 2021). Qualitative studies often failed to mention how they analyzed their data, only covering data collection and reporting quotations in results sections to support their narrative. Most studies relied on attitudinal surveys containing embedded notions of risk and protective factors that may not be supported by the literature. These limitations may be due to the novelty of these programs, which left little time for meaningful and thorough evaluations. As a result, however, integration of evidence is quite challenging, especially since several manuscripts had multiple sections missing (e.g., sample characteristics, aims of the study, methods). That said, not all studies produced questionable empirical evidence. Boyd-MacMillan (2016), Feddes et al. (2015), Liht and

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Savage (2013), Madriaza et al. (2018), Manby (2009c), and Savage et al. (2014) used pre-/post-measures. Feddes et al. (2015) and SAFIRE (2013) used longitudinal designs. Aldrich (2014), Mercy Corps (2015, 2016), Swedberg and Reisman (2013), and Williams et al. (2016) used a control group. Encouragingly, most of these studies found positive outcomes on measures beyond user satisfaction.

Methodological problems aside, conflicts of interest also permeated evaluation studies of primary and secondary prevention programs—especially those employing qualitative designs. In seven of the 33 reviewed studies, data relied mostly on the views of program providers, deciders, stakeholders, community partners, or police/correctional staff, who were solicited to assess the effectiveness of programs in which they were involved (Bala, 2017; Bowie & Revell, 2018; Hirschfield et al., 2012; HM Government, 2011a–d; Joyce, 2018; Kundnani, 2009; Younis & Jadhav, 2019). Six studies used community members' perceptions of programs—rather than perceptions of individuals who had undergone them—as primary data (Campbell III, 2011; Castillo, 2015; HM Government, 2011a–d; Kundnani, 2009; Lakhani, 2012; McDonald & Mir, 2011). Consequently, evaluations were potentially biased, overly positive (or negative in the case of Prevent), and, more importantly, inattentive to the real impacts these programs had on the targeted population. Finally, in six studies, authors were also program implementers (Liht & Savage, 2013; Madriaza et al., 2018; Mercy Corps, 2015, 2016; Savage et al., 2014; Speckhard et al., 2018). Even though program implementers could be expected to publish positively skewed assessments of their own programs, most of the above-mentioned studies were nuanced and methodologically robust, evaluating intermediate, negative, and final outcomes with appropriate data collection and analysis procedures. Thus, while caution would be warranted in reading the results of evaluations made by program implementers, the conflation of assessor and implementer does seem to have potentially positive effects, namely in terms of mobilizing staff, making sure they understand the complexity of the process and sustaining their motivation throughout the evaluation. That being said, it may be worthwhile to create mixed evaluation teams with both internal and independent external evaluators in order to counterbalance potential conflicts of interest.

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One of the main challenges facing evaluation studies of prevention programs is defining what success looks like and how such success links theoretically and empirically to violent radicalization (Koehler, 2016; Mastroe & Szmania, 2016; Williams, 2021). Instead of operationalizing success as, for example, the reduction of empirically documented risk factors to violent radicalization, some studies have used outcome measures of user satisfaction or program-provider satisfaction. Such operationalizations limit the conclusions that can be drawn concerning the real effectiveness of these programs in preventing and countering violent extremism. Some authors argue that improvement in protective factors and reduction in risk factors towards violent radicalization do not constitute true measures of success because these outcomes are at most proxy measures of "true" violent radicalization. However, readers must keep in mind that it is not possible to measure the impact of programs on a non-event. In other words, it cannot be inferred that an attack did not take place due to a prevention program. Similarly, it cannot be inferred that an attack took place because a program was not put in place or did not yield positive results. By redefining PVE programs from a public health perspective, it becomes clear that they are not designed to stop violent radicalization or an attack from happening: They are designed to reduce the risk, in the mid- to long-run, that a vulnerable individual will follow a path towards violent radicalization. Therefore, future studies that use improvement in protective factors or reduction in risk factors as proxy measures of success would better align with existing practice in the field of general violence prevention. However, additional research on intermediate outcomes is needed to inform how these proxy measures relate to actual incidents.

Another important limitation is that several studies did not assess for negative or iatrogenic outcomes, potentially introducing both a bias in the interpretation of their effectiveness and obstacles to their comparability with programs that looked for negative outcomes. This may have resulted in a disservice to programs that have been more frequently evaluated and that assessed negative/iatrogenic outcomes, such as programs under the UK's Prevent strategy or Mercy Corps' Introducing New Vocational Education and Skills Training initiatives. Even though evaluating negative/iatrogenic outcomes may put programs and their stakeholders and clinical staff under the spotlight of criticism, it is a courageous endeavor that must ultimately be applauded as it speaks to methodological and scientific rigor. It also means

that policymakers, stakeholders, and funders must be supported in gaining an adequate understanding of the results of program evaluations before making a value judgment as to their effectiveness.

Finally, very few studies described or formulated a theory of change and logic model to understand the processes underlying a program's positive and negative outcomes. Therefore, it remains impossible to explain how some prevention activities were able to achieve the positive outcomes reported and to determine if these positive outcomes increased resilience to radicalization to violence.

In conclusion, due to the lack of theoretically and methodologically robust empirical evaluations, our ability to identify best primary and secondary PVE practices based on empirical evidence is limited. Furthermore, although processes to violent radicalization may have some commonalities across types of extremist groups or individuals, generalizing findings across contexts is by and large impossible given the limited state of evidence in the field, the diversity of populations and drivers of violent extremism in different states/societies, and the heterogeneity in programming approaches (Bjørgo, 2013; Kruglanski et al., 2014). Given the lack of evaluative studies on far-right, far-left, or single-issue prevention programs, this report's conclusions can only be applied to general programs or those targeting violent Islamist radicalization. Finally, because of the lack of clarity on sample characteristics and level of risk, it remains unknown which primary- or secondary-level prevention programs have been effective and for which populations.

Limitations of the Current Study

When interpreting the findings of this systematic review, the following six possible limitations must be considered. First, some potentially relevant studies may not have been included as they were produced in languages other than English or French. We chose to only cover literature written in languages common to members of the research team so as to ensure that peer review could be conducted effectively during the selection and the coding process. However, this means that methodologically sound and relevant studies may have been excluded from our review.

Second, many government-led programs may have been internally evaluated in reports not accessible to researchers. As such, we may only have a truncated picture of the outcomes of government-led primary and secondary PVE programs. By not making the methods and results of these studies public, governments may run the risk of putting too much confidence in potentially questionable results and thereby contribute to public distrust and suspicion of government's programs, remit, and ethical standards. These negative consequences could, however, have been avoided by opening government reports for peer review. Moving forward, gaining access to government data or reports could confirm, contradict, or at least further shed some light on the results found in this systematic review.

A third limitation may result from the variability introduced by each rater. We attempted to address this by measuring and monitoring inter-rater agreement rates, as well as by reaching consensus when raters had divergent selections or ratings. However, inter-rater reliability was only acceptable, suggesting that research assistants' future training on inclusion and exclusion criteria should be improved.

Fourth, because our search strategy was designed to be broad in order to include a wide range of PVE programs, it may not have been tailored to some specific types of programs, such as counternarrative campaigns. Readers wishing to get a clearer picture of such programs' outcomes should consult available systematic reviews or wait for them to be published by other research consortia. Naturally, these constitute avenues for future research.

Fifth, because of data collection and analysis, publication delays, and the swiftness with which the PVE field is evolving, our June 2019 end date for data collection implies that the current systematic review may not be fully up to date. Some relevant studies that would have been eligible have been published since then, for example, Bilali (2022) and Saleh et al. (2021). Even though their results do not contradict our key findings, we must be cognizant that the speed at which the PVE field is evolving may mean that the conclusions of this review will need to continue being updated as new studies become available.

Finally, because our key findings are based on data of limited methodological quality, they may not reliably reflect the realities of the on-the-ground practice or the full breadth of positive and negative outcomes stemming from primary and secondary PVE programs. Once the field disposes of enough high-quality studies to meaningfully integrate them, it may be

worthwhile to conduct systematic reviews comprising exclusively methodologically solid studies.

Conclusion

This systematic review aimed to critically synthesize the outcomes of primary and secondary prevention programs in the field of violent radicalization. Conducting this systematic review has highlighted significant overarching caveats in the field that have posed challenges to integrating the evidence. As of now, evidence on the outcomes of primary and secondary PVE programs is characterized by divergences and contradictions in the following, to name a few: a) understanding of radicalization and its risk and protective factors; b) program types, characteristics, and design; c) training and experience of practitioners; d) political considerations; and e) diversity of local environments in which programs are deployed (e.g., cultural considerations, nature of the problem locally, available capacity/resources on the ground). This heterogeneity may, unfortunately, contribute to suspicion and legitimacy issues regarding programs and their funding, and it may obfuscate lessons learned. Nevertheless, on a more positive note, the current state of the evidence on PVE programming shows that primary and secondary prevention programs are effective in improving personal, interpersonal, or psychosocial characteristics that have been reported as protective against violent radicalization.

Due to the lack of strong evidence, however, the conditions required for evidence-based best practice guidelines to emerge are currently absent. Thus, the existence of numerous documents, toolkits, and guides presenting "best practices" is surprising, and the validity of their recommendations is questionable. One way to address this limitation is to develop guidelines that stem from expert evaluations of evidence generated in systematic reviews or meta-analyses (e.g., Delphi processes; https://www.rand.org/topics/delphi-method.html). We hope that, in the coming years, consensus-building projects such as that outlined above will be undertaken to move the field forward in terms of evidence-based best practice guidelines.

Acknowledgement

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Appendix A

Database Search

      A broad array of databases was checked for relevant material across disciplines (Political Science, Sociology, Religion, Education, etc.), as well as multidisciplinary databases (Academic Search Complete, Web of Knowledge). Searches were originally conducted in the summer of 2016, and updates were performed at the end of 2017 and in June 2019. Databases searched were as follows: ABI/Inform Global (ProQuest), Academic Search Complete (EBSCO), ATLA Religion Database (EBSCO), CBCA Complete (ProQuest), Communication Abstracts (ProQuest), Canadian Public Policy Collection, Canadian Research Index (ProQuest), Education Source (EBSCO), ERIC (EBSCO), Érudit/Persée, Francis (EBSCO), International Political Science Abstracts (ProQuest), Medline, PAIS International (ProQuest), Political Science Complete (EBSCO), Dissertations & Theses Global (ProQuest), PsycINFO (EBSCO), Repère, Sociological Abstracts (ProQuest), SocINDEX (EBSCO), and Web of Knowledge.

Database Search Example

      The following example is the search run in the PsycINFO (EBSCO) database:

("Radical Islam*" OR "Islamic Extrem*" OR Radicali* OR "Homegrown Terror*" OR "Homegrown Threat*" OR "Violent Extrem*" OR Jihad* OR Indoctrinat* OR Terrori* OR "White Supremacis*" OR "Neo-Nazi" OR "Right-wing Extrem*" OR "Left-wing Extrem*" OR "Religious Extrem*" OR Fundamentalis* OR Anti-Semitis* OR Nativis* OR Islamophob* OR "Eco-terror*" OR "Al Qaida-inspired" OR "ISIS-inspired" OR "Anti-Capitalis*")

AND

(Prevent* OR interven* OR respon* OR screen* OR assess* OR procedur* OR instrument* OR program* OR reduc* OR treatment* OR counterterror* OR "counter-terror*" OR "de-radicali*" OR detect* OR "countering violent extrem*" OR CVE)

AND

(AB youth OR adult* OR adolescen* OR student* OR teenag* OR "young people" OR colleg* OR universit*)

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All searches were conducted by a library science expert and made use of database-specific features and controlled vocabulary where appropriate. Several French-language databases were also checked after the search terms were translated into French by a translation expert. Search results were exported to an Endnote database for management and abstracts, then screened for relevance.

Additional searches were run using the Google search engine in order to seek out grey literature. Because the goal was to locate non-traditional publication types, the full Google search engine was used and not Google Scholar, which would have returned mainly standard journal articles. An exhaustive single search statement is not possible using Google, so a series of searches were run, varying the keywords employed. The first five pages of results were reviewed, and relevant materials manually entered into the project's Endnote database. The OpenGrey.eu database was also checked for potentially relevant material.

Appendix B

Quality of Study Assessment Tool

Quality of Study Assessment Tool

Prevention systematic review   Rating (0 = no, 1 = yes)

1) ARE THE KEY CONCEPTS AND VARIABLES CLEARLY DEFINED?

Examples of key concepts/variables : violent radicalization, self-esteem,
        program completion, etc.

2) ARE THE RESEARCH QUESTIONS/HYPOTHESES CLEARLY STATED?

Example : Did completion of program X reduce radicalized behaviors
        and/or attitudes among sample Y?

3) IS THE CHOICE OF METHODS IN LINE WITH OBJECTIVES?

Example : If the program provider wants to assess if program X had an
        effect on attitudes, are there pre/post measures, or at least
        a control group?

4) IS THE SAMPLE ADEQUATELY DESCRIBED?

Examples : N , ethnicity, gender, age, civil status, employment, ...

5) ARE THERE ENOUGH METHODOLOGICAL DETAILS?

Examples : quantitative/qualitative design, allocation to groups,
        description of variables/scales, statistical analyses,
        interview procedures, content/discourse analyses, ...

6) ARE THE DATA ANALYSIS METHODS APPROPRIATE?

Example : If variables are dichotomous, were statistical analyses
        adapted to such variables (e.g., using tetrachoric correlations,
        logistic rather than regular regression, etc.)?

7) IS THE EVIDENCE ROBUST?

Examples : Is it minimally representative? What is the strength of
        the research design? Were control variables/
        alternative explanations considered?

8) WERE MAJOR LIMITATIONS INCLUDED IN THE PAPER?

Examples : biases in the chosen sample, suboptimal research design,
        weak quantitative/qualitative analyses, ...

9) WERE MAJOR CONFLICTS OF INTEREST DECLARED IN THE PAPER?

Examples : interviews conducted by program staff, financial ties,
        authors of the paper not mentioning that they are
        also authors of the tool they assessed, ...

10) ARE FUTURE RECOMMENDATIONS OR IMPLICATIONS MENTIONED?

Examples : how to improve the program, how to better reach the
        targeted populations, how to improve policies, etc.

TOTAL (/10)

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Appendix C

List of Eligible Primary and Secondary Prevention Studies Excluded Because of Insufficient Methodological Quality

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