Exploring The Relationship Between Youth Assets and Substance Use Among Rural Youths: An Empirical Process For Community Based Prevention Planning

Presenter: Dr. Michael Vimont MSSW ACSW, Ashland University

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Presenter Disclosures

Dr. Michael P Vimont

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

The Study

- Based on the Prevention Science Model[1]

  – What is the rate of the incidence and prevalence of the problem within a population group?
  – What are the precursors (i.e. assets, risk factors, protective factors) that predict the current level of involvement?
  – Develop coordinated, community-owned, multi-component strategies that focus on the precursors (using research to help prioritize them).

[1] Arthur, M., & Blitz, C. (2000). Bridging the gap between science and practice in drug abuse prevention through needs assessment and strategic community planning. *Journal of Community Psychology, 28 (3), 241-255.*

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The Study

- Explores the association between youth assets and the use of
  - Alcohol
  - Tobacco
  - Marijuana
  among rural youths living in northeastern Ohio

- Utilizes an instrument to measure "assets" that previously had only been administered to urban and suburban youth

- Provide empirical results on the
  - rate of substance use among rural youths
  - levels of assets possessed by rural youths
  - the relationship between assets and substance use
  - psychometric properties of the instrument used to measure assets

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Catalyst for the study

☐ Wayne County Family & Children First Council (WCFCFC) adopted asset building as the central framework for measuring the health of its youth and the impact of prevention based programming (FY 2002).

☐ WCFCFC had been using Search Institute's Profiles of Student Life: Attitudes and Behaviors instrument; however, costs and concerns with psychometric properties of the instrument led the group to seek another instrument.

☐ WCFCFC chose Roy Oman's Youth Asset Survey (YAS) to use in a pilot study to test the validity and reliability of the instrument in a rural area.

☐ Michael Vimont was chosen by WCFCFC to coordinate the pilot study with school districts located in the county.

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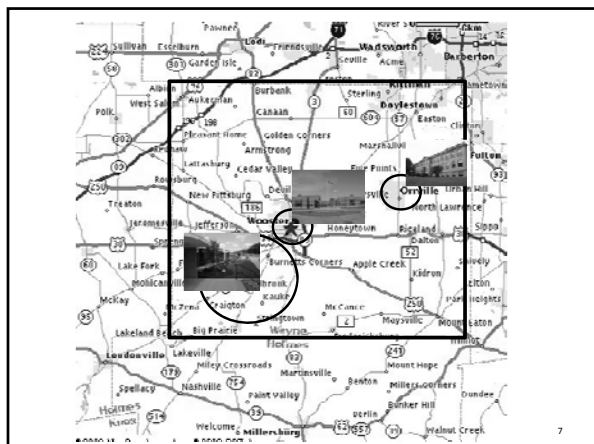
Prevention Strategies

- Deficit Reduction
  - Efforts are targeted toward *at-risk* youths based on their prior engagement and/or their demographic characteristics
  - Intervention is the responsibility of professionals, with *at-risk* youths viewed as clients or customers
  - Target for change is the *at-risk* youth.
  - Goal is the amelioration of symptoms

Prevention Strategies

- Positive Youth Development
  - Efforts are targeted toward all youths based on the concept that all youth need to acquire *developmental youth assets* in order to thrive
  - Intervention is the responsibility of everyone in the community
  - Targets for change, if needed, are located at all levels of the community (or ecological system)
  - Goal is the acquisition of developmental youth assets

Developmental Youth Assets

- are ingredients youths need to become healthy, productive adults.
- are referred to as *building blocks[2]* and are centered on the second decade of life.
- when present, are theorized to
  - enhance developmental outcomes
  - reduce health-compromising behaviors
  - increase positive outcomes[2]

[2] Leffert, N., Benson, P. L., Scales, P. C., Sharma, A. R., Drake, D., R., & Blyth, D. A. (1998). Developmental assets: Measurement and prediction of risk behaviors among adolescents. *Applied Developmental Science, 2(4), 209-230*.

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Developmental Assets and Asset-Building Community

- If the theory holds, youth with more assets should display behavior indicative of positive, healthy outcomes
- One indicator of this is avoiding engagement of high risk-behaviors that compromise the capacity for positive outcomes
- Examples of risk behavior: teenage sexual activity, truancy, criminal behavior, violence, and substance use

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Youth Asset Survey (YAS)

- Purports to measure nine assets using 37 Likert-like items:
  - Family communication
  - Peer role models
  - Community involvement
  - Non-parental adult role models
  - Use of time in groups and/or sports
  - Use of time in religious activities
  - Future aspirations
  - Responsible choices
  - Good Health Practices

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Primary research questions

- What is the relationship between youth assets and the reported use of alcohol, tobacco, and marijuana among rural adolescents, while controlling for the demographic variables of gender, age, and household type?
- What is the predictive capacity of youth asset scores with the reported use of alcohol, tobacco, and marijuana among rural adolescents?
- Which youth assets are the best predictors for the reported use of alcohol, tobacco, and marijuana among rural youths?

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Description of sample (N = 2021)

- Age
  - Mean = 14.52 (S.D. = 2.12)
  - Range from 11 years old to 19 years old
  - High school (n = 1072; 53.3%)
  - Middle school (n = 941; 46.7%)
- Gender
  - Males (n = 949; 48.9%)
  - Females (n = 990; 51.1%)

- Race
  - White (n = 1688; 86.7%)
  - Multi-racial (n = 101; 5.2%)
  - Black (n = 74; 3.8%)
  - Other (n = 83; 4.3%)
- Household type
  - Two parent (n = 1509; 78.3%)
  - One parent (n = 418; 21.7%)

Note: attributes do not add up to sample size due to "no response" (not included in percentages)

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Factor analysis[*] of the YAS

- Original factor analysis
  - Family communication (3 items)
  - Peer role models (6 items)
  - Future aspirations (2 items)
  - Responsible choices (6 items)
  - Community involvement (6 items)
  - Use of time (groups/sports) (4 items)
  - Use of time (religion) (2 items)
  - Non-parental adult role models (7 items)
  - Good health practices (1 item)

- Current study factor analysis
  - Family communication (3 items)
  - Peer role models (6 items)
  - Future aspirations (3 items)
  - Responsible choices (7 items)
  - Community involvement (6 items)
  - Use of time (groups/sports) (4 items)
  - Use of time (religion) (2 items)
  - Non-parental adult role models (6 items)

*Principal axis factoring with varimax rotation; eigenvalues >= 1.0

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Asset Scoring

Items scored with values from one through four. Subscales scores based on the average score of items within the subscales (with reverse scoring for 19 items).

Table 4. Descriptive statistics of asset scores (N = 2021)

Asset Item	No. Items	α	M	S.D.	Range Min.	Max.	Skewness	Kurtosis
Sum of asset scores			23.80	3.68	10.00 -	32.00	-0.38	0.23
Family communication	3	0.73	2.98	0.73	1.00 -	4.00	-0.61	-0.27
Peer role model	6	0.87	2.97	0.64	1.00 -	4.00	-0.34	-0.44
Future aspiration	3	0.71	3.57	0.52	1.00 -	4.00	-1.33	1.64
Responsible choices	7	0.83	3.03	0.48	1.00 -	4.00	-0.86	0.47
Community involvement	6	0.85	2.34	0.74	1.00 -	4.00	0.21	-0.73
Use of time (religion)	2	0.86	2.75	1.05	1.14 -	4.00	-0.27	-1.36
Non-parental adult role model	6	0.76	3.32	0.46	1.00 -	4.00	-0.68	0.77
Use of time (groups/sports)	4	0.82	2.85	0.92	1.09 -	4.00	-0.42	-1.07

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Differences in Asset Scores between Male and Female

Asset Item	Female (n=990) M	SD	Male (n=949) M	SD	t (1937)
Family Communication	3.06	0.74	2.90	0.71	4.92 **
Peer Role Model	3.09	0.64	2.86	0.62	8.19 **
Future Aspirations	3.66	0.47	3.50	0.55	6.67 **
Responsible Choices	3.12	0.45	2.97	0.49	7.07 **
Community Involvement	2.43	0.74	2.26	0.73	5.22 **
Use of Time (religion)	2.81	1.06	2.71	1.04	2.11
Non-parental adult role model	3.39	0.44	3.25	0.47	6.53 **
Use of Time (groups/sports)	2.89	0.92	2.83	0.91	1.35
Sum of Asset Scores	24.44	3.61	23.28	3.60	7.13 **

** $p < .01$, one tailed (with Bonferroni correction).

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Differences in Asset Scores between Household Type

Asset Item	Two-parents (n=1509) M	SD	Other (n=418) M	SD	t (1925)
Family Communication	3.03	0.71	2.83	0.77	4.88 **
Peer Role Model	3.02	0.63	2.80	0.67	6.47 **
Future Aspirations	3.61	0.49	3.46	0.58	5.38 **
Responsible Choices	3.07	0.45	2.94	0.54	4.82 **
Community Involvement	2.39	0.73	2.17	0.73	5.39 **
Use of Time (religion)	2.83	1.04	2.50	1.04	5.73 **
Non-parental adult role model	3.34	0.45	3.24	0.48	4.24 **
Use of Time (groups/sports)	2.94	0.89	2.50	0.92	8.98 **
Sum of Asset Scores	24.24	3.50	22.44	3.81	9.08 **

** $p < .01$, one tailed (with Bonferroni correction).

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Differences in Asset Scores between Grade Levels (6 - 8th and 9th - 12th)

Asset Item	6 - 8th Grade (n=941)		9 - 12th Grade		
	M	SD	M	SD	t (2011)
Family Communication	3.07	0.70	2.90	0.75	5.25 **
Peer Role Model	3.04	0.63	2.90	0.65	5.19 **
Future Aspirations	3.60	0.50	3.55	0.54	1.95
Responsible Choices	3.04	0.48	3.03	0.49	0.28
Community Involvement	2.41	0.73	2.27	0.74	4.05 **
Use of Time (religion)	2.94	1.00	2.58	1.06	7.60 **
Non-parental adult role model	3.37	0.43	3.27	0.48	4.80 **
Use of Time (groups/sports)	2.88	0.87	2.82	0.95	1.31
Sum of Asset Scores	24.33	3.52	23.32	3.75	6.18 **

** $p < .01$, one tailed (with Bonferroni correction).

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Reported frequency use rates of tobacco, alcohol, and marijuana

Reported frequency of use within past year	tobacco		alcohol		marijuana	
	n=	%	n=	%	n=	%
did not use	1459	74.2	1113	56.7	1634	83.5
once	163	8.3	367	18.7	92	4.7
six times	67	3.4	172	8.8	45	2.3
once per month	33	1.7	89	4.5	25	1.3
twice per month	36	1.8	94	4.8	30	1.5
once per week	21	1.1	75	3.8	33	1.7
three times per week	51	2.6	31	1.6	41	2.1
every day	135	6.9	22	1.1	56	2.9
missing	56	n/a	58	n/a	65	n/a

*Intercorrelations for reported substance use ***
(N = 1956)

Asset	1	2	3
1 Tobacco	----		
2 Alcohol	.662	----	
3 Marijuana	.638	.627	----

* all intercorrelational values are significant at $p < .01$ (2-tailed)

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Substance use and demographic variables

- Gender
  - adolescent males reported significantly greater frequency of use than adolescent females in the use of
    - tobacco – t (1911) = 5.21, p < .001
    - alcohol – t (1910) = 4.11, p < .001
    - marijuana – t (1903) = 5.58, p < .001

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Substance use and demographic variables

- Household type
  - adolescents from one-parent households reported significantly greater frequency of use than adolescent from two-parent households in the use of
    - tobacco – t (1897) = 5.58, p < .01
    - alcohol – t (1896) = 4.89, p < .01
    - marijuana – t (1889) = 5.07, p < .01

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Alcohol Use

Hierarchical Regression Analysis Summary for Demographic and Youth Asset Variables Predicting Reported Frequency of Alcohol Use (log)

Predictor Variable	Model 1		Model 2	
	b	**Beta**	**b**	**Beta**
Gender (male = 1)	.034 **	.063	-.006	-.012
	(.012)		(.011)	
Age	.044 ***	.342	.038 ***	.297
	(.003)		(.003)	
HouseholdType (Two-parent = 1)	-.064 ***	-.096	-.015	-.022
	(.014)		(.013)	
Family Communication			.002	.005
			(.009)	
Peer Role Model			-.126 ***	-.297
			(.011)	
Future Aspirations			-.008	-.015
			(.012)	
Responsible Choices			-.065 ***	-.112
			(.015)	
Community Involvement			-.019 *	-.051
			(.009)	
Use of Time (religion)			-.025 ***	-.095
			(.006)	
Non-parental adult role models			.015	.025
			(.015)	
Use of Time (groups/sports)			-.006	-.019
			(.007)	
Constant	-.396		.345	
R^2	.134 ***		.312 ***	
Adjusted R^2	.132		.308	

Note: N=1869; *b* = unstandardized regression coefficient with standard error in parentheses; Beta = standardized regression coefficient.

*** $p < .001$. ** $p < .01$. * $p < .05$.

Tobacco Use

Hierarchical Regression Analysis Summary for Demographic and Youth Asset Variables Predicting Reported Frequency of Tobacco Use (log)	Model 1		Model 2	
Predictor Variable	**b**	**Beta**	**b**	**Beta**
Gender (male = 1)	.061 ***	.103	.020	.034
	(.013)		(.012)	
Age	.038 ***	.272	.034 ***	.243
	(.003)		(.003)	
HouseholdType (Two-parent = 1)	-.082 ***	-.115	-.024	-.034
	(.016)		(.014)	
Family Communication			.009	.023
			(.009)	
Peer Role Model			-.115 ***	-.252
			(.012)	
Future Aspirations			-.047 **	-.082
			(.013)	
Responsible Choices			-.088 ***	-.142
			(.016)	
Community Involvement			-.014	-.035
			(.010)	
Use of Time (religion)			-.015 *	-.054
			(.006)	
Non-parental adult role models			.055 **	.086
			(.016)	
Use of Time (groups/sports)			-.031 ***	-.097
			(.008)	
Constant	-.357		.404	
R^2	.103 ***		.277 ***	
Adjusted R^2	.102		.273	

Note: N=1870; b = unstandardized regression coefficient with standard error in parentheses; Beta = standardized regression coefficient.

$^{***}p < .001$. $^{**}p < .01$; $^{*}p < .05$.

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Marijuana Use

Hierarchical Regression Analysis Summary for Demographic and Youth Asset Variables Predicting Reported Frequency of Marijuana Use (log)

Predictor Variable	Model 1		Model 2	
	b	*Beta*	*b*	*Beta*
Gender (male = 1)	.045 ***	.092	.015	.030
	(.011)		(.010)	
Age	.030 ***	.259	.026 ***	.230
	(.003)		(.002)	
HouseholdType (Two-parent = 1)	-.069 ***	-.116	-.031 *	-.052
	(.013)		(.013)	
Family Communication			.017 *	.052
			(.008)	
Peer Role Model			-.077 ***	-.204
			(.010)	
Future Aspirations			-.034 **	-.071
			(.012)	
Responsible Choices			-.061 ***	-.118
			(.014)	
Community Involvement			-.018 *	-.055
			(.009)	
Use of Time (religion)			-.017 **	-.074
			(.005)	
Non-parental adult role models			.017	.032
			(.014)	
Use of Time (groups/sports)			-.011	-.040
			(.007)	
Constant	-.301		.281	
R^2	.093 ***		.220 ***	
Adjusted R^2	.092		.216	

Note: N=1862; b = unstandardized regression coefficient with standard error in parentheses; Beta = standardized regression coefficient.

*** $p < .001$. ** $p < .01$. * $p < .05$.

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Conclusions

- The presence of assets in youth lives is a strong predictor for the non-use of substances
- The Youth Asset Survey (YAS) is a valid and reliable instrument in which to measure assets among rural youths
- Compared to studies involving urban and suburban youth, the YAS administered to this rural population provided for
  - greater internal consistency within factors
  - a measurement of eight assets rather than nine
  - a stronger relationship between assets and substance use

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Conclusions

- Peer role model, as an asset, is the strongest predictor for substance use among rural youths.
- Responsible choices, as an asset, displays a strong relationship with substance use among rural youths.
- Working together, the two assets of Peer Role Models and Responsible Choices contribute a significant portion of the overall model's capacity to predict reported use of substances.
- Family communication, as an asset, displays the weakest relationship with substance use among rural youths.

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Areas for further research

- Further data analysis within sub-populations of adolescent years (i.e. comparing and contrasting regression models between middle school and high school students).

- Conducting longitudinal cohort studies to measure changes in asset acquisition and substance use within the same population.

- Expanding study to other rural areas

- Measuring other types of at-risk behaviors to provide further analysis regarding the predictive capacity of assets as it relates to these behaviors.

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