Challenging sustainability in school-based intervention in Nicaragua

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Abstract

Purpose – The current study identifies successes and limitations of sustaining Dale se Real (DsR) as a school-based educational intervention program related to drugs and violence for 7th and 8th grade students in Nicaragua, Central America. As evidence-based interventions are transported and imported across national borders, issues surrounding their adaptation and sustainability become important targets for investigation.

Design/methodology/approach – Interviews were conducted with nine key informants (e.g. school directors, implementers) from seven institutions, four of which sustained DsR and three of which did not. This study explores DsR's fit with the institutions' missions and routines, program adaptability, broader community support and sustainability planning.

Findings – Findings demonstrate two emerging views of sustainability within the Nicaraguan schools: a deficit approach and an empowerment approach. These two approaches imply different motivational structures for institutions and also led to the practical finding that developers and trainers need to provide structured or formal ways of empowering schools to continue implementing a program after staff no longer routinely contact them.

Originality/value – This study contributes a particular case on what facilitates and impedes sustainability of school-based interventions that can inform future intervention research in Latin American countries.

Keywords Sustainable development, Community-based intervention, Implementation, Lower middle-income countries

Paper type Research paper

A growing issue for intervention scholars is understanding how to sustain health interventions after funding is spent (Scheirer and Dearing, 2011), especially in low resource contexts that may not be able to afford continued program updates, trainings and technical support. Only about half of health programs continue after funding has ended (Scheirer, 2005), and even fewer operate at the same level of quality (Cooper *et al.*, 2015). In such contexts, promoting sustainable

implementation of effective prevention programs may be one of the most powerful ways to produce public health impact (Catalano *et al.*, 2012; Gruen *et al.*, 2008). Policymakers, researchers and communities would benefit from learning what enables and thwarts program sustainability (Hansen *et al.*, 2007; Scheirer and Dearing, 2011). Particularly, hearing the voices of groups who initially participate and then discontinue health education programs can provide insight into reasons for sustaining or terminating program delivery.

The current study contributes toward understanding sustainability of school-based interventions by exploring these issues in the lower middle-income country (LMIC) of Nicaragua. This case is one of the first to examine health intervention sustainability in Central America. A systematic review of school- and community-based mental health interventions in LMICs identified only 32 mental health interventions represented in the literature, with a final sample of only 22 studies that fit the review criteria (Barry *et al.*, 2013). Only one of these was conducted in Central America in Honduras. Another study examined sustainability of community health workers in LMICs and identified 16 countries in their review, none from Central America (Pallas *et al.*, 2013). These reviews attest to the fact that little is known about health education in this region of the world. Moreover, as researchers in Panama warn, despite the fact that Latin America as a whole has similarities, each country has its own distinct culture which implies the need to test and implement health-based intervention programs in different cultural settings (Mejia *et al.*, 2015). As one of the poorest countries in Central America with limited intervention infrastructure, this study offers a compelling case for understanding how to best implement and sustain programs in Nicaragua. The current study adds to existing literature on the need for intervention programs that maintain adaptability and fidelity across various contexts (Hansen, 2013). As evidence-based interventions are transported and imported across national borders, issues surrounding their adaptation and sustainability become important targets for investigation.

Sustainability in review

Program sustainability is a multidimensional component generally defined as a community's continued use and implementation of an intervention program toward desired outcomes after the initial or seed funding has ended (Glasgow *et al.*, 1999; Scheirer and Dearing, 2011). Sustainability is an integral and necessary phase of intervention frameworks (Scheirer and Dearing, 2011). For example, a visionary model proposed by Glasgow *et al.* (1999) positions *maintenance* as the final state of the reach, effectiveness, adoption, implementation, maintenance (RE-AIM) framework. Program maintenance, they argue, requires institutionalization to support enduring practice or policy within an organization or community. Others (e.g. Rabin *et al.*, 2008; Weiss *et al.*, 2012) have suggested that capacity building (i.e. garnering or allocating local resources to continue intervention efforts) and adequate infrastructure are needed to maintain intervention efforts. In general, intervention sustainability requires continued attention to and mitigation of problematic conditions by *local* community stakeholders. This begs the question, what are the processes by which responsibility for delivering programs transfers to local communities?

As communities take responsibility for delivering and administering interventions, an important goal is achieving appropriate fit (i.e. aligning program's demands and an organization's ability to meet those demands). Program fit not only includes program aims and community needs but also community capacities and demands of administering a program long term (Barrera *et al.*, 2016; Wiltsey Stirman *et al.*, 2012). For example, if transportation is required to attend sessions but communities have no resources to provide it, programs likely will fail (e.g. August *et al.*, 2006). Factors of program fit that research has identified to differentiate sustained versus unstained programs were lack of administrative support, inadequate staff, problems with participant engagement, participant recruitment and competing internal demands (Cooper *et al.*, 2015). In the context of LMICs, one review identified that when communities were involved in recruiting and hiring program staff, when

the approach matched religious, moral and social norms and when communities saw the program as beneficial, there was a better chance for sustained programing (Pallas *et al.*, 2013). Sustainable programs, then, should resonate with target populations (e.g. attract and engage participants, involve communities in staffing decisions) and also match local financial and organizational capabilities (e.g. garner supportive staff and administers, attain organizational priorities). When there is alignment or good fit, local communities tend to take responsibility for interventions.

To sustain an intervention does not mean it must stay in its original form. Maintaining a good fit between a program and community often requires adaptation (Scheirer and Dearing, 2011), and programs often are sustained because of their adaptability (Barrera *et al.*, 2016; Shediac-Rizkallah and Bone, 1998). This presents a paradox: adaptability enhances stability (Chambers *et al.*, 2013). Rather than freezing a program when its efficacy is established through a randomized controlled trial and then widely disseminating it with 100% fidelity, sustainability is supported by "an alignment, compatibility, or convergence of problem recognition in the external organizational environment or community, the program in question, and internal organizational objectives and capacities" (Scheirer and Dearing, 2011, p. 2,060). Flexible fit allows programs to adjust to shifting exigencies in society, engendering sustainability.

Models for how organizations can sustain through adaptation have been proposed. All of these models attempt to balance theoretical fidelity with practical adaptation to deliver a static program in a dynamic environment. For example, Evans *et al.* (2015) suggest four "reinvention" points, which allow for interventions to be optimized through "interaction with individual agents and contextual features" (p. 761). Barrera *et al.* (2016) call for local adaptations that maintain programs' underlying theoretical mechanisms while altering aspects of a program that might enhance local sustainability. These models seek to guide the prevention community through the complex steps needed to keep essential program components while letting nonessential parts vary.

This goal is good but has not always been realized in practice. Wiltsey Stirman *et al.* (2012) reviewed 125 intervention studies and found that fewer than half of communities continued programs with high levels of fidelity and that communities sustained only particular parts of interventions rather than entire programs. This can be problematic depending on which components were kept and excluded. Other work suggests that teachers frequently adapt interventions to fit their teaching style (Pettigrew *et al.*, 2013) and to address time and external constraints (Miller-Day *et al.*, 2013). If convenience or comfort drives adaptations, there is a danger of unknowingly removing the important "active ingredients" of programs (Abry *et al.*, 2017, p. 194). Ultimately, successful programs manage fit and adaptability while leveraging existing community resources.

Other aspects that influence sustainability have been identified. In LMICs, these included having a well-designed and managed program (e.g. respected individuals as implementers, consistent and effective management of program staff, adequate training and appropriate remuneration) as well as integration of program activities within existing structures and systems. A US study showed that community outreach (i.e. presenting program findings to stakeholders) and communication with program trainers (annually or up to monthly) also significantly differentiated groups that sustained versus those that discontinued school-based programs (Cooper *et al.*, 2015). Others emphasize that planning for sustainability, not surprisingly, increases program continuation (Cooper *et al.*, 2015; Scheirer and Dearing, 2011). Based on prior research, it is important to assess how a program content fits with an institution's mission as well as capacity, program adaptability and sustainability planning.

Current study
The current study explores issues surrounding sustainability in the context of Nicaragua, Central America. Data come from an interview assessment of the Dale se REAL (DsR)

program. DsR is a school-based drug and violence prevention program. DsR is culturally regrounded (Colby *et al.*, 2013) to the Nicaraguan adolescent context from the evidence-based programs *keepin' it REAL* (Hecht *et al.*, 2006) and the *Fourth R* (Wolfe *et al.*, 2009) programs. Thus, the program content and delivery design were adapted to fit Nicaraguan youth culture and also local school implementation processes. The current study focuses on fit/adaptability, organizational support and planning surrounding the DsR program in Pacific regions of Nicaragua. This case offers a glimpse into an important topic in a region of the world that, like other LMICs, is experiencing an increase in prevention activities. This study therefore contributes to understanding some of the issues facing school-based prevention programs in LMICs where intervention programs are being transported.

The aims of the current study are to (1) assess the sustainability of DsR in various Nicaraguan institutions, (2) understand how Nicaraguan institutions describe factors that contributed to continuation or discontinuation of the DsR program and (3) discover the processes institutions use to plan for sustainability.

Methods

A total of 23 schools and youth service organizations (hereafter, institutions) implemented the DsR program in 2015. Financial support for DsR ended after implementation in 2015 and restarted with the school year in 2017, thus creating a unique window of opportunity in 2016 to explore program sustainability. All 23 institutions were invited to participate in qualitative, follow-up interviews to learn about barriers and facilitators to sustaining implementation of the program. A total of seven institutions (30%) agreed to participate and nine 20–40 min interviews were conducted with key informants (e.g. school directors, implementers). Informed consent was obtained from all participants and no compensation was offered. The seven institutions represented a total of 437 youth, about evenly split between 7th and 8th grades, ranging from eight to 60 students in each grade.

Interviews began with a broad question, "Can you please share with us about your experience with the DsR curriculum?" and continued by probing for current and future plans for implementing the program. We then asked about the factors that made it easy or difficult to implement DsR. Questions included asking about internal and external factors, decision-making process and decision-making authority as well as how schools selected program instructors. We closed the interview by asking participants to imagine they were responsible for sustaining the program and to share "the most important steps to maintain DsR for the next two years."

Interviews were originally conducted in Spanish and audio recorded. Bilingual members of the research team listened to audio recordings and typed English summaries of responses for each interview question. English summaries were then coded into four sustainability categories developed based on existing sustainability literature (e.g. Cooper *et al.*, 2015; Scheirer and Dearing, 2011). These included (1) fit with organizational mission and routines, (2) adaptability, (3) organizational readiness/support and (4) planning for sustainability. Analysis further considered which institutions continued DsR during 2016, the year following initial implementation. A total of four institutions continued the program and three did not. All institutions, at the time of the interview, stated they planned to continue or resume the program in 2017. All methods used in this study were submitted for ethical review and approved by a university institutional review board.

Results

This section presents an in-depth view of challenges to sustainability across the four predefined categories based on prior research. We assess how DsR fits with the institutions'

missions and routines, program adaptability, broader community support and sustainability planning. We used the shorthand to denote institutions that sustained DsR (s1, s15, s60, s100) and those that did not sustain (ns10, ns20, ns25).

Fit with institutional mission
All of the schools admitted that DsR fits their mission, even though only four of the seven continued delivering the program after funding ended. While the program fit institutional, social and student educational missions, it also created a tension in their mission to work alongside families, particularly by participating in a research study. Each is described in more detail.

Social. Participants indicated a desire to fulfill the cultural mandate of education, namely, to guide students toward success. For example, one participant noted, "We saw in your program the opportunity to help our society and create a positive impact. . .. The objectives of the program were pretty aligned with the school goals" (s60). Another wanted to stay relevant with emerging social concerns: "If there is something positive and new, then we will take it. Few people promote these kinds of subjects, but to us the humanitarian mission is really important" (ns25). DsR had "content" that addressed "topics that we are dealing with already" (ns10). This fit with the social mission of the institutions was attractive to all groups, weather they sustained DsR or not.

Student. In total, two themes emerged regarding how school administrators and teachers viewed the program benefitting students. First, they reported that students enjoyed the lessons – lessons were interactive, fun and engaging. Second, teachers and administrators appreciated the effectiveness of DsR for addressing issues relevant to their students. Echoed by those that sustained and those that did not, a participant stated "it did help the students and made an impact on their lives" and that DsR was "something attractive to them" (s1). The students looked forward to their DsR lessons. Not only were lessons enjoyable, but one participant reported that the program "has facts that are real, tangible and helpful so students can understand this outside world in a better and real way" (ns20). Because serving students was the primary aim of the institutions that participated in DsR, these direct benefits made the program attractive.

Parents. In general, administrators and implementers reported that after thorough explanation, parents were on board with institutions delivering the program. Some parents, though, were leery of the research surrounding the program. The formal language of the informed consent form and the types of questions that would be asked of their children in surveys were off-putting. Analysis of survey response rates indicated that some of the Catholic-affiliated schools were especially reluctant to allow their students to participate in surveys that would assess drug use and sexual experiences. Thus, the research aspects of the program created a barrier for some schools to participate. The following representative quote demonstrates the sentiment for almost all schools, regardless of whether they sustained or discontinued the program: "Parents said the program was helpful for their kids but some of them did not allow their kids to participate from the surveys since the survey consent sheet was too full of explanation that it made parents feel uncomfortable of giving us permission to collect information" (s20). This finding highlights the tension between generating an evidence base and promoting youth well-being.

Fit with institutional routines
Successfully integrating an intervention into existing organizational routines is key to sustaining a program beyond its initial funding period (May and Finch, 2009). Data from this study concurred and delved specifically into the process by which the program was adopted and by which someone was selected to deliver the program. An additional process that limited sustainability was also discovered.

Program adoption. To explore how institutions came to participate in the DsR program, interviews asked, who is responsible for deciding if DsR is taught? How is the decision made? Data revealed four different decision-making authorities: (1) school board of directors, (2) school principal/organization director, (3) academic (curriculum) director and (4) school counselor in consultation with the principal. Most institutions reported that the decision-making processes involved evaluating the program and its content before agreeing to incorporate DsR into an institution's curriculum. Criteria for adopting the program included viewing the program content as helpful, respectful and/or beneficial to students. One institution (s100) stated that the program was easy to adopt because DsR's "pedagogy matched the school's." Another institution (ns25) saw no barriers, mentioning specifically that they were able to "integrate [DsR] to our calendar." These aspects of adopting the program (fit with teaching philosophy and logistical fit with school calendar) are important considerations for understanding sustainability.

Teacher selection. This study also investigated who was selected to deliver the program and the process behind that decision. It was expected that some teachers would be instructed to deliver the program, whereas others would volunteer. In this sample, however, all the institutions admitted that school directors and other administrative authorities made the decision to adopt DsR or not. This top-down approach was described by one school (s60) as a process: "First, the program was presented [to the school], then it was assigned to a department, and then [delegated] to one of the teachers." The interview revealed that these processes also involved careful analysis to determine the most appropriate, qualified person for implementation. "The director thought the psychologist was the most ideal teacher since she has all the abilities to address and carefully handle the subjects [of drug use, bullying, and dating violence]" (s60). This process for determining who could best deliver DsR was typical for all institutions regardless of whether they sustained the program.

Where schools varied, however, was in their methods for determining the most qualified instructor to deliver DsR. One institution selected the teacher based on her "willingness, capacity, intelligence, and availability" (ns25). Another administrator stated "the willingness of the teacher, the experience, and the class assigned to be taught" were factors that determined who would implement DsR (ns10). Administrative decision makers "analyzed where the program would best fit according to its content and then sent the teachers to be trained about it" (s1). Many of the schools delivered DsR through a mandatory civic-oriented class, a social science course or through a natural science course. These decisions seemed to be motivated by a desire to find someone who would not merely deliver the program from "obligation" (ns25).

Teacher turnover. Analysis of sustainability and fit with existing routines resulted in an unexpected, emerging finding: teacher turnover. One institution that did not continue the program explained "one of the teachers left the country and the other was moved to another area within the school" (ns10). Echoing this turnover, another participant stated, "there are two teachers that are not at the school any more but there is still one that liked the program because it was interactive" (ns20). Across all schools, there were three that explicitly stated that sustainability was hampered due to teacher turnover. Based on observation of other experiences in Nicaragua, it is likely that turnover, not only of teachers but also of directors, is a serious issue and should be factored into any plans for sustainability.

Adaptability
Very few responses were coded as adaptability. Coded segments came from three institutions, two of which sustained delivery and one that did not. Participants called for changes to the program content (e.g. updating terminology to ensure students identify with the video materials) and also logistics. The rarity of the calls for adaptation should be noted.

All the schools stated that the program content connected with their students and, for the most part, that teachers enjoyed teaching it. An illustrative quote demonstrates appreciation for the program and also desire for flexibility in its implementation: "The teacher who implemented the program liked it; however, she thinks it is a little bit extensive. Although it was easy to follow, sometimes she had to skip or adjust some lessons to the school curriculum and time" (s60). Adapting the program is necessary; however, content adaptation of DsR was less important than flexibility in delivery options.

Broader community support

One emerging influence on the sustainability of the DsR program was the importance of ongoing contact and support from the program developers. When asked about factors that impeded or facilitated sustainability, there was a clear divide in responses from schools that discontinued DsR and those that sustained the program. Institutions that did not sustain the program stated, "people in charge of the program disappeared without letting [us] know what was going to happen after the first year of implementation" (ns25). Another participant echoed this sentiment, "The school wanted to implement it but there was not follow up from the DsR end" (ns10). Lack of follow-up from developers clearly created a barrier for some institutions. None of the schools that continued to implement the program, however, cited this as an impediment. One participant even summarized the opposite perspective: "DsR provided all the materials, teachers' trainings and follow ups to our school" (s60). Another institution that sustained DsR even mentioned a need to expand it. This participant believed "there was a lack of communication with parents...[so] training teachers to lead parent workshops is good" (s1). Thus, the data show that some institutions needed accountability and support to continue implementing the program but others did not.

Planning for sustainability

Another way of assessing the processes related to sustainability was to explore what steps institution directors and implementers would take to plan for sustainability. The interview asked participants to imagine that constituents wanted to continue DsR and that they would lead the effort to sustain it for two years. Participants shared what would be done first, second and third. Since interviews came from nine participants, there were nine plans from across seven different schools. Information from multiple participants within the same institution was combined in order to have four plans from institutions that sustained DsR and three from institutions that did not.

From institutions that sustained the program, administrators and implementers first identified a need to adapt the program to allow for logistical constraints. "Some lessons are repetitive. So, the time of the activities . . . should be reduced" (s60). Similarly, one participant recommended to "adjust the materials and make them less extensive" (s100). In total, two of these groups also mentioned changing the narrative videos that are part of five different lessons. One school had no technological devices that were able to play the videos. Another suggested altering the content of the videos to make viewers feel cared for and understood (s15).

In total, two of the sustaining schools also mentioned outreach to families as an important part of planning for sustainability. One suggested "First, workshop for family leaders, information for neighborhood over the importance of participating and the relevance of the subject" (s1). Another participant recommended "Sharing with parents about the program in a less formal way," likely stemming from hesitance caused by the formal consent forms, which many parents viewed as off-putting (s60). Altering content and expanding to families were two suggestions that came from institutions that sustained the program, so one can assume that they represent surmountable barriers.

Findings from institutions that did not sustain DsR were enlightening. Their suggestions may represent actual barriers they faced or may envision an ideal situation for implementation. Interestingly, the plans for those who did not implement the program are more detailed than other institutions (i.e. all include a third step, whereas most schools in the sustaining group did not include a third step). Their plans also reflect less familiarity with the program. For example, they requested that the material include more interactive elements which were part of every lesson.

One participant (ns25) recommended adjustments to the materials (e.g. student books, homework assignments, reflection/debriefing times) and improved teacher development (e.g. stimulate and motivate teachers, create feedback session with teachers). Another participant provided an outline for consecutive steps needed to establish the DsR program. They recommended obtaining permission, becoming an active presence in the classroom and maintaining active, open channels of communication between the DsR staff and the school (ns10). A third participant recommended bringing guest speakers to the classrooms, adjusting the parental consent form to be less intimidating and incorporating "more activities to promote the participation and commitment of the students, like debates and drug conferences from the DsR staff in the classrooms" (ns20).

There was less consistency/overlap among the suggestions emanating from these nonsustaining schools. There also appeared to be less familiarity with the DsR program content, materials, activities and format. Notwithstanding, these suggestions signify barriers to sustainability such as (1) inadequate teacher training and supports, (2) unengaging student materials and activities and (3) limited involvement from program developers and experts (i.e. the DsR team). Overall, the nonsustaining schools seemed to want DsR staff to do more direct instruction with youth (e.g. class debates, follow-ups, observations) which may belie issues some institutions face in finding, motivating and compensating excellent teaching staff or may indicate poor fit with existing organizational routines.

Discussion

This study provides insight into sustainability in the context of a LMIC. Particularly, findings shed light on processes that facilitate and impede sustainability. Despite coming from a limited number of schools and few participants, the data are compelling because they explore an overlooked and emerging context for prevention activities. This interview study provides an in-depth look at how sustainability occurred or did not occur. In addition, this is the first study of its kind that examines intervention sustainability in a Central American country and offers a particular look at the Nicaraguan school and youth serving organizational context.

Findings demonstrate two emerging views of sustainability within the Nicaraguan institutions. We call the first a deficit approach and the second an empowerment approach. Those operating from a deficit approach discontinued the program. The deficit approach required additional supports from the DsR team to continue delivering the program. They wanted to see more direct involvement between the program developers and students (e.g. teaching the program directly to students, presenting at school assemblies). This approach also seemed to need external accountability to continue the program (e.g. team phone calls and emails).

Conversely, the empowerment approach was adopted by groups that sustained the program. These institutions felt they had been given all they needed to continue the program and effectively influence their youth. Participants even suggested integrating the program into the broader community by expanding to reach parents of youth. Their planning for program sustainability was marked by adaptation to fit their logistical and constituent needs.

Although studies in the US context have identified the need to maintain contact between program developers and trainers (e.g. Cooper *et al.*, 2015), in the Nicaraguan context, this need

only emerged in the deficit approach. Indeed, the average level of contact for sustaining groups in the USA was somewhere between annually and monthly, but the groups in the Nicaraguan context expected more frequent contact. Such groups may legitimately need additional resources and supports, such as direct and sustained contact with program trainers, whereas those adhering to an empowerment approach do not. Future research could examine how much contact is required and what type (e.g. training, ongoing support, direct contact with students, continued training workshops). Findings also may signal particulars of the Latin American or Nicaraguan social context. For example, Nicaraguan and Latin cultural expectations for relational maintenance (Leffers and Mitchell, 2011) may be different than in other countries and, thus, more time spent nurturing relationships and supporting program implementers may be needed.

Considering the deficit and empowerment approaches also leads to an important practical finding. Namely, developers and trainers need to provide some structured or formal way of empowering schools to sustain programs. For some schools there may need to be a clear transfer of authority, a ritual to empower them to continue the program. This may take form in a matriculation ceremony for teachers who have delivered the program or perhaps a formal post-implementation guide that releases schools, teachers and counselors to continue implementing the program for the benefit of their youth. Such ceremonial and practical events may help demark involvement from program developers to empower institutions to sustain the program for their students and the social good.

These approaches may tap into the motivational structure of institutions. Empowerment approaches seem intrinsically motivated to improve youth and society. Those from a deficit approach may be more extrinsically motivated to fulfill this mission. Thus, contact by the DsR team provided the accountability or support needed to motivate their involvement and sustainability. Identifying factors that determine which institutions are intrinsically and extrinsically motivated may facilitate strategic investments that can promote sustainability.

A similarity between the Nicaraguan context and the US context is the need for adequate staff. Over a decade ago, in their review of implementation research, Fixsen et al. (2009) highlighted staff selection as one aspect of a comprehensive implementation framework. The importance of selecting the right people to implement and support health programing has not changed and appeared in the Nicaraguan context as well. In this study, both sustaining and discontinuing schools underscored the importance of selecting qualified teachers. This process was designed to ensure that the person delivering the program was qualified and not obliged. Plaguing both sustaining and discontinuing schools, however, was high turnover. In fact, one school not included in these analyses had 100% turnover of staff (director and all teachers). Some have suggested one strategy for overcoming this obstacle is to recruit multiple actors who work as program champions from multiple levels of an institution (see Gagnon and Pettigrew, 2018; Mihalic and Irwin, 2003).

Another finding highlighted in this data is the importance of maintaining an ecological view of these Nicaraguan institutions. Organizations are embedded and connected with other social systems (e.g. family, peer, political, neighborhood, etc.). These social systems interface in important and consequential ways (Pettigrew et al., 2018). School-based programs, to gain longevity and buy-in, may need to support these broader concerns. If developers only think about immediate institutional missions (e.g. educating the young), they will miss the other key stakeholders who support youth and schools. This may be especially pronounced in the Latin culture of Nicaragua that values family input (Espinoza, 2002). Influences such as family inform the adaptability and fidelity of intervention programs when applied across cultural contexts.

A primary limitation of the current study is sample size. Few interviews from a limited number of schools offer a small number of cases from which to extrapolate results. Additionally, the small sample did not allow for any statistical tests for group differences.

The dynamics faced by sustaining and nonsustaining institutions in the sample may also be different from the larger group of schools. Our response rate (30%) was adequate for a qualitative pilot study but is not large enough to extrapolate findings to the broader group of institutions that implemented DsR. Instead, these qualitative findings offer descriptions that help generate hypotheses for future study and practice. That is, although few in number, the interviews collected provide insight into sustainability work in a novel and important cultural context.

In the final analysis, the goal of intervention work is not sustainability, *per se*, but rather decreased substances use initiation and violence among youth. An intermediate goal that may achieve this long-term outcome is an effective and sustainable program. Since LMICs are increasingly importing evidence-based programs from other countries, learning the processes involved in developing and planning for sustainable interventions can have significant returns. Thus, lessons learned from the Nicaraguan case can assist others doing work in Nicaragua and perhaps also in the Central American region.

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