

Reducing Stress and Enhancing Resilience: A Model

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Learning Objectives

1. Discuss the evidence that a rural community's disproportionate exposure to environmental hazards is associated with adverse mental health outcomes.
2. Describe the development and implementation of one community-based model to reduce stress and enhance resilience.
3. Identify barriers and facilitators to replication of this model to a range of environmental issues and communities.

Learning Objective #1

Discuss the evidence that a rural community's disproportionate exposure to environmental hazards is associated with adverse mental health outcomes.





Mental Health Symptoms

- 37% of adults who completed health assessments with nurse practitioner at Southwest Pennsylvania Environmental Health Project report stress
 - 4th most frequently reported symptom, after sleep disturbance, headache, and throat irritation¹
- Similar reports of stress, anxiety, and problems with mood in other communities experiencing development of unconventional natural gas
 - Multiple community studies conducted in Pennsylvania²⁻⁶, California⁷, and Texas⁸
 - Stress was the most frequently reported symptom in a community survey conducted in southwest Pennsylvania²
 - Stress is often attributed to social and community changes⁹⁻¹¹

Mental Health

- Studies of communities exposed to large scale industrial accidents, such as oil tanker spills or oil rig accidents, consistently demonstrate higher prevalence of mental health problems when compared to communities that have not been exposed to such events¹²⁻²²
- We conducted a study to describe the mental health and function of residents living in one county with high levels of unconventional natural gas extraction

Results of a Pilot Study

- Rural county²³ in southwestern PA
 - Overall low level of education. Only 10% have bachelor's degree or higher, with 43% having high school or less²⁴
 - Racially and ethnically homogeneous—94% identify as white, non-Hispanic²⁴
 - 11% live below poverty level²⁴
- A total of 239 adults who lived in one county and presented to a clinic completed the Short Form (SF) 36
 - SF-36 is a standardized survey instrument that assesses physical and emotional health and function
- Results suggest a significant proportion of this sample is having difficulty fulfilling their work and social roles
- Results of the SF-36 are consistent with positive screen for depression in 31% of participants
 - Expected proportion for sample like this one would be 19%

Learning Objective #2

Describe the development and implementation of one community-based model to reduce stress and enhance resilience.



Identified Problem: Stress

- Introduced evidence-based stress management program
 - Offered at no cost
 - Privacy of own home
 - With or without “health coach”
 - Individually tailored to client goals
 - Community partners offered to clients
 - Intensive outreach to community residents
- Result??

Reconsider Options

- Adopt a community-based participatory approach to
 - Defining the problem
 - Agree on an intervention
 - Implement the intervention
 - Evaluate the intervention
- Community-based participatory approach
 - Is a collaborative process
 - Partners contribute equally
 - Strengths are recognized and appreciated

First Step: Focus Groups in Three Counties



THE PROBLEM

Depressed mood, stress, worry, helplessness, anger, and inability to cope with changes in their communities

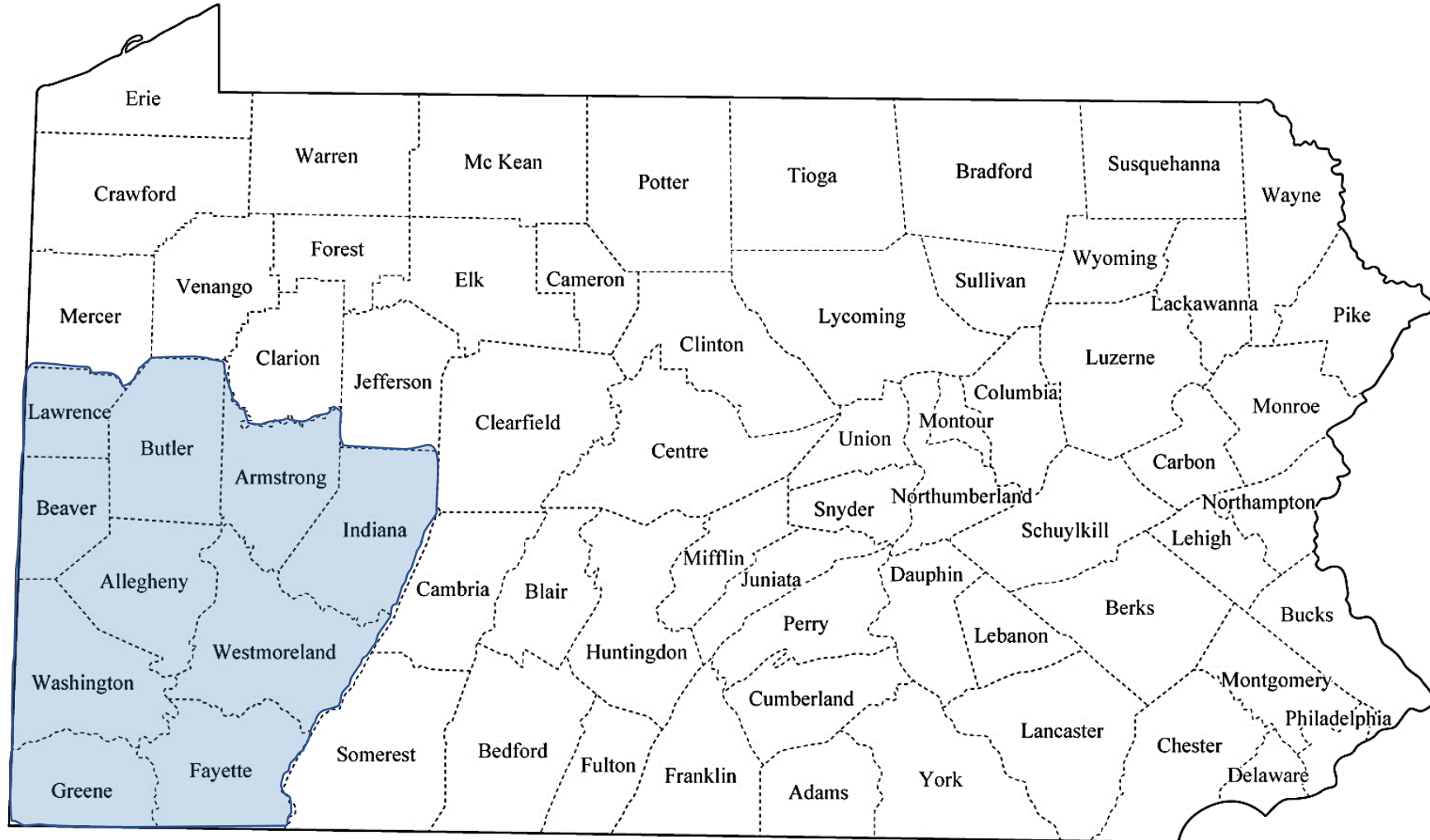
THE SOLUTION

Improved communication, problem solving, and advocacy skills

Next Step: A Skill-Building Resource Guide



Final Step: Evaluation and Replication



Replication Step One: Community Partners

- Establish community partners
 - Define desired characteristics, but be open to opportunities
 - For example, “health care providers”
 - Community partners crucial to success of this project
 - Participate in focus groups
 - Identify potential focus group participants
 - Disseminate information
 - Examples of community partners:
 - Food and Water Watch PA, PennFuture, Sierra Club, Buffalo Creek Watershed, Cornerstone Care, PA 2-1-1 Southwest, Pediatric Alliance

Replication Step Two: Define Problem

- Use focus groups to define the problem and identify potential solutions
 - Use same focus group question guide for each discussion so can compare results across groups
 - Our question guide:
 - Can you tell us about your own/other's personal experiences living in communities with unconventional natural gas development (UNGD)?
 - Can you tell us about your own professional experiences living in/working in communities with UNGD? (Explain that "professional" includes volunteer activities)
 - Can you tell us about stressors that others have told you about/you have observed in others?
 - What do you think are the greatest stressors related to UNGD for people living or working in your county?
 - What resources (factsheets, handouts, organizations) do you think would be most helpful to address those stressors for the people in your county? What do the resources look like/include?
 - We would like to know how the experience of participating in the focus group was for you. Is there anything you would like to tell us about that?

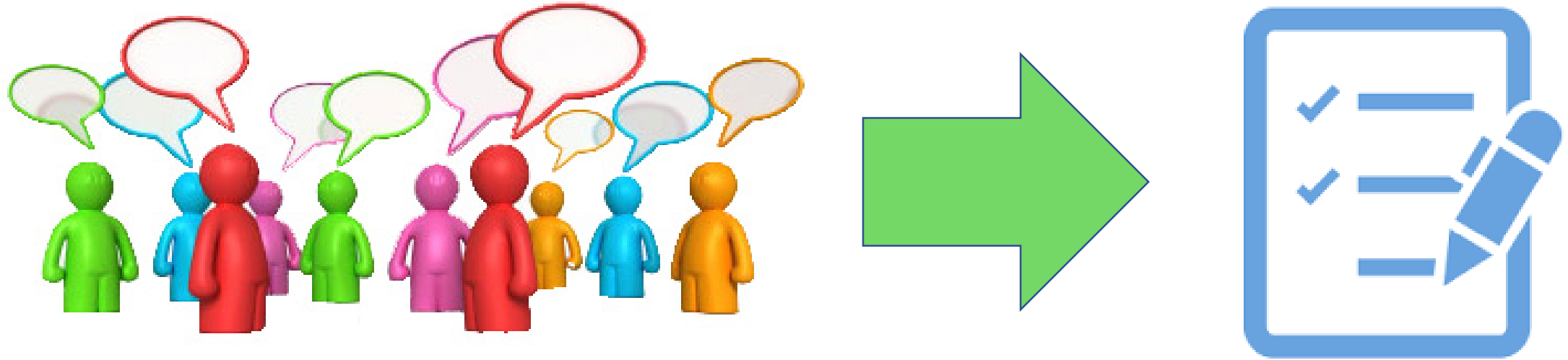
Focus Group Results

- Focus group characteristics
 - Total of 4 focus groups (one county had 2)
 - Duration: 90 minutes average (range 75-105)
 - Held in libraries, community colleges
 - Average of 5 participants in each group (range 1-10)
 - Over 60% of participants were female
 - Characteristics of participants varied by county
 - 21 health care providers
 - 4 human service/governmental agencies
 - 18 community-based organizations

Definition of Problem in Four Counties

	COUNTY #1 ≥ 15 YEARS	COUNTY #2 15 YEARS	COUNTY #3 > 10 YEARS	COUNTY #4 < 10 YEARS
Contamination of water, air, property	X	X	X	X
Truck traffic	X	X		X
Noise and light disturbs sleep	X	X		X
Financial stress (e.g., job insecurity, property values, increasing rents)	X		X	X
Conflict and division between neighbors	X	X	X	
Industrialization of rural area	X	X	X	
Betrayed by government (e.g., lack of response to problem, sides with industry)	X	X	X	
Afraid to speak out publicly or testify	X	X		
Generalized fear, uncertainty, suspicion	X			X
Infrastructure damage	X		X	
Lack of information that can be understood	X	X		
Unpleasant smells		X		X
Lack of health care resources				X

Replication Step Three: Select Solution(s)



- Proposed solutions exceeded available resources
- Multi-voting technique¹² used to prioritize solutions in each county
 - Each participant invited to participate via Survey Monkey
 - List of potential solutions and 100 points to distribute according to importance of each item
 - 62% response rate

Priority Solutions in Four Counties

	COUNTY #1 ≥ 15 YEARS	COUNTY #2 15 YEARS	COUNTY #3 > 10 YEARS	COUNTY #4 < 10 YEARS
SERVICES FOR RESIDENTS				
• Protection from exposure (e.g., including monitoring and mitigation of air and water at home and in community)	X	X	X	
• Health assessments for residents			X	
EDUCATION and INFORMATION FOR RESIDENTS				
• Symptoms/health impacts associated with UNGD	X			
• Available community resources			X	
• Better understanding of issues (e.g., confidence to speak out)		X		
• Scientific information in understandable language		X		
• Existing regulations				X
• Environmental contamination and related health outcomes				X
• Stress and UNGD				X
EDUCATION and INFORMATION FOR PROVIDERS				
• Mental health interventions	X			
• Stress and UNGD				X

Replication Step Four: Developing Solutions

- Resources (EHP) for development of resource guide
 - Time, personnel, skill set
 - Includes evaluation piece
- Evaluation
 - Questions included: 4 closed-ended, 1 open-ended
 - I feel more prepared to deal with the stress of unconventional natural gas drilling
 - I know more about resources to deal with issues of unconventional natural gas drilling.
 - In general, I think the resources we have reviewed will be helpful to people in my community who are concerned about unconventional natural gas drilling.
 - Most people in my community will not use the resources we reviewed.
 - Please use the space below to write down the positive and negative aspects of this experience.

Learning Objective #3

Identify barriers and facilitators to replication of this model to a range of environmental issues and communities.



Small Group Work

- Work in a group of 4-6 and decide on an environmental issue on which you can focus your discussion for the next 15-20 minutes.
 - At least 1 person in the group should be informed about the known or potential health impacts of this environmental exposure and be willing to share information with the group.
 - Discuss application/modification of this model to the issue/health effect in your community using the questions on the next slide.

Small Group Work

- Use the giant post-it to record your group's answers to these questions:
 - What is the environmental exposure and known/potential health effect your group would like to address using this model?
 - What would facilitate replicating this model in your community? Identify 3 community characteristics, resources, etc., that would facilitate replication.
 - What would make replication challenging? Identify 3 community characteristics, resources, etc. that would present challenges to replication.
 - For each challenge, brainstorm 1 possible “work around”
 - Would modifying the model facilitate replication? If so, what would you suggest.

Small Group Work Handout

- Step 1: Identify community partners
- Step 2: Conduct focus groups to define the problem and range of possible solutions
- Step 3: Assuming that possible solutions exceed available resources, select priority solution(s)
- Step 4: Develop/implement solutions
- Step 5: Evaluate effectiveness

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