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Hope Mediates the Relationship Between Childhood Adversity and Academic Resilience Among Appalachian Young Adults

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The impact of adverse childhood experiences (ACEs) on health and academic outcomes is a well-established area of research since Felitti et al.'s (1998) seminal work. However, there is a gap in our understanding of the interactions of positive supports that promote academic resilience (AR) among rural young adults who have experienced ACEs. This cross-sectional, moderated mediation study aimed to fill this gap by exploring the factors predicting AR among rural Appalachia young adults. We confirmed the negative relationship between ACEs and AR and tested the degree to which hope and perceived social support (PSS) interact to influence that relationship. The study revealed the mediating role of hope but did not support the proposed role of PSS in moderating the relationship between ACEs and hope. We discuss this finding in the context of other research and provide recommendations for K12 educational leaders and future research.

***Keywords*: *a*ppalachia, adverse childhood experiences (ACEs), perceived social support, academic resilience, trauma, hope, rural**

Students' resilience in educational pursuits depends on various individual, family, school, and community attributes and resources (Holdsworth et al., 2018; Johnson, 2008). Rural communities may find access to jobs and other community resources challenging, while rural schools may find difficulties meeting all students' educational needs (Frankland, 2021).

Chronic poverty results in children experiencing stress and trauma that can interfere with their overall well-being, including their academic growth and development. This reality is true in rural Appalachia, just as in other contexts. Frankland (2021) documented the need for more research on trauma-informed practices, including social-emotional learning in rural schools. In response to Frankland's call, we explored how social support and hope interact to mediate the relationship between adversity and academic resilience.

While exposure to adversity (or Adverse Childhood Experiences, ACEs), including extreme poverty, can be detrimental, some youth thrive. Moreover, though chronic poverty is a risk factor, Werner (1989) noted, “even in the most discordant and impoverished homes, and beset by physical handicaps, some children appear to develop stable and healthy personalities, and display a remarkable degree of resilience in the face of life’s adversities” (p. 72). Over 30 years after Werner’s observation, some persistent questions remain. First, what allows one individual to thrive in the face of life’s adversities? And second, what can schools do to increase the chance of an individual displaying resilience in the face of adversity?

Supportive and protective elements that help children and young adults overcome adversity (Werner, 1989) appear critical to developing resilience. The greater the number and severity of ACEs in a child’s life, the more protective factors they were likely to need to support continued resilience (Werner, 1989). In rural communities, children may have extra protective support from sources such as a faith community and extended family support (e.g., grandparents) (DeFrain, 2014; Keller et al., 2023). Keller et al. (2023) found that grandparents’ religiosity and social support were protective factors for their grandchildren they were rearing. In school settings, youth can experience protective factors such as social support (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Quinton, et al., 2018; Sulimani-Aidan et al., 2018; Werner, 1989) that result in positive outcomes such as increased hope levels (Grund & Brock, 2019; Hellman, Robinson-Keilig, et al., 2018; Munoz, Pearson, et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018).

Previous research has explored the relationship between adverse childhood events, hope, social support, and resilience, but it has been limited to selected populations and has not included the rural context, such as in Appalachia (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Hellman, Robinson-Keilig, et al., 2018; Munoz, Pearson, et al., 2018; Munoz, Quinton, et al., 2018; Sulimani-Aidan et al., 2018). Munoz, Quinton, et al.. (2018) called for research with diverse samples, and developing the academic resilience scale (Cassidy, 2016) suggested an opportunity to explore the relationship of supportive factors with domain-specific academic resilience. This cross-sectional quantitative study aimed to examine the relationship of adversity, hope, and perceived social support on academic resilience in the lives of emerging adults in North and Central Appalachia.

Review of Literature

To provide a background for this study, we briefly review the origins and recent research on academic resilience, Appalachia, adverse childhood experiences, rural poverty, hope, and social support. Beginning with the outcome variable, academic resilience, we define and summarize antecedents and outcomes, highlighting relationships with the other constructs under consideration.

Academic Resilience

Scholars define resilience in various ways (Hunsu et al., 2022), but most definitions refer to positive adaptation to adversity (Tudor & Spray, 2017), commonly called the ability to bounce back. Several scholars have argued for context-specific measures of resilience (Cassidy, 2016; Riley & Masten, 2005; Tudor & Spray, 2017), suggesting that adversities and positive adaptation will look different, at least behaviorally, in other contexts. Resilience may be domain-specific, similar to self-efficacy (Bandura et al., 1999). Another area for improvement that some have noted is the need for direct measures of resilience with most scales instead of measuring protective and risk factors (Lee et al., 2013).

Wang et al. (1994) defined academic (educational) resilience (AR) as "the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions, and experiences" (p. 46). Martin and Marsh (2009) distinguished between academic buoyancy (AB) and resilience, with AB being the ability of students to persist through the inevitable ups and downs of formal education. They suggest AR is persistence despite more severe stressors that are, more strictly speaking, adversities or 'major assaults' on developmental processes" (p.355). Hunsu et al. (2022) describe the research on academic resilience as "focused on how students who experience severe adversities (e.g., homelessness, parental divorce, etc.) overcome such adversities and go on to succeed in school" (p. 356).

Academic resilience is the ability to overcome adversity that might threaten educational development (Cassidy, 2016). Resilient students persist and achieve academic success despite facing one or more risk factors, including school-specific difficulties in learning and mastering concepts and related relationship challenges or accessing necessary resources (Yavuz & Kutlu, 2016). Cassidy (2016) developed and validated the academic resilience scale (ARS-30) with university students in the UK to include three dimensions: persistence, reflecting, adaptive-help-seeking, and negative affect and emotional response. Interestingly, Hunsu et al. (2022) found evidence supporting the multi-dimensionality of the ARS-30, arguing against its use to measure AR as a single dimension.

Regarding antecedents and components of AR, in a longitudinal qualitative study with Australian school children, Johnson (2008) found that students attributed their AR to teacher-student interactions such as listening, being available, and explaining complex concepts well. Holdsworth et al. (2018), in their qualitative exploration of college students' perceptions of resilience, found that building social networks, perspective development through reflection and goal setting, and well-being (both physical and mental health) contributed to resilience. Yavuz and Kutlu (2016) identified cognitive flexibility as an antecedent to academic resilience. Several studies have linked academic resilience conceptually and empirically to persistence and positive outcomes in formal education

(Ayala & Manzano, 2018; Cassidy, 2016). Rudd et al. (2021) systematically reviewed the AR quantitative research. They found AR positively associated with achievement as an outcome and with various protective factors such as family support, self-esteem, and extraversion.

We found no research on academic resilience in three journals focused on rural education: *The Journal of Research in Rural Education, The Rural Educator,* and *Theory and Practice in Rural Education.* In *The Rural Educator*, we found only one review of research on a related topic (trauma-informed practices, Frankland, 2021) and one program-specific exploration of college students' perceptions of barriers and supports (Goldman, 2019).

Rural Northern and North Central Appalachia

Appalachia is a broad region in the eastern USA, encompassing nearly 200,000 square miles and tracing the Appalachian Mountain range through 13 states (Appalachian Regional Commission, 2019). Appalachia is further categorized into northern, central, and southern subregions. The Appalachian region is mainly rural, with nearly half of the population residing in rural areas, more than double the national proportions.

While Appalachia has a deep and rich cultural heritage, these positive elements are frequently overshadowed, at least in the popular conversation, by persistent poverty, limited community resources, and widespread negative stereotypes that lead to mistreatment by people of other regions (Cooke-Jackson & Hansen, 2008). In addition to the stereotypes, scholars have noted an overall lack of research regarding Appalachia (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011).

Rural Appalachian youth do face some difficult realities. The isolated nature of many Appalachian communities limits access to critical resources such as grocery stores, medical care, and adequate housing (Ali & Saunders, 2006, 2009; Cooke-Jackson & Hansen, 2008; Semke & Sheridan, 2011), and mental health support (El-Amin et al., 2018). Communities lacking suitable mental health support see increased deaths from drug overdoses, suicides, and diseases associated with chronic alcoholism (El-Amin et al., 2018).

Chronic poverty has impacted Appalachian youth from some areas over several generations (Byun et al., 2012; Evans et al., 2016; Hoffman et al., 2017; Smokowski et al., 2013). Bright (2018) observed that growing up in systemic, generational poverty can produce cumulative adverse outcomes and limited opportunities from childhood to adulthood. These long-term outcomes include poor diets, reduced health, persistent unemployment, and continuous low socioeconomic status (Seals & Harmon, 1995). Adults sometimes adopt unhealthy lifestyles as coping mechanisms, struggling to support their children and exposing them to toxic stress (Shonkoff & Garner, 2011).

Appalachian youth growing up in a cycle of chronic poverty are likely to face interpersonal victimization, financial strain, and adverse life events (Banyard et al., 2017; Hardaway et al., 2012; Smokowski et al., 2013), including academic struggles that reduce their self-efficacy and desire to continue their education (Ali & Saunders, 2009). Students growing up in chronic poverty who successfully finish high school tend to have lower post-secondary aspirations than their peers (Irvin et al., 2012).

Adverse Childhood Experiences

Adverse childhood experiences (ACEs) are extreme childhood difficulties (Banyard et al., 2017), including exposure to sexual abuse, physical abuse, emotional abuse, or neglect (Norman et al., 2012). As an individual is exposed to ACEs, there is a permanent change in brain structure and functioning (Shonkoff & Garner, 2011). Due to the nature of this rewiring, ACEs tend to have a negative impact throughout the lifespan. This lifelong influence, noted by Felitti et al. (1998), is both strong and cumulative.

Those exposed to one or more ACEs will likely have increased morbidity and mortality later in life (Felitti et al., 1998; Shonkoff & Garner, 2011). Among other outcomes, individuals who have experienced ACEs may have increased fear and anxiety, altered mood functioning, and impaired judgment of whether something is safe (Shonkoff & Garner, 2011). ACEs are linked to a wide range of adulthood problems, such as smoking, severe obesity, eating disorders, high-risk sexual behavior, lack of physical activity, depression, use of illicit drugs, and suicide attempts (Felitti et al., 1998; Norman et al., 2012; Shonkoff & Garner, 2011; Southwick et al., 2014). Adults struggling to come to terms with adverse experiences from their childhood are likely to struggle to maintain supportive social networks and find themselves living in a cycle of persistent poverty, homelessness, crime, and incarceration (Shonkoff & Garner, 2011).

The lifelong impact of ACEs means that their effects extend to future generations. As adults struggle to cope with the realities of their past, they tend to adopt unhealthy lifestyles, find themselves unable to maintain employment or a stable living situation, and have difficulties supporting their children (Shonkoff & Garner, 2011). As a result of these struggles, the next generation becomes exposed to similar ACEs and toxic stresses as their parents before them (Shonkoff & Garner, 2011). This cycle entraps families with children's exposure to ACEs frequently occurring at the hands of a parent or guardian (Norman et al., 2012).

This cycle of adversity negatively influences children's educational development. In her landmark study, Werner (1989) found that 66% of children who score four or higher on the ACE scale developed severe learning or behavioral problems before age ten. Permanent changes to brain structure play a large part in this, as they impair memory and have been shown to inhibit educational attainment and lifetime economic productivity (Shonkoff & Garner, 2011). Instead of academic success, individuals find themselves with

delinquency records, increased teen pregnancy rates, and an array of mental health problems (Werner, 1989).

Bethell et al. (2019) investigated positive childhood experiences that would mitigate the adverse outcomes of ACEs, at least in mental and relational health areas. Based on Bethell et al.'s findings, Breedlove et al. (2021) partly theorized that restorative practices in schools could provide some of those mitigating positive experiences.

Hope

Snyder et al. (1991; Snyder, 2002) define hope as a cognitive process with two distinct components related to goal pursuit: pathways and agency. Agency refers to the determination to meet future goals. Those with high agency hope are more certain about goal attainment and perform better. They also tend to pursue more challenging goals than those with low agency hope. Pathways hope is the generation of feasible plans, including alternative paths, to meet a goal (Snyder et al., 1991). Those with high levels of pathways hope to plan initial ways to accomplish a goal, and when faced with barriers, they will find alternative paths (Snyder, 2002). Finding alternative paths frequently involves calling friends and family for support during stressful situations (Snyder, 2002). This reliance upon a social network ties Snyder's cognitive theory of hope to social support.

Hope contributes to both resilience and well-being (Grund & Brock, 2019; Hellman, Munoz, et al., 2018; Hellman, Robinson-Keilig, et al., 2018; Munoz, Quinton, et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018). Those with high levels of hope have healthy lifestyles, avoid life crises, and cope better with stressors (Snyder et al., 1991), and as a result, experience improved physical well-being (Snyder, 2002). Hope contributes to relationships, academics, and careers (Counts et al., 2017). In school contexts, Snyder et al. (2002) noted that hope predicts student performance as measured by grades and drop-out rates. Ciarrochi et al. (2007) found hope positively related to academic achievement. Dixson et al. 2018) found that hope partially mediated the relationship between socioeconomic status and academic achievement. Pertinent to school leaders and scholars, evidence is growing that hope can be taught. Hodson et al. (2021) demonstrated that hope and cognitive flexibility increase with daily diary goal reflection intervention.

It is generally agreed that protective factors such as having a relationship with a supportive adult can moderate the impact of adverse experiences and promote resilience. The individual attributes of hope and resilience are widely recognized as positive and related: high-hope individuals display resilience by maintaining their pursuit of goals in the face of adversity (Cassidy, 2016; Grund & Brock, 2019; Hellman, Robinson-Keilig et al., 2018; Munoz, Pearson, et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018).

With hope playing such a significant role in goal pursuit and positive outcomes, the effects of low levels of hope can be devastating, negatively impacting development and affecting everything from behavior to cognitive functioning to psychological development (Baxter et al., 2017; Grund & Brock, 2019; Munoz, Pearson, et al., 2018; Snyder, 2002; Snyder et al., 2003). Not surprisingly, adverse childhood experiences (ACEs) have a significant negative impact on academic outcomes. What remains to be seen is the role of hope and social support.

Social Support

Social support (SS) has been defined as being loved and cared for by others, including communication and mutual responsibility (Kim et al., 2008). Zimet et al.(1988) described different types (instrumental, informational, emotional, and evaluative) and sources (family, friends, and esteemed others such as teachers, coaches, and religious leaders). Social support occurs between two or more individuals and can be given and received (direction). It can consist of information, direct assistance (instrumental), encouragement (emotional), financial, and appraisal (evaluative) (Reevy & Maslach, 2001; Zimet et al., 1988). The level of social support an individual experiences depends on the richness of the social network in which they are embedded and their support-seeking behaviors (House, 1981; Reevy & Maslach, 2001). Lin (1986) described the subjective-objective dimension of social support, distinguishing between received support (objective) and perceived support (subjective). Over the subsequent decades, perceived social support (PSS) has more empirical support for having protective or stress-buffering functions (Bolger & Amarel, 2007; Demaray & Malecki, 2002; Wethington & Kessler, 1986) and is a more powerful predictor of well-being (Uchino, 2009) and self-esteem among adolescents (Ikiz & Çakar, 2010).

Perceived social support (PSS) has been linked to positive health outcomes (Uchino, 2009) as well as academic outcomes (Eggens et al., 2008). Martinez-Lopez et al. (2019) found perceived social support to be positively associated with adjustment to university. Of note, Mishra (2020) systematically reviewed the social support literature and found that students from low socioeconomic and other underserved backgrounds encountered barriers in accessing institutional social support in post-secondary education (e.g., financial aid support). Still, they derived support from peers with similar backgrounds and their family cultural values (e.g., discipline, integrity). Mishra also noted that students from collectivist cultures were more likely to access SS from peers than students from individualist cultures (Western Europe and the United States).

Social support in the home, school, or community protects children from negative outcomes related to ACEs (Powell & Davis, 2019). Specifically, social support is an influential factor in the presence of hope (Ho et al., 2021; Mahon & Yarcheski, 2017). Relevant to the current study, Ho et al. (2021) found that parental support contributed to increased hope among young adults regardless of socioeconomic status.

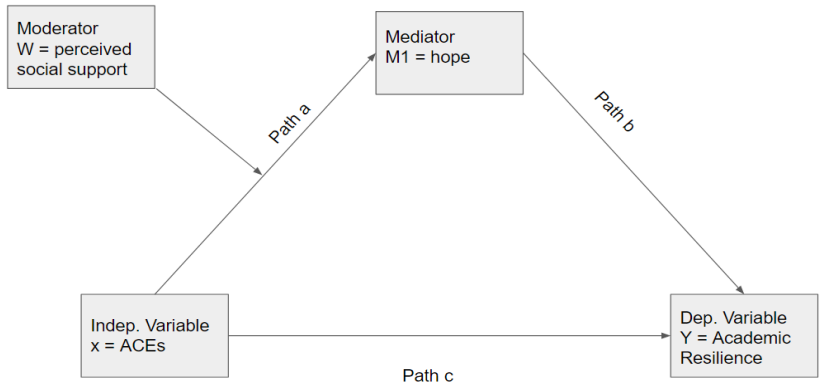
Methodology

We designed this cross-sectional study to:

1. Examine the relationships between hope, ACEs, perceived social support, and academic resilience;
2. Explore whether a combination of ACEs and hope predicts academic resilience;
3. Examine whether hope mediates the relationship between ACE and academic resilience and whether such mediation, if present, is moderated by perceived social support (see Figure 1). Specifically, the moderated mediation model was tested using a bootstrapping approach to assess the significance of the indirect effects at differing levels of the moderator (i.e., social support) on the relationship between ACEs and academic resilience via hope, the potential mediator (Hayes, 2013).

Figure 1

Moderated mediation model with hope as the mediator and perceived social support as the moderator.



Participants

After ethics board review and approval, two hundred emerging adults between 18 and 29 (*M* = 24.5, *SD* = 3.21) from rural Upper and Central Appalachia responded anonymously to the online questionnaire. Of those, 155 (77.5%) reported having spent most of their life and educational experiences within the Appalachian coalfields, a distinct sub-region located within Central Appalachia. Overall, the Coalfield area is economically distressed, with coal production and coal-related employment declining by more than 50% between 2001 and 2022 (Appalachian Regional Commission, 2023). Ninety-six participants (48%) self-identified as male, and ninety-eight (49%) identified as female, with five (2.5%) indicating their gender was not listed and one (0.5%) not sharing their gender.

Instrumentation

The following instruments were administered via QuestionPro in an anonymous online questionnaire in March 2020.

Academic Resilience Scale (ARS-30)

Cassidy (2016) developed the Academic Resilience Scale (ARS-30) to measure students' responses to academic challenges and adversities. The ARS-30 consists of three subscales: 14 items measure perseverance, seven measure negative affect and emotional response, and nine measure reflective and adaptive help-seeking. The ARS-30 demonstrates adequate reliability and predictive validity. The Cronbach's α for the overall ARS-30 is 0.90, .83 for the perseverance subscale, .78 for reflective and adaptive help-seeking, and .80 for negative affect and emotional response (Cassidy, 2016; Hunsu et al., 2022). All scale items correlated .3, except for items 1 (.14) and 14 (.12) (Cassidy, 2016). A significant positive correlation exists between ARS-30 scores and academic self-efficacy, r = .49 (Cassidy, 2016).

Adverse Childhood Experiences Questionnaire (ACE-Q)

We used the 10-item Adverse Childhood Experience Questionnaire (ACE-Q; Felitti et al., 1998) to measure participants' adverse childhood experiences. The ACE-Q measures the level of childhood exposure to emotional abuse, physical abuse, sexual abuse, and household dysfunction. Household dysfunction can encompass several experiences, including parental separation, exposure to substance abuse, mistreatment of the mother or stepmother, mental illness, or criminal behavior in the household (Felitti et al., 1998). The ACE-Q produces scores from zero to ten, with a higher value indicating more adverse childhood experiences. The ACE-Q has been widely used as a screening instrument with many sub-populations in the USA and other countries, showing predictive solid validity for mental and physical health outcomes (Zarse et al., 2019).

Perceived Social Support (MSPSS)

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) measures social support and consists of 12 items in total, with four items measuring each of the three sources of support: family, friends, and significant other. The MSPSS is psychometrically sound with good reliability and adequate construct validity, besides being easy to understand and interpret (Zimet et al., 1988). Cronbach's α values were found to be above .80 for the overall MSPSS scale and each of the three subscales, with actual values ranging between .81 and .98 (Zimet et al., 1990).

Adult Trait Hope Scale (AHS)

The adult trait hope scale (AHS; Snyder et al., 1991) consists of 12 items that measure two subscales: pathway thinking (4 items) and agency thinking (4 items) plus four filler items on a 4-point Likert scale from 1 *Definitely False* to 4 *Definitely True*.

Sample items include: “I can think of many ways to get out of a jam” and “I energetically pursue my goals.” The AHS has been found to be valid with various sub-populations and adequately reliable, with prior research placing internal consistency values between .63 and .86 (Pleeging, 2022; Snyder, 2002).

Data Analysis

To address RQ1, a Pearson correlational analysis was used to determine whether there were significant correlations among hope, ACEs, perceived social support, and academic resilience. To address RQ2, a standard multiple regression was utilized to explore whether a combination of ACEs and hope predicts academic resilience. In addressing RQ3, we used Preacher and Hayes’ (2008) SPSS macro (bootstrapping with 1000 iterations) to examine whether there was a conditional indirect effect of the moderator (i.e., social support) on the relationship between ACEs and academic resilience via the potential mediator (i.e., hope). In the moderated mediation model (Figure 1), the ACEs score was the independent variable, with hope as the mediator. The dependent (outcome) variable was academic resilience, and social support was the proposed moderator. The moderated mediation analysis tested the conditional indirect effect of a moderating variable (i.e., social support) on the relationship between a predictor (i.e., ACE) and an outcome variable (i.e., academic resilience) via the potential mediator (i.e., hope). An index of moderated mediation was used to test the significance of the moderated mediation (Hayes, 2013), i.e., the difference in the indirect effects across levels of social support. Significant effects were supported by the absence of zero within the confidence intervals.

Results

RQ1: Correlations among Study Variables

As expected, the analysis revealed a strong positive relationship between hope and AR and between PSS and AR. We also found a robust negative relationship between ACEs and AR, hope, and PSS (see Table 1).

Table 1

Pearson Correlation among Academic Resilience, ACE, Hope, and Perceive Social Support

Variable	M	SD	1	2	3
1. Academic Resilience	107.10	18.02			
2. ACE	2.08	2.21	-.44**		
3. Hope Total	24.89	3.90	.57**	-.36*	
4. Perceived Social Support (MSPSS)	64.66	14.70	.52**	-.42**	.42**

* p<.05 (2-tailed); **p<.01 (2-tailed); ACE - Adverse Childhood Experiences

RQ2: Multiple Regression Analysis

The multiple regression analysis found that ACEs and hope (total) accounted for about 39% of the variation in academic resilience, a large effect size according to Cohen et al.(1988), R^2 = .39, $F(2, 197) = 63.22$, p <.001. Hope predicted academic resilience (β = 2.19, p < .001), as did ACEs (β = -2.24, p < .001).

Table 2

Multiple Regression Analysis Summary for Hope and Childhood Adversity Predicting Academic Resilience

Variable	*B*	95% CI	*β*	*P*
Adversity	-2.24	[-3.1929 -1.2766]	.49	0.00
Hope	2.19	[1.6443 2.7297]	.28	0.00

RQ3: Moderated Mediation Model

Assumptions of linearity, normality, and uncorrelated errors were checked and met. The test revealed a significant indirect effect of ACEs on academic resilience, b = -1.38, *BCa CI* [-2.16, -.696], through hope, indicating that hope mediates the relationship between ACEs and academic resilience. Meanwhile, hope's upper and lower confidence intervals (Zimet et al., 1988) crossed zero, [-.05, .03] suggesting the lack of significant moderation effect. We should have found significance in the impact of social support on the strength of the relationship between adversity and hope. Given such, data showed that hope mediated the relationship between adversity and academic resilience,

regardless of the perceived social support level. The relationship between adversity and hope does not vary based on the amount of perceived social support.

Discussion

In this study, adversity and hope accounted for substantial variation (39%) in academic resilience, suggesting their importance to Appalachian young adults' academic resilience. We found hope was a significant mediator of the relationship between adversity and academic resilience, suggesting the importance of hope in helping Appalachian young adults recover from adversity. This study provides some evidence that the mechanism of that impact is through the lowering of hope. People with higher levels of ACEs tend to score lower on overall hope, both in devising pathways to a goal and in the agency for taking steps along a pathway. While educators cannot help students avoid all adversity, policymakers and educational leaders can implement trauma-informed supports and programs to enable early identification and intervention. Also, teachers can teach certain cognitive and affective skills. As noted in the implications for practice section below, ACEs can be moderated, and hope can be taught.

Meanwhile, perceived social support did not moderate the relationship between adversity and hope levels. Regardless of the level of perceived social support reported by the participants, a significant negative impact of adversity on hope levels was observed with the same strength. Even if an individual reported significant social support in this study, they would still be susceptible to the negative implications of adversity. On the surface, this appears to contradict Werner's (1989) observation that the development of supportive and protective elements determines whether an individual will overcome adversity, with increased volume and severity of ACEs resulting in an increased need for protective factors. This finding also appears to contradict more recent research indicating that the presence of a lasting positive relationship with a trusted adult has shown to be a particularly powerful protective factor (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Quinton, et al., 2018; Sulimani-Aidan et al., 2018). Thus, while the current study failed to find the moderation effect of perceived social support on ACEs and hope, we note that the cross-sectional nature of this study limited our ability to sort out the relationship between social support and hope (Vogt, 2005). Additionally, it may be that the presence of ACEs overwhelms the supportive factors in place, reducing hope levels for even those with high levels of support. This would align with Werner's observation that even highly resilient individuals can encounter problems when stressful events outweigh the protective factors (Werner, 1989).

Implications for Practice

The results of this analysis, which point to the importance of developing hope and the devastating influence of ACEs on hope, lend themselves to several applications for educational policy and professional practice. While these implications apply to various K-12 school settings, they are particularly relevant in the Appalachian context due to the

elevated rates of adversity that are present in this region (Banyard et al., 2017; Bright, 2018; Norman et al., 2012; Shonkoff & Garner, 2011; Southwick et al., 2014) and the overall isolation and lack of access to critical supports (Ali & Saunders, 2006, 2009; Cooke-Jackson & Hansen, 2008; El-Amin et al.2018; Semke & Sheridan, 2011). We also recommend that rural educators recognize the protective factors in rural communities and seek opportunities to collaborate with faith communities, civic groups, and extended family members. The following recommendations assume both the risk and protective factors of rural America.

First, to build on the strength of higher preschool enrollment in some rural areas (Hartman et al., 2023), rural schools can prepare staff to identify children with trauma symptoms early and provide appropriate interventions to moderate those effects. The power of ACEs and related trauma on overall student well-being and academic outcomes highlights the importance of access to early protective resources starting in preschool, if not sooner. These could include teachers trained in trauma-informed instruction and available school counselors and psychologists. Funding public preschool and adequately training staff, particularly in high-poverty rural areas, would build on the already higher rates of rural preschool attendance and should be a policy priority. This recommendation is supported by Eppley et al. (2023), who found that rural public schools in Pennsylvania have better academic outcomes than cyber charter schools despite funds being shifted to cyber charters. Several other states with large rural populations are experiencing similar policy trends (e.g., Texas; see Griffith, 2023).

The devastating impact of ACEs means that teaching individuals to be more hopeful or to pursue social support will be insufficient if children remain in educational and other social systems that allow, enable, or even support continued trauma. Thus, another implication for practice is the power of school-community partnerships with civic and faith groups. As noted, faith and extended family communities strengthen Appalachia and many other rural areas. Zuckerman (2023) reviewed the research on rural school-community partnerships and found promising models for full-service community schools and career networks. These partnerships can facilitate the provision of trauma-informed family support services to prevent, identify, and provide early interventions for children at risk. The career networks model supports students in entering their chosen careers. Additionally, community-based adult education can train community members to recognize trauma symptoms among family members and help break the cycle of ACEs. Parents, guardians, and extended families, who all will need to play a part in eliminating the cyclical nature of childhood trauma, can be taught hopeful cognitive approaches to pursue goals and seek social support.

Given the importance of hope in developing academic resilience, it is clear that hope needs to be a more explicit part of the K-12 educational experience in rural schools. Students should be taught the process of goal pursuit and how it can be developed as a

transferable skill. The need for this concrete focus on goal-oriented behaviors points to another implication for practice: the need for programs that explicitly teach social involvement and goal-oriented behaviors. These programs should focus on seeking positive support to help achieve goals and emphasize targeted practice to build the skills related to goal pursuit, support-seeking behaviors, and achievement.

Steps can be taught to increase cognitive flexibility, an antecedent to AR. One such step involves creating problem situations in which students navigate different approaches and solutions to the problems (Yavuz & Kutlu, 2016). The cognitive flexibility to imagine different pathways when barriers are encountered is the pathway dimension of hope. Teachers can support the development of academically resilient students by modeling pathway and agency thinking and then providing opportunities for students to practice finding alternate pathways and exercising agency in response to barriers (Mirza & Arif, 2018). Additionally, it is essential to develop students' metacognition, an awareness of their learning process, and an ability to anticipate barriers common in the rural environment.

Limitations and Recommendations for Research

These findings also suggest several opportunities for future research, particularly given the need for overall research on the Appalachian region (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011). Data were collected at the beginning of the COVID-19 pandemic so that replication would be in order after the pandemic. As a cross-sectional study, we attempted to measure multiple constructs at once. Social support, hope, and academic resilience were all measured as current constructs, while ACEs were measured as remembered past occurrences. It might more clearly illuminate the relationships by including measures of past experiences, such as social support perceived in high school. Future studies might use a different variation of the Hayes Process model (Hayes, 2013) or a cross-lagged design to reveal causal relationships (e.g., Rowsell et al., 2016).

A cross-lagged panel or other longitudinal design would address the limitation related to sorting out the relationships between past occurrences of ACEs and current levels of resilience, hope, and social support. Clarifying these relationships is especially difficult because resilience, hope, and perceived social support levels fluctuate, particularly in emerging adulthood (Brissette et al., 2002). Scholars might be interested in the social support and hope experienced while in secondary school and how those vary over time and, in turn, influence academic and health outcomes.

Also, researchers could explore how emerging adults who have experienced adversity learn to build social networks and access social support through those networks. Similar research could be done with other people groups susceptible to trauma, such as immigrant groups, including refugees and asylum seekers, and emancipated foster youth (and adults), to name a few. Vicarious resilience suggests the social nature

of building resilience (Hernandez-Wolfe, 2018) and could open up possibilities for exploring how academic resilience can be learned in schools among students and faculty.

While much attention has focused on adverse childhood experiences, adults across their lifespan also experience adversity and pursue academic goals. As such, researchers might consider an investigation into how post-traumatic stress disorder, post-traumatic growth, and other responses to trauma interact with academic outcomes and learning among adults.

Lastly, the current study is limited to one geographic location. While many challenges are common to rural areas, cultural and other differences may limit the generalization of these findings to other areas and populations.

Conclusion

This cross-sectional study of young adults in rural Appalachia revealed that hope and adverse childhood experiences (ACEs) predicted academic resilience (AR). The moderated-mediation tests indicated that while hope and perceived social support (PSS) were strongly correlated and hope mediated the relationship between ACEs and AR, PSS did not moderate that relationship. The results highlight the importance of school-community partnerships and increased funding for pre-school options, along with integrating hope-building lessons and activities into the curriculum for students and teachers. Educators and other professionals can model and teach the cognitive flexibility necessary for pathway hope and agency hope that lead to academic resilience.

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