PATH ANALYSIS OF THE RELATIONSHIPS BETWEEN SOCIAL SUPPORT, INTERPERSONAL RELATIONS & PERCEIVED HEALTH IN URBAN ADOLESCENTS

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Learner Objectives:
1. Describe health practices and disparities facing US urban youth
2. Define social support, interpersonal relations, resilience and positive life perspective as they relate to US urban youth.
3. Explain directional path models showing how social support, interpersonal relations and perceived health are related to one another among the research cohort.
4. Analyze strengths and challenges of path analysis compared to other statistical methods

Disclosures: Nothing to disclose
No sponsorship or commercial support
No conflict of Interest
METHODLOGY...

Non-probability, convenience sample of 125 U.S. urban adolescents
Predominantly Latino and African American race/ethnicity
Participants completed a demographic and general questionnaire and six instruments:

- Multidimensional Scale of Perceived Social Support (Mean total score used)
- Brief Resilience Scale
- Adolescent Lifestyle Profile Score (ALP-R2) (3 subscales used):
  - Interpersonal Relations
  - Stress Management
  - Positive Life Perspective
- Perceived Health (single item)

Path analyses performed (AMOS software 20.0.0) to investigate the hypothesized conceptual model and identify the model that best fit the data
SOCIAL SUPPORT...

“Feedback from a primary group that is health protective, during times of stress” — Cassel, 1976

Weiss (1974) 6 categories:

- Attachment
- Social integration
- Opportunity of nurturing behavior
- Reassurance of worth
- Sense of reliable alliances
- Acquiring guidance in stressful situations

Social support is associated with positive health practices and wellbeing among adolescents.
MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with who I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

**Significant Others (SO) (Items 1, 2, 5, and 10), Family (FA) (Items 3, 4, 8, and 11) and Friends (FR) (Items 6, 7, 9, and 12)**
RESILIANCE...

“Dynamic process encompassing positive adaptation within the context of significant adversity.”

1. Exposure to significant threat or severe adversity

2. Achievement of positive adaptation despite adversity


BRIEF RESILIENCE SCALE (BRS) 6-ITEM

- I tend to bounce back quickly after hard times.
- I have a hard time making it through stressful events.
- It does not take me long to recover from a stressful event.
- It is hard for me to snap back when something bad happens.
- I usually come through difficult times with little trouble.
- I tend to take a long time to get over set-backs in my life.

ADOLESCENT LIFESTYLE PROFILE (ALP-R2)

44 Items in 7 subscales:

• Health Responsibility
• Physical Activity
• Nutrition
• Positive Life Perspective
• Interpersonal Relations
• Stress Management
• Spiritual Health
3 ALP-R2 SUBSCALES EMPLOYED FOR STUDY

Positive Life Perspective
18. Am excited about the future.
23. Am happy with who I am.
26. Work toward important goals in my life.
28. Look forward to each new day.
38. Set goals that I can achieve.
39. Feel good about myself when I do something well.

Interpersonal Relations
1. Spend time talking to members of my family.
6. Congratulate others when they do something well.
12. Try to be sensitive to the feelings of others.
19. Spend time with close friends.
31. Settle conflicts through discussion rather than fighting.
37. Make a special effort to be helpful to others.
3 ALP-R2 SUBSCALES TESTED

Stress Management

5. Get 6-8 hours of sleep at night.
11. Take time to relax each day.
17. Accept things in my life that I cannot change.
25. Take time for myself to do something I like.
35. Try to think pleasant thoughts as I fall asleep.
43. Discuss my problems with someone close to me to try and solve them.
PATH ANALYSIS – DEFINITION OF TERMS

Path Model (Sewell, Wright, 1920’s) - Pictorial representation of the association of a set of variables

Exogenous Variables – causational associations are not part of the model
  ▪ social support

Endogenous Variables – influenced by at least one other variable in the model
  ▪ stress management, interpersonal relations, positive life perspective, resilience and perceived health

Goodness-of-fit - comparing the given model with an alternative model
DIRECT, INDIRECT, AND TOTAL EFFECTS

Direct effects
- Direct association of one variable with another

Indirect effects
- Association of one variable with another mediated through other variables in the model
- Computed as the product of paths linking variables

Total Effect = Direct Effects + Indirect Effects
KEY SIGNIFICANT RESULTS...

All but one of the hypothesized effects in the initial model were significant (p<0.05) (Figure 1).

Results showed significant positive effects of social support:

- Interpersonal relations (standardized r = 0.556, p<0.01)
- Positive life perspective (r = 0.173, p<0.05).

Significant positive effects of interpersonal relations on both:

- Stress management (r = 0.564, p<0.01)
- Positive life perspective (r = 0.223, p<0.05).

Significant positive effect of stress management on:

- Positive life perspective (r = 0.430, p<0.05).

Significant effects of positive life perspective on:

1) Perceived health (r = 0.303, p<0.05)
2) Resilience (r = 0.229, p<0.05).
KEY NON-SIGNIFICANT RESULTS

• Non-significant direct effect of stress management on perceived health ($r = 0.060$, $p>0.50$).

• The overall lack of fit of this hypothesized model was non-significant, $\chi^2 = 6.334$, df=7, $p>0.50$. 
Health Practices of Urban Adolescents

MODEL 1 – AMOS

Chi-square = 7.935, df = 8, p = .440
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<tr>
<th>Path</th>
<th>Estimate</th>
<th>C.R</th>
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<tr>
<td>StressManagement (\leftarrow) SocialSupport</td>
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<td>PositiveLifePerspective (\leftarrow) StressManagement</td>
<td>0.454</td>
<td>5.516</td>
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<tr>
<td>PositiveLifePerspective (\leftarrow) InterpersonalRelations</td>
<td>0.301</td>
<td>3.659</td>
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<tr>
<td>PerceivedHealth (\leftarrow) PositiveLifePerspective</td>
<td>0.343</td>
<td>3.978</td>
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<tr>
<td>Resilience (\leftarrow) PositiveLifePerspective</td>
<td>0.231</td>
<td>2.589</td>
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</table>
Health Practices of Urban Adolescents

Model 2 – AMOS  
Chi-square = 10.987  
df = 9  
p = .277
### Regression Weights: (Group number 1 - Default model)

<table>
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<td>PositiveLifePerspective ← StressManagement</td>
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<td>PerceivedHealth ← PositiveLifePerspective</td>
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<td>.144</td>
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<td>1.693</td>
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### Standardized Regression Weights: (Group number 1 - Default model)

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<td>PositiveLifePerspective ← InterpersonalRelations</td>
<td>.301</td>
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<td>PositiveLifePerspective ← StressManagement</td>
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<td>PerceivedHealth ← PositiveLifePerspective</td>
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<tr>
<td>Resilience ← PositiveLifePerspective</td>
<td>.231</td>
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</table>
Model 3 derived from Model 1 - changed direction resilience to positive life perspective
Chi-square = 10.181, df= 7, p = .179 (Model 1 Better)
Direct effect of resilience on perceived health non significant, reg coeff = 0.06
Direct effect of social support on resilience non significant, reg coeff = -0.01
Health Practices of Urban Adolescents

Direct effect of interpersonal relations on resilience non significant, r= - 0.10
Direct effect of social support on stress management non significant, r=0.16
PATH ANALYSIS LIMITATIONS & ADVANTAGES

LIMITATIONS

• Unable to test directionality in relationships.
  • Calculations are done based on the researchers hypotheses of causality
• The selected variables and pathways limit the structural equation model’s ability to recreate the sample covariance and variance patterns that have been observed in nature. Because of this, there may be several models that fit the data equally well.

ADVANTAGES

• Useful in understanding relational data in multivariate systems.
• Ability to distinguish between indirect and direct relationships between variables
• Path uses sum score and of variables that have been validated
REFERENCES


REFERENCES


QUESTIONS?