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Changing Community Readiness To Prevent The Abuse Of Inhalants And Other Harmful Legal Products In Alaska[1]

Kristen A. Ogilvie, MA,
Kristen A. Ogilvie, Pacific Institute for Research and Evaluation, Alaska Office, 4111 Minnesota Drive, Anchorage, AK 99503, USA, Email: kogilvie@pire.org

Roland S. Moore, PhD,
Roland S. Moore, Prevention Research Center, 1900 University Avenue, Suite 400, Berkeley, CA 94704, USA

Diane C. Ogilvie, MAEd,
Diane C. Ogilvie, Akeela, Inc., 4111 Minnesota Drive, Anchorage, AK 99503, USA

Knowlton W. Johnson, PhD,
Pacific Institute for Research and Evaluation, Louisville Center, 1300 South 4th Street, Suite 300, Louisville, KY 40208, USA

David A. Collins, PhD, and
Pacific Institute for Research and Evaluation, Louisville Center, 1300 South 4th Street, Suite 300, Louisville, KY 40208, USA

Stephen R. Shamblen, PhD
Pacific Institute for Research and Evaluation, Louisville Center, 1300 South 4th Street, Suite 300, Louisville, KY 40208, USA

Abstract

This paper presents results from an application of the Community Readiness Model (CRM) as part of a multi-stage community mobilization strategy to engage community leaders, retailers, parents, and school personnel in preventing youth use of inhalants and other harmful legal products in rural Alaska. The CRM is designed to assess readiness to address a single social problem, based on a limited set of key informant interviews. In this study, researchers conducted 32 baseline and 34 post-intervention community readiness assessment interviews in four rural Alaskan communities. These interviews with key informants from the communities were coded and analyzed using CRM methods to yield readiness scores for each community. The aggregate results were analyzed using hierarchical linear modeling (HLM), and the individual community scores were analyzed in the context of the overall study. Significant positive changes in community readiness were found across six readiness dimensions as well as for the overall readiness score. Variation in the degree of changes in readiness across the four communities is attributed to differences in the intervention's implementation. The implications of these results include the potential for CRM assessments to serve as an integral component of a community mobilization strategy and also to offer meaningful feedback to communities participating in prevention research.

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Keywords

Community readiness; Inhalants; Alaska; Prevention; Legal products; Drug use

Introduction

Comprehensive, community-based interventions are increasingly recognized as effective in prevention related to multiple health issues [1–4]. Inherently local, community-based interventions must attend to a community's local dynamics and its readiness to engage in prevention activities [5]. As researchers work to assess the feasibility and effectiveness of various adapted community-based interventions, especially those involving community mobilization, they must determine meaningful ways to gauge each community's readiness for prevention. Evaluating a community's readiness to engage in prevention as a foundation for adapting a preventative intervention holds the potential to ensure a more successful intervention study [6–8].

Various methods to assess community readiness have been developed, but most of the work on community readiness assessment derives from the Community Readiness Model (CRM) developed at Colorado State University's Tri-Ethnic Center for Prevention Research [6,8,9]. This paper describes the process of adapting the CRM instrument for the purpose of evaluating the readiness of four Alaskan communities to engage in the prevention of youth abuse of inhalants and other harmful legal products (e.g., cough medicine, alcohol-laden household products, etc.), both before and after implementation of intervention activities. Representing one of the first efforts outside the originating center to document such an adaptation, this paper presents an overview of the adaptation process, a description of the integration of this model into a community mobilization intervention, and a presentation of preliminary findings.

Background: Community Readiness Model (CRM)

The concept of the Community Readiness Model (CRM) was operationalized by researchers at the Tri-Ethnic Center at the University of Colorado [10] as an explicitly applied methodology to assess community norms regarding health problem prevention. The CRM assessment involves asking a small number of knowledgeable members of a community (key informants) about how a specific health or social issue has been framed and dealt with in the past, and what the prevailing norms surrounding that issue are in the community. The questions fall within one of six dimensions: A) existing prevention efforts, B) community knowledge of these efforts, C) leadership, D) community climate, E) knowledge about the problem, and F) prevention resources [8]. The answers to these questions are compiled and scored (using a scale from 1 to 9) on the degree to which the community falls on a continuum of nine stages, summarized in Table 1.

The results of the scoring can then be presented to community representatives (including relevant coalitions) to establish the realistic baseline from which they can move their community towards a state of active maintenance of successful prevention programs.

The theoretical underpinnings of community readiness may be found in Prochaska and DiClemente's [11,12] Stages of Change model, but with the individual orientation of that model reapplied to collectives and community decision-makers, recognizing the need for prevention not just to operate on individuals but within community systems [2,13]. It also owes a debt to Rogers' theory of innovation diffusion, in its attention to relationships within the community and the role of prominent stakeholders in effecting change [14]. A more proximate predecessor to the notion of Community Readiness, refined for public health purposes, may be found in the literature on system or organizational readiness [15].

The CRM is not unique, as it has parallel and derivative assessment tools in the literature on prevention. Analogous approaches influenced by the Stages of Change model include Dunnagan, et al.'s [16] combination of interviewing of 34 key informants and surveying 1,250 adults in order to triangulate an assessment of their community's efforts to reduce underage drinking. More recently, Griffin et al. [17] incorporated elements of the CRM and Stages of Change into an assessment of community and organizational capacity for teen pregnancy prevention efforts.

One strength of the community readiness approach is its flexible application to a variety of health issues and social problems, such as provision of health services [18], domestic violence [19], drug use [20], HIV [21,22], and alcohol-related problems [10,23]. This theoretically-grounded approach is designed to nudge community members through tailored feedback to overcome denial and systemic barriers in order to facilitate active opposition to the health problems facing their communities. For example, Slater et al. [24] conducted a trial of the method and found in a two-year follow-up with 36% of the original interviewees that the key informants were able to help move their communities towards support for prevention activities. Communities in the experimental communities showed significantly greater improvement in their readiness than the control communities.

An additional strength of the CRM approach is that it can be modified for use on a larger scale. For instance, Engstrom et al. [25] extended the approach to work with eleven communities in an effort designed to reduce youth access to tobacco. With culturally-specific modifications, Kennedy et al. [26] were able to use the Community Readiness Model to assess the extent to which HIV-AIDS is perceived as a problem and addressed through prevention efforts throughout the country of Liberia. Perhaps the greatest strength of the CRM is that it imposes order on an assessment task that can be daunting. Use of the CRM offers evaluators a systematic way to focus program delivery in a community through the evaluation of the community context for those prevention efforts [27].

Published critiques of the Community Readiness Model are rare, but one is found in an article by Beebe and colleagues proposing an alternative approach. These authors claim that the CRM was not developed in a rigorous fashion and that the number of key informants and how they are chosen may be debated [6]. A related question might be: how important is it to follow the precise sequence of questions specified in the method? An additional problematic issue is that the CRM originators' insistence on focusing on one problem at a time may obscure the interconnectedness of many co-occurring disorders and social problems. In a study including many of the CRM originators, the cautionary note is issued that "the Community Readiness Model must be used with care in large, diverse communities, where shared contexts may differ widely among groups" [28]. The relative paucity of publications assessing the Community Readiness Model, particularly from researchers outside of the University of Colorado group that developed it, suggests that validation through replication of the approved method, both by other groups and in other settings, is warranted.

Methods

Study Design

To assess each community's readiness to engage in the prevention efforts, our team adapted the CRM assessment tool with the assistance of the Colorado State scientists. We used the modified instrument to conduct 32 baseline readiness interviews prior to intervention and 34 post readiness interviews approximately 20 months later after a community mobilization strategy had been implemented in the four participating Alaskan communities.

Community Mobilization Strategy

The community mobilization strategy being assessed was part of a larger feasibility study called the *Alaska Harmful Legal Products (HLPs) Prevention Study*. This larger study was to design, implement, and evaluate a community-based pilot intervention to prevent the abuse of inhalants and other harmful legal products by Alaskan youth. It included three components, each based on established evidence-based interventions: 1) community mobilization; 2) environmental strategies targeting the home, school, and retail settings; and 3) a problem-solving, life skills school curriculum for pre-adolescents.

The community mobilization component of the project was based on Wagenaar's model that involves seven steps as a guide for mobilization [29]. These steps are: (1) assessing the community, (2) building a base, (3) expanding the base, (4) developing a plan of action, (5) implementing the plan of action, (6) seeking feedback and disseminating results, and (7) sustaining the effort. In the feasibility study, assessing the community involved a community readiness assessment, focusing on readiness to prevent youths' use of harmful legal products and based on the CRM model discussed above [9,10]. The base for the mobilization strategy involved coalitions or alliances consisting of key leaders, agencies and organizations [30,31]. The base was expanded by hiring a part-time local community prevention organizer (CPO) who followed a written work plan organized by tasks and due dates to mobilize community members beyond the base. The researchers offered training and technical assistance to the coalitions and the CPOs. A community prevention action plan was developed to provide concrete steps and strategies. Media advocacy was an essential aspect of this plan to motivate community policy makers, police, parents, community members, teachers at local schools, and retail merchants to become involved with community prevention interventions [32]. The community received feedback from the community readiness assessment and a pre-post assessment of changes was conducted.

As the first step in the mobilization strategy and to insure optimal organization of our communities, scores from the adapted version of the CRM instrument were used formally and informally. Community prevention organizers (CPOs) were trained on CRM in their foundations training in March of 2005. This training talked about the importance of accurately assessing a community's level of readiness to successfully initiate prevention strategies. CPOs were given reports that scored each of their respective communities. The researchers asked the CPOs to share the information with potential media contacts in their continued efforts to build media interest. Another formal use of the scores included incorporation in coalition trainings to illustrate how programs should be designed to impact the issue of legal product abuse.

Research Setting

The four participating communities are typical of regional centers in rural Alaska. All four are located off the road system and are accessed from other areas of the state primarily by daily scheduled jet service from Anchorage or Juneau. They serve as government, commercial, and service hubs for smaller villages in their respective regions (two in the Far North and two in Southeast Alaska) [33]. Their populations range from about 3,000 to 9,000. Two of the communities have a majority Alaska Native population while the other communities' populations are over 20% Alaska Native.

Questionnaire Adaptation

Referring to the CRM handbook and consulting with its developers, the study team created an adapted version of the CRM questionnaire. The CRM handbook's most important guideline is that the generic questions provided in the handbook need to be modified for the issue being addressed and that irrelevant questions should be eliminated [9]. For instance, one question in the CRM handbook reads, "How are these leaders involved in efforts regarding this issue?"

Our modification reads, “How are these leaders involved in activities to prevent the misuse of these products?” In this way, our questionnaire comprised 23 of the 36 CRM questions, including all 20 of those identified as essential for scoring.

The entire study team was involved in the survey adaptation. Two project anthropologists created a draft instrument that was circulated to the study team. Team feedback was incorporated, producing a final draft instrument, which was pretested with two Alaskans who had lived and worked for a considerable time in rural Alaska. Based on the pretest, the instrument was modified to simplify language and provide more clarity about the HLPs issue. Finally, the revised questionnaire was reviewed by two members of the original CRM development team at Colorado State, neither of whom suggested further modification.

Interview Procedures

The team conducted baseline interviews prior to the intervention implementation and post interviews immediately after the intervention. The CRM consultants provided interview training via videoconference for the three study team members with ethnographic interviewing experience. The two-hour training entailed coaching the study team on the interviewing process, discussing the scoring, and answering questions. A fourth interviewer was involved in the post interviews and was trained internally following similar procedures.

The sampling frame consisted of a list of 13 community subsystems from which to identify seven to nine key informants who represented community members involved in substance abuse prevention: (1) behavioral health, (2) the court system, (3) elders, (4) faith organizations, (5) families, (6) health care, (7) law enforcement, (8) media, (9) policy makers, (10) retailers, (11) schools, (12) social services, and (13) tribal leaders. Community partners enrolled in the study identified important contacts in each of the subsystems. In many cases, key informants represented multiple subsystems such that we were able to complete interviews with an average of 9.5 of the subsystems across the four communities.

The central factor in identifying key informants was to ensure adequate representation of the subsystems in each of the communities. In the case that identified key informants were unavailable (e.g., out of town during the three days interviewers were in the communities) or, rarely, unwilling to participate, alternate key informants were solicited from key community contacts such that as many subsystems were represented as possible. In two cases during baseline data collection, telephone interviews were conducted during the week following the trips to the communities in order to interview people who corresponded to underrepresented subsystems.

For the post interviews, project staff contacted the baseline informants; or, in cases when baseline informants were no longer in the community, no longer in their former roles in the community, or uninterested in participating, alternate key informants in similar roles were identified within the same parameters of the subsystem model described for the baseline assessment.

In both baseline and post intervention interview, two interviewers traveled to each community to conduct the community readiness interviews with this identified sample of key informants. The interviewers conducted a minimum of two interviews together (one interview each) in each community for the baseline and post data collection.

Data Collection

In February and March 2005, the three study-team interviewers conducted 32 community readiness interviews across the four rural communities in Alaska. Approximately 20 months later in October 2006, 34 post intervention interviews were conducted in the same communities.

The number of interviews in each community ranged from seven to ten, more than the minimum of four to six recommended in CRM. In both assessment periods, key informants represented a wide range of community members. Nine key informants participated in both the baseline and post interview. In the other cases, people were identified with similar roles as the baseline informants. Written informed consent forms were given to every key informant, and the interviewer also read an informed consent script. Both the written and verbal consent procedures asked permission to tape-record the interview.

To focus clearly on the prevention of inhalants and other harmful legal products, the interviewers next gave a careful definition of harmful legal products. This statement, designed to focus key informants on the issue, read as follows:

> We're particularly interested in inhalants and other legal products that can be misused by young people. Some examples of inhalants are "huffing or sniffing" whipped cream cans, gasoline, model glue, spray paint, and solvent-based products like magic markers to get high. Examples of other legal products that young people could misuse to get high are over-the-counter medicines like cough syrup, NO-DOZ, and Dramamine, prescription drugs like Oxycontin, and other products found in the house that are swallowed like Lysol, vanilla extract, and aftershave lotion.

Following this statement, interviewers asked which of these types of products are most commonly abused in the community. This question allowed key informants to reflect on the issue specifically in relation to their communities and also provided valuable information to the research team as they sought to develop interventions that appropriately addressed the most frequently abused products. The community readiness portion of the interview lasted approximately 45 minutes, and key informants were offered $30 for participation. All interviews were recorded, and professional transcribers were contracted to transcribe the interviews.

Readiness Scoring

The study team adhered carefully to CRM's method of scoring readiness. Three raters rigorously reviewed the CRM training materials. Two scored the baseline interviews, and two scored the post intervention interviews. One rater had previous experience with the CRM scoring method. The three raters, with little knowledge of the Alaskan communities involved, independently reviewed the de-identified transcripts, from which all names and community references had been removed.

The raters used the anchored rating scales (1–9) provided in the CRM handbook to score each interview. The scoring was completed by each rater independently by reviewing the interview transcript for key phrases and descriptions that indicated where on each dimension's anchored scale an interview should be scored. For instance, the CRM handbook provides the following anchor rating scale for Dimension A (Existing community prevention efforts), from "1. No awareness of the need for efforts to address the issue" through " 9. Evaluation plans are routinely used to test effectiveness of many different efforts, and the results are being used to make changes and improvements" [9]. Raters systematically moved up the provided anchored rating scales for each dimension to determine the interview's score. If the responses in an interview indicated that the community exceeded the first statement, the next statement was assessed and so on, until the rater determined that the responses indicated that the community met the statement. "In order for a community to receive a score at a certain stage, all previous levels must have been met up to and including the statement which the scorer believes best reflects what is stated in the interview" [9]. Each rater created a scoring sheet of individual scores for each interview by dimension using these scales.

Upon completion of the independent scoring of each interview, the two raters for each set of interviews met to compare scores and determine a consensus if their scores differed. If the scores differed, the raters were asked to produce examples from the transcripts that supported their scoring decisions. In all cases, the raters were able to determine consensus. In establishing consensus, the raters created a table of "combined scores" for each community, which listed each interview's consensus scores by dimension. For each community, the combined scores were then averaged, producing the "calculated," or mean, score for each dimension. Finally, the raters averaged the calculated scores for all six dimensions yielding the "overall stage of readiness" for each community.

Results

Overall Change

In assessing overall change in community readiness to prevent youth's use of harmful legal products, we aggregated the pre-post intervention readiness data described earlier for the four communities. These were repeated cross-sectional data with nested repeated observations; therefore, we used a Hierarchical Linear Modeling (HLM) regression strategy to assess statistical significant change over time in the readiness outcomes [34]. This analytical procedure takes into consideration pre-post data where a majority of the key respondents at the pre-assessment are different from those at the post assessment; but some key respondents provide data at both times one and two. Pre-post differences in key respondent's tenure in the community, race, age, and gender were also controlled in the analysis.

Table 2 presents results of pre – post change in community readiness outcomes using for the four communities as an aggregate (baseline sample = 32; post sample = 34). The overall community readiness score ranges from 1 – 9 representing stages of community readiness described in table I above, which represent an average score from 1–9 of six readiness dimensions or indicators of readiness. We also assessed change in the overall readiness score as for the six CRM dimensions described earlier.

Change in overall community readiness—When the overall readiness of the four communities is assessed as an aggregate, the average rating of key respondents prior to the community mobilization intervention was 2.9. Since scoring or any stage of readiness is truncated, such that, for instance a score between 2.0 and 2.9 represents Stage 2, this average rating can be interpreted as Stage 2 – Denial/Resistance. At the post assessment, the average overall rating increased to 3.8, which is Stage 3 (Vague Awareness). In this stage most members of the community recognize the use of harmful legal products is a local problem, but there is little motivation to address it. Statistically, this amount of change in the overall rating score denotes a large intervention effect (ES = 1.03).

Change in dimension readiness—Table 2 shows medium to large changes in the rating scores of the six dimensions that defines community readiness of this study (range of ES = . 56 to 1.10. The key respondent interviews revealed that the Community Efforts dimension mean rating was 4.4 for the baseline assessment and 5.3 for the post assessment. In other words, at baseline some community members had met and begun a discussion of developing community efforts to prevent youths' substance use including the use of harmful legal products prior to implementation of the community mobilization intervention [9]. At the post-intervention assessment, the communities had demonstrated that efforts (programs/activities) were being planned. This dimension of community readiness was the highest of the six dimensions prior to and after the community mobilization strategy had been implemented.

The mean rating on the dimension of Knowledge of Efforts ranged from 2.7 at baseline to 3.5 at the post assessment. These average scores can be interpreted to mean that key respondents

seem to think that the community as a whole had no knowledge about how to address the issue of youth using harmful legal products, but that a few community members had limited knowledge about efforts to deal with this issue. After the intervention, a few in the community knew about local efforts to prevent youths' use of harmful legal products.

At baseline, the mean rating on the dimension of Leadership was 2.8, indicating that community leaders recognized the need to do something about youth using harmful legal products. At the post assessment the mean rating increased to 3.6, indicating that some leaders were trying to get something started to deal with this issue. The baseline mean score on the dimension of Community Climate averaged 2.6, indicating that the climate tended to be neutral; after the intervention, the community as a whole was still neutral, but there was some evidence that the attitude was beginning to reflect an interest in the issue.

Key respondents rated the dimensions of Knowledge about the Issue and Resources for Prevention Efforts the lowest of the CRM dimensions at baseline (2.5 and 2.4, respectively). That is, it was believed that a few community members had some knowledge of the issue and that the community resources were probably not available to deal with this issue. At the post assessment, the assessment showed that community members were beginning to recognize the signs and symptoms of the youth of harmful legal products among its youth and that the community had a few individuals, organizations that could be used as resources to address this issue. (mean = 3.5 and 3.7 respectively). The readiness improvement on these dimensions were the greatest with the intervention effect sizes being large (ES = 1.1 and 1.09 respectively).

Community-Specific Results

Each community's scores represent meaningful similarities and differences regarding the four communities' stages of readiness prior to the beginning and immediately after the conclusion of the intervention. Table 3 presents the baseline and post overall readiness scores as well as the six CRM dimensional scores by community.

All four communities scored in the second (Denial/Resistance) and third (Vague Awareness) stages of the Community Readiness Model with average (overall) readiness scores of 3.0, 2.9, 3.0, and 2.7 at baseline. According to CRM, Stage 2 suggests some community members acknowledge a problem exists but that most do not recognize it as a local problem. Stage 3 indicates that while most recognize the issue as a local problem, there is little motivation to address it [9].

In the post assessment, all four communities increased their overall readiness scores. However, there was significantly more variation between the post readiness scores among the communities. The post overall readiness scores for the four communities were 3.4, 3.6, 4.4, and 4.1. These scores correspond to the third (Vague Awareness) and fourth (Preplanning) stages of CRM. Stage 4 indicates that community members recognize a problem, acknowledge that something needs to be done, but have little concentrated or focused efforts.

While positive change occurred in all four communities in the overall readiness score, the extent of this change varied. The four communities' results were bifurcated with two communities increasing readiness by 1.4 points and two increasing slightly with improvements of only .4 and .7. Three of the four communities progressed to the next stage of readiness (two moved from Stage 3 to Stage 4 and one moved from Stage 2 to Stage 3), but the community with the slightest improvement scored in Stage 3 at both baseline and post.

The relative variation across the communities' overall readiness scores at the two waves of data collection is also reflected across the communities' dimensional scores at baseline and post. At baseline, four of the six dimensions represented **less** than a one point difference in the

range among the four communities. The post assessment, however, demonstrated more dimensional differences among the four communities.

Dimensional change varied by community. Every dimension in every community saw positive change with the exception of Dimension C – Leadership in Community A. The greatest positive change across the communities occurred in Dimension F – Resources with three communities registering change of 1.1 or greater in this area.

Discussion

Guiding the Intervention Design and Implementation

Research suggests that community-based interventions use community assessments as starting points for intervention activities [7,29]. Responding to similar baseline readiness scores in all four of the communities, the project intervention took similar approaches in all four communities: The community prevention organizers (CPOs) and the coalitions in all four participating communities concentrated their efforts on strategies to reduce denial and increase awareness of inhalants and other harmful legal products. Community-specific media efforts were used to target both of these objectives [32,36]. Community prevention organizers gave lengthy radio interviews that aired across hundreds of square miles of tundra, articles were placed in regional health corporation newsletters, and cable TV "scanner" channels advertised the project. A thirty-minute short film documenting the new effort in all four of the communities was developed by a local Alaskan television producer and shared in many venues. CPOs attended elders' meetings and potlatches to talk about the project and outreached to personal networks.

The intervention successfully increased awareness that the use of inhalants and other harmful legal products is a local problem in the communities. After attending project events that aimed to increase awareness about HLPs, numerous community members began attributing previously unremarkable occurrences to the abuse of inhalants and other harmful legal products. In one community, a high school principal said,

> When we found a pile of Axe body spray aerosol cans outside the gym after a wrestling match, I first thought, 'Finally, the boys are getting into personal hygiene.' But that's not what the boys were using the cans for.

In another community, the Boys & Girls Club manager told of an incident that occurred shortly after he attended a project training:

> We were having a sleepover at the Boys and Girls Club. I caught some middle school kids with six whipped cream cans. I asked them what they were for and they said they were going to use them to put on their snacks. I knew we weren't having snacks that needed whipped cream. So I took the whipped cream cans and told them that 'whip its' are not allowed. They never asked for the cans back.

A teacher who attended the project's life skills curriculum training during which an overview of the signs and symptoms of inhalant abuse was given, recognized in hindsight that one of her students might have been abusing inhalants the year before. She said,

> At the training I learned about the signs and symptoms of kids using inhalants and other harmful everyday products. It made me think of a student I had last year who frequently had a red, pimply rash around his mouth and nose. I wonder if he was using. He definitely had many risk factors in his life. I wish I had known then what I know now.

These and other similar stories from the communities illustrate the critical importance awareness raising played in a project that dealt with an issue that most communities did not

recognize as a problem. This is congruent with other researchers' findings that suggest communities must recognize a problem before prevention efforts can be undertaken in earnest [37]. As discussed, the baseline readiness scores indicated that the communities were somewhere between denial/resistance and vague awareness of the problem. In these situations, the CRM handbook suggests that attention be focused on raising awareness. According to the model, in the case that communities are in stage 2, Denial/Resistance, awareness should be raised that the problem or issue exists in the community. In the case that communities are in stage 3, Vague Awareness, efforts should be geared at raising the awareness that the community can do something [9]. In this project, attention was focused through the coordinated effort of the CPO and intervention team on both types of awareness raising (i.e., awareness both of the problem or issue and that something can be done about the problem).

Post Results: Reasons for Variation in Community Readiness Change

Community variation in the effects of the mobilization intervention was expected since this study involved four distinct and diverse communities. Qualitative evidence suggest two primary reasons for the reported community variation. In particular, project staffing to carry out consistent mobilization efforts in the communities and coalition/alliance leadership support of the project and prevention generally appear as meaningful contributors to the different levels of change in community readiness.

Community prevention organizer retention—Community mobilization is dependent on having engaged champions who maintain consistent efforts to keep an issue central to local dialogue over time [38,39]. In particular, committed community staff and champions play a large role in the success of prevention efforts [38,40]. In the case of the Alaska HLP study, the principal community staff and champions were the Community Prevention Organizers (CPOs), who were entirely responsible for implementing the intervention in their communities. Due to the isolated rural character of these communities, the study struggled to identify, train, and sustain community staff and was unable to utilize itinerant organizers because of the communities' isolation [41]. Both the communities (A and B) that experienced less than a one point increase in overall readiness underwent significant turnover in the CPO position that left the project without an on-the-ground coordinator for months in some cases. The suggestion that these two communities did not fare as well in increasing readiness due to less coordinating on the part of community staff is further supported by the fact that both of these communities registered much smaller changes in Dimension A (Community Efforts) and Dimension B (Knowledge of Efforts) than the other two communities. Without a devoted and consistent coordinator, there were fewer efforts and community members were less aware of those efforts that did exist.

The community mobilization efforts, which included coalition training, were tailored to the needs of each community. However, the study had minimum expectations that all communities were to meet, including a series of three meetings/trainings and of media events. Community A, which scored the lowest in the post assessment, did not meet these minimums due to CPO attrition as well as minimal support from the coalition and extended base (see below). Community B, which scored second lowest in the post assessment, met the minimum requirements, but again due to CPO attrition, had many of the community mobilization events concentrated significantly late in study's intervention rather than distributed more throughout the study's intervention time period. The other two communities, which maintained community staff more regularly, met the minimum community mobilization intervention requirements and spaced them more appropriately, affecting the readiness results more positively.

Coalition/alliance organization & leadership support—Another related factor in the community readiness variation relates to the varying degrees that coalition/alliance leadership

supported the project specifically and prevention more generally. Coalitions (and what some of our communities referred to as alliances) provide an important base from which to build community prevention efforts [4,40,42,43]. Aligned with Wagenaar's model [29,440], community coalitions/alliances were conceptualized as the base from which the project's efforts would emanate. An extended base of people and organizations peripherally affiliated with the coalition/alliances were the second tier of targeted participants. Community coalitions and alliances were found at varying degrees of organization at the time the study began. Community B, which was the second lowest scoring in overall readiness at the post assessment, had the least organized coalition/alliance from the beginning of the study. Community B made progress, but considering the CPO attrition, it was unable to improve its readiness scores. Community C also had relatively little organization in its coalition/alliance at baseline. However, the leadership of the coalition/alliance was especially involved in this project and helped promote it significantly.

Coalition leadership and organizational stability and structure are conceptualized as particularly important factors in the success of community prevention efforts [38,45,46]. All four communities experienced change in their coalition/alliance leadership and/or organization during the study period. However, the greatest change and most in stability in leadership occurred in Community A, which had more than one community leadership role change hands involuntarily over the course of the study. With these changes, the face of the coalition and extended base changed drastically and coalition cohesion lessened. This reduced the amount of support the HLP Prevention Project had in this community. Dimension C (Leadership) in Community A was the only dimension in all four communities that showed a reduced score in the post assessment (3.9 to 3.1). The greatest change in organization occurred in Community D, which saw a youth coalition incorporated into a new larger community coalition with a youth-focused sub-group. However, this change was directed and purposeful in advancing the coalition/alliance, which supports a model of coalition development [42,46]. While maintaining interest in youth prevention and the HLP project, specifically, of the four communities, Community D stood out as a model for how the project should be carried out. This is reflected in their high scores in the post assessment and in the fact that Community D is the only community to have advanced two readiness stages (from Stage 2 to Stage 4) over the course of the study.

Conclusion

The Community Readiness Model proved a useful tool in the Alaska HLP prevention study. The results of the readiness assessments allowed the intervention team the opportunity to customize intervention activities to the stages in which the communities scored [5,8]. This approach was congruent with the community mobilization strategy that was adapted for this study, which proposes community assessment as the first step in mobilization [29,44]. While community readiness was conceptualized as a starting point that could affect the success of the interventions, it also was identified as an intervening variable to the ultimate goal of the mobilization effort, increased community engagement. Indeed, in this short-term feasibility study, the positive community readiness results provided the most meaningful evidence that the community mobilization design was effecting change in the communities. In the absence of control groups, this, of course, remains partially speculative.

In addition to the appropriate and evocative fit with our mobilization strategy, the CRM assessments proved meaningful to the communities and served as part of our intervention to raise awareness. The results of the readiness assessment universally piqued the interest of community members. Invariably, coalitions, alliances, retailers, and parents in the four participating communities showed sincere interest in their communities' readiness scores. As a focal point for beginning discussions about a problem that endangers youth, but is not well-

recognized, the readiness scores afforded a meaningful showcase of local information on the topic. Community members learned what was going on in their communities regarding this issue. When the CRM scores for each community and statistics about the prevalence of abuse of these products were presented in different intervention venues (e.g., parent workshops, face-to-face retailer meetings, coalition meetings, etc.) community members expressed interest in participating in the intervention activities.

This study demonstrates the potential value of CRM as an integral part of a community mobilization strategy for prevention, as a guide for the intervention in a multi-community research study, and as a meaningful mode of feedback for the participating communities.

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Table 1

Nine CRM community readiness stages [9]

Stage	Description
1. No Awareness	Issue is not generally recognized by the community or leaders as a problem (or it may truly no be an issue).
2. Denial/Resistance	At least some community members recognize that it is a problem, but there is little recognition that it might be a local problem.
3. Vague Awareness	Most feel that there is a local problem, but there is no immediate motivation to do anything about it.
4. Preplanning	There is clear recognition that something must be done, and there may even be a committee. However, efforts are not focused or detailed.
5. Preparation	Active leaders begin planning in earnest. Community offers modest support of efforts.
6. Initiation	Enough information is available to justify efforts. Activities are underway.
7. Stabilization	Activities are supported by administrators or community decision makers. Staff are trained and experienced.
8. Confirmation/Expansion	Standard efforts are in place. Community members feel comfortable using services, and they support expansions. Local data are regularly obtained.
9. High Level of Community Ownership	Detailed and sophisticated knowledge exists about prevalence, causes, and consequences. Effective evaluation guides new directions. Model is applied to other issues.

Table 2

Aggregate community readiness results

CRM Readiness Outcomes	Baseline Mean n = 32	Post Mean n = 34	t value	ES (d)
CRM Overall Readiness (Average)	*2.9*	*3.8*	*4.00*	*1.03*
CRM Dimension Readiness				
A. Community Efforts	4.4	5.3	2.38	.61
B. Knowledge of Efforts	2.7	3.5	2.77	.72
C. Leadership	2.8	3.6	2.19	.56
D. Community Climate	2.6	3.5	3.14	.81
E. Knowledge about the Issue	2.5	3.5	4.27	1.10
F. Resources for Prevention Efforts	2.4	3.7	4.21	1.09

Note: All tests of significance are significant, $p < .05$, two-tailed. All tests of significance are based on 60 *dfs*.

Effect Size: Effect sizes are reported as Cohen's D. Cohen [35] has suggested the following guidelines for interpreting the magnitude of D: .20=Small; .50=Medium; .80=Large.

Table 3

Community readiness scores by community, pre- and post-intervention

	Community							
	A		B		C		D	
	Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
Overall Readiness Score (Average)	**3.0**	**3.4**	**2.9**	**3.6**	**3.0**	**4.4**	**2.7**	**4.1**
Community Readiness Model Stage* (pre-intervention)	Stage 3: Vague Awareness		Stage 2: Denial/Resistance		Stage 3: Vague Awareness		Stage 2: Denial/Resistance	
Community Readiness Model Stage* (post-intervention)	Stage 3: Vague Awareness		Stage 3: Vague Awareness		Stage 4: Pre-Planning		Stage 4: Pre-Planning	
	Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
Dimensional Scores								
A. Community Efforts	4.0	4.5	5.0	5.3	3.8	5.6	4.4	6.1
B. Knowledge of Efforts	2.6	2.9	3.1	3.3	2.8	3.9	2.3	4.0
C. Leadership	3.9	3.1	2.1	3.1	3.0	4.6	2.3	3.4
D. Community Climate	2.4	2.8	2.6	3.4	2.9	4.2	2.4	3.4
E. Knowledge about the Issue	2.9	3.3	2.1	3.3	3.0	3.9	2.3	3.5
F. Resources for Prevention Efforts	2.4	4.2	2.3	3.0	2.8	4.0	2.6	4.0

*Note: Following the CRM protocol [9], overall readiness stages are truncated or rounded down to the lower integer.