COMMUNITY READINESS AS A MULTIDIMENSIONAL CONSTRUCT

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Abstract

Both the organizational studies literature and the community psychology literature discuss the importance of readiness when implementing change. Although each area emphasizes different characteristics, several common themes are present within the literature. The current study integrates and applies organizational and community psychology literature in evaluating community readiness in the context of a school–community–university collaborative prevention model. Results demonstrate (a) that there is substantial agreement between members of community prevention teams on the level of readiness of a community; (b) that readiness is a cohesive, but multidimensional, construct related to hypothesized community and individual characteristics; and (c) that there is small to moderate agreement between members of prevention teams and their "agency directors." These results support the notion that clear "theories of change" need to be formulated before deciding how to assess community readiness, as assessments will vary due to several factors: the type of respondent, the level in which analyses are conducted, and the specific community domain (i.e., school, workplace collaboration, collaboration experience) investigated.

The term *community readiness* has been used for at least 50 years (Burgess, McDonald, & Roberts, 1955; Carmack, 1965) to describe the ecological context and organizational system in which the implementation of community change efforts takes place (Boyd & Angelique, 2002; Bronfenbrenner & Morris, 1997; Cummings & Worley, 2001; Foster-Fishman & Keys, 1997). Over the past decade, the concept has gained attention as a potential moderator of program implementation and outcomes in prevention trials (Harachi, Abbott, Catalano, Haggerty, & Fleming, 1999; Solomon, Battistich, Watson, Schaps, & Lewis, 2000).

This paper integrates organizational and community psychology concepts in the pursuit of modifying and then testing a community "self-organizational" model of community readiness (Feinberg, Greenberg, Osgood, Anderson, & Babinski, 2002). The first goal is to integrate the theory from existing organizational psychology and community readiness literature into a comprehensive model useful for community-based collaborative prevention activities. The second goal is to gauge the extent to which the constructs in the integrated model of readiness "fit" empirical data by assessing psychometric properties of the corresponding measurement model. The third goal is to assess the construct validity of the proposed conception of readiness by examining the association of the measure of readiness with constructs suggested by a reading of the literature on organizational psychology and community psychology, and by comparing the agreement of the construct within and between different community samples.

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THE COMMUNITY SELF-ORGANIZATIONAL MODEL OF COMMUNITY READINESS

Previous theoretical work within the community self-organizational model of readiness places importance on the psychosocial context of the community for the effectiveness of prevention programs or community-health services (Goodman et al., 1998; Murphy-Berman, Schnoes, & Chambers, 2000). The history of a community, such as past community involvement and past empowerment-related experiences, and certain community characteristics, such as the effectiveness of local leadership, are important aspects of community readiness (Feinberg et al., 2002). These psychosocial characteristics describe a community context, which may support or hinder the community's ability to successfully make change (Murphy-Berman et al., 2000).

Empirical work within the community self-organizational model has only just begun to operationalize the constructs mentioned above. There is some evidence to show that these psychosocial characteristics, such as community identity and ownership of the social problems, differ between communities (Murphy-Berman et al., 2000). Additional research demonstrates associations between residents' general concept of community readiness and both prevention coalition functioning (Feinberg, Greenberg, & Osgood, 2004) and member attendance at coalition-sponsored training in prevention (Feinberg et al., 2002). More specific work demonstrates that a strong sense of community tends to facilitate empowerment processes (Chavis & Pretty, 1999; McMillan, Florin, Stevenson, Kerman, & Mitchell, 1995; Peterson & Reid, 2003) that are considered necessary to support sustainable change.

INTEGRATION OF ORGANIZATIONAL PSYCHOLOGY AND COMMUNITY PSYCHOLOGY

Integrating the organizational and community psychology literatures will help to develop a more comprehensive model of community readiness, which may be useful for community prevention research and practice by facilitating enhanced assessment of readiness. Such enhanced assessment would improve the selection of communities and schools to participate in collaboration-oriented prevention activities, as well as identify contexts and organizational processes that may hinder change and thus require preliminary intervention (e.g., technical assistance) to prepare a community for the introduction of a prevention collaborative model. In these ways, a comprehensive model of readiness would ultimately result in more effective collaborative prevention initiatives.

The integration of organizational and community psychology literatures facilitates the research in this report in four specific ways. First, we use prior theoretical and empirical work from organizational psychology and community psychology to explain the timing of construct measurement. Second, main concepts from organizational and community psychology are drawn together to create a parsimonious model. Third, prior theoretical and empirical work from organizational and community psychology informs our sampling strategy. Finally, important concepts from these fields are drawn together to inform variable selection to assess the construct validity of the proposed concept.

Timing of Measurement

The organizational literature clearly articulates readiness as the *precursor* to implementing change (Armenakis, Harris, & Mossholder, 1993): Entities (e.g., organizations, individuals, or communities) with high levels of readiness would be more likely to *support* a change effort (e.g., Goodman et al., 1998), and entities with low levels of readiness would be more likely to resist change (e.g., Macri, Tagliaventi, & Bertolotti, 2002). By focusing on pre-existing

capacity, levels of readiness predict behavior (i.e., community support or resistance to change), which then determines the success of the change effort. For this reason, the measurement of community readiness occurs before project implementation.

Conceptual Model of Readiness

The proposed measurement model of community readiness focuses on the *preexisting psychosocial characteristics* of communities and is composed of four interrelated, yet distinct, factors: Community Attachment, Initiative, Efficacy, and Leadership. The following section will draw from both fields to review these four concepts. These factors are measured as perceptions because of the emphasis others have placed on readiness being a cognitive characteristic (Armenakis et al., 1993; Backer, 1995).

The proposed first concept, Attachment, describes the emotional and psychological ties residents have for their communities. This construct is drawn from the organizational psychology construct of cohesion and the community psychology concept of sense of community. Within the organizational literature, staff cohesion describes the levels of emotional trust and teamwork that are present within staff at an agency (Lehman, Greener, & Simpson, 2001). Within the community psychology literature, sense of community refers to both the emotional ties between neighborhood residents and the emotional ties residents have to their immediate neighborhood (McMillan & Chavis, 1986).

Cohesion and sense of community (and Attachment) are theorized to operate in a similar way: Individuals who are more trusting and team-oriented, and who feel affiliated with the rest of the individuals in the setting as a whole (whether it be staff in an agency or residents in a neighborhood), would be more likely to join with the others to accomplish a goal (Lehman et al., 2002; Peterson & Reid, 2003). Thus, sense of community predicts involvement in substance abuse prevention activities (Peterson & Reid, 2003). We have narrowed this concept slightly to make it more applicable for measuring readiness in the field of community prevention research: The proposed concept of Attachment similarly measures emotional ties; however, it focuses on measuring the emotional ties residents have to their communities instead of also including the emotional ties residents have with each other.

The second proposed concept, Initiative, describes the level of active resident engagement in community activities. Change is most likely to happen with the active involvement of the target population (Armenakis et al., 1993; McMillan et al., 1995). Communities with a history and current orientation toward active resident involvement in community affairs are those most likely to demonstrate success in implementing collaborative prevention programs. The construct of Initiative, therefore, brings together the ideas of individual member influence and autonomy from the organizational psychology literature (Simpson, 2002) with the idea of citizen participation from the community psychology literature (Perkins, Florin, Rich, Wandersman, & Chavis, 1990).

The proposed third concept, Efficacy, describes the past success of community residents working together in order to improve their community. This construct applies self-efficacy on an individual level to the community level. On an individual level, the organizational literature has theorized that individuals who feel successful will have confidence in confronting new and challenging situations, which leads them to be more successful in the future (Bandura, 1989; Lehman et al., 2002). On a group level, collective efficacy refers specifically to the group's collective belief that the group can be successful in making change (Armenakis et al., 1993). Groups that have more favorable beliefs about their abilities are more likely to act in ways that will make them successful. On a community level, then, the thoughts and feelings that the community as a whole has been successful in making positive change happen before is more likely to stimulate the behavior that will lead to successful change.

The proposed fourth concept, Leadership, describes the effectiveness and consensus-building skills of local leaders. This construct brings together the emphasis of strong collaborative leadership skills within the organizational literature with the importance of leadership support within community psychology. Within the community psychology literature, the concept of leadership in terms of readiness focuses on the presence or absence of a leader for the specific change effort (Oetting et al., 1995). We draw on the organizational psychology literature, then, to build on this concept to describe not only the presence or absence of a leader, but also leadership quality. Generally, leaders who are able to engage individuals and build consensus and collaboration are more effective at making change happen (Lehman et al., 2002; Nelson, Raskind-Hood, Galvin, Essien, & Levine, 1998).

Sampling Method

Both the organizational psychology literature and the community psychology literature help clarify the appropriate target sample to assess readiness for community collaborative prevention activities. Within the organizational literature, readiness for organizational change is frequently assessed by interviewing or surveying both staff in the organization and the directors of that organization (Armenakis et al., 1993; Lehman et al., 2002; Nelson et al., 1998). Some have theorized that it is important to include individuals in all levels of the organization in order to accurately represent "the organization" (Simpson, 2002). Analyses can divide the sample into different groups, leaders versus organization staff, or aggregate the sample depending on the specific research question at hand (Lehman et al., 2002; Simpson, 2002).

Within the community psychology literature, some place importance on interviewing key leaders (Feinberg et al., 2002; McMillan et al., 1995; Oetting et al., 1995), whereas others place importance on surveying community residents (Beebe, Harrison, Sharma, & Hedger, 2001). Key leaders have been theorized as the most appropriate sample for several reasons. First, key leaders are likely to be the most knowledgeable about their community (Oetting et al., 1995). In addition, key leaders are frequently highly involved in the change effort and, therefore, most responsible for the success of the change effort (Feinberg et al., 2002). However, some researchers within community psychology note the important role of community members; without the support of community members, efforts by leaders are likely to fail (Beebe et al., 2001).

Blending these two literatures, then, identifies four potentially important target samples to measure the readiness for community collaborative prevention initiatives: general community members, staff in the participating agencies, agency directors in those agencies, and key leaders in their communities. We included all four subsamples in the present study. Those interviewed are part of a prevention team that is composed of general community leaders, parents, staff from involved agencies, and their agency directors. This method gathers information from a representative community sample, which allows us to test the agreement of a readiness construct in several ways, as previous research shows that community members in different roles sometimes perceive their community differently (Riggs, Feinberg, & Greenberg, 2002). Agreement can be tested within the entire community sample, within the key leaders (considered here those agency directors not involved directly in the community change effort), and within the prevention team community members; it can also be tested between these two subsamples.

Construct Validity

Blending these two literatures helps select the most salient concepts to assess the construct validity of the proposed readiness model. As noted earlier, the proposed model focuses on the preexisting psychosocial characteristics of communities. Other community organization

researchers have examined two additional psychosocial constructs in relation to readiness: community norms regarding the problem behavior and residents' perception of the awareness of the problem in the community (Beebe et al., 2001; Plested, Smitham, Jumper-Thurman, Oetting, & Edwards, 1999). Communities that are rated as "more ready" by prevention specialists have community members that have less favorable attitudes regarding adolescent substance use (Beebe et al., 2001) and a higher awareness of the problem (Plested et al., 1999).

Additionally, involvement in neighborhood block organizations and community task forces has been investigated in relation to sense of community and the general concept of empowerment. Research has found that, in general, community participation is predicted by an awareness of the problem and a strong sense of community (McMillan et al., 1995; Perkins et al., 1990), and it also relates positively to psychological empowerment, which includes elements of initiative and perceived efficacy (McMillan et al., 1995).

The present study draws from this research in using similar variables to assess the construct validity of the proposed readiness model. We expect collaboration involvement (similar to community participation), community norms of substance use, and the perceived availability of substances (similar to the awareness of the problem) to predict community readiness. The rationale is as follows: If community members do not perceive a situation as problematic—either because they themselves engage in the problem behavior or because the situation is not seen as severe (e.g., the problem is "underground")—community members would likely not have a history of active involvement in prior change efforts. This history and orientation would lead to lower levels of Initiative and Efficacy.

From an organizational perspective, the attitudes and priorities that organizations have toward prevention, collaboration, and new ideas may have a substantial impact on the activities of their employees in community collaborative change efforts. Organizations that are more supportive of the change effort and open to new ideas are more likely to be more efficient partners in creating change (Lehman et al., 2001). Workplace atmosphere has been linked empirically to outcomes such as employee initiative (Morrison & Phelps, 1999) and workplace satisfaction (Ferguson, 1983). Specific to schools, research shows that the level of principal and district support impacts program implementation (Kam, Greenberg, & Walls, 2003).

In this study, the collaborative change effort includes several community organizations (described below) and the school district. Measuring the psychosocial characteristics of the school and other involved organizations will help assess the readiness of involved organizations and it can validate the degree to which the proposed construct globally measures these characteristics of communities. Thus, we include here measures of school functioning, workplace support of prevention activities, and the degree to which the workplace is open to new ideas. We expect that communities with better functioning school districts and workplaces that value prevention and are more open to new ideas will have higher ratings of community readiness. The rationale is as follows: Organizations with these characteristics are likely to support involvement in community prevention activities, which would stimulate higher levels of Attachment, Initiative, and Efficacy. In addition, community Leadership is likely to be viewed as more consensus and collaboration oriented when the community's workplaces have these characteristics.

Summary

Integrating the organizational psychology and community psychology literatures helps form the theoretical base to the present study. First, measurement of community readiness should occur prior to program implementation. Second, the most salient psychosocial characteristics of communities are likely to be Attachment, Initiative, Efficacy, and Leadership. Third, it is

important to include regular community members, as well as key leaders, agency staff, and agency directors within the sample. Lastly, prior collaboration involvement, school functioning, community norms and the perception of the problem, and indicators of the workplace atmosphere are appropriate and necessary constructs to include in assessing construct validity.

THE CURRENT STUDY

The current study evaluates readiness in the context of a school–community–university research project examining a sustainable, partnership-based approach to prevention dissemination. PROSPER (PROmoting School–community–university Partnerships to Enhance Resilience) was developed to catalyze the formation of community–school teams through state universities' county extension representatives. The PROSPER model utilizes a linking-agent framework to develop a community-based prevention team that includes both community and school leadership (Spoth, Greenberg, Bierman, & Redmond, 2004). The local PROSPER team is co-led by a local Cooperative Extension service (CES) educator and a representative of the local public schools (i.e., principal, vice-principal, or guidance counselor); other team members include representative community stakeholders (i.e., parents, mental health and substance use workers, faith leaders, youth). Local teams are targeting middle school students' substance use through implementing evidence-based family and classroom prevention programs.

In pursuit of the three main goals, this paper theorized a readiness model, and now proposes three main research questions. First, using a latent variable approach, what is the relationship among the four hypothesized subdimensions of *community readiness* (Attachment, Initiative, Efficacy, and Leadership) in a sample of community prevention team members? Second, what is the relationship between team members' report of community readiness and other school and community characteristics? Third, what is the level of agreement of the construct within and between prevention team members and an independent sample of respondents from the same communities? In addition, this paper takes a multilevel approach in assessing these relationships, as both individual and group-level assessments of readiness have been theoretically and empirically related to implementation of change (i.e., Armenakis et al., 1993; Feinberg et al., 2004).

METHOD

Participants

The full sample includes 255 individuals within 28 communities located in 2 states (14 randomized communities within each state, 7 intervention and 7 control). In the intervention communities, individuals consist of local stakeholders recruited for the PROSPER project teams. These individuals include local Cooperative Extension and school representatives (who serve as coleaders of the local team), local mental health and substance abuse agency representatives, parents, and youth. In the control communities, similar representatives from Cooperative Extension, the school, and the community were recruited. In addition, persons serving as workplace supervisors were interviewed in both intervention and control communities (from this point forward called "agency directors"). For analyses, the full sample is divided into two groups: 183 team members (TM) and 72 agency directors (AD).

In control communities, the number of respondents per community ranged from 4 to 10, with a mean of 6.9; the number of respondents in intervention communities ranged from 8 to 15, with a mean of 11.3. There were purposefully fewer participants in control communities because they are used for comparison purposes to assess community characteristics and outcomes, rather than to assess team dynamics. Respondents ranged in age from 23 to 65 (*M*

= 44.7, *SD* = 9.21), and 45.1% of respondents were male. All respondents indicated completing a minimum of a high school education or GED, with 94.1% of the sample having obtained a college degree. Seventy-four percent of the sample lived in or near the school district that organized the PROSPER intervention team.

Procedure

Recruitment—Primary eligibility criteria for communities considered for the project were (a) school district enrollment of 5,200 or less and (b) at least 15% of the student population eligible for free or reduced-cost school lunches. Communities in which over half of the population was either employed by, or attending, a college or university were excluded from the project, as were communities that were involved in other university-affiliated prevention research projects with youth. Twenty-eight communities were recruited. Subsequently, two communities (one in each state) withdrew during the first two months of their participation and were replaced.

The participating universities' institutional review boards authorized the study before participant recruitment began. Community and participant recruitment followed several steps. First, initial contacts were made with regional- and/or county-level Cooperative Extension personnel about their interest in the project. Where there was interest in the project and personnel were available, project investigators explained the project in more detail to the Extension personnel who had the requisite programming expertise. Subsequently, investigators and Extension personnel met with local school district superintendents and principals to describe the project's partnership model and research design. Communities that had both a committed school district and county extension agent were recruited to participate.

After community selection, districts were blocked by size and state and then randomized in order to minimize potential systematic differences. The community team members (intervention communities) and comparison group (control communities) team members were recruited by the team leader and coleader (the county extension agent and the local school representative).

Assessment—Team members (TMs) and their agency directors (ADs) participated in a one-hour computer-assisted face-to-face interview within two months of team initiation. (Team members also serving as agency directors received a slightly longer interview.) Upon completion of the interview, participants were compensated with $20.

Measures

Several scales describing individual and community characteristics were constructed. Unless otherwise noted, response items ranged on a four-point Likert scale from "Strongly Disagree" to "Strongly Agree," and both ADs and TMs responded to the items. All scales were formed by taking the mean of the scale items.

To measure *community readiness,* four conceptually based subscales were developed. Community attachment is a three-item scale ($\alpha = 0.56$; adapted from Wandersman, Florin, Friedmann, & Meier, 1987) measuring the level of resident investment and closeness in a community; an example item of community attachment is: "Most people who live here feel a strong tie to this community." *Community initiative* is a four-item scale ($\alpha = 0.65$) adapted from Feinberg et al. (2004) measuring the level of active engagement of community members; an example item (reverse scored) of community initiative is: "It is difficult to get people in this community involved in community activities." *Community efficacy* is a four-item scale ($\alpha = 0.66$) adapted from Feinberg et al. (2004) and Wandersman et al. (1987) measuring the ability of community members to work together for community benefit; an example item of

community efficacy is: "In the past the community has been successful at addressing social problems." *Community leadership* is a four-item scale (α = 0.81; Feinberg et al., 2004) measuring the effectiveness of community leadership; an example item of community leadership is: "Community leaders are able to build consensus across the community."[1]

Individual collaborative experience was measured by asking TMs questions to assess their prior collaborative involvement: individually, their involvement in collaboration, and their leadership within the collaboration.

Two scales were used to measure the *workplace atmosphere*. First, *agency support of prevention* (α = 0.56) is a three-item scale created to measure the degree of agency support for prevention activities; a sample item is: "My agency commits resources to planning and conducting prevention programming." *Workplace openness* (α = 0.83) is a four-item scale adapted from Moos and Insel (1974) measuring the degree to which new ideas are appreciated; a sample item is: "At my workplace new and different ideas are always being tried."

Two scales assess perceptions of *school functioning. School proactive* (α = 0.80) is a four-item scale that assesses the degree to which the school leadership is perceived as effective and proactive; an example item is: "The middle school does a good job of reaching out to parents." *School problems* is a two-item scale (*r* = 0.33) that assesses the degree to which the school is perceived to be plagued with problems; an example item is: "Problems seem to overwhelm the middle school."

Two scales were adapted from the Minnesota Community Readiness Survey (Beebe et al., 2001) to measure *community norms and the perception of the problem.* First, *community substance use norms* (α = 0.83) is a six-item scale assessing the community's acceptance of adolescence substance use; an example item is: "Adults in [this community] think the use of alcohol is a normal part of growing up." Second, *substance availability* (α = 0.86) is a six-item scale assessing how accessible substances are to adolescents. Participants responded on a 1–4 scale ranging from very difficult to very easy: "How easy is it for middle school students in your community to obtain [alcohol/tobacco/marijuana/ecstasy/metham-phetamine/other substances]?"

Community demographics—Two community demographics from the U.S. Census (2000) were aggregated on a school-district level by the National Center for Educational Statistics (2003). *Community poverty* measured the percentage of families below the poverty threshold (*M* = 6.81, *SD* = 1.93). *Urban/ruralness* was measured with *population density* (*M* = 265.01, *SD* = 287.59).

RESULTS

The Construct of Community Readiness

We used structural equation modeling (SEM) with AMOS, Version 4 (Arbuckle, 1999) with maximum likelihood estimation to test the fit of our hypothesized second-order factor model. This analysis had two steps. First, the hypothesized model fit was assessed in comparison to an alternative independence model that estimated means and variances of the observed variables (see Figure 1). Second, the fit of an alternative one-factor readiness model was assessed in comparison to the same independence model. Both models were identified by setting factor means to zero and factor variances to one.

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[1]All scales with their complete items can be obtained from Mark Greenberg at mxg47@psu.edu, Prevention Research Center, 109 S. Henderson, University Park, PA 16802.

See Table 1 for a summary of the fit indices. As outlined by Hu and Bentler (1995), we used multiple fit indices (the chi-square, Tucker Lewis index [TLI], comparative fit index [CFI], relative noncentrality index [RNI], root mean square error of approximation [RMSEA], and the change in chi-square to change in degrees of freedom ratio for the nested models) to assess model fit. Based on the combination of several factors, our hypothesized four-factor model was deemed to have the best fit. This model reported a nonsignificant chi-square value χ^2 (86, $N = 183$) = 108.57, $p > 0.05$. In addition, in comparison to the baseline model, the relative fit indices were above 0.90 (0.947 TLI/0.957 CFI/0.957 RNI), and the RMSEA was within the acceptable range (0.038). In addition, all regression weights (factors to items) were high, generally similar, and significantly predicted by their respective factors (see Figure 1).

In contrast, the alternative one-factor readiness model was shown to fit poorly. The chi-square value χ^2 (90, $N = 183$) = 182.70, $p < 0.001$ was significant, and all relative fit indices and the RMSEA were below acceptable values. In addition, the change in chi-square and change in degrees of freedom χ^2 (4, $N = 183$) = 74.13, $p < 0.001$ between our hypothesized model and this alternative model was significant. One similarity remained between both models: All regression weights (factors to items) remained significantly predicted by the single readiness factor.

Relation of Community Readiness with Individual, School, and Community Factors

Two sets of analyses examined the relation of community readiness with individual and community characteristics. First, the individual, school, community, and workplace characteristics were added to the SEM model as predictors of perceptions of community readiness (correlations between the predictor variables were estimated). Model fit, the significance of regression weights, and the r-squared were assessed. Second, at the level of the community, hierarchical regressions[2] were run in order to assess the amount of shared variance between community readiness and the independent variables, along with significant variance of each domain.

The fit of the community readiness model predicted by individual and community characteristics was deemed to be acceptable. Although the chi-square value was significant χ^2 (198, $N = 183$) = 260.52, $p = 0.002$, all relative fit indices were around 0.90 (TLI = 0.887/ CFI = 0.912/RNI = 0.912), and the RMSEA was within acceptable range (0.042).

In assessing the value of individual, school, community, and workplace characteristics in predicting community readiness, team members' history of collaborative experience ($\beta = 0.28$, $p < 0.001$) and perceptions of school proactiveness ($\beta = 0.25$, $p < 0.01$), school problems ($\beta = -0.19$, $p < 0.05$), and community substance use norms ($\beta = -0.27$, $p < 0.001$) were all significant predictors of perceptions of perceived community readiness; that is, individuals with more experience in collaboration, and those who perceived better functioning schools and less acceptance of adolescent substance use, rated their communities as more ready. This model accounted for a significant (34%) amount of variance in readiness $F(8, 145) = 11.07$, $p < 0.001$.

See Table 2 for results of the community-level analysis. The community-level analysis showed similar findings. The final five-step model including community demographics, team member characteristics, characteristics of school functioning, community substance use atmosphere, and workplace characteristics was significant, $F(10, 17) = 4.94$, $p < 0.01$. Individual characteristics, perceptions of school functioning, and the community substance use atmosphere each added significant additional variance in predicting ratings of community readiness. That is, teams with older team members and those with more experience in

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[2]Hierarchical regressions were run at the community level due to the conceptual and statistical distinction of the multiple domains (community demographics, individual, school, community substance atmosphere, and workplace).

collaboration rated their communities as more ready; teams that reported their school districts as better functioning rated their communities as more ready; and teams that reported their communities' norms were more accepting of adolescent substance use rated their communities as less ready.

Level of Within-Community and Cross-Respondent Agreement

Two sets of intraclass correlations (ICCs) were calculated in order to assess the degree to which respondents within communities agree on the level of readiness in their community. The ICC is a useful tool to use to answer this question because it is based on a reparame-terization of total variance into the variance component due to variability between communities and the variance component due to variability within communities. The ICC represents the variance between communities divided by the total variance, and ranges from 0 to 1. High values indicate that a large proportion of total variance is due to variability between communities, not to within-community variability. If respondents within each community agree on the readiness of their community, and there is a fair degree of variability across communities in the level of readiness, then the ICC should be relatively large.

ICCs were first calculated for the readiness measure and each subdomain with the full community sample to assess the agreement of all individuals within the same community. We then calculated these ICCs for the same measures separately by reporter (i.e., TMs, ADs).

See Table 3 for the ICC values and significance levels. The full sample analysis demonstrated significant ICCs ($p < 0.05$) for the initiative, efficacy, and readiness scales, while the attachment subscale value approached significance ($p < 0.10$). For the ICCs by respondent type, the ICC was significant for the initiative, efficacy, and community readiness scales. The ICC for community agency directors was significant for the efficacy scale.

Two analyses were run to assess the agreement between the TMs and ADs. First, simple correlations of the subscales were run for each sample to assess how the construct operated within each sample. Second, simple correlations were run across average AD and TM reports for each community. This analysis included creating mean scale scores that were aggregated by respondent category (AD vs. TM) within community for the community readiness scale and each subdomain.[3]

The simple correlations for the readiness subscales were quite similar for both TMs and ADs. All subscale correlations ranged from $r = 0.52$ to 0.73, with the exception of the correlation between the attachment and leadership subscales (the correlation was about 0.30). Hence, the construct seems to operate similarly within each sample.

Cross-respondent type correlations are presented in Table 4. Ratings of readiness and each subscale ranged from small to moderate ($r = 0.15$ to 0.31, $p < 0.15$); that is, respondents at different organizational levels from the same community show low levels of agreement about the level of readiness in their communities.

DISCUSSION

This study examined the construct of community readiness and its relationship to multiple individual and community domains. Results of this study indicate that perceived community readiness is a multidimensional, yet cohesive, construct, and is related to community and individual characteristics shown to be important in both the organizational and community prevention literatures.

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[3]In this analysis $n = 27$ instead of $n = 28$. One intervention community did not have any ADs who were not also team members.

The Construct of Community Readiness

Latent variable analysis demonstrated that an expansion of the community self-organizational model of community readiness (Feinberg et al., 2002) can be best conceived as four distinct, yet interrelated, factors: Attachment, Initiative, Efficacy, and Leadership. How individuals feel about their communities, along with the degree to which individuals will get involved to make positive changes, how successful communities have been in the past, and the consensus-building skills of local leadership are all related, yet they are conceptually and statistically distinct concepts.

Essentially, this analysis brings up one important point that every readiness model takes: that readiness, and specifically, in this case, community readiness, is multidimensional (Beebe et al., 2001; Edwards, Jumper-Thurman, Plested, Oetting, & Swanson, 2000; Feinberg et al., 2004; Goodman et al., 1998; Lehman et al., 2002). Although different readiness models place emphasis on different constructs, they all include multiple domains of assessment. At this point, researchers may disagree about the specific constructs that are the most important aspects of readiness, but it is clear that a comprehensive assessment of community factors from multiple reporters is necessary to characterize communities. A clear articulation of a theory of change and longitudinal data are needed to help discriminate which factors and reporters are the most salient predictors of later community success.

Community Readiness with Individual, School, and Community Factors

The multivariate analyses indicated that community demographics, perceived school functioning, substance abuse norms, and team members' personal history of collaboration all were related to community readiness. These findings provide initial construct validation for the readiness measure, that this construct is tapping into an underlying community atmosphere.

Our findings indicate that community size and poverty, along with member collaboration levels, perceptions of school functioning, and community substance use norms, all relate to perceptions of community readiness. Community size and poverty could affect the amount of community resources available for the prevention project (Edwards et al., 2000; Murphy-Berman et al., 2000) that is suggested at the organizational level (Lehman et al., 2002). It is possible that communities that had team members with more collaborative experience also have more community-wide interagency collaboration. Collaboration levels could be assumed as part of the groundwork preparation needed for successful community change efforts (Edwards et al., 2000); in addition, intraorganization collaboration may be inherent within the organizational approach to readiness (Armenakis et al., 1993). Previous community involvement, if successful, is likely to produce stronger attachment to communities and feelings of initiative and efficacy (McMillan et al., 1995), and also help community leaders build a consensus and collaborative-oriented reputation.

This is the first time school functioning has been explicitly examined in relation to community readiness. The PROSPER model brings together school districts and community agencies in pursuit of quality youth and family programs. The school district defines the recruitment population and acts as a partner through the implementation process. Perhaps the finding that the school's proactive stance and level of problems relate to community readiness indicates a sense of empowerment and accomplishment that can be built upon in community-based prevention initiatives. It may also indicate the important role of school board members as leaders in rural communities and small towns, where they may be central to community life. Although school functioning was a strong predictor of community readiness, other community factors also were important. This finding also indicates that although community characteristics may be related to school district functioning, they are not identical. Longitudinal analyses are

needed to assess the degree to which community readiness and school functioning are independent predictors in the community-school collaborative prevention process.

Community norms regarding adolescent substance use demonstrated significant negative relationships to readiness. This finding replicates earlier findings (Beebe et al., 2001) and validates community norms as important in the early stages of readiness (Edwards et al., 2000). However, the availability of substances did not predict ratings of readiness. It could be argued that substance availability may have had less salience because it has less variability between communities: Teens may have relatively easy access to alcohol and illegal drugs in most communities. Nevertheless, future research should continue to investigate how community substance use characteristics relate to readiness and overall prevention implementation.

Although workplace characteristics demonstrated significant correlations with readiness, they were not significant in the multivariate model. This may be because other variables, such as collaborative experience, account for its effect; team members with greater collaborative experience are likely to work in agencies that support such activities. It is also possible that these characteristics drop out of the model because within one community, there are many different workplaces with many different types of leaders and missions. Perhaps there is just too much variability between workplaces for these constructs to coalesce to describe an underlying community atmosphere.

Level of Within-Community and Cross-Respondent Agreement

This analysis demonstrated small to moderate agreement of community perceptions between prevention team members and their agency directors. This analysis is similar to, and replicates, the findings of Lehman et al. (2002). Similar to Lehman et al. (2002), we theorize that this level of agreement is the result of differences in experience and in position. The prevention team members are those individuals "on the ground" and "doing the work" in their communities. They, potentially, have more direct contact with community members and are able to better relate to fellow community members. In addition, their successful recruitment onto the PROSPER team indicates that they have a strong commitment to prevention and believe that adolescent substance use can be improved in their communities.

On the other hand, the agency directors are in decision-making positions, and potentially have had more years of experience working in the human service industry and in their communities. They may have less immediate contact with the community members that their agencies serve, but because of this division, their perceptions may be more objective.

From an organizational perspective, it is possible that there are multiple levels of readiness: one among practitioners and one specific to organizational leadership and administration. In this sense, practitioners may have certain skills and experiences that are salient to getting the community involved, whereas the readiness of administrative leadership may be more salient when it comes to finding financial support.

That small to moderate agreement about community readiness between these two samples suggests that theories of change need to become more explicit in measuring and assessing readiness and program functioning. "Whose perception of readiness matters?" is both a theoretical and an empirical question open to longitudinal investigation. Analyses at both the individual and community levels suggest that community readiness operates the same way as, and has the same relationships with, other community characteristics at both levels. Theories of change should incorporate both respondent type and organizational level in measurement.

Several Different Models: When to Use Which One

Community readiness research has a longstanding position in community intervention research, yet the topic has received a burst of attention recently. Organizations, communities, and community-collaborative prevention programming are complicated systems, and readiness can be measured at multiple levels. Different models may be more useful in different contexts and with different purposes. For example, the stage model (e.g., Edwards et al., 2000) is very concrete and may be a good technical assistance tool for researchers, consultants, and program evaluators to use with communities to provide immediate feedback. Perhaps drawing information directly from community members (e.g., Beebe et al., 2001) may be more important when a program requires grassroots support/involvement. The organizational change model (e.g., Armenakis et al., 1993; Lehman et al., 2002) may be useful for small-scale change efforts—change within an organization or a limited sample—whereas the community self-organizational model may be more appropriate for large-scale projects involving several community partners. In addition, empirical findings from each model should complement and be integrated when appropriate.

Limitations

These findings should be interpreted within the limitations of sample size, self-report, and community demographics. Although the number of communities involved in this intervention research project is moderate to large in comparison to the field, it lacks sufficient power to detect some potentially significant relationships. In addition, by design, significantly fewer agency directors were approached for assessment. A larger number of agency directors would have enabled us to examine statistical invariance testing with team members and agency directors, and it would have provided greater confidence in making generalizations about their position in the community.

This analysis is based on individual perspectives of community readiness. This method of data collection has inherent benefits and challenges. Many argue that considering individual perspectives is more important than objective measures in predicting behavior in social science research. However, analyses were run at both the individual level and the community level to compensate for this potential limitation. It could be argued that aggregating several individual scores helps us reach a community's "true score" on a construct. The significant agreement of prevention team member perceptions supports this idea.

Lastly, these results apply to small, and mostly rural, communities. There is variation in population density, but none of these communities have an urban core. Future research should expand investigation of these concepts into more diverse populations.

CONCLUSION

These results demonstrate that perceived community readiness is a multidimensional, yet cohesive, construct and is related to hypothesized community and individual characteristics. These results support the notion that clear "theories of change" need to be formulated when assessing community readiness, as assessments will vary due to several factors: the type of respondent, the level in which analyses are conducted, and the specific community domain (i.e., school, workplace collaboration, collaboration experience) investigated. Longitudinal community-level studies are necessary to examine how community readiness impacts prevention team functioning, quality of implementation, and sustainability of prevention efforts. Integrating organizational studies with community prevention research enabled a more comprehensive and meaningful assessment of readiness.

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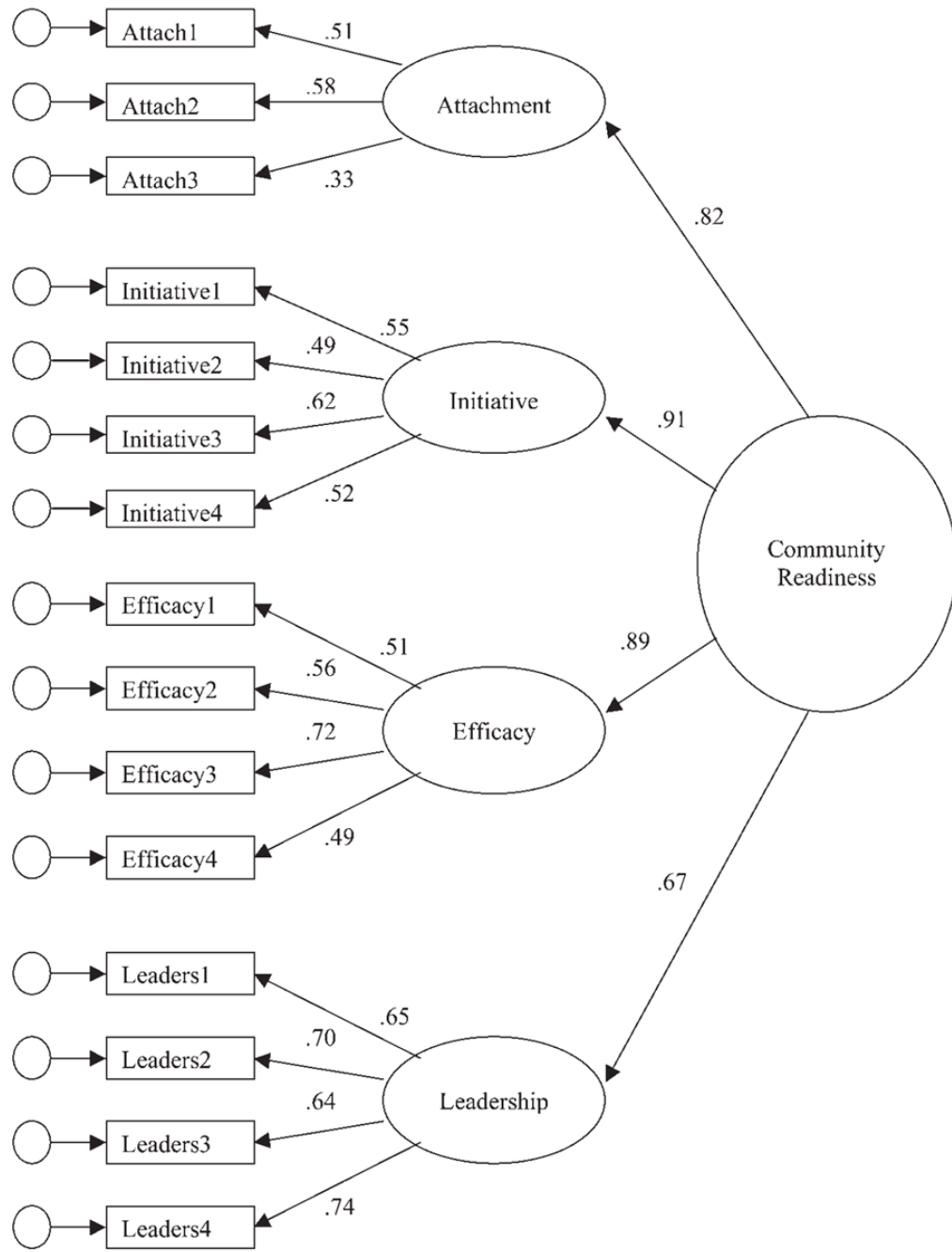
Figure 1.
Hypothesized second-order factor model with standardized factor loadings.

Table 1

Fit Statistics for Latent Variable Readiness Analyses

Model	Df	χ^2	p	TLI	CFI	RNI	RMSEA
Hypothesized	86	108.57	.051	.947	.957	.957	.038
Alternative	90	182.70	.000	.793	.823	.823	.075
Baseline	105	688.26	.000				

Table 2

Community Readiness Predicted by Individual and Community Characteristics at the Team Level

	Simple r	β^+	R^{2++}	ΔR^2	F-test for ΔR^2
Step 1: Community Characteristics					
Poverty	−.07	−.30 *			
Population Density	−.36 *	−.58 ****	.07	.07	1.99
Step 2: Individual Characteristics					
Age	.10	.35 **			
Prior Collaborative Experience	.47 **	.35 **	.28	.21	3.35 **
Step 3: School Functioning					
School Proactive	.10	.54 ***			
School Problems	−.40 **	−.31 *	.51	.23	4.93 **
Step 4: Community Substance					
Substance Use Norms	−.47 **	−.29			
Substance Availability	−.29 *	.10	.63	.12	3.08 *
Step 5: Workplace Characteristics					
Agency Support Prevention	.32 *	.00			
Workplace Openness	.32 *	.10	.59	−.04	0.00

*
$p <= .10;$

**
$p <= .05;$

***
$p <= .01;$

****
$p <= .001.$

+ β final weights for the model.

++ R^2 adjusted values.

Table 3

Community Readiness and Subscale ICC Values for TM, AD, and Full Sample

Scale	Team Member	Agency Director	Full Sample
Attachment	.08	.02	.10[*]
Initiative	.23[***]	.08	.15[***]
Efficacy	.19[**]	.15[*]	.15[***]
Leadership	.00	.00	.04
Community Readiness	.20[***]	.04	.14[**]
	$n = 180$	$n = 71$	$n = 251$

[*] $p <= .10$;

[**] $p <= .05$;

[***] $p <= .01$.

Table 4

TM Report of Community Readiness with AD Report of Community Readiness, n = 27

	Team Member				
	Readiness	Attachment	Initiative	Efficacy	Leadership
AD Readiness	.23	.33 **	.10	.31 *	.01
AD Attachment	.27	.37 **	.21	.41 ***	−.10
AD Initiative	.32 **	.44 ***	.26	.38 ***	−.04
AD Efficacy	.08	.08	−.02	.18	.00
AD Leadership	.13	.23	−.02	.13	.11

*
$p <= .15$;

**
$p <= .10$;

***
$p <= .05$.