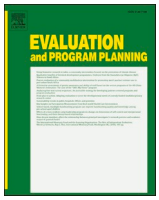
Evaluation and Program Planning 106 (2024) 102451

Contents lists available at ScienceDirect

Evaluation and Program Planning

journal homepage: www.elsevier.com/locate/evalprogplan



The Icelandic Prevention Model Evaluation Framework and Implementation Integrity and Consistency Assessment

Michael J. Mann [a,1], John P. Allegrante [b,c], Megan L. Smith [a], Inga Dora Sigfusdottir [d,e], Alfgeir L. Kristjansson [e,f,*,1]

[a] School of Public and Population Health, Boise State University, Boise, ID 83725, USA
[b] Department of Health and Behavior Studies, Teachers College, Columbia University, New York City, NY 10027, USA
[c] Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, New York, NY 10032, USA
[d] Department of Psychology, Reykjavik University, Reykjavik 101, Iceland
[e] Icelandic Centre for Social Research and Analysis, Reykjavik 101, Iceland
[f] Department of Social and Behavioral Sciences and WV Prevention Research Center, School of Public Health, West Virginia University, Morgantown, WV 26506, USA

ARTICLE INFO

Keywords:
Assessment
Evaluation Framework
Implementation
Prevention
Substance Use

ABSTRACT

The Icelandic Prevention Model (IPM) follows a systematic but flexible process of community capacity building, data collection, analysis, dissemination, and community-engaged decision-making to guide the data-informed selection, prioritization, and implementation of intervention strategies in preventing adolescent substance use. This paper describes two new evaluation tools intended to assess the: 1) integrity of IPM implementation, and 2) unique aspects of IPM implementation in different community contexts. These evaluation tools include a: 1) five-phase *IPM Evaluation Framework for Assessing Value Across Communities, Cultures, and Outcomes (IPM-EF)*; and 2) 10-Step *IPM Implementation Integrity and Consistency Assessment* (*IPM-IICA*) that utilizes both quantitative (scored) and qualitative (narrative) data elements to characterize implementation integrity and consistency at both community coalition and school community levels. The IPM-EF includes five phases. Phase 1: Describe the Intervention Context; Phase 2a: Document the Extent to Which the 10 Steps of the IPM were Implemented (using the IPM-IICA scored); Phase 2b: Document the Unique Community-Specific Methods Used within the 10 Steps of the IPM to Tailor Local Intervention Delivery (using the IPM-IICA narrative); Phase 3: Measure Changes in Community Risk and Protective Factors; Phase 4: Measure the Outcomes Associated with the IPM; and Phase 5: Investigate Multiple Full Cycles Over Time.

1. Background

During the mid- to late 1990s, comparative pan-European research showed a very high prevalence of alcohol drinking, tobacco use, and other drug use among adolescents in Iceland compared to other European youth (ESPAD, 1995). In response to this situation, the government of Iceland, the City of Reykjavik, researchers, and municipal and local-community practitioners joined forces to begin developing a collaborative process that culminated with the implementation of the "Drug-Free Iceland 2002" governmental initiative (Drug Free Iceland, 2003; Sigfusdottir et al., 2020). The Drug-Free Iceland initiative laid the foundation for a process framework that has since been developed through multiple iterations into what has become known as "the Icelandic Model of Adolescent Substance Use Prevention" or simply, "The Icelandic Prevention Model" (IPM) (Sigfusdottir et al., 2009).

Since the inception of the Drug Free Iceland initiative more than 25 years ago, and subsequent development of the IPM (Sigfusdottir et al., 2020), Iceland has witnessed some of the most dramatic reductions in youth substance use in the Western world and now ranks at or near the bottom in all standard categories of substance use among European youth (ESPAD, 2020; Kristjansson et al., 2016). The current version of the IPM includes a systematic process of community-based and collaborative primary prevention that has been described in detail in the 5 Guiding Principles of the IPM (Kristjansson et al., 2020a) and the 10 Steps to Implementation (Kristjansson et al., 2020b). The IPM is now being utilized in numerous places around the world, most commonly

* Correspondence to: Department of Social and Behavioral Sciences, School of Public Health, West Virginia University, Morgantown, WV 26506, USA.
E-mail address: alkristjansson@hsc.wvu.edu (A.L. Kristjansson).
[1] Contributed equally to this work.

https://doi.org/10.1016/j.evalprogplan.2024.102451
Received 3 April 2023; Received in revised form 31 May 2024; Accepted 4 June 2024
Available online 10 June 2024

being implemented by local authorities in municipalities or states (Asgeirsdottir et al., 2021; Carver et al., 2021; Halsall et al., 2020; Kristjansson et al., 2022).

What separates the IPM from most other prevention approaches is a) the use of a systematic process of community capacity building, data collection, analyses, dissemination, and community-engaged, data-informed decision-making that guide the selection, prioritization, and implementation of intervention strategies by the whole community; b) a strong reliance on locally tailored, community-specific input and collaboration where all members of the collaborative are important for its success, including local community members, practitioners, administrative leaders, policy makers, and researchers; and (c) commitment to long-term engagement (e.g., a minimum of 5 years at a time) and institution and capacity-building (Kristjansson et al., 2020a; 2020b). The 10-Steps to IPM Implementation (Kristjansson et al., 2020b) describe this structured, but flexible, implementation process in detail.

Although numerous studies point to the value of the IPM and its assumptions in a variety of contexts (Asgeirsdottir et al., 2021; Beneito & Munoz, 2022; Carver et al., 2021; Kristjansson et al., 2010; 2022), recent criticism of the IPM (Koning et al., 2021; Kristjansson et al., 2021) suggests that due to its inherent flexibility and local adaptability, the IPM 10-step process framework may benefit from further clarification and more specific guidance for evaluative purposes. In an effort to provide that clarification and guidance, we present a description of two new tools that have been designed and developed to support the local adaptation, implementation and evaluation of the IPM across a variety of communities, cultures, and outcomes. These new tools include the: (1) IPM Evaluation Framework, and (2) IPM Implementation Integrity and Consistency Assessment.

1.1. Meeting a need: Assessing IPM implementation integrity

Implementation integrity and program fidelity are similar and related concepts. Both concepts address the degree to which intervention approaches are implemented as intended by its developers (Carroll et al., 2007). Although the IPM is first and foremost a process tool rather than a traditional intervention program per se (Kristjansson et al., 2021), it is still intended to be implemented in accordance with its core theoretical elements and assumptions while incorporating context and community-specific implementation strategies. Evaluating implementation integrity helps clarify the relationships between model activities and outcomes. Knowing that the model has been implemented with integrity increases confidence that research or evaluation findings are causally related to key model elements, even when the specific means of implementing those elements vary between communities. Furthermore, evaluating implementation integrity will likely offer opportunities for improving the intended implementation of the model across communities by identifying gaps in delivery, filling those gaps, and thereby enhancing the prospect of achieving desired outcomes.

Offering practical tools for assessing implementation integrity may also help practitioners better understand the model, and allow researchers and evaluators to better understand core components to be investigated. The IPM is a multi-level, multi-step prevention approach that involves shifting from the traditional individual-focused program delivery paradigm to a more complex paradigm focused on changing the adolescent social environment through collaborative community action in a manner that is tailored to individual communities. As such, the IPM assumes that communities differ, and that implementing and evaluating the IPM will require accounting for the differences between communities. Providing tools that show which discrete steps and actions are essential may create a more concrete pathway to successfully implementing this type of complex approach with greater consistency and integrity while also accounting for community differences. This type of assessment may also provide researchers with better conceptual and practical tools for understanding and measuring essential aspects of IPM delivery as well as better linking essential activities to intended outcomes. Overall, a strategic implementation integrity assessment tool for the IPM may help evaluators and policy-makers render more informed decisions about how to assess the quality of IPM implementation, improve local implementation, enhance the likelihood of desired outcomes, and determine whether to expand, discontinue, or invest more deeply in the IPM while accounting for localized preferences and needs.

1.2. Meeting a need: Better assessing the value of the IPM in different contexts

The IPM is currently being implemented and evaluated in a range of diverse communities in a large number of countries outside of Iceland. Shadish, Cook, and Campbell (2002) defined external validity as, "Inferences about the extent to which a causal relationship holds over variations in persons, settings, treatments, and outcomes" (p. 21). When policy-makers and other leaders decide whether or not to choose the IPM for their community or country, assessing the external validity and portability of the model from one context to another appears both reasonable and responsible.

While assessing implementation integrity and consistency helps clarify hypothesized causal relationships between intended impact and outcome variables, it is equally important to use an evaluation approach that encourages, describes, and accounts for community and context-specific variations in how the model is implemented. Knowing how different communities implement the model in a manner that aligns with their context, culture, and capacity allows other communities to better assess the feasibility of implementation in their own community and learn from the unique way others have implemented the essential aspects of the IPM.

Because the IPM is a grassroots approach to substance use prevention, it relies on local wisdom and encourages community members to identify locally-specific priorities and locally-selected intervention strategies. Many steps within the IPM not only allow for the selection of unique community priorities and strategies that are well-aligned with local strengths and values, but actually encourage or even require this type of community-specific adaptation. This approach provides theoretical support for the generalizability of the IPM to a wide range of settings, communities, and cultures. However, detailed analyses of these community-level differences and their relationships to overall IPM outcomes have yet to be conducted.

Although there are promising aspects associated with assessing implementation integrity, traditional assessments and expectations related to program fidelity are often imperfect, particularly for community-based approaches (Green, 2006). Generally, model developers may hope that adopters will deliver an approach without making any changes or enhancements; however, this is seldom the case (Green, 2006). Instead, a more realistic approach to assessing program fidelity, or in the case of the IPM "implementation integrity and consistency," may include a) identifying and measuring a set of essential elements required for successful implementation; b) clarifying where adaptations are encouraged, or in the case of the IPM, identifying where using community-selected priorities and strategies are advantageous and enhance model delivery; and c) documenting unique community-specific methods used to tailor the local delivery of the IPM's 10 Steps. This type of approach to evaluating implementation integrity might also help develop a body of evidence associated with establishing external validity and describing the means by which the model was successfully or unsuccessfully adapted to different settings.

2. Methods

In order to address these needs, we undertook the development of an evaluation methodology that involves the use of two tools: The *IPM Evaluation Framework for Assessing Value Across Communities, Cultures, and Outcomes (IPM-EF)*; and the *IPM Implementation Integrity and*

Consistency Assessment (IPM-IICA) to support implementation of the IPM 10 Steps and the accurate assessment of the integrity of implementation and outcomes of the IPM in various community contexts.

2.1. The IPM Evaluation Framework: Assessing value across communities, cultures, and outcomes

Fig. 1 depicts the IPM Evaluation Framework (IPM-EF). The IPM-EF includes a structured series of evaluation activities designed to enhance attempts to assess the value of the IPM across communities, cultures, and eventually outcomes, including an approach to assessing IPM implementation integrity and consistency. The framework includes five major phases of evaluation activities, each of which are described below. Four of these phases are conducted using traditional research and evaluation methods. Phase 2, which includes Phase2a and Phase 2b, is focused specifically on evaluating implementation integrity, which requires a comprehensive understanding of the IPM and its essential design elements. In order to further aid practitioners and academics implementing and investigating the IPM, we have developed a tool designed to clarify how to implement and evaluate Phase 2 activities. This tool, the IPM Implementation and Consistency Assessment (IPM-IICA), will be presented in the next section. A brief description of each of the phases and associated activities in the IPM Evaluation Framework can be found below.

Phase 1: Describe the Intervention Context. The widespread implementation of the IPM offers opportunities to better understand whether the IPM works across a range of settings and circumstances. Documenting the context in which model implementation takes place represents an important step in understanding community-specific considerations likely to drive how the steps in the model are implemented. In more traditional, non-population-level approaches, this phase might include describing the setting, participants, recruitment and selection procedures, representativeness, participation and attrition rates, staff, and delivery settings. In the case of the IPM and its population-level approach, this step instead includes documenting population characteristics including the key characteristics of "participants," i.e., adolescents, families/caregivers, and community members; "professionals," i.e., practitioners and policy makers; and the population-at-large. Additionally, at the population-level, a description equivalent to "delivery setting" would include identifying key historical, cultural, and institutional characteristics likely to influence the implementation and uptake of the model. The context can be described using a wide range of traditional quantitative and qualitative approaches, including policy and historical reviews. Comprehensive descriptions of the local context should include all the 6 elements described above.

The intervention context is expected to be different from one community to the next. For example, in Iceland the key "agents for change" included primary prevention specialists who were particularly important in the Icelandic implementation of the model (Sigfusdottir et al., 2009; 2020), while practitioners associated with local health departments have been key members in West Virginia in the United States (Davis et al. under review). These types of community-specific variations in implementation are not only expected, but encouraged, as they reflect adaptations necessary to build on the existing strengths of individual communities and align with existing institutions, systems, and histories.

Phase 2: Document the Implementation of the IPM 10 Steps to Implementation. Although Phases 1, 3, 4, and 5 can be completed using a variety of traditional research and evaluation methods, Phase 2 likely requires an approach specific to the IPM. To meet the need for specific implementation and evaluation-related guidance, we will present the IPM Implementation Integrity and Consistency Assessment in the next section. First, we will present the key concepts that undergird Phase 2 evaluation below.

Functionally, the IPM consists of two distinct but integrally related conceptual approaches that operate in tandem, one of which is flexible and the other of which is not. First, the IPM is grounded in the 10 Steps to Implementation (Kristjansson et al., 2020b). The 10 Steps should be thought of as essential elements—foundational building blocks—that are required in any community or context. Although the execution of the steps allows for considerable flexibility, implementing all the steps should not be seen as optional, but instead as necessary for the model to be effective. Together, the 10 Steps outline a process focused on maximizing and sustaining community awareness, engagement, data-informed decision-making, and participation in changing the social environment in a manner that keeps community coalitions moving forward and toward preventing or reducing adolescent substance use. Thus, the 10 Steps provide a flexible structure that ensures reflection, action, engagement, and progress; however, omitting any of them is likely to diminish the overall effectiveness of the IPM. Although some communities may not have the capacity to implement all of the 10 Steps immediately (e.g., during the first iterative IPM cycle), any community that wants to attain the full benefits of the IPM should make a long-term commitment to building the capacity necessary to consistently implement all 10 steps during each annual or bi-annual cycle.

Conversely, and by design, within each of the 10 Steps, the IPM intentionally requires the development of community-determined priorities for intervention and implementation strategies tailored to each community's unique population, historical, cultural, and institutional characteristics. The 10 Steps outline ***what*** must be done, but within the steps, local communities are best positioned to decide much of ***how*** those steps will be completed on each occasion. A high degree of flexibility has been purposely included ***within*** the 10 Steps, because the model assumes that a local prevention coalition and its community members are best suited to select community-specific priorities and strategies within each cycle of the IPM's broader 10 Steps. For example, the 10 Steps require

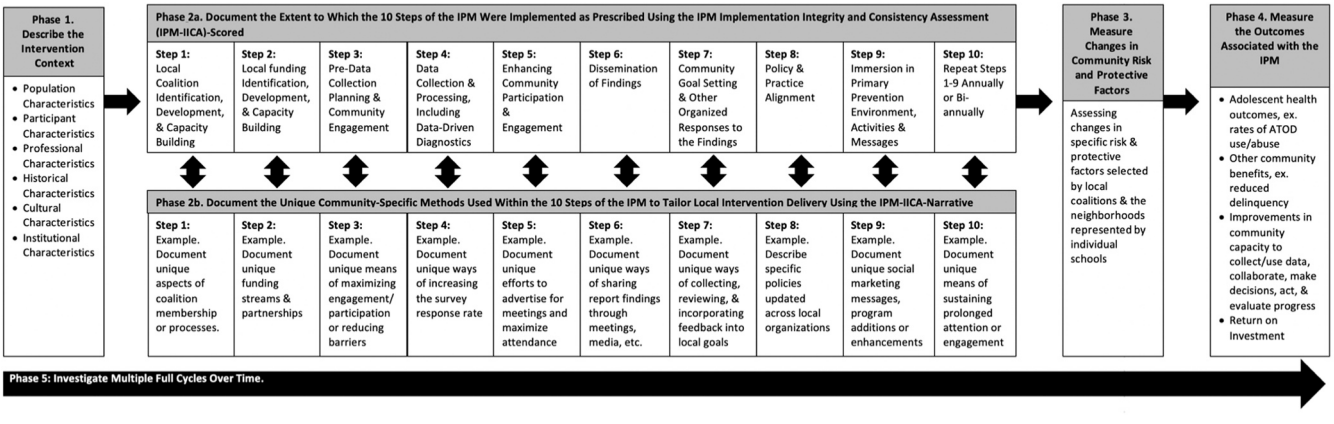


Fig. 1. The Icelandic Prevention Model Evaluation Framework (IPM-EF): Assessing Value Across Communities, Culture, and Outcomes.

coalition leaders to make community members aware of opportunities to participate in key events; however, the communities themselves determine which communications strategies work best for them. In some communities, local coalitions may determine that using social media will work best, in others traditional media, and still others by door-to-door visits to their neighbors. Further, as coalitions implement strategies within each step, they will learn more about what works in their particular community and may choose to adapt or combine strategies during future implementation cycles.

Taken together, although there is flexibility within the 10 Steps—especially in terms of how they are implemented—adherence to the 10 Steps themselves is less flexible with the goal being to grow the capacity to fully implement all of the steps during each cycle over time. This is an iterative process in which the evaluation framework supports increasing levels of implementation from cycle to cycle. Clearly, capacity to intervene varies widely between communities. Some communities may be able to implement all 10 Steps relatively quickly, while it may take several years for other communities to build that capacity, particularly pertaining to steps 1–3. In either case, the explicit goal for proper IPM implementation includes: a) employing all 10 Steps in each annual or bi-annual cycle of model delivery, and b) using local expertize to tailor activities within those steps to the unique needs and strengths of individual communities.

Phase 3: Measure Changes in Community Risk and Protective Factors. The theoretical pillars underlying the IPM stem from classical sociology of deviance (Akers, 1979; Hirchi, 1969; Merton, 1938). Such theories emphasize the environmental impact of risk and protective factors at the mezzo and micro levels within key community domains in the lives of children and youth. Consistent with these theories, the risk and protective factors that have been highlighted in the IPM as key intervention components have been outlined within the theoretical framework of the IPM (Sigfusdottir et al., 2009).

The IPM assumes that major community domains include the family environment, the peer environment, the school environment, and leisure time environment with an emphasis on the neighborhood children and youth spend most of their time growing and developing in (e.g., the neighborhood/geographical area represented by each school catchment area). Essentially, the adolescent social world is composed of these major domains at the local community level. Regular assessments (i.e., annual or biannual) of risk and protective factors within each of the four domains in each local community describe how the adolescent social world changes over time and highlights the role of key mediators that are assumed to influence the onset of substance use and its progression among children and youth. Several studies inside and outside of Iceland have shown risk and protective factors within these four domains, as well as local community access to alcohol, tobacco and other drugs (ATOD), are important social determinants in the onset and progression of substance use among youth (e.g., Egan et al., 2012; 2019; Kristjansson et al., 2010; 2021; Sigfusdottir et al., 2009). Thus, the routine assessment of key risk and protective factors serves three key purposes: a) to regularly update surveillance data to track trends and potential changes in the local and global population; b) to serve the ongoing research feedback-loop to the community and personnel involved in the implementation of the IPM; and c) for assessment and evaluation. Additionally, risk and protective factors for youth ATOD use are strongly interrelated and likely will contribute to several outcomes beyond substance use such as mental health (Kogan et al., 2021), academic achievement (Ragnarsdottir et al., 2017) and bullying (Mann et al., 2015) calling attention to positive but unintended outcomes of the primary prevention-focused IPM.

Phase 4: Measure the Outcomes Associated with the IPM. Most ATOD-outcome measures in the IPM are standard and also included in multiple other studies such as the US-based study, *Monitoring the Future* (Johnston et al., 2017), and the pan-European ESPAD study (ESPAD Group, 2020). To name a few, the measures include: lifetime, 12-month and 30-day use of cigarettes, e-cigarettes, hookah, snuff and/or tobacco in the mouth; lifetime, 12-month and 30-day use of alcohol; drunkenness, cannabis use (e.g., marijuana); and other drug use. Age of onset is particularly important to the IPM as its focus is predominantly at the level of primary prevention (Sigfusdottir et al., 2009). In addition to standard ATOD measures, implementers of the IPM also typically collect outcome data on factors that are known to be related to ATOD use among youth and are commonly of importance in local prevention (James et al., 2011; Mann et al., 2016; Sigfusdottir et al., 2007). These may include, but are not exclusive to, mental health indicators, quality of life, delinquency, violence and/or bullying behavior, and conduct disorder. As stated above, in practice ATOD, mental health, quality of life, and other behavioral outcomes are strongly inter-related. It therefore is logical to assume that collecting data on such outcomes in conjunction with ATOD use will be illuminating to prevention personnel at any given site.

Phase 5: Investigate Multiple Full Cycles Over Time. Comprehensive community and/or nation-level systems change and environmental change aimed for improving lives for youth and families likely will require longer time scales to achieve than most traditional intervention programs. In Iceland, it took several years to build the capacity that led to changes in the social environment and culminated in dramatic reductions in adolescent substance use (Sigfusdottir et al., 2009). The major decline from the high rates of use in the late 1990s to today's low rates occurred over about a 15-year period. In this respect, it is important to note that it might require 1–3 years to build the capacity to successfully implement the IPM, an additional 1–3 years to begin to see significant change, and possibly an entire decade to see the full benefits of the model. As such, our expectations for change, and methods for assessing change, must include approaches dedicated to assessing all elements of the IPM Evaluation Framework over long periods of time and across multiple implementation cycles. This sequential approach to evaluation over multiple IPM cycles therefore challenges traditional program evaluation to allow for longer periods of implementation and monitoring and to account for the accumulative nature of progress.

The IPM Implementation Integrity and Consistency Assessment (IPM-IICA) tool, that will be described in the next section, was developed to quantitatively and qualitatively assess levels of implementation of the 10 Steps and document the unique community-specific priorities and strategies that were emphasized during each cycle. Assessing the impact of multiple and repeated cycles of implementation of the 10 steps represent an important goal for better clarifying the feasibility of the IPM outside of the Icelandic context.

2.2. The IPM Implementation Integrity and Consistency Assessment

The IPM Implementation Integrity and Consistency Assessment (IPM-IICA) was developed to support the implementation of the IPM 10 Steps and the accurate assessment of Phase 2 in the IPM Evaluation Framework. The IPM-IICA can be used to support communities in their preparation and implementation of the IPM and complements previous publications on the IPM 5 Guiding Principles (Kristjansson et al., 2020a) and 10-Steps to Implementation (Kristjansson et al., 2020b).

Given that the IPM is a community-engaged approach (Sigfusdottir et al., 2009; Kristjansson et al., 2020a) and presumes that a close collaboration between researchers, policy makers, local practitioners, and community leaders is necessary for successful execution of the IPM, the IPM-IICA is meant to help coordinate efforts across partners by providing additional details that support accurate implementation of the 10 Steps (Kristjansson et al., 2020b). In this way, it can be used to support the planning and organizing process of the proposed IPM implementation while also maximizing the odds of a positive evaluation at the end of the cycle.

The quantitative portion of the IPM-IICA includes a series of yes/no questions for each of the 10 Steps to Implementation (Kristjansson et al., 2020b). These questions are simple and straightforward and were specifically designed to be universally applicable to all implementations of

the IPM.

Because the IPM is a local community approach that assumes that public schools represent the hub of local communities (see Guiding Principle 2, Kristjansson et al., 2020), the tool is organized by individual local schools and should be scored for each individual school participating in the project for each project cycle (i.e. 1–2 years). If 10 individual schools are participating in the IPM project, then this tool will be used to assess implementation at each of the 10 individual schools at the end of each cycle. An overall project score can then be created by combining the scores for the 10 schools in the manner described below. In each case, the tool should be completed collaboratively by coalition leaders/personnel and the school-level project leader for each school.

The tool consists of 10 steps that are compose of three levels each. The tool's three levels reflect the three levels of activity required for a successful implementation of the project. Level 1, the broader coalition level, includes coalition actions that affect the whole municipality, county, city, or a supervising agency including all of the schools within that area. Level 2 includes coalition-based activities and actions taken by coalition leaders/staff to implement the IPM at individual schools. Level 3 includes school-based activities and actions taken by individual school leaders participating in the project to advance the project.

Coalition-level activities that benefit the whole community are scored once and those scores are applied to each individual school's score for Level 1. This means that the first section of each school's evaluation tool should have the same Level 1 score as this score represents the coalition activities that serve the whole municipality and all schools together. The remaining two sections of each step should be scored by individual school and indicate (a) the support services that were or were not provided to each school by the coalition, i.e. Level 2 activities, and (b) the activities each school did or did not to engage in themselves, i.e. Level 3 activities.

The leftmost column includes the questions regarding the key topics/matters that are assumed to be necessary for the successful completion of each respective step. The second column includes the Yes/No response to each question. The third column includes the scoring for each question, "1" for "yes" and "0" for "no." The fourth, rightmost column for each question, titled "Recommended Evidence for Review," are suggested to be used to document additional information for evaluative purposes, such as meeting minutes, attendance records, etc., and is not standardized within the framework (although we do include suggestions for each question).

It may be important to note that higher level units, such as state and nation-level governmental agencies, are not expected to respond to the implementation-level evaluation questions as they are typically not a part of the actual community implementation of the IPM. However, such state and nation-level governmental agencies often represent an important ally during the implementation, e.g., because of funding procurement, administrative leadership and/or for gatekeeping purposes. As such, support from state and national level agencies should be reported as part of Phase 1 (Describing the Intervention Context).

Please review the IPM-IICA tool, which is depicted in full in Table 1.

Finally, the IPM-IIAC requires a qualitative, narrative description for each of step in model. These narrative descriptions should be used to document the unique community-specific strategies and methods used to tailor delivery of each step within the local community. Although implementing all of the steps of the IPM represents an important implementation goal, precisely how each step is implemented by each community or country will vary. In order to best understand variations in outcomes between communities and countries, it will be important to be able to review and understand variations in exactly how the process was implemented at each site. Therefore, providing rich narrative descriptions of local implementation strategies represents an important step in evaluating the IPM across communities, cultures, and outcomes. The assumption of context-dependent flexibility in implementation between sites also presents opportunities for rich, qualitative descriptions that reflect unique aspects of implementation, reflections from local coalition members, practitioners and other stakeholders, and local lessons that guided efforts to adapt the implementation of essential IPM elements in community-specific ways.

Scoring the IPM-IIAC's quantitative section. The IPM-IIAC should be used to create a score for each participating school community and for the project as a whole. For each individual school community participating within the coalition, two types of scores will be calculated and reported. These include a) a percent completed for each step in the IMP-IIAC (i.e., a per step score), and b) a percent completed across all steps score for the IMP-IIAC (i.e., an overall individual school community score). To score each step, an answer should be generated for each question for a specific school community, including questions related to the coalition that serves them. A score of 1 can be assigned to each "yes" response and a score of 0 to each "no" response. All responses will then be added up, divided by the highest possible score for that step, and multiplied by 100. The percent completed for each step will be reported to indicate the progress each school community has made in that area. For the overall individual school community score, total all of the "yes" responses across all steps including questions related to the coalition that serves them, divide by the highest possible score of 126, and multiply by 100. The percent completed will represent the overall score for a specific school community as supported within the coalition partnership.

For an overall project score, each school community within a coalition should be scored individually using the scoring criteria described above. As mentioned previously, each school should have the same Level 1 scores for each step as Level 1 represents actions taken by the coalition that benefit the community and all schools as a whole. The scores for Levels 2 and 3 should be based how well the coalition and school leaders has performed related to that specific school, I.e., There should not be overall coalition scores that are universally applied to all school communities at Levels 2 or 3, but instead each school should be scored individually at those levels for each step.

For an overall project score "by step," (a) multiply the highest possible score for an individual step by the total number of schools in the project to create the highest possible score for that step, (b) add all "yes" responses across individual schools for that step, (c) divide the total number of "yes" responses across schools by the highest possible score for all schools in your project, and (d) multiply by 100 for a percent completed score "by step" across the project.

For a total overall project score, (a) multiply 126 (I.e. the highest possible score for a single school) by the total number of schools in the project to create the highest possible score by step, (b) add all "yes" responses across individual schools for the project, (c) divide the total number of "yes" responses across schools by the highest possible score for all schools in your project, and (d) multiply by 100 for a percent completed score for project overall.

All questions must be scored. Scores such as "not applicable" should not be used when reporting the quantitative results from the IPM-IIAC. When reporting quantitative results associated with evaluating the IPM in the research literature and professional presentations, at a minimum, the report should include a) percent completed at the by-step level for the overall project including the range of individual school community scores represented within the data (i.e., high score/low score), and b) percent completed for the total project overall including the range of individual school community scores represented within the data (i.e., high score/low score).

This part of the evaluation approach offers multiple benefits to policy makers, practitioners and evaluative researchers. To name a few, it will support implementation sites in their efforts to identify which essential elements they are not yet addressing and to set implementation goals designed to increase the number of essential elements that are included in subsequent cycles. Additionally, supervisors will have a consistent means of evaluate the progress made by local sites and to compare local sites' progress within and between cycles of implementation.

Reporting the qualitative, narrative results from the IIPM-IIAC. When

Table 1
The Icelandic Prevention Model Implementation Integrity and Consistency Assessment (IPM-IICA).

Step 1: Local Coalition and School Partner Identification, Development, and Training
Description: This step focuses on putting together a local coalition to lead the IPM project. A successful coalition includes leaders and decision-makers from key sectors of the community who have received training on the IPM. Coalition members meet regularly with high levels of attendance at each meeting and participation in the project. They do not send low level representatives participate in their place. Additionally, school-based partners at each local school are identified, trained, and engaged in the project as well.

Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
Has a local coalition been created that includes high-level leaders/decision-makers that represent ALL the following categories: public education, public health, recreation/leisure time, local policymaker(s)/government official(s), local news/media, parent representative(s), student representative(s)?			List of coalition members
Has the local coalition identified a leader that is responsible for organizing coalition meetings?			Name of coalition leader
Has the local coalition leader read the research articles and completed the training videos that provide an overview of the Icelandic Prevention Model (IPM) found at icelandicpreventionmodel.info or other training of a similar or higher quality from a professional organization qualified to provide IPM training that is delivered online or in person.			Documentation that training modules have been completed
Have at least 80 % of the coalition members read the research articles and completed the training videos that provide an overview of the model found at icelandicpreventionmodel.info or other training of a similar or higher quality from a professional organization qualified to provide IPM training that is delivered online or in person.			Documentation that training modules have been completed
Did the coalition meet at least 10 times spread throughout the last 12 months?			Meeting minutes
Did all coalition members attend at least 90 % of regular coalition meetings?			Meeting attendance
Do meeting minutes indicate a record of ALL the following (a) relevant tasks being assigned between community coalition members, (b) tasks completed on time, (c) accountability when tasks were not completed on-time or with sufficient quality?			Meeting minutes
Has someone from the coalition introduced the IPM to the school district(s) superintendent and/or other members of their team and identified a contact person for the project at the school district(s)?			
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
Has someone from the coalition introduced the IPM to this local school's leadership team (school principal, assistant principal(s), counselors) and identified a school-level project leader?	n/a	n/a	n/a
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
Has this school identified a school-level project leader to lead the IPM work in this school community?			Name of school level project leader
Has the school-level project leader read the research articles and completed the training videos that provide an overview of the model found at icelandicpreventionmodel.info or other training of a similar or higher quality from a professional organization qualified to provide IPM training that is delivered online or in person.			Documentation that training modules have been completed
Have at least 80 % of the other school level leaders at this school (ex. school principal, assistant principal (s), counselor(s), etc.) read the research articles and completed the training videos that provide an overview of the model found at icelandicpreventionmodel.info or other training of a similar or higher quality from a professional organization qualified to provide IPM training that is delivered online or in person.			List of school level leaders and documentation that training modules have been completed
Total Possible Score for Step 1		**12**	
Total Actual Score for Step 1 %			
Completed for Step 1			

Step 2: Local Funding Identification, Development, and Capacity Building
Description: This step focuses on determining whether or not sufficient funding and time has been committed to the IPM project. Successfully completing this step may include finding new funds, repurposing existing funds, redeploying the time of existing professional staff in partner agencies, or some combination of all of these activities. The IPM should be adequately funded and not run solely by volunteers. Although volunteers may, and likely will, be part of the model execution in most places, the leadership and core implementation activities of the IPM project should be carried out by professional staff that are compensated to do so. At minimum, the coalition should ensure that at least one professional staff member is fully funded to implement the IPM at the coalition-level and that school-level leaders are given adequate time to participate in this project.

Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Has the coalition secured funding to support the implementation of the IPM throughout the current implementation cycle, ie.1-2 years?			Funding documentation
For this cycle, has the coalition secured funding for a minimum of one full-time position to lead the implementation of the IPM locally?			Funding documentation
Has a budget been developed that shows (a) how participating organizations have aligned or repurposed existing funds/staff time to support the project, and (b) the allocation of new funds?			Budget
Has the coalition secured funding for a 5-year implementation or developed a plan to ensure funding for a 5-year implementation?			Plans, contracts, applications
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
Were resources committed to this school that allowed for the reduction of barriers to community participation in IPM school-based meetings (ex. transportation, food, childcare, including online options)?			Budget
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	
Was time and/or funding allocated to ensure the school-level project leader's ability to devote adequate time to leading the IPM project within the school community?			Work allocations, contracts, bonus or stipend, etc.
Total Possible Score for Step 2		**6**	
Total Actual Score for Step 2			
Completed for Step 2			

(*continued on next page*)

Table 1 (*continued*)

Step 3: Pre–Data Collection Planning and Community Engagement Description: In this step, coalition and school-level project leaders engage with school personnel, families, and the community-at-large to gain wide-spread support for the work ahead. Before the school-based survey data is collected in step 4, coalition and school-level project leaders should ensure that all these groups understand the purpose/benefits of the IPM project and have a general awareness of the next steps in the project. All relevant groups should have been given adequate opportunity to ask questions and discuss the proposed work prior to data collection. Step 3 activities typically include developing a communications plan and communicating through various meetings, media, and other community-specific means.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Communications Plan			
Has the coalition developed a communications plan that outlines the means they will use to engage all school personnel and every member of the community connected to each school within the coalition/project (ex. School all calls, social media, local news, other local media, billboards, online advertisements, etc.)?			Communication plan
Engaging School District Leaders			
Have representatives of the coalition met with all relevant highest-level school district officials (ex. school district superintendents, school board members, etc.) to introduce the planned implementation of the IPM and gain their support?			List of meetings
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
Engaging Leaders and Educators at this School			
Have representatives of the coalition met with the leaders of this school (ex. school principal, assistant principal(s), counselors) to introduce the data collection portion of the project and gain their support?			List of meetings
Did the coalition advertise faculty and staff meeting(s) at this school designed to introduce the project and gain support well in advance of the event(s)?			Advertisement items
With support and assistance from the school-level project leader and other school leaders, have representatives of the coalition held open meeting(s) for all interested faculty and staff at this school to introduce the planned implementation of the IPM and gain their support?			Meeting attendance record
In order to maximize attendance, did plans for the faculty and staff meeting(s) include barrier reduction strategies? For example, conducting the meeting during school hours; or, if after school hours, then providing transportation, meals, childcare, and/or remote participation options, or other similar strategies to maximize participation?			Meeting plans
Did the coalition representatives provide opportunities for faculty and staff at this school to have their questions answered or concerns addressed at the school meeting(s)?			Meeting minutes
Were there alternate opportunities for school faculty and staff at this school who were unable to attend the meeting to receive the information provided at meeting(s)?			Description of alternate plans
Engaging Families and the Community			
Did the coalition advertise parent/caregiver meeting(s) at this school designed to introduce the project and gain support well in advance of the event(s)?			Advertisement items
In order to maximize attendance, did plans for parent/caregiver meetings include barrier reduction strategies? For example, providing transportation, meals, childcare, and/or remote participation options, or other similar strategies to maximize participation?			Meeting plans
With support and assistance from the school level project leader and other school leaders, have representatives of the coalition given presentations to parents and other caregivers in all schools that introduce the planned implementation of the IPM and gain their support?			List of meetings
Did the coalition representatives provide opportunities for parents and other caregivers to have their questions answered or concerns addressed at all parent/caregiver meetings?			Meeting minutes
Were there alternate opportunities for parents/caregivers at this school who were unable to attend the meeting to receive the information provided at the meeting?			Description of alternate plans
Was an accessible (reading level and languages) parental/caregiver notification letter provided to this school that describes the purpose and goals of the IPM and the ways in which student data/responses will be kept safe? Depending on local requirements these letters may include opt-out or opt-in language. Below, you will see that the school is responsible for distributing this letter.			Notification letters
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	
Engaging Professionals at this School			
Did the school-level project leader at this school participate in the faculty/staff meeting(s)?			Meeting attendance record
Did other leaders of this school (ex. school principal, assistant principal(s), counselors) participate in the faculty/staff meeting(s) and clearly express their support for the project?			Meeting attendance record
Did at least 80 % of school faculty and staff at this school participate in the core faculty/staff meeting(s)?			Meeting attendance record
Did the school-level project leader at this school help school faculty and staff at this school who were unable to attend the meeting receive the information missed through other means (ex. recordings of the meeting, written summaries, etc.)?			Meeting plans
Engaging Families and the Community Connected to this School			
Did this school participate in coalition efforts to advertise parent and other caregiver meetings well in advance of the event (ex. Included in existing school methods of communicating events/opportunities with parents)?			Meeting plans
Did the school-level project leader at this school participate in the parent/caregiver meeting(s)?			Meeting attendance record
Did other leaders of this school (ex. school principal, assistant principal(s), counselors) participate in the parent/caregiver meeting(s) and clearly express their support for the project?			Meeting attendance record

(*continued on next page*)

Table 1 (*continued*)

Step 3: Pre–Data Collection Planning and Community Engagement Description: In this step, coalition and school-level project leaders engage with school personnel, families, and the community-at-large to gain wide-spread support for the work ahead. Before the school-based survey data is collected in step 4, coalition and school-level project leaders should ensure that all these groups understand the purpose/benefits of the IPM project and have a general awareness of the next steps in the project. All relevant groups should have been given adequate opportunity to ask questions and discuss the proposed work prior to data collection. Step 3 activities typically include developing a communications plan and communicating through various meetings, media, and other community-specific means.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Did parent and other caregiver attendance at this meeting increase since last year? If you are implementing the model during the first year, mark "yes" if any parents or other caregivers attended.			Meeting attendance records from each year
Did the school-level project leader at this school help parents/caregivers at this school who were unable to attend the meeting receive the information missed through other means (ex. recordings of the meeting, written summaries, etc.)?			Description of alternate plans
Before implementing the survey, did the school-level project leader send notification about the survey in writing to parents and other caregivers in a manner that was accessible to all parents/caregivers (ex. reading level, relevant languages, etc.)?			A copy of the notification letter; procedures for distribution
While implementing the survey, did the school-level project leader ensure that all students whose families opted them out of the survey did not participate.			Procedures for distribution
Total Possible Score for Step 3		**25**	
Total Actual Score for Step 3 %			
Completed for Step 3			
Step 4: Data Collection and Processing, Including Data-Driven Diagnostics Description: This step ensures that data is correctly collected, processed, analyzed and delivered to the coalition- and school-community leaders via confidential, easy-to-understand reports within three months of data collection.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Is there a list that clearly identifies the data collection supervisor (Supervising Contact Agent, SCA) at each school? Note: These persons may also serve as the school-level project leaders.			SCA list or record
Have at least two coalition members and any coalition staff members assigned to data collection/processing/reporting completed the IPM training module on data collection found at icelandicpreventionmodel.info or other training of a similar or higher quality from a professional organization qualified to provide IPM training that is delivered online or in person.			Training module completion
Was a standard or adapted IPM survey administered in each school in the local community, with an average of response rate of at least 80 % across all schools? Adapted IPM surveys should still be focused on describing the social environment and collect data related to risk and protective factors as well as key substance use/misuse related outcomes and related outcomes of interest using valid and reliable scales and/or questions.			N and response rate by school; copy of survey
Was the survey data cleaned, prepared for analysis, analyzed, and school-community reports made available for each school within 3 months of the last day of data collection?			Time to delivery of reports
Did all school reports include results from diagnostics that identified which risk/protective factors were the most influential on the intended outcomes for this school & the community it serves?			Review of all reports
Were all school reports accessible and use easy to understand language free of technical and/or high-level jargon? (Ex. Low amounts of dense text, but high amounts of easily understood charts/graphs.)			Review of reports
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
Throughout the data collection process, did coalition leaders/staff support this school while conducting data collection? (Ex. answer questions, provide technical assistance, help ensure a high response rate, etc.)			Notes
Did this school receive their school-community report from the coalition/contracting agencies within 3 months of last day of data collection?			Time from data collection completion to report dissemination
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	
Was an individual clearly identified as the data collection supervisor (Supervising Contact Agent, SCA) at this school? Note: This person may also serve as the school-level project leader.			SCA list or record
Did SCA at this school complete the IPM training module on data collection found at icelandicpreventionmodel.info or other training of a similar or higher quality from a professional organization qualified to provide IPM training that is delivered online or in person.			Training module completion
Was the IPM survey been administered at this school in the local community, with a minimum of response rate of 80 %?			N and response rate
Was the survey data collection completed in two months or less at this school?			Data collection start and end date
Total Possible Score for Step 4		**12**	
Total Actual Score for Step 4 %			
Completed for Step 4			
Step 5: Enhancing Community Engagement and Participation Description: This step focuses on the preparation and planning required to ensure that the school survey results are disseminated widely and to all relevant stakeholders in step 6. This step uses communications, advertising, and other outreach activities to maximize attendance and participation in the activities described in the next step. Maximizing community attendance at these events and community engagement with the findings in the dissemination reports is essential to the success of the IPM.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Did the coalition review/modify the communications plan developed in Step 3 to incorporate possible new/revised communications strategies designed to enhance participation in the report dissemination meetings? I.e. Did the coalition formalize what they learned from their recent attempts to communicate with and engage the public?			Communication plan

(*continued on next page*)

Table 1 (*continued*)

Step 5: Enhancing Community Engagement and Participation Description: This step focuses on the preparation and planning required to ensure that the school survey results are disseminated widely and to all relevant stakeholders in step 6. This step uses communications, advertising, and other outreach activities to maximize attendance and participation in the activities described in the next step. Maximizing community attendance at these events and community engagement with the findings in the dissemination reports is essential to the success of the IPM.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Did the coalition communications plan for report dissemination meetings include, at a minimum, meetings with: a) teachers/administrators from each participating local school, b) parents/caregivers from each participating local school, c) other youth professionals (i.e., Recreational leaders, coaches, afterschool club leaders, religious leaders, etc.) that represent the coalition-level, and d) a group of key policymakers/government officials that represent the coalition-level?			Communication plan
Did the coalition use the revised communication plan to maximize participation and engagement at the coalition-level meeting(s) with key policy-makers/government officials representing public education, public health, recreation/leisure time, local government(s), local news/media, parent representative (s), student representative(s)?			Outreach and advertising materials (emails, social media posts, take-home mail, etc.)
Did the coalition use the revised communication plan to advertise for the coalition-level meeting(s) with other youth professionals (I.e. Recreational leaders, coaches, afterschool club leaders, religious leaders, etc.) using multiple channels of communication (ex. School all calls, social media, local news, other local media, billboards, online advertisements)?			Outreach and advertising materials (emails, social media posts, take-home mail, etc.)
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
For this school, did the coalition use the revised communication plan to advertise for the school-level meeting(s) with faculty, staff, parents, and other caregivers using multiple channels of communication (ex. School all calls, social media, local news, other local media, billboards, online advertisements) prior to the event?			Outreach and advertising materials (emails, social media posts, take-home mail, etc.)
For this school, were meeting advertisements accessible to all members of the community this school represents? (i.e., Languages, reading levels, etc.)			Outreach and advertising materials (emails, social media posts, take-home mail, etc.)
For this school, did these advertisements for the report dissemination meetings include language about any or all the following barrier reduction strategies: providing transportation, meals, childcare, and/or remote participation options?			Outreach and advertising materials (emails, social media posts, take-home mail, etc.)
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	
Did the school-level project leader and/or other school leaders participate in coalition efforts to advertise report dissemination meetings in advance of the event (e.g., included in existing school methods of communicating events/opportunities) for both faculty/staff and parents/caregivers?			Outreach and advertising materials (emails, social media posts, take-home mail, etc.)
Did the school-level project leader and/or other school leaders express support for attendance at this school's report dissemination meeting(s)?			Outreach and advertising materials (emails, social media posts, take-home mail, etc.)
Did the school-level project leader and/or other school leaders assist/support the implementation of at least some barrier reduction strategies at the report dissemination meetings at this school? For example, providing transportation, meals, childcare, and/or remote participation options, or other similar strategies to maximize participation?			Meeting plans
Total Possible Score for Step 5	**10**		
Total Actual Score for Step 5			
Percent Completed for Step 5			

Step 6: Dissemination of Findings Description: This step focuses on conducting coalition-level and school-based dissemination meetings, collecting community feedback related to the results described in the dissemination reports, and assessing community support for potential community action in response to the data.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Were coalition leaders identified as presenters and trained to provide an accurate and accessible dissemination report presentation using the training materials at icelandicpreventionmodel.info or other training of a similar of higher quality from a professional organization qualified to provide IPM training that is delivered online or in person?			Meeting plans and/or training materials
Were school-community reports for each school disseminated to both district superintendents prior to any community dissemination meetings?			Report distribution evidence
Did the coalition-level meeting(s) with key community policy-makers include high-level leaders and decision-makers representing public education, public health, recreation/leisure time, local government(s), local news/media, parent representative(s), student representative(s)?			Meeting plans or minutes
Did the coalition-level meeting(s) with other youth professionals include representatives from all key youth serving organizations in the community?			Meeting plans or minutes
Did representatives from the coalition attend all of the report dissemination meetings in all coalition-level meetings described in this step?			Meeting attendance record
Were all report presentation materials in all coalition-level meetings presented in an accessible and easily understandable language that is free of technical and/or high-level jargon?			Reports and meeting slides, info graphs, other materials
Were all coalition-level groups provided with the opportunity to share feedback with the coalition before goal setting, especially feedback associated with goals for the coming year?			Meeting minutes
Did the coalition representatives record community feedback/input for future use during goal setting?			Meeting feedback notes

(*continued on next page*)

Table 1 (*continued*)

Step 6: Dissemination of Findings Description: This step focuses on conducting coalition-level and school-based dissemination meetings, collecting community feedback related to the results described in the dissemination reports, and assessing community support for potential community action in response to the data.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Was report information disseminated in a manner that protected the confidentiality of all participants, both individuals and participating schools?			Reports and meeting slides, info graphs, other materials
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
Was the school-community report for this school disseminated to the principals prior to the school-based dissemination meeting(s)?			Report distribution evidence
Was at least one report presentation given for faculty and staff at this school prior to the parent/caregivers dissemination meeting(s)?			Meeting plans or minutes
Was at least one report presentation given for parents and caregivers at this school?			Meeting plans or minutes
Did representatives from the coalition attend all of the report dissemination meetings at this school?			Meeting attendance record
Were all report presentation materials at this school's dissemination meetings presented in an accessible and easily understandable language that is free of technical and/or high-level jargon?			Reports and meeting slides, info graphs, other materials
Were all leaders, faculty, staff, parents, and other caregivers at this school provided with the opportunity to share feedback with the coalition before goal setting, especially feedback associated with goals for the coming year?			Meeting minutes
Was feedback/input from this school community recorded for future use during coalition goal setting?			Meeting feedback notes
Were there alternate opportunities for faculty, staff, parents and caregivers at this school who were unable to attend the meeting to receive the information provided and to provide feedback/input to the coalition?			Distribution of reports and/or meeting slides, info graphs, other materials
At this school, were the barrier reduction strategies outlined in Step 5 implemented as advertised. For example, providing transportation, meals, childcare, and/or remote participation options, or other similar strategies to maximize participation?			Outreach and advertising materials (emails, social media posts, take-home mail, etc.) as compared to meeting plan/ implementation records.
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	
Did the school-level project leader at this school participate in all report dissemination meeting(s)?			Meeting attendance record
Did other school leaders attend all of this school's report dissemination meeting(s) and express support for the project, I.e. faculty/staff and parents/caregivers?			Meeting attendance record
Did the school-level project leader connect members of their school community to alternate opportunities for faculty, staff, parents and caregivers at this school who were unable to attend the meeting(s) to receive the information provided and to provide feedback/input to the coalition?			Distribution of reports and/or meeting slides, info graphs, other materials
Total Possible Score for Step 6		**21**	
Total Actual Score for Step 6			
Percent Completed for Step 6			

Step 7: Community Goal Setting and Other Organized Responses to the Findings Description: During this step, the coalition reviews community feedback/input and identifies a set of 3-4 priority goals addressing key risk and protective factors to work on during the remainder of the implementation cycle. These risk and protective factor-related goals should be clearly linked to the data, community feedback, and making changes in the social environments of children and adolescents. All goals should then be shared widely with the community and adopted as community-shared/community-owned goals.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Did the local coalition review all community feedback provided in Step 6 prior to developing coalition level goals?			Meeting minutes
Did the local coalition identify 3-4 tangible goals related reducing relevant risk factors and enhancing relevant protective factors during the remainder of the current IPM implementation cycle? All goals should be clearly linked to changing the overall social environment of children and adolescents by addressing community-level risk and protective factors.			Meeting minutes, including goals
All 3-4 goals clearly linked to changing the overall social environment of children and adolescents by addressing relevant community-level risk and protective factors.			Meeting minutes
Was the community provided with options for providing feedback or input related to choosing which community goals should be pursued in addition to the report dissemination meetings described in step 6? Ex. Review and comment of draft goals?			Communication evidence such as emails, social media posts, meeting minutes, etc.
Did the local coalition evaluate whether the whole community could share a common set of goals or whether some school-communities would benefit from having unique goals based on the survey report findings and act according to that review?			Meeting minutes
Did the coalition introduce the selected goals to parents/other caregivers, education professionals, and leisure time professionals throughout the community in an accessible manner using multiple channels of communication and repetition to ensure wide-spread awareness and adoption of these goals? Ex. Use social market and/or health communications messaging and techniques?			Meeting plans, communication lines
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
n/a	n/a	n/a	n/a
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	

(*continued on next page*)

Table 1 (*continued*)

Step 7: Community Goal Setting and Other Organized Responses to the Findings Description: During this step, the coalition reviews community feedback/input and identifies a set of 3-4 priority goals addressing key risk and protective factors to work on during the remainder of the implementation cycle. These risk and protective factor-related goals should be clearly linked to the data, community feedback, and making changes in the social environments of children and adolescents. All goals should then be shared widely with the community and adopted as community-shared/community-owned goals.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
n/a	n/a	n/a	n/a
Total Possible Score for Step 7	**6**		
Total Actual Score for Step 7			
Percent Completed for Step 7			

Step 8: Policy and Practice Alignment Description: This step focuses on the alignment between the goals that were established in Step 7 and existing policy and practice. A collaborative plan should be created where key organizations identify ways to align their practices with the selected goals. Usually, communities and schools already possess some policies and common practices that can be aligned with the goals and strategies decided on in Step 7.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Has a *collaborative plan* been developed that shows how participating organizations have aligned/integrated their work and dedicated resources to support the 3-4 goals selected in Step 7?			Collaborative plan
Has each participating organization represented in the coalition identified at least one way of aligning each goal with their organizational practices? This may sometimes consist primarily of vocal support of goals and supporting goal communication within its membership.			Communication evidence such as emails, meeting feedback, etc.
Have the selected 3-4 community goals been included in formal plans required for established institutions, organizations, and agencies in the community/municipality (Ex. School improvement plans, other strategic plans, budgets, etc.) with the goal of the project being integrated into all relevant child, adolescent, and family-serving institutions within the community?			List of community goals, participating institutions' strategic plans, policies, practice documents
Has the coalition identified opportunities for aligning local policy with each selected goal, and initiated sustained action related to policy change (i.e., draft policy language, identifying a policymaker to initiate new/revised policy, community advocacy for policy, etc.)?			Meeting minutes
Did the coalition provide technical assistance and support to participating policy-makers', groups', organizations', and institutions' efforts to integrate the Step 7 goals into their policy and practice?			Records indicating the provision of technical assistance to community groups and policy-makers.
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
At this school, did the coalition provide technical assistance and support to school leaders, faculty, and families efforts to integrate the Step 7 goals into policy and practice?			Records indicating the provision of technical assistance to community groups and policy-makers.
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	
Has this school identified at least one way of aligning each of the 3-4 community goals with their organizational practices? This may sometimes consist primarily of vocal support of goals and supporting goal communication within its membership.			Communication evidence such as emails, meeting feedback, etc.
Has this school identified and implemented policy changes designed to align with the 3-4 community goals selected in Step 7?			Policy documentation
Were the goals selected in Step 7 written into formal plans required for this school, ex. School improvement plans, budgets, faculty or staff contracts, etc. at this school?			Goal plans
Has this school fully implemented those activities during this IPM implementation cycle?			Documentation of activities
Total Possible Score for Step 8		**10**	
Total Actual Score for Step 8			
Percent Completed for Step 8			

Step 9: Child Immersion in Primary Prevention Environments, Activities, and Messages Description: After working through steps 1-8, the coalition and each school-community should have identified, selected and run a minimum of three new, enhanced, or improved intervention strategies and communicated community goals widely and effectively. Intervention and communications strategies do not need to be expensive. Many interventions and communications strategies can be simple but still effective.			
Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Have a minimum of three new, enhanced and/or improved intervention strategies been implemented by the coalition itself based on the goals and strategies selected by the coalition in Step 7?			Documentation of intervention activities via meeting minutes, plans, funding, intervention plans, etc.
Were additional communications related to the Step 7 goals provided throughout the remainder of the implementation cycle using multiple channels of communication (ex. boosters/reminders/social marketing/messages) to enhance awareness, adoption, and action. Ex. Use social market and/or health communications messaging and techniques?			Communication evidence, such as emails, social media posts, meeting minutes, etc.
Were the communications channels used for these additional communications available and accessible to all members of the community (ex. Reading level, languages, media channels)?			Communication evidence, such as emails, social media posts, meeting minutes, etc
Can at least 80 % of randomly selected parents and caregivers in the community-at-large name all 3-4 of the community goals selected for this cycle?			Formative survey or qualitative data
Can at least 80 % of randomly selected parents and caregivers in the community-at-large describe how they have incorporated at least one of those goals into their families for that cycle?			Formative survey or qualitative data
Can at least 80 % of interviewed recreational/leisure professionals name all 3-4 of the community goals selected for this cycle?			Formative survey or qualitative data
Can at least 80 % of interviewed recreational/leisure professionals describe how the groups/organizations incorporated the selected community goals/strategies into their daily practice?			Formative survey or qualitative data

(*continued on next page*)

Table 1 (*continued*)

Step 9: Child Immersion in Primary Prevention Environments, Activities, and Messages

Description: After working through steps 1-8, the coalition and each school-community should have identified, selected and run a minimum of three new, enhanced, or improved intervention strategies and communicated community goals widely and effectively. Intervention and communications strategies do not need to be expensive. Many interventions and communications strategies can be simple but still effective.

Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools in the coalition.	**Y/N**	**Score (1/0)**	**Recommended evidence for review**
Can at least 80 % of interviewed key policy-makers and relevant government officials name all 3-4 of the community goals selected for this cycle?			Formative survey or qualitative data
Can at least 80 % of interviewed key policy-makers and relevant government officials described how have incorporated those goals into their work for this IPM implementation cycle?			Formative survey or qualitative data
Level 2: Coalition-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	**Recommended Evidence for Review**
n/a	n/a	n/a	n/a
Level 3: School-Based Activities that Support Individual Schools: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**	
Have a minimum of three new, enhanced and/or improved intervention strategies been implemented in this school community based on the 3-4 goals selected by the coalition in step 7?			Documentation of intervention activities via meeting minutes, plans, funding, intervention plans, etc.
At this school, were additional communications related to the 3-4 goals established in Step 7 provided throughout the remainder of the implementation cycle using multiple channels of communication, ex. boosters/reminders/social marketing/messages? Ex. Use social market and/or health communications messaging and techniques?			Communication evidence, such as emails, social media posts, meeting minutes, etc.
At this school community, were these additional communications available and accessible to all members of the community (ex. Reading level, languages, media channels)?			Communication evidence, such as emails, social media posts, meeting minutes, etc.
Can at least 80 % of interviewed educational professionals at this school can name all 3-4 of the community goals selected for this cycle?			Formative survey or qualitative data
Can at least 80 % of interviewed educational professionals at this school describe how their school has incorporated those goals into their work for that year?			Formative survey or qualitative data
Can at least 80 % of interviewed parents/other caregivers from this school name all of the community goals for this cycle?			Formative survey or qualitative data
Can at least 80 % of interviewed parents/other caregivers from this school describe how they have incorporated at least one of those goals into their families for that cycle?			Formative survey or qualitative data
Total Possible Score for Step 9		**16**	
Total Actual Score for Step 9			
Percent Completed for Step 9			

Step 10: Repetition

Description: Changing the social environment in which young people grow and develop takes time and repetition. With each implementation of the IPM steps, the implementation team should improve its capacity to act, enhance the level of participation within individual communities, better align policy and practice with community goals, and promote changes in the profile of risk and protective factors within the adolescent social environment. Therefore, it is critical to repeat the cycle as is necessary to grow community and professional agreement, collaboration, and implementation. Immersing young people in a positive social environment – low in risk factors and high in protective factors - over time is the express goal of the IPM. Sustaining adult attention on the needs of young people over time and protecting progress made toward ensuring a positive social environment represent other essential goals of the model.

Level 1: Coalition-Based Activities that Support the Whole Community/Municipality: Administered and scored at the coordinating level, I.e. The same coalition score will apply to all schools.	**Y/N**	**Score (1/0)**
Minimum of 2 cycles completed (annual or bi-annual)		
Minimum of 3 cycles completed (annual or bi-annual)		
Minimum of 4 cycles completed (annual or bi-annual)		
Minimum of 5 cycles completed (annual or bi-annual)		
Level 2 & 3: All School-Based Community Activities: There will be an individual score for each participating school.	**Y/N**	**Score (1/0)**
Minimum of 2 cycles completed (annual or bi-annual)		
Minimum of 3 cycles completed (annual or bi-annual)		
Minimum of 4 cycles completed (annual or bi-annual)		
Minimum of 5 cycles completed (annual or bi-annual)		
Total Possible Score for Step 10		**8**
Total Actual Score for Step 10		
Percent Completed for Step 10		

Summary Table: Quantitative Scoring for an Individual Coalition and School Community Partnership

	Coalition "X" and School Community "Y"		
	Possible Score by Step	**Actual Score by Step**	**Percent Complete by Step**
Step 1: Local Coalition Identification, Development, and Capacity Building	12		
Step 2: Local Funding Identification, Development, and Capacity Building	6		
Step 3: Pre–Data Collection Planning and Community Engagement	25		
Step 4: Data Collection and Processing, Including Data-Driven Diagnostics	12		
Step 5: Enhancing Community Engagement and Participation	10		
Step 6: Dissemination of Findings	21		
Step 7: Community Goal Setting and Other Organized Responses to the Findings	6		
Step 8: Policy and Practice Alignment	10		
Step 9: Child Immersion in Primary Prevention Environments, Activities, and Messages	16		
Step 10: Repetition	8		
	Possible Total Score	**Actual Total Score**	**Overall Percent Complete**
Totals	126		

reporting qualitative, narrative results associated with evaluating the IPM in the research literature and professional presentations, at a minimum, report key community-specific strategies and methods used to tailor delivery to local communities. These results can be reported as core strategies, themes, or examples from the field using standard qualitative methods.

Although the quantitative portion of the IPM-IICA tool is more structured with specific scoring instructions and criteria, the qualitative narrative results focused on describing the local context and community-specific implementation are equally important, both in terms of using high methodological standards and reporting key results in evaluation reports and the professional literature. This portion of the evaluation lends itself to assessing the essential aspects of the IPM related to a) the impact of grassroots leadership, selecting locally-informed strategies for implementing essential elements of the model, and tailoring implementation efforts to align with and strengthen existing institutions that support children, adolescents, and community health and wellbeing; b) promoting reflective practice, including the inclusion of community and coalition responses to program and evaluation data as well as the perceived effectiveness of locally-derived implementation strategies; c) identifying both intended and unintended outcomes associated with implementing the model; and d) considering the full benefits of implementing the model, including enhancing community/coalition cohesion and community/coalition capacity to address complex problems. Each of which benefits from the type of rich detail and openness to discovery that characterizes high-quality qualitative research.

3. Discussion

The IPM-EF and IPM-IICA contribute to the evaluation literature by presenting a novel framework and tool for evaluating a promising intervention that is being implemented in communities across the globe. Together, they promote a mixed-methods evaluation approach that effectively combines quantitative evaluative criteria and scoring focused on the essential elements of program delivery (i.e., what is done) with rich qualitative descriptions of flexible community-based approaches to selecting, implementing, and learning from prevention and health promotion programming (i.e., how it is done).

For example, the IPM-EF and IPM-IICA assume that all communities that seek to operate the IPM will collect survey data for dissemination and community engagement as well as implementing interventions as part of repeated cycles of the IPM. However, the IPM-EF and IPM-IICA do not assume that approaches to data collection and dissemination will necessarily be identical across different communities and neither do they assume that all communities will use the same intervention strategies to address similar problems that are revealed by the data.

Like the IPM itself, the IPM-EF and IPM-IICA are designed to be used across a wide range of communities and contexts with differing histories, cultures, and capacities. Also, in the spirit of the IPM, these tools invite leaders, coalition members, practitioners, and the community-at-large to participate in a structured but flexible evaluation approach that relies on community and coalition reflection, responsiveness to quantitative and qualitative data, and a commitment to iterative growth and capacity-building over time. The IPM assumes that different communities will take different paths to implementation and these tools are intentionally designed to evaluate each community's unique journey to implementing the approach.

In the terminology of implementation science, the IPM is a "determinant framework" (Nilsen, 2015). Such frameworks are commonly multilevel in nature and do not address causal mechanisms; they primarily guide the process of implementation. This evaluation framework for the implementation of the IPM is designed to provide detailed support to sites that plan to implement and evaluate the IPM. The IPM is a community engagement approach that relies on wide-reaching, long-term collaboration and communication between researchers, policy makers, prevention experts and lead administrators, local practitioners, and community members (Sigfusdottir et al., 2009; 2020).

It should be noted that this evaluation framework is not an attempt to fully standardize the IPM. The IPM-EF and IPM-IICA are intentionally open and inclusive. Although specific steps are required, ***how*** individual sites implement these steps will vary and ***when*** the steps are implemented will also vary depending on each site's capacity and readiness to do so. The IPM-EF and IPM-IICA can be used to help individual sites monitor their implementation progress and set their own incremental goals towards improved implementation over time with the intent of increasing their implementation score with each cycle. For both the IPM-EF and IPM-IICA, we do not envision a minimum score or threshold of positive responses to the evaluation questions to designate a "sufficient" implementation. Rather, the framework should be used to guide incremental progress with the objective of all evaluation questions being responded to positively over time.

What would be the ideal number of positive responses per round of IPM implementation depends on many factors. Some of which include: societal and local community norms around coalition-based public health work; existing policies and programs that can be utilized as bridging units for a successful IPM implementation; capacity for high-level data collection to processing, analyses, report preparation and dissemination; staff training, retention/turnover, and the experience and skill-levels of staff who run both the coalition level units and local school level units; overall amount of funding dedicated to the project, including manpower and other resources; and, of course, the time that has been allocated to complete the IPM implementation at each site.

It is worth noting that although local coalitions represent the "scoring level" of the IPM-EF and IPM-IICA, we also recognize both the relevance and need for higher level leadership units in the implementation of the model. Leaders at municipal, county, state and regional levels, with the support of policy makers and elected officials, are crucial to creating the conditions describe above, i.e., the conditions in which the local units are most likely to achieve success. Such units commonly provide administrative support, organization, and funding to the local implementation of the IPM. Using this approach, we suggest measuring the success of municipal, county, state, and regional leaders in terms of their capacity to deploy resources, support, and oversight to the local level thus ensuring the success of each local unit. As such the local coalitions of the IPM-EF and IPM-IICA should be viewed and scored as the "ground level denominator" that can be summed and averaged to provide a total score meant to reflect the success and contributions of the higher-level administrative units. In our experience, providing evidence that demonstrates value of actions of higher-level leaders may help maximize funding and other forms of support that are essential to success and continuation of IMP implementation.

As proponents of the IPM, experience has taught us that societies and communities vary. Not all societal contexts will be equally ready to dive straight into two-level implementation of the IPM as portrayed by the model. Consistent with IPM Guiding Principle 5 (Kristjansson et al., 2020), "match the scope of the solution to the scope of the problem" we encourage allowing sufficient time to build the capacity required to fully implement the IPM and for its benefits to unfold. This will likely include a need for considerable training of personnel and community.

4. Conclusions

The Icelandic Prevention Model Evaluation Framework and Implementation Integrity and Consistency Assessment comprise two new tools designed to improve the implementation and evaluation of the model. The Icelandic Prevention Model Evaluation Framework (IPM-EF) provides a comprehensive, conceptual map meant to maximize the value of efforts to evaluate the model as a whole, especially across diverse contexts and cultures. Across five phases, the framework describes a structured series of evaluation activities that ensure practitioners and evaluators consider the context in which the intervention is being implemented, assess whether or not essential elements are being

included, describe unique aspects of implementation, identify changes in risk and protective factors at the community level, and monitor differences in community level intended outcomes, especially over time. Additionally, within the context of the overall evaluation framework, the Icelandic Prevention Model Implementation Integrity and Consistency Assessment (IPM-IICA) is a practical tool that help practitioners better evaluate Phase 2 of the IPM-EF by: 1) more accurately determining the degree to which the 10 Steps of the Icelandic Prevention Model are being implemented as intended, and 2) documenting how the execution of those steps are being tailored to each unique setting using local wisdom and community-specific expertise. Together, these new tools should further clarify key aspects of the IPM, as well as enhance the planning, delivery, and evaluation of the Icelandic Prevention Model.

5. Lessons learned

The Icelandic Prevention Model was initially developed as a "municipal/community" organizational structure for Iceland. While the IPM has gained attraction worldwide during the past 20 years, the model has lacked a clear evaluation framework that can be incorporated into different community contexts (Koning et al., 2021; Kristjansson et al., 2021). The IPM 5 Guiding Principles and 10 Steps to implementation provide guidance for users regarding background assumptions and step-by-step implementation, but a transferrable evaluation criteria and framework has not been available to date. This paper provides an evaluation framework for assessing IPM implementation via two new tools: 1) a five-phase *IPM Evaluation Framework for Assessing Value Across Communities, Cultures, and Outcomes (IPM-EF)*; and 2) a 10-Step *IPM Implementation Integrity and Consistency Assessment* (*IPM-IICA*) that utilizes both quantitative (scored) and qualitative (narrative) data elements to characterize implementation integrity and consistency at both community coalition and school community levels, including the unique aspects of implementation that reflect community and context-specific needs, learning, and growth.

Ethics approval and consent to participate

Not applicable.

Funding

This study was funded by the Centers for Disease and Prevention (U48DP006391).

CRediT authorship contribution statement

Alfgeir Kristjansson: Conceptualization, Funding acquisition, Supervision, Validation, Writing – original draft, Writing – review & editing. **Inga Dora Sigfusdottir:** Conceptualization, Methodology, Writing – review & editing. **Megan Smith:** Conceptualization, Validation, Writing – review & editing. **Michael J Mann:** Conceptualization, Funding acquisition, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing. **John P Allegrante:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

Acknowledgements

The authors wish to thank Ms. Hannah M. Layman for assistance with formatting and organizing the manuscript for submission.

Consent for publication

Not applicable. No data was collected as part of this study.

Competing interest

ALK provides consultation services for Planet Youth. Other authors declare that they have no competing interests.

Author's contribution

MJM conceived the study, co-led the conceptualization and writing, and procured funding. JPA reviewed and edited several drafts of the manuscript and contributed to writing. IDS and MS reviewed and approved the study and provided comments on conceptualization and narrative flow. ALK conceived the study, co-led the conceptualization and writing, and procured funding. All authors reviewed and approved the final manuscript.

References

Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., & Radocevich, M. (1979). Social learning and deviant behavior: A specific test of a general theory. *American Sociological Review, 44*, 636–655.

Asgeirsdottir, B. B., Kristjansson, A. L., Sigfusson, J., Allegrante, J. P., & Sigfusdottir, I. D. (2021). Trends in substance use and primary prevention variables among adolescents in Lithuania, 2006-19. *European Journal of Public Health, 31*(1), 7–12.

Beneito, P., & Munoz, M. (2022). Preventing tobacco use from the start: Short- and medium-term impacts on the youth. *Health Policy, 126*(8), 831–836.

Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science, 2*(40), 1–9.

Carver, H., McCulloch, P., & Parkes, T. (2021). How might the 'Icelandic model' for preventing substance use among young people be developed and adapted for use in Scotland? Utilizing the consolidated framework for implementation research in a qualitative exploratory study. *BMC Public Health, 21*, 1–15, 1742 (2021).

Drug Free Iceland (2003). Drug Free Iceland Final Report, May 2003. ⟨https://www.landlaeknir.is/servlet/file/store93/item10661/IAE_final2003.pdf⟩.

Egan, E. A., Van Horn, M. L., Monahan, K. C., Arthur, M. W., & Hawkins, D. J. (2012). Community-level effects of individual and peer risk and protective factors on adolescent substance use. *Journal of Community Psychology, 39*, 478, 98.

Egan, K. L., Gregory, E., Osborne, V. L., & Cottler, L. B. (2019). Power of the peer and parent: gender differences, norms, and nonmedical prescription opioid use among adolescents in south central Kentucky. *Prevention Science, 20*, 665–673.

ESPAD Group (2020). ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs, EMCDDA Joint Publications, Publications Office of the European Union, Luxembourg. ⟨http://www.espad.org/sites/espad.org/files/2020.3878_EN_04.pdf⟩.

Green, L. W. (2006). Public health asks of systems science: to advance our evidence-based practice, can you help us get more practice-based evidence? *American Journal of Public Health, 96*(3), 406–409.

Halsall, T., Lachance, L., & Kristjansson, A. L. (2020). Examining the implementation of the Icelandic model for primary prevention of substance use in a rural Canadian community: A study protocol. *BMC Public Health, 20*(1), 1235.

Hirchi, T. (1969). *Causes of delinquency*. Los Angeles: University of California Press,.

James, J. E., Kristjansson, A. L., & Sigfusdottir, I. D. (2011). Adolescent substance use, sleep, and academic achievement: evidence of harm due to caffeine. *Journal of Adolescence, 34*, 665–673.

Johnston, L.D., O'Malley, P.M., Miech, R.A., Richard, A., Bachman, J.G., & Schulenberg, J.E. (2017). Monitoring the future national survey results on drug use, 1975–2016: Overview, Key Findings on Adolescent Drug Use. Ann Arbor: Institute for Social Research, University of Michigan.

Kogan, S. M., Bae, D., Sigfusdottir, I. D., & Kristjansson, A. L. (2021). Mental health, academic engagement, and youth's nonmedical use of stimulants: A latent profile analysis. *Substance Use & Misuse, 56*(4), 479–483.

Koning, I. M., De Kock, C., van der Kreeft, P., Percy, A., Sanchez, Z. M., & Burkhart, G. (2021). Implementation of the Icelandic prevention model: A critical discussion of its worldwide transferability. *Drugs: Education, Prevention and Policy, 28*(4), 367–378.

Kristjansson, A. L., Davis, S. M., Coffman, J., & Mills, R. (2022). Icelandic prevention model for rural youth: A feasibility study in central appalachia. *Health Promotion Practice, 23*(3), 397–406.

Kristjansson, A. L., James, J. E., Allegrante, J. P., Sigfusdottir, I. D., & Helgason, A. R. (2010). Adolescent substance use, parental monitoring, and leisure-time activities: 12-year outcomes of primary prevention in Iceland. *Preventive Medicine, 51*(2), 168–171.

Kristjansson, A. L., Mann, M. J., Sigfusson, J., Thorisdottir, I. E., Allegrante, J. P., & Sigfusdottir, I. D. (2020a). Development and guiding principles of the icelandic model for preventing adolescent substance use. *Health Promotion Practice, 21*(1), 62–69.

Kristjansson, A. L., Mann, M. J., Sigfusson, J., Thorisdottir, I. E., Allegrante, J. P., & Sigfusdottir, I. D. (2020b). Implementing the Icelandic model for preventing adolescent substance use. *Health Promotion Practice, 21*(1), 70–79.

Kristjansson, A. L., Sigfusdottir, I. D., Mann, M. J., Thorisdottir, I. E., & Allegrante, J. P. (2021). Comment to Koning et al.: Implementation of the Icelandic prevention model: a critical discussion of its worldwide transferability. *Drugs: Education, Prevention and Policy, 28*(4), 379–381.

Kristjansson, A. L., Sigfusdottir, I. D., Thorlindsson, T., Mann, M. J., Sigfusson, J., & Allegrante, J. P. (2016). Population trends in smoking, alcohol use and primary prevention variables among adolescents in Iceland, 1997-2014. *Addiction, 111*(4), 645–652.

Mann, M. J., Kristjansson, A. L., Sigfusdottir, I. D., & Smith, M. (2015). The role of community, parent, peer, and school factors in adolescent bullying behavior and victimization: Implications for school-based intervention. *Journal of School Health, 85*, 477–486.

Ragnarsdottir, L. D., Kristjansson, A. L., Thorisdottir, I. E., Allegrante, J. P., Valdimarsdottir, H. B., Gestsdottir, S., & Sigfusdottir, I. D. (2017). Cumulative risk over the early life course and its relations to academic achievement in childhood and early adolescence. *Preventive Medicine, 96*, 36–41.

Michael J. Mann, PhD., is a Professor and Director of the School of Public and Population Health at Boise State University, ID, USA. He completed his PhD in Health Behavior at the University of Florida in 2007. His main research includes the interseciont between public health and public education, especially how to improve school health implementation, enhance community engagement in child and adolescent health promotion and prevention, and program evaluation.

John P. Allegrante, PhD., is the Charles Irwin Lambert Professor of Health Behavior and Education in the Department of Health and Behavior Studies at Teachers College, Columbia University and an Adjunct Professor in the Mailman School of Public Health at Columbia University, NY, USA. He completed his PhD at the University of Illinois, Urbana-Champaign. Dr. Allegrante's interests include behavioral self-management and health outcomes in chronic disease, health education in schools and health-care settings, global health promotion and health education workforce capacity and development.

Megan L. Smith, PhD., is an Associate Professor in the School of Public and Population Health at Boise State University, ID, USA. She completed her PhD in Child Development from West Virginia University in 2015. Dr. Smith's research and community outreach work focuses on mental health and well-being of children, youth and families.

Inga Dora Sigfusdottir, PhD., is a Professor at Reykjavik University and Director of the Icelandic Center for Social Research and Analysis in Reykjavik, Iceland. She completed a PhD in Sociology in 2004. Her primary research interests are in the area of sociology of deviance and risk behavior via multi-disciplinary perspectives.

Alfgeir L. Kristjansson, PhD., is a Professor at West Virginia University, School of Public Health, WV, USA and the Co-Principal Investigator of the WV Prevention Research Center. He completed a PhD in Social Medicine from the Karolinska Institute in 2010. Dr. Kristjansson's interests are in the area of adolescent health behavior, community health promotion and intervention development, prevention strategies, and measurement and evaluation.