

## Abstract

This two-study longitudinal investigation examined the indirect effects of secondary traumatic stress (STS) on secondary traumatic growth via two mediators: perceived social support and secondary trauma self-efficacy. In particular, we tested if the two hypothetical mediators operate sequentially, that is with secondary trauma self-efficacy facilitating social support (i.e., cultivation hypothesis) and/or social support enhancing self-efficacy (i.e., enabling hypothesis).

## Introduction

Secondary traumatic stress (STS) results from indirect exposure to trauma (Bride, Robinson, Yegidis, & Figley, 2004) and has a set of symptoms that is similar to posttraumatic stress disorder (PTSD). This indirect exposure to trauma is typified by healthcare providers working with traumatized individuals. Although it has been associated with many negative consequences, including higher distress, increased negative cognitions (Pearlman & Mac Ian, 1995), and higher job burnout (Ballenger-Browning et al., 2011), recent research highlighted the importance of positive changes, such as meaning making (Park & Ai, 2006) or posttraumatic growth (Cann et al., 2010). In these two studies, the term secondary traumatic growth is used to refer to positive changes in schemas about self and the world and perceived psychological growth that trauma-focused providers experience as a result of their work. Using Social Cognitive Theory (SCT; Bandura, 1997) as our theoretical framework, we argue that social support and self-efficacy serve as key mediators in the association between STS and secondary traumatic growth. However, there are two alternative hypotheses explaining the relationship between self-efficacy and social support. The cultivation hypothesis suggests that self-efficacy facilitates social support, whereas the enabling hypothesis states that social support enhances and protects self-efficacy (Schwarzer & Knoll, 2007). Although both the cultivation and enabling hypotheses have been supported by empirical findings, no studies have examined these hypotheses in the context of indirect exposure to trauma. We tested competing hypotheses. The effect of STS on secondary traumatic growth would be: a) mediated first by secondary trauma self-efficacy and then by perceived social support (cultivation hypothesis) or b) perceived social support would lead self-efficacy (enabling hypothesis).

## Method

### Participants

Participants in **Study 1** (N = 293 at Time 1, N = 115 at Time 2) were behavioral healthcare providers working with U.S. military personnel suffering from trauma. **Study 2** was conducted among Polish healthcare workers (N = 298 at Time 1, N = 189 at Time 2) providing services for civilian survivors of traumatic events.

### Measures.

**Secondary Traumatic Stress.** Secondary Traumatic Stress Scale (Bride et al., 2004)

**Secondary trauma self-efficacy.** The secondary Trauma Self-Efficacy (STSE) Scale (Cieslak et al., 2013).

**Perceived social support.** The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988).

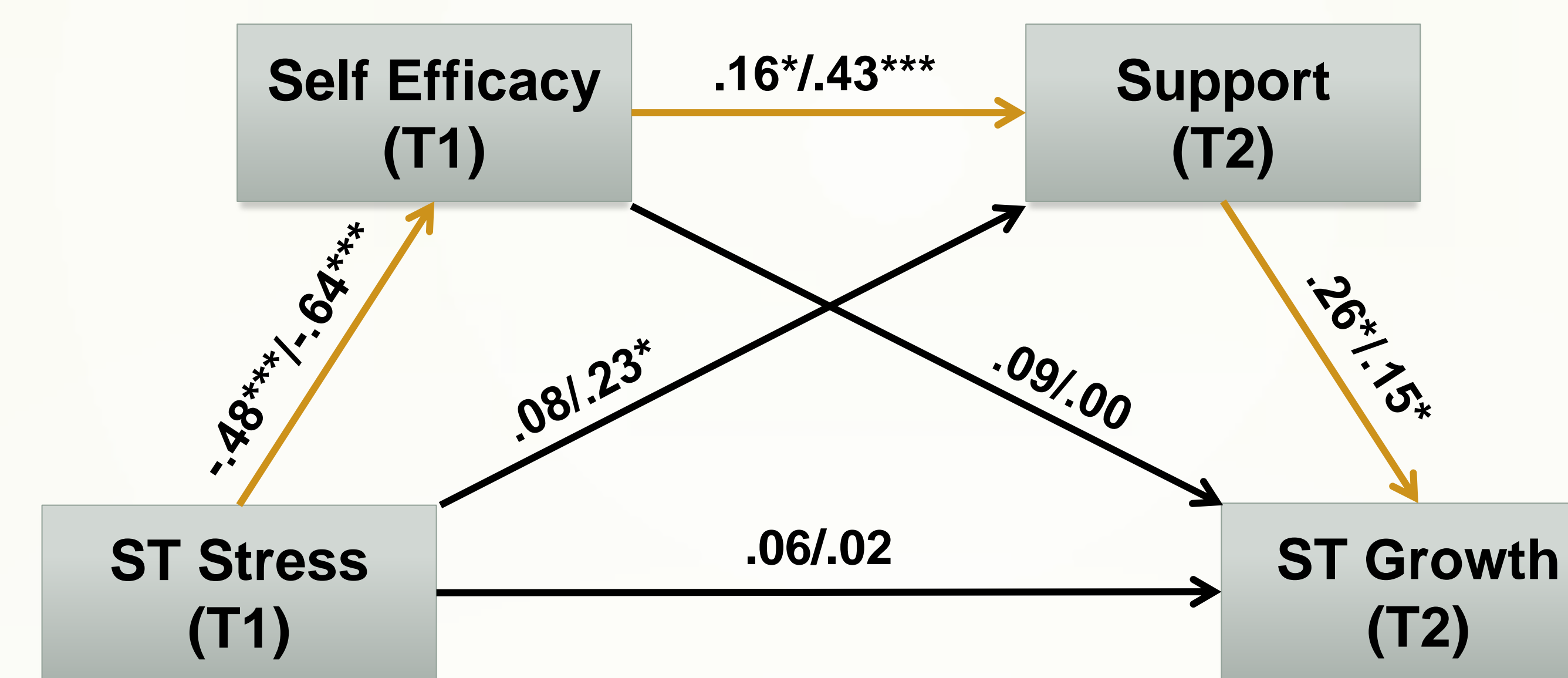
**Secondary Traumatic Growth.** Posttraumatic Growth Inventory-Short Form (PTGI-SF; Cann et al., 2010)

**Indirect Exposure to Trauma.** Secondary Trauma Exposure Scale (Cieslak et al., in press)

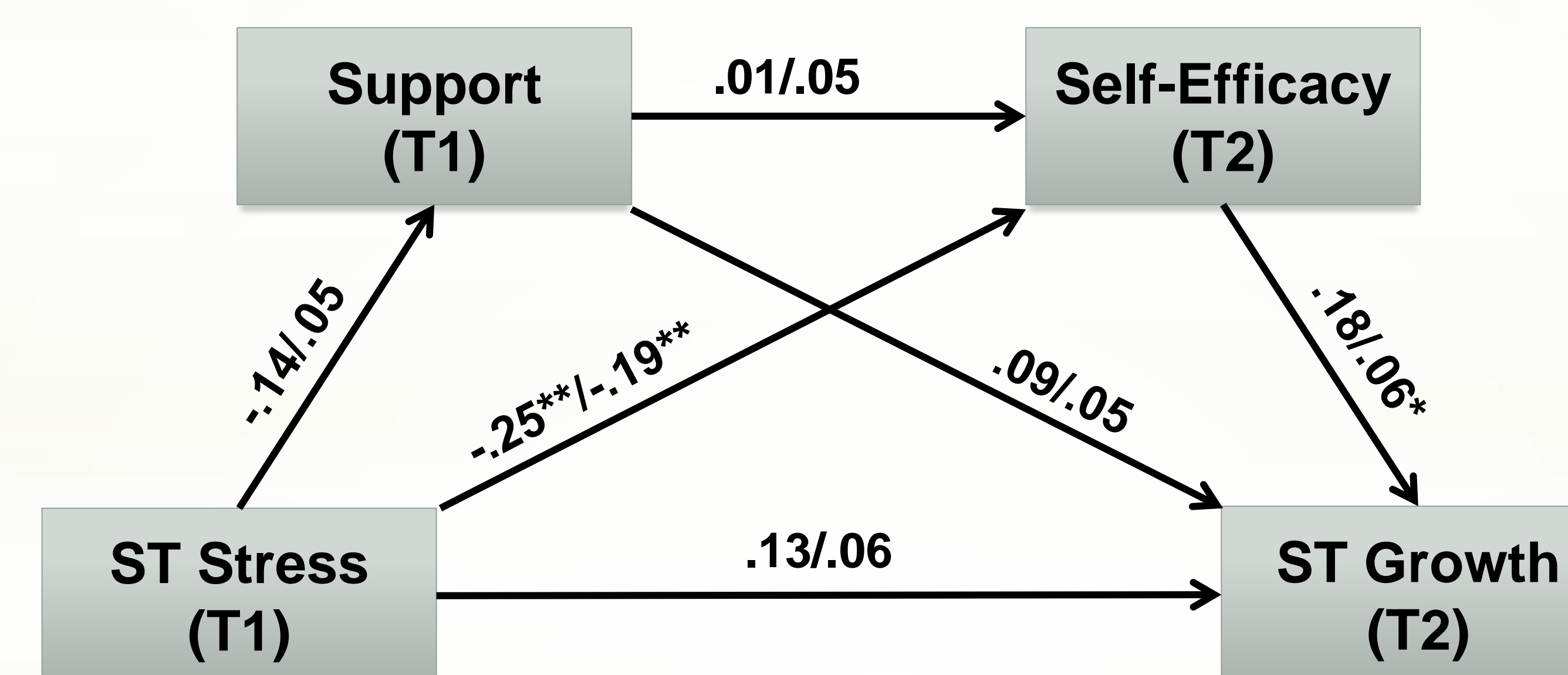
### Procedures.

Participants from both Study 1 and Study 2 completed a set of questionnaires evaluating STS, perceived social support, secondary trauma self-efficacy, and secondary traumatic growth. Additionally, indirect exposure to trauma and demographic variables were assessed as possible factors that should be controlled when testing the hypotheses.

In both studies, multiple mediational analyses showed evidence for the cultivation hypothesis (Figure 1). The relationship between STS at Time 1 and secondary traumatic growth at Time 2 was mediated sequentially by secondary trauma self-efficacy at Time 1 and social support at Time 2. The enabling hypothesis was not supported in either study (Figure 2).



**Figure 1:** Multiple mediation analysis of **cultivation hypothesis** (Study 1 coefficient  $\beta$ /Study 2 coefficient  $\beta$ ).



**Figure 2:** Multiple mediation analysis of **enabling hypothesis** (Study 1 coefficient  $\beta$ /Study 2 coefficient  $\beta$ ).

## Results

In both Study 1 and Study 2, after controlling for the effects of three covariates (i.e., T1 indirect exposure to trauma, T1 social support, and T1 secondary traumatic growth), path analyses supported the cultivation hypothesis. High secondary traumatic stress (T1) was related to lower secondary trauma self-efficacy (T1), which in turn predicted lower social support (T2), and then lower social support (T2) was related to lower secondary traumatic growth (T2). Indirect effects were tested using the bootstrapping method with 95% confidence interval.

**Table 1:** Mediating Effects of Perceived Social Support and Secondary Trauma Self-Efficacy in the Relationship between Secondary Traumatic Stress and Secondary Traumatic Growth

Indirect Effects Pathways	B	SE	BC 95% CI		Effect size $ab_{ps}$
			Lower	Higher	
<b>Study 1: Model 1</b>					
STS T1 $\rightarrow$ ST Self-Efficacy T1 $\rightarrow$ ST Growth T2	-.079	.095	-.289	.081	-.061
STS T1 $\rightarrow$ Support T2 $\rightarrow$ ST Growth T2	.042	.046	-.022	.171	.033
<b>Cultivation hypothesis:</b> STS T1 $\rightarrow$ ST Self-Efficacy T1 $\rightarrow$ Support T2 $\rightarrow$ ST Growth T2	-.041	.029	<b>-.136</b>	<b>-.002</b>	-.032
<b>Study 1: Model 2</b>					
STS T1 $\rightarrow$ ST Self-Efficacy T2 $\rightarrow$ ST Growth T2	-.100	.056	-.231	-.008	-.077
STS T1 $\rightarrow$ Support T1 $\rightarrow$ ST Growth T2	-.030	.045	-.163	.021	-.024
<b>Enabling hypothesis:</b> STS T1 $\rightarrow$ Support T1 $\rightarrow$ ST Self-Efficacy T2 $\rightarrow$ ST Growth T2	-.001	.006	-.022	.006	-.001
<b>Study 2: Model 1</b>					
STS T1 $\rightarrow$ ST Self-Efficacy T1 $\rightarrow$ ST Growth T2	-.001	.072	-.148	.134	-.001
STS T1 $\rightarrow$ Support T2 $\rightarrow$ ST Growth T2	.048	.029	.008	.130	.048
<b>Cultivation hypothesis:</b> STS T1 $\rightarrow$ ST Self-Efficacy T1 $\rightarrow$ Support T2 $\rightarrow$ ST Growth T2	-.058	.029	<b>-.137</b>	<b>-.015</b>	-.058
<b>Study 2: Model 2</b>					
STS T1 $\rightarrow$ ST Self-Efficacy T2 $\rightarrow$ ST Growth T2	-.016	.025	-.081	.023	-.016
STS T1 $\rightarrow$ Support T1 $\rightarrow$ ST Growth T2	.004	.012	-.009	.051	.004
<b>Enabling hypothesis:</b> STS T1 $\rightarrow$ Support T1 $\rightarrow$ SE Self-Efficacy T2 $\rightarrow$ ST Growth T2	.000	.001	-.000	.006	.000

## Discussion

This is the first longitudinal two-study investigation of how social support and self-efficacy operate as the mediators between secondary traumatic stress and secondary traumatic growth. Both studies consistently supported the cultivation hypothesis, indicating that self-efficacy beliefs mediate the relationship between STS and secondary traumatic growth through facilitation of social support.

Prior to our study, the cultivation and enabling hypotheses had not been tested in the context of secondary traumatization. These findings are only strengthened by the robust evidence supporting the cultivation hypothesis across both Study 1 and Study 2, each of which used different populations.

The findings regarding the cultivation hypothesis may have implications for SCT (Bandura, 1997) and support programming for trauma care providers. SCT proposes that self-efficacy is a key factor inter-relating with environmental factors facilitating adaptation in challenging situations. Our results suggest that enhancing self-efficacy helps a long-term adaptational process by facilitating social support. Thus, the greater the perceived efficacy for managing STS the greater the capacity to utilize a key environmental resource. Staff support programs focusing on the enhancement of secondary traumatic growth may benefit from boosting self-efficacy with the intent to facilitate perceived social support.

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