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# Risk and Protective Factors Predictive of Sense of Coherence during Adolescence

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## **Abstract**

This brief report presents a study undertaken to better understand the factors that are related to sense of coherence (SOC) levels among youth. Middle school students ( $N = 1619$ ) reported on risk and protective factors across ecological domains. Analyses revealed that social support, anger expression, family conflict and neighborhood cohesion were predictors of SOC for both males and females. Community views regarding gang membership was a predictor of SOC only for males, while age was a predictor of SOC only for females. The findings suggest a resiliency and ecological framework may be helpful in understanding SOC in youth.

## **Keywords**

*Adolescence, health, resiliency, sense of coherence*

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**COMPETING INTERESTS:** None declared.

SENSE OF COHERENCE (SOC) is a central construct within the salutogenic model of health (Antonovsky, 1987). Despite evidence of a strong relationship between SOC and well-being in diverse populations and contexts (e.g. Amirkhan & Greaves, 2003), relatively little is known about the origins of SOC. To expand our understanding of SOC development in youth, we explore the construct within a resiliency framework that includes variables from various ecological domains influential in human development (i.e. Bronfenbrenner, 1979). A resiliency perspective addresses how risk and protective factors together influence health-related outcomes (Richman & Fraser, 2001), and is reflected in the underlying perspective of the salutogenic model and SOC construct (Antonovsky, 1998).

Within this framework, we examine gender differences given previous mixed findings regarding gender and SOC (e.g. Nash, 2002; Sagy & Antonovsky, 2000) and the reality that many developmental changes during adolescence occur via differing processes for males and females (Deaux & Major, 1987). Thus, our research questions are: (a) What select risk and protective factors across adolescent ecology predict SOC? And (b) How do factors predictive of SOC differ by gender during adolescence?

## **Method**

Surveys of middle school students ( $N = 1619$ ) conducted between 1998 and 2001 in select western US schools provide the data for this study. A slight majority (52.4%) of the students resided in urban areas. The sample consisted of 46.8 percent male and 53.2 percent female. More than half the sample (55.7%) was White, followed by Hispanic (19.7%), Asian (7.6%), Multiethnic (7.0%), Native American (4.3%) and Black (2.5%). More detailed explication of methods has been previously published (Evans, Marte, Betts, & Silliman, 2001).

In selecting measures for this study, our intent was to reflect the global orientation of SOC. Specifically, we selected variables that: (a) appeared through prior research to be theoretically related to SOC as a construct that emphasizes links between successful coping and positive health outcomes; (b) represented a mix of both risk and protective factors in the lives of youth; and (c) reflected potential influences common in the lives of youth at the individual, home, school and community domains of environment.

SOC was our dependent variable (Margalit & Efrati, 1995). Independent variables included one risk and protective factor at each level of environment: anger expression (Speilberger, 1991) and influence of religion at the individual level; family conflict (Bloom, 1985) and environmental control at the home level; truancy and involvement in school activities at the school level; and community views regarding gang membership and neighborhood cohesion (Buckner, 1988) at the community level. A measure of social support (Resnick et al., 1997) that taps relationships in multiple ecological domains was included as a general protective factor. Age, socioeconomic status (SES) and ethnicity were included as covariates to control for potential developmental, resource and cultural effects.

## **Results**

There was no significant difference between mean SOC scores for males ( $n = 715$ ,  $M = 2.954$ ,  $SD = .412$ ) and females ( $n = 814$ ,  $M = 2.945$ ,  $SD = .450$ ). A stepwise multiple regression analysis conducted separately by gender revealed robust models for both males and females (see Table 1). As males report higher levels of anger expression, family conflict and community endorsement of gang membership they report lower SOC, but higher levels of social support and neighborhood cohesion predict higher SOC levels. As females experience increased levels of anger expression and family conflict they report lower SOC, while age and higher levels of social support and neighborhood cohesion are related to higher SOC levels.

## **Discussion**

Factors predicting SOC emerged from nearly all levels of youth ecology and include both risk and protective elements. Findings suggest social support and neighborhood cohesion may provide youth with a positive environment and consistent resources that contribute to increased SOC. In contrast, youth who have difficulty managing their anger may be indicating their frustration with a confusing world that is reflected in lower SOC scores. Alternatively, externalized anger may create patterns of problematic interactions and drive away helpful social resources, which in turn influence the ability to understand and cope with the environment. Lastly, youth experiencing

higher levels of family conflict may have less stable and consistent resources available from which to draw that encourage development of SOC.

*Table 1.* Summary of multiple regression analysis by gender for variables predicting sense of coherence

	<i>Items in measure</i>	<i>α</i>	<i>Males (n = 449)</i>	<i>Females (n = 530)</i>
SOC	13	.71	–	–
Age (C)	†	–	-.019	<b>.116**</b>
SES (C)	†	–	.040	.018
Ethnicity (C)	†	–	.019	.014
Anger expression (R)	12	.84	<b>-.256**</b>	<b>-.307**</b>
Influence of religion (P)	1	–	-.018	.055
Family conflict (R)	5	.70	<b>-.226**</b>	<b>-.103*</b>
Environmental control (P)	4	.56	.005	.054
Truancy (R)	1	–	.027	-.006
Involvement in school activities (P)	1	–	.071	-.019
Community views re: gang membership (R)	1	–	<b>-.096*</b>	.016
Neighborhood cohesion (P)	7	.74	<b>.111*</b>	<b>.094*</b>
Social support (P)	8	.81	<b>.279**</b>	<b>.385**</b>

*Note:* † Age was measured in years only and ranged from 12 to 16 years ( $M = 14.29$ ). SES was measured with a composite variable that included mother's education, father's education and perceived income. Since over half the sample was White and some of the other categories were very small, ethnicity was dichotomized as 0 = *White* and 1 = *non-White*. Alphas reported are for gender combined. Analyses conducted separately by gender revealed comparable alphas to those reported. Although the alpha for the environmental control index is notably lower than those reported for other measures, it is clear *a priori* that the relatively diverse and concrete indicators used to tap environmental control are unlikely to exhibit the strong internal consistency that would be expected for more global measures of the construct (e.g. see Rusbult & Martz, 1995). Values noted for males and females are betas. Adjusted  $R^2 = .421$  for males (full model). Adjusted  $R^2 = .480$  for females (full model). C = covariate. R = risk factor. P = protective factor. Although some variables were intercorrelated, there was no serious problem with multicollinearity as assessed by correlation, tolerance and variance inflation factor (VIF) statistics. \* $p < .01$ ; \*\* $p < .001$



Gender differences did emerge within an overall pattern of stability in predictors of SOC. Males appear to be more influenced by their perception of community norms that support gang involvement, which is consistent with prior findings that males are more susceptible to involvement in gang activity than females (Snyder & Sickmund, 1999). On the other hand, results suggest females are undergoing changes in SOC as they age during this developmental period. It is not clear from the present results why being older is predictive of higher SOC levels for females; however, it does reflect previous mixed findings regarding gender. Further, it suggests that SOC is a malleable construct that can change over time, at least for females at this stage of life. The failure of SES, ethnicity, religion, environmental control, truancy and school activities to appear in either model is somewhat surprising. It could be that these variables are influential but simply suppressed or moderated through the other variables in the highly robust models. It also could suggest the broader aspects of youth ecology levels may be particularly important to consider within a resiliency framework. For example, youth having a sense of control in the home may not be as influential on SOC as experiencing the overall family and home environment as safe and stable.

There are limitations to the present study, such as our use of cross-sectional data that examined a limited age range even though one of our interests was the developmental underpinnings of SOC. The stability of core predictors across models, however, is generally consistent with prior research (e.g. McSherry & Holm, 1994), and suggests these factors may emerge prior to early adolescence. Future research should include longitudinal studies and consider involving younger populations to illuminate how development of SOC and its relation to health outcomes change over time. It also would be beneficial to test how present results fit within various risk-protective resiliency models.

Results reported here provide support for SOC as a global orientation, and hint at the potential of using a resiliency and ecological framework to tease out the origins of SOC and formulate effective interventions. Results suggest future efforts to better understand SOC in adolescents should examine even younger populations, be sensitive to potential gender differences and consider the role of risk and protection in the lives of youth

across social domains.

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