Lessons of Partnership: Successes and Challenges Associated with the Dissemination of the Not-On-Tobacco Program within Cooperative Extension Service Framework

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Abstract: Not-On-Tobacco (N-O-T) is a voluntary smoking cessation program for teens. The West Virginia Prevention Research Center (WVPRC) partnered with West Virginia University Extension Service to test a regional implementation model of N-O-T within the current 4-H infrastructure. Directed content analysis was used to allow for pre-determined themes and categories to be assessed by identifying barriers and successes at each phase of model implementation. The project effectively set a foundation of collaboration between Extension and the WVPRC, highlighted the differences between prevention theories and positive youth development ideology and showcased that Extension’s efforts are more successful when county based.

Introduction

The foundation of the Cooperative Extension Service is to help Americans across the lifespan achieve healthier lifestyles. Housed in land-grant universities, key to this mission is the translation of evidence-based programming to the citizens of all ages in each state. Extension’s 4-H Youth Development has a Healthy Living mandate that addresses healthy eating; physical activity; social-emotional health; and alcohol, tobacco, and other drug-use prevention by increasing youths’ awareness, skills, and competencies to make healthy choices. 4-H Youth Development and Cooperative Extension also foster the evaluation of youth programs and their impact on healthy living outcomes (Force, 2009). Critical in the Healthy Living mission is developing or identifying multi-faceted evidence-based programs to create meaningful learning experiences for youth to prevent or intervene in these high risk behavior areas, across a variety of contexts.

The Healthy Living Strategic Framework identifies four guiding principles that drive the mission: (1) Learning about healthy living concepts occurs in the learning environments created with youth development principles, (2) 4-H delivers healthy living programs in a variety of program settings to diverse youth and families in metro and non-metro (rural) areas, (3) 4-H Healthy Living Programs and their curricula are based on evidence and “best practices” within healthy living research, and (4) 4-H’s approach to implementing healthy living programs must include youth-adult partnerships. The Framework’s goals, strategies, and expected outcomes derive from these principles (Force, 2009). One way to actualize these Principles is by leveraging resources with communities, academic institutions, and states around youth risk behavior areas, such as use of tobacco.

Tobacco use is a critical threat to our nation’s health; it continues to be the most preventable cause of disease and death (T.C.f.D.C.a. Prevention, 2015b). Yet, a staggering 14% of high school students reported currently (last 30 days) using cigarettes in 2012. Every day, 3200 youth try smoking for the first time, and estimated costs of the US tobacco epidemic from 2009-2012 are upwards of $289 billion (T.C.f.D.C.a. Prevention, 2015a).

West Virginia (WV) is consistently at the forefront of the youth tobacco burden’ with 19.6% of its young people reporting current use, a figure higher than any other state (C.f.D.C.a.
Partnerships are vital when addressing public health concerns. WV partners include the WV Prevention Research Center (WV PRC) at West Virginia University, funded by the Centers for Disease Control and Prevention (CDC); the American Lung Association-WV; and the WV Division of Tobacco Prevention. These collaborators have partnered for decades to reduce youth smoking. In 2009, the WVPRC engaged the West Virginia Cooperative Extension Service to join this partnership based on shared agendas and a natural alignment of purpose that includes a commitment to the land-grant university mission. This alignment with Extension reflected and reinforced the Healthy Living mission guiding principles and specific strategies outlined in the Alcohol and Other Drugs Logic Model to address youth tobacco use and offer cessation resources to youth (Programs, 2015). The goal of this paper is to describe the project and identify challenges and successes associated with the initial engagement of WVU Extension in a state-wide smoking cessation model.

**The Not-On-Tobacco Program**

Extension’s initial engagement centered on an ongoing project to enhance WV teen’s access to the American Lung Association’s national youth smoking cessation program, Not-On-Tobacco (N-O-T), developed by the WV PRC in 1998 (Dino, et al., 2001; Dino & Horn, 1998; Dino, Horn, & Meit, 1998; Horn, Dino, Kalsekar, & Fernandes, 2004). The program was designed to be used primarily within schools to assist youth aged 14-19 to quit smoking. The program was delivered in ten 50 minute sessions to teens that volunteered to participate and were recruited by trained program facilitators.

Consistent with Extension’s integrated approach to health promotion the guiding principles of healthy living, and specifically, its related logic model for the prevention of Alcohol, Tobacco, and Other Drugs, (Programs, 2015) N-O-T addressed smoking-related topics such as nicotine addiction; the physical, psychological, and social consequences of smoking; preparation for quitting; and dealing with urges and cravings, as well as stress management, dealing with family/peer pressure, and increasing healthy lifestyle behaviors in physical activity and nutrition.

Although the program in the model being tested by this research project was not delivered within the context of 4-H, the four guiding principles of 4-H (positive youth development, partnerships, intentional learning experiences, and developing youth potential) applied (Branstetter, S., 2008; Dino, et al., 2001; Dino & Horn, 1998; Dino, et al., 2001; Dino, et al., 2001; Horn, Dino, Fernades, & Kalsekar, 2004; Horn, Dino, Goldcamp, Kalsekar, & Mody, 2005). The program was designed to create group support for tobacco cessation among youth, building a trusting relationship with the adult facilitator, and offering an opportunity to master necessary life skills to manage and maintain smoking cessation activities (related to Healthy Living Principles 1 and 2). N-O-T is an evidence-based teen smoking cessation program that has been implemented across diverse economic and cultural contexts, including rural, urban, and international settings (Healthy Living Principles 3 and 4), over the course of the nearly two decades since its inception and research/field testing, new challenges with recruitment and implementation were incurred that led researchers to investigate new ways of identifying at risk teens and partners who could support and implement the program in contexts where youth could most benefit, Extension (Force, 2009; Programs, 2015).
Background of Not-On-Tobacco and the Dissemination Model
Although research showed that N-O-T is the most widely used standardized teen smoking cessation program in the US (Curry, 2006), its widespread use in WV was limited (Anesetti-Rothermel, Noerachmanto, Horn, & Dino, 2012). To highlight, from 2000-2005, ALA trained over 700 school personnel as N-O-T facilitators in WV, but only 152 N-O-T programs were implemented during the period. Previous studies by the investigative team identified barriers to program dissemination (Anesetti-Rotherme,l et al., 2012; Massey, et al., 2003) and discussions with trained facilitators and community partners suggested that less than optimal implementation given the large number of trained facilitators is a consequence of shifts in funding priorities, changing standards for school accountability, and competing needs of teens in schools. To address this usage gap, the WVPRC received funding from the CDC (1-U48-DP-005004) to develop a multi-phase regional dissemination model and evaluate the effectiveness of the Model for addressing identified barriers. The Dissemination Model was based on social marketing, social cognitive theories, and diffusion of innovations theory. It integrates infrastructure development, accountability, delivery, training, and communication. Key to this paper, the initial evaluation of the Model would utilize WV’s existing 10 Tobacco Prevention Regions, with each region served by a Regional Tobacco Coordinator-details of this model and its theoretical rationale are described elsewhere (Horn, Jarrett, Anesetti-Rothermel, O’Hara Tompkins, & Dino, 2014).

Soon after the project began, the Regional Tobacco network was dissolved, requiring that the research team identify a new state-wide infrastructure network. It was this dissolution that created an opportunity for the partnership with Extension. Extension’s mission, infrastructure, and expertise seemed excellent for creating opportunities to enhance program dissemination and increase accessibility of the program to youth smokers in multiple settings. Moreover, since Extension is in every state, the research team saw the potential for widespread application of the Model, if proved effective. Extension agreed to partner and County-level Agents served as the regional coordinators, working with the ALA-WV master trainer to train and support N-O-T facilitators at the local level. This support was intended to address local barriers and needs quickly, based on an understanding of local community culture, politics, and needs. Extension viewed the project as a way to enhance evidence-based services for youth in smoking cessation across diverse audiences and delivery areas in a way that aligned with the many of the goals of the Healthy Living Mission (discussed in detail in the Results section).

Methods

Dissemination Model Study Design
This study used a matched design with random assignment into treatment (Dissemination Model) and Control (usual dissemination procedures) regions. Each of WV’s 10 Tobacco Prevention Regions consisted of five to six counties. Regions were characterized on sixteen variables (see Table 1) and five matched pairs were created based on these variables. Within each pair, treatment and control regions were randomly determined. We used the RE-AIM framework to compare treatment and control regions on N-O-T’s Reach into the target population:

- Effectiveness,
- Adoption by target settings,
- Implementation and consistency of delivery, and
- Maintenance or program use over time.
Our hypothesis was that the Dissemination Model would be superior to usual practice because of the added infrastructure support, communication, implementation guidance, and training. Further information about the model and design can be found in Frontiers in Public Health (Horn, et al., 2014).

Table 1
Characteristics of West Virginia Tobacco Prevention Regions for Matching Pairs

<table>
<thead>
<tr>
<th>Social Demographic Factors</th>
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<tbody>
<tr>
<td>average household size</td>
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<tr>
<td>percentage of population with HS graduate or higher</td>
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<tr>
<td>population density</td>
</tr>
<tr>
<td>income per capita</td>
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<tr>
<td>unemployment rate</td>
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<table>
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<tr>
<th>Health Indicators Related to Smoking</th>
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<tbody>
<tr>
<td>percentage of adult reported have fair or poor health</td>
</tr>
<tr>
<td>percentage of death caused by lung cancer</td>
</tr>
<tr>
<td>percentage of pregnant women who smoke</td>
</tr>
<tr>
<td>smoking prevalence rate for adult</td>
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<td>percent of uninsured population</td>
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<tr>
<th>Smoking Laws and Policies</th>
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</thead>
<tbody>
<tr>
<td>Clean Indoor Air overall score</td>
</tr>
<tr>
<td>restaurant 100% smoke free</td>
</tr>
<tr>
<td>breakroom 100% smoke free</td>
</tr>
<tr>
<td>sport arena smoke free</td>
</tr>
<tr>
<td>private office smoke free</td>
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<td>bar 100% smoke free</td>
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**Data collection**
Qualitative and quantitative data were collected regularly throughout the study period. Study participants, including the State Coordinator, Regional Coordinators, and facilitators were asked to complete paper or online surveys at 3, 6, 12, and every six months thereafter until the conclusion of the survey, regarding barriers and facilitating factors related to program implementation, budget, and needed support. In addition, Extension Agents who coordinated the identified regions contacted trained facilitators periodically throughout the study to check in, offer support, troubleshoot problems, and supply N-O-T related program materials. The Regional Coordinators completed monthly reports that summarized the issues that arose through check-in’s with facilitators and communication with research staff. State coordinators and research staff reviewed the monthly reports and offered support, advice, and feedback as needed.

At the end of the funding period, we conducted interviews with key partners to understand the challenges and successes associated with implementing the Dissemination Model.

**Analysis**
Data related primarily to Model implementation and were analyzed qualitatively using directed content analysis. Directed content analysis allows for pre-determined themes and categories to
be assessed and is appropriate for this model because our primary outcomes focused on identifying barriers and successes at each phase of model implementation. In addition, we triangulated our findings with the surveys completed by study participants at 3, 6, and 12 months.

**Results and Discussion**

Although the research team did not find any significant increases in uptake or implementation of N-O-T in treatment versus control regions during the course of the study, the team identified key factors associated with a large scale dissemination project that likely contributed both to the overall null results related to the hypothesis and to the secondary results related to the factors contributing to a model that relied on a new partnership for success. The focus of this paper is about the development of the partnership as opposed to the model itself, therefore, this section describes the processes that most impacted the partnership including (1) project changes that occurred during implementation and (2) primary challenges, successes, and lessons learned from the engagement of Extension into a WV teen smoking cessation model.

**Project Changes**

There were multiple staffing changes throughout project implementation. These changes occurred across all staff levels and in all partner organizations. As already noted, the original Model infrastructure, the Regional Tobacco Coordinator Network, was completely dissolved prior to planning and implementation phase of the model. There were also changes in staff and leadership on the research team, within the American Lung Association, Extension Service, and within potential implementation sites. These changes resulted in additional time to identify new staff and partners, build these new relationships, update staff on protocols, and revise IRB protocols. Fortunately, the strength of the existing partnerships and the shared commitment to the vision of improved teen health provided the foundation to address the following challenges.

**Project Challenges**

Qualitative data indicated that Extension Agents engaged in ongoing in troubleshooting to ensure the best fit to overlay the county-level Extension infrastructure (including design, staffing, reporting, and work plan duties) to the regional dissemination model in the project. In spite of these efforts, the mismatch between the county-level and regional focus proved quite challenging. For example, when Extension Agents who coordinate a region crossed county lines, it caused confusion at the county level because local boards of education, teachers, and community leaders were used to working with the county’s Extension Agent. Also, the Extension Agent’s work plan was based on county responsibilities, creating challenges to aligning work-related activities to the regional coordination of N-O-T. The vast programming, travel, and responsibilities of a county-level Extension Agent in a rural state such as WV, placed conflicting time and resource demands on the Agents. Although the research project provided fiscal support for Regional Coordinators, the majority of funding for Agents and county Extension Service offices come from the county board of education and the county commission. Agents also are required to report to a county level extension service committee. In addition, although the missions of the project and Extension are parallel, primary prevention and youth development are different and there was inadequate understanding and appreciation of these differences by the project team.
The two challenges required a communication and time needs that were not planned for in the original protocol. Communication was also difficult when Agents were working in the field in very rural areas. The need for confidential communications as required by the research protocol placed an increased burden on Agents who needed to be physically in their offices to submit monthly reports to the research team. These Extension-related issues were not considered in the initial protocol and the team responded in a reactive rather than according to an already developed communication plan.

**Lessons Learned**
Although the model as implemented proved challenging, research staff, the State Coordinator, and Extension worked jointly to find creative solutions to improve communication throughout the project. In addition to scheduled Online surveys, Extension Agents suggested a monthly report in narrative form, to “tell the story” within the context of their other responsibilities and to be able to report accurately without concern for breaking participant confidentiality, and to aid in identifying issues and addressing them as a team. This became the crux of the process evaluation for this project. The team also implemented monthly calls with the institutional researchers, Extension agents who were coordinating the regions, and the State Coordinator to increase communication.

Key partners, particularly those who have a significant role in implementation, should have ample opportunity to provide input as soon as possible on model implementation, feasibility, design, and analysis. This is an ideal condition of collaborative health research. In this case, the model and study protocol was already developed and funded when Extension was invited to be a partner due to circumstances beyond the control of the research team. However, in hindsight, additional discussion and action-planning was needed regarding the structure of Extension Agent’s job responsibilities, funding sources, and reporting processes when they were brought on board in order to maximize success. Even with the challenges, the partnership yielded successes that will help propel future collaboration.

**Successes**
The project effectively set a foundation of collaboration between Extension Service and the WV PRC. This foundation resulted in county-based healthy living strategic planning between the two organizations. The purpose of Prevention Research Centers is to be a network of academic, community, and public health partners that conduct applied public health research together to improve the health of their defined community. Extension Service is the bridge between the academic research and the community implementation of the applied public health projects. Although not all PRC’s are within land-grant institutions, the WV PRC and WVU Extension system can work together to complete the land-grant universities mission to deliver a practical education to improve the daily life of the state citizenry.

Most importantly, this partnership illustrated the ways in which creating partnerships can enhance the Goals outlined in the Healthy Living Mission.

*Healthy Living Goal 1: Program Development and Design*
Within the framework of positive youth development and the healthy living mandate, Not-On-Tobacco meets the strategies outlined to meet Goal 1 including identification of evidence-based programs, utilize research-based curricula, and implement high-quality learning experiences. Years of research by WV investigators and others demonstrated that N-O-T is a feasible,
effective, and widely disseminated program (Branstetter, 2008; Dino, Horn, Abdulkadri, Kalsekar, & Branstetter, 2008; Dino et al., 2001; Horn, Dino, Kalsekar, & Mody, 2005; Horn, Dino, Gao, & Momani, 1999). The American Lung Association adopted the N-O-T program as their premiere teen smoking cessation program and disseminates it nationally using a train-the-trainer model that includes a group of Master trainers.

**Healthy Living Goal 2: Evaluation and Research**
The opportunity to partner with researchers to test the N-O-T dissemination model was an opportunity to enhance existing Extension efforts to evaluate and research activities that provide tobacco cessation information, resource and support to youth and their families (Logic Model for ATOD). (Force, 2009; Programs, 2015) The Extension Agents served a dual role as a research participant in understanding dissemination through identified regions and as a member of the research team. In these roles, Extension Agents were uniquely positioned to offer input on research design, participant recruitment, data collection and appropriate analysis often unavailable to research teams as they design and implement projects. The specific research design is briefly described below. The full model and design can be found in Horn, et. al., 2014.

**Healthy Living Goal 3: Professional Staff and Volunteer Development**
Research staff worked with Extension Service leaders to identify 4-H Youth Development Agents to serve as coordinators in each of the five treatment regions. Once the Agents were identified, the ALA Master Trainer provided facilitator training and training in the research protocol. Agents recruited volunteer facilitators from schools and community organizations and conducted training. The ALA Master Trainer, the Extension Agents, and facilitators were consented to be study participants. The study protocols were approved by the West Virginia University Institutional Review Board.

**Healthy Living Goal 4: Educational Materials**
The N-O-T curriculum is prescribed by the program and widely tested among diverse youth audiences, so it was not an opportunity for Extension Agents to contribute to the overall development of educational materials. However, in line with the strategies to meet this goal, N-O-T is packaged by the American Lung Association to be easily implemented following facilitator training. The program is packaged as N-O-T in a box and includes the overall curriculum, reporting forms, facilitator forms, mini-grant forms, and supplies for games and team building throughout the ten session program. Each facilitator receives a box at training and can order additional booklets for teens who participate. This packaging makes N-O-T easy to implement and increases fidelity across program implementation sites.

**Healthy Living Goal 5: Marketing and Communications**
Again, although this project did not fully meet the strategies and tactics outlined as a part of Goal 5 of the Healthy Living Mandate, marketing and communications, it did afford Extension Agents who coordinated a region the opportunity to contribute to the marketing and communications strategy for their region. One of the hallmarks of this dissemination model was to create an infrastructure that allowed for more localized control and decentralization of recruiting efforts from the standard model. Extension Agents were able to craft recruitment letters, posters, and other marketing materials in line with their insider knowledge of the communities within their assigned regions.
**Healthy Living Goal 6: Resource Development**

This project was funded through the WV Prevention Research Center by the Centers for Disease Control and Prevention. The WV PRC utilized these resources to fund part of the Extension Agent salaries to support research efforts in their region as well as all of the educational, marketing and communication materials needed to support the program. This ability to leverage resources and enhance Extension Agent participation in federally-funded research efforts, as well as a demonstrated partnership between the WV PRC research team and Extension led to the submission and funding of additional efforts throughout West Virginia to meet other aspects of the identified priority areas of the Healthy Living Mandate.

**Healthy Living Goal 7: Strategic Partnerships and Collaborations**

In addition to how the above discussion of how the partnership of Extension and the WV PRC contributed to the Goals outlined in the Healthy Living Mandate, there are additional benefits to this emerging collaboration. First, this type of research partnership between a state’s flagship institution and Cooperative Extension highlights the ability of diverse partners to work collaboratively to conduct research that directly relates to fulfilling the land-grant institution mission to impact residents of West Virginia. Second, it affords Extension the opportunity to offer at-risk youth evidence-based programs at little or no cost. Third, it creates additional opportunities to represent Extension on local committees to address Alcohol, Tobacco and Other Drugs. Finally, it opens up the capacity of both Extension and university-affiliated researchers to address community needs in a participatory, flexible, and synergistic way that capitalizes on the strengths of both sides of the partnership.

**Conclusion/Summary**

The collective capacity of the faculty expertise in youth development and youth programs throughout Cooperative Extension Service and the national Prevention Research Center Network’s research faculty opens up an untapped avenue of jointly approaching youth prevention efforts and positive youth development approaches. Both positive youth development and prevention efforts work to address the individual and environmental problems that limit positive development. Extension Service can utilize the key elements of the positive youth development philosophy, the experiential learning model (Knowledge, Experience, Reflect, and Apply), while incorporating a risk and prevention framework that emphasizing the need to work towards building on the positive assets. In addition, both the PRC program and Extension Service have strong ties to local communities making the identification of priority health issues for youth relevant and increases opportunities for successful implementation and rapid dissemination of evidence-based health interventions. The potential to utilize the nationwide reach, as well as the strengths and complementary skills of both the PRC and Extension networks in partnership to create a positive healthy environment for youth across West Virginia and across the nation is vast.

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