

## STRESSFUL LIFE EVENTS AND PHYSICAL AND PSYCHOLOGICAL HEALTH: MEDIATING EFFECTS OF DIFFERENTIATION OF SELF IN A SPANISH SAMPLE

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*The pathways between differentiation of self and health remain only partly elucidated. This cross-cultural study sought to test Bowen's hypothesis about the associations between differentiation, stressful life events, and physical and psychological health, in a sample of 466 Spanish adults. Results show that people with higher levels of differentiation were less prone to physical ailments (e.g., heart disease, cancer, or blood disorders) and psychological symptoms (e.g., depression or anxiety). Further, differentiation mediated the association between stress (i.e., perceived negativity of stress in the past year and number of stressful events across the lifetime) and physical and psychological health. The current research provides cross-cultural empirical evidence for the links between differentiation and mind and body health in a Mediterranean culture.*

Stress is recognized as a key underlying public health problem due to its adverse effects on physical, social, and psychological health (American Psychological Association, 2007). According to a recent survey in Spain, 53% of participants identified that they had experienced physical or psychological illness in conjunction with chronic or acute stressful circumstances (CINFA, 2017). Although all people experience stressful events, some individuals respond to and manage these stressful life events (SLEs) effectively without experiencing significant health decline, while others handle stress in less effective ways, leaving them more at risk for adverse health outcomes. Research has begun to establish the critical link between quality of the family system and the adaptive functioning of its individual members (Knopp et al., 2017; Lee & Szinovacz, 2016). Understanding how individual differences in intrapersonal and interpersonal mechanisms may contribute to healthy outcomes following SLEs is a crucial next step in preventing stress-induced diseases.

Differentiation of self (DoS), a central concept in Bowen's family systems theory (BFST; Bowen, 1978; Kerr & Bowen, 1988), is a family systems-level construct that is thought to represent the individual's capacity for self-regulation within the context of their significant relationships.

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Bowen theorized that greater DoS allows a person to achieve balance in the degree of connectedness and emotional separation in close relationships, and to adapt more effectively under stress by managing high levels of emotionality that occur in stressful circumstances (Kerr & Bowen, 1988). DoS may have relevance within a variety of Mediterranean cultures, including Spanish (Rodríguez-González, Skowron, Cagigal, & Muñoz, 2016) and Italian cultures (Lampis, 2016). Thus, purpose of this study is to examine whether DoS, an index of relational self-regulation, buffers the negative effects of SLEs on physical and psychological health outcomes in a Spanish sample.

### *Bowen Theory, Stress, and Health*

Stressful life events, health, and family have profound interconnections (Campbell, 1986; Falconer, Nussbeck, Bodenmann, Schneider, & Bradbury, 2015; Martire, Lustig, Schulz, Miller, & Helgeson, 2004). Many health practitioners (e.g., family therapists, nurses, physicians) understand that individual adult health is inextricably intertwined with the health and functioning of the family system (Bowen, 1978; Haefner, 2014; Martire et al., 2004). Empirical research has continued to employ and test theoretical models that focus on explaining the family-health connection, with one such model being the biobehavioral family model (BBFM; Wood, 1993). BBFM is a biopsychosocial model that explores the bidirectional influences of family social relationships, emotional functioning, and biological processes on health, and in recent years, findings have provided valuable information to inform relational clinical interventions (e.g., Priest, Roberson, & Woods, 2018). Complementary to the biobehavioral family model, BFST (Bowen, 1978) is another useful framework to guide family researchers toward a better understanding of the interplay between stress, emotion regulation, family, and health (Skowron, Van Epps, Cipriano-Essel, & Woehrl, 2014). Grounded in systems thinking, Bowen's ideas have played a significant role in the field of family therapy, marriage, and health, and his theory describes the emotional functioning of a family system wherein individual health and functioning is thought to be best understood in the context of relational processes (Nichols & Schwartz, 2004).

Differentiation of self reflects the development of mature and healthy functioning, and is defined as the extent to which one is able to balance (a) intellectual and emotional functioning and (b) intimacy and autonomy in one's significant relationships (Bowen, 1978; Skowron & Friedlander, 1998). Bowen conceptualized DoS as an indicator of affect regulation capacities within interpersonal relationships (Kerr & Bowen, 1988; Skowron & Schmitt, 2003) and several empirical studies confirm that greater DoS is associated with markers of regulatory control, including fewer mental health symptoms (Sandage & Jankowski, 2010), more self-control (Ross & Murdock, 2014), and greater effortful control (Skowron & Dendy, 2004). DoS involves both intrapersonal and interpersonal dimensions that are assessed using the *Differentiation of Self Inventory* (DSI; Skowron & Friedlander, 1998; Skowron & Schmitt, 2003), and more recently, the Spanish-DSI (Rodríguez-González, Skowron, & Jódar, 2015), which was used in the present study. Bowen (1978) theorized that highly differentiated individuals can mindfully engage the thinking and feelings systems that govern behavior. Thus, even under periods of stress or conflict, more differentiated individuals can thoughtfully self-reflect and act in accordance with their own values. More poorly differentiated individuals often rely on significant others to stabilize and soothe anxiety. Thus, DoS levels reflect an individual's capacity to manage emotionality within close family relationships and theoretically relate to an individual's ability to cope with life stress (Bowen, 1978; Kerr & Bowen, 1988).

### *Empirical Studies on Differentiation and Health*

It is well established that DoS and psychological health are related; however, findings from empirical studies of DoS-physical health connection are inconclusive, and most have assessed the DoS-physical health connection within U.S. samples (Miller, Anderson, & Keala, 2004). A recent review on the topic of DoS and health (Rodríguez-González, 2017), summarizing 42 empirical research studies conducted between 1987 and 2014, explored associations between DoS and health. Among these studies, 39 assessed the relationship of DoS and psychological health; these studies found greater DoS was associated with greater self-esteem and fewer depressed symptoms (e.g., Chung & Gale, 2006), fewer psychiatric symptoms and greater positive affect (e.g., Sandage & Jankowski, 2010), and fewer psychological symptoms (e.g., Ross & Murdock, 2014). Several empirical

studies have considered the role of DoS in the relationship between perceived stress of SLEs and psychological health (Rodríguez-González, 2017), and research conducted in primarily Caucasian U.S. samples appears to show that DoS operates as a mediator of the stress-health relationship (Bartle-Haring, Rosen, & Stith, 2002; Findler, 2014; Krycak, Murdock, & Marszalek, 2012; Skowron, Wester, & Azen, 2004). To our knowledge, no studies of this kind have been conducted within European or Spanish samples.

Fewer studies have documented links between DoS and indicators of physical health, and we could not locate any studies that examined DoS and physical health outside of U.S. samples or samples of college students (Rodríguez-González, 2017). Among the five published empirical studies on DoS and physical health outcomes, two reported that higher levels of DoS were associated with physical health, namely lower body mass index (BMI; Hooper & Doehler, 2011), and less severe fibromyalgia symptoms (Murray, Daniels, & Murray, 2006). With regard to studies examining U.S. university students, Skowron (2004) found no association between DoS and self-reported physical health status in an ethnically diverse sample, whereas Protinsky and Gilkey (1996) found an association between higher levels of DoS and greater perceived health in a predominantly Caucasian U.S. sample. In sum, these findings show there is evidence that DoS is linked to psychological and physical health, and that DoS may mediate effects of stress on psychological health in particular. Thus, in this present study, we test the direct links between DoS and two indices of health (i.e., number of physical illnesses and psychological distress). Further, we will clarify the mediating or moderating role of DoS on the stress-health connection in a Spanish population where these relationships have not yet been examined.

#### *Clarifying the Relationship between Differentiation, Stress, and Health*

Given that Bowen (1978) hypothesized the DoS could operate as a moderator of the stress-health connection, but it might instead operate as a mediator of the stress-health connection, depending on the duration of anxiety and stress in the family system, we sought to clarify the associations between DoS, SLEs, and health. Bowen posited that “people at any point on the scale (of differentiation), if stressed sufficiently, can develop physical, emotional, or social symptoms. The higher the level of differentiation, however, the more stress required to trigger a symptom” (Kerr & Bowen, 1988, p. 97). Thus, if DoS functions as a moderator, we reasoned that under conditions of fewer life stressors, no differences between high and low DoS would be observed on an adult’s health outcomes. Under greater levels of life stress, however, highly differentiated adults would report greater health outcomes than those of their less differentiated peers. This is in line with Murdock and Gore (2004), who found that poorly differentiated individuals experienced heightened psychological distress relative to more highly differentiated individuals when faced with similar levels of perceived stress.

Though we posited that DoS would operate as a moderator of links between life stress and health outcome, we tested an alternative empirically supported hypothesis that DoS levels would mediate the stress-health association. Specifically, if the negative effects of life stress operate through one’s level of DoS to influence health outcomes, we reasoned that evidence of DoS as a mediator of the stress-health outcomes relationship would emerge. Several empirical studies have shown evidence of DoS as a mediator between perceived and actual stress and psychological health (e.g., Bartle-Haring et al., 2002; Findler, 2014; Krycak et al., 2012; Kudo & Fujiu, 2009; Skowron et al., 2004). Krycak et al. (2012) tested a competing hypothesis of DoS as a mediator and moderator of actual and perceived stress and psychological distress. They found evidence for a mediation effect; that is, DoS functions as a pathway through which stress is perceived differently depending on the level of DoS one possesses. They concluded that the way stress is operationalized may be related to how DoS operates in the stress-health relationship. To add to Krycak et al.’s (2012) conclusions, we posited that the role of DoS in the stress-health connection might also depend on the culture or sample that is examined. Thus, in the present study, we included measures of both the perceived negativity of SLEs (i.e., negative perception of SLEs) and actual stress levels (i.e., total number of SLEs) to better understand the way that DoS might operate to facilitate greater health outcomes under varying conditions of life stress.

### *Aims of the Present Study*

In the present study, we sought to test whether DoS mediates or moderates the negative associations between life stress and health outcomes, and to learn whether propositions in BFST regarding the beneficial effects of DoS (i.e., relational self-regulation) extend to health outcomes in a Mediterranean (i.e., Spanish) culture as well. No prior studies conducted in Spain have examined the role of DoS in moderating or mediating the relationship between SLEs and health. As such, the purpose of this study was twofold. First, we tested whether DoS would moderate the associations between the number of and negative perception of SLEs and physical and psychological health. Consistent with Bowen theory (1978) and previous research (e.g., Murdock & Gore, 2004), we hypothesized that DoS would moderate the relationship between SLEs and health outcomes, such that higher levels of DoS would serve to weaken the association between greater SLEs and negative health outcomes. Given that previous research has shown evidence of DoS as a mediator between perceived stress and psychological stress and adjustment, we also tested the hypothesis that DoS levels would mediate the relationship between SLEs and health outcomes, such that SLEs negatively affect health outcomes through lower level of DoS. Finally, by conducting this study in a sample of Spanish adults, we sought to examine the cultural validity of previous research on DoS and health by subjecting it to empirical testing in a Mediterranean (Spanish) culture.

## METHOD

### *Participants and Procedure*

A sample of 466 adults with a mean age of 44.3 years ( $SD = 14.79$ ; 43.5% male) took part in the study. Inclusion criteria included (a) being a Spaniard, residing in Spain, and (b) being 18 years of age or older. Participants were recruited for this anonymous survey on a volunteer basis using a snowball sampling procedure. Eligible individuals received full instructions, a demographic questionnaire, a battery of measures, and a prepaid envelope to return the completed measures (via mail or hand-delivery). Measures were presented in random order and the assessment took approximately 45 min to complete.

Descriptive statistics showed that the sample was highly educated: 46.6% of the participants graduated from university, 13.3% had a postgraduate degree, 28.3% had finished high school, 11.6% had completed some elementary school, and 0.2% did not report educational attainment. Most participants (60.1%) reported having children. The majority (71.5%) of participants were employed, 10.3% were unemployed, and the remaining reported other situations (e.g., retired). The majority of participants (80%) lived with a stable partner and the mean duration of relationships was 18.26 years ( $SD = 14.72$ , range = 0–59 years).

### *Measures*

*Differentiation of self (DoS).* The *Spanish-Differentiation of Self Inventory (S-DSI)*; Rodríguez-González et al., 2015) was used to assess adults' levels of DoS. The S-DSI is the Spanish adaptation of the *Differentiation of Self Inventory-Revised (DSI-R)*; Skowron & Schmitt, 2003), and is comprised of two subscales: emotional reactivity (13 items) and emotional cutoff (13 items). Participants rated items on a 6-point Likert scale, ranging from 1 (*not at all true of me*) to 6 (*very true of me*). Higher scores reflect lower emotional reactivity and emotional cutoff, which are the indicators of greater DoS. The S-DSI has evidenced construct validity (Rodríguez-González et al., 2016). In the present study, the S-DSI revealed excellent internal consistency (Cronbach's  $\alpha = .93$ ) for the full scale.

*Stressful life events.* The *Life Experiences Survey (LES)*; Sarason, Johnson, & Siegel, 1978) was used to evaluate both the number of and the negative perception of the SLEs experienced by participants. Section 1 of the LES was used in this study, which consists of 47 specific events, oriented to the general population, and three blank spaces for participants to contribute other recent SLEs not listed in the measure. Participants were asked to endorse SLEs they experienced (a) across the lifetime and (b) during the past year, by indicating whether they viewed the event as being positive or negative, based on the perceived impact of the particular event on their life at the time of occurrence. Items are rated on a 7-point scale, ranging from  $-3$  (*extremely negative*) to  $+3$  (*extremely positive*). For this study, we used two scores from the LES: (a) total number of SLEs

experienced throughout the participant's life, with higher scores indicating a greater number of SLEs events regardless of their positive or negative impact (e.g., starting a new job or the death of a family member), and (b) negative values that represent the participants' evaluation of SLEs as negative. The negative perception of SLEs score is computed by summing the impact ratings of those events designated as negative by the participant within the preceding 12 months (i.e., those events rated  $-3$  to  $0$ ) while removing any events that were evaluated as positive. The Spanish version of LES is derived from Rodríguez-Naranjo and Caño's (2010) adaptation, which obtained a good level of reliability for the negative perception of SLEs score (Cronbach's  $\alpha = .82$ ). In the present study, the negative perception of SLEs revealed good internal consistency (Cronbach's  $\alpha = .84$ ).

*Psychological health.* The *Brief Symptom Inventory* (BSI; Derogatis, 1993) was used to assess the participants' level of psychological health. The BSI is a 53-item self-report inventory designed to reflect the psychological symptom patterns of psychiatric and general populations. We used the Global Severity Index (GSI) to create a composite psychological health score across all items. Participants rated items from 0 to 4, with higher scores indicating more severe levels of psychological distress and lower scores indicating greater psychological health. The psychometric properties of the BSI and subscale scores are excellent (Derogatis, 1993). In the present study, the BSI revealed excellent internal consistency (Cronbach's  $\alpha = .94$ ).

*Physical health.* The *Health Survey of the Spanish National Statistical Agency* (HS-SNSA; Instituto Nacional de Estadística, 2006) was used to assess specific physical illnesses. This measure includes the 27 diseases most prevalent in Spain (e.g., diabetes, cancer, high cholesterol, or blood pressure). Participants indicated if they experienced each illness at any point in their life, in the past 12 months, and with or without medical diagnosis. As we were interested in assessing recent and current physical health as an outcome, rather than physical health across the lifetime, we used number of illnesses experienced in the past 12 months for all analyses.

## RESULTS

### *Preliminary Analyses*

Descriptive statistics, including means, standard deviations, and intercorrelations for the study variables can be found in Table 1. All study analyses were computed using SPSS version 22. We conducted *t* tests to assess gender differences on DoS and all outcome variables. No mean gender differences were observed on DoS scores or on physical health scores. However, men reported lower BSI scores (i.e., fewer psychological symptoms;  $M = 0.36$ ,  $SD = 0.03$ ) relative to women ( $M = 0.60$ ,  $SD = 0.50$ ),  $t(464) = -3.48$ ,  $p < .01$ . Age was positively correlated with physical health problems, showing that older participants experienced a greater number of physical illnesses within the past year.

As expected, the total number of SLEs was significantly negatively correlated with physical and psychological health problems, such that the lower life stress correlated with greater BSI scores and HS-SNSA scores (see Table 1). Likewise, DSI scores showed significant correlations with HS-SNSA and with BSI scores, in the expected directions, indicating that higher levels of DoS were associated with fewer physical health conditions and lower levels of psychological distress. The total number of SLEs was modestly but significantly correlated with DoS, indicating that greater life stress was reported by persons with lower levels of DoS. The negative perception of SLEs score was also significantly correlated with DoS, signifying that a more negative perception of SLEs was related to lower levels of DoS.

### *Testing for Moderation Effects*

All moderation analyses were performed using the Process macro for SPSS (version 2.12.1; Hayes, 2013) to test whether DoS scores moderated the associations between two measures of life stress and the two health outcomes, after considering the effects of age and gender. Models one and two assess the moderating role of DoS on the associations between total number of SLEs and physical and psychological health, respectively. We examined two additional models to assess the moderating role of DoS on the associations between negative perception of SLEs and physical and psychological health measures. Predictor variables and the interactions terms were centered in all

Table 1  
*Correlations, Means, and Standard Deviations for Study Variables ]*

Variable	1	2	3	4	5	6	7
1. DoS	1						
2. Total number of SLEs	-.18**	1					
3. Negative perception of SLEs	.19**	-.44**	1				
4. Physical health (past 12 months)	-.38**	.16**	-.11*	1			
5. Psychological health (GSI)	-.56**	.22**	-.34**	.34**	1		
6. Age	-.12*	.13**	.09*	.53**	-.03	1	
7. Gender (female = 1, male = 0)	-.06	.04	-.15**	.08	.15**	-.14**	1
<i>SD</i>	0.94	5.24	4.94	2.54	0.45	14.79	0.49
<i>Mean</i>	3.08	9.05	-4.52	2.92	0.55	44.32	0.57

*Notes.* DoS = differentiation of self; SLEs = stressful life events; GSI = Global Severity Index.  
 \* $p < .05$  (2-tailed). \*\* $p < .01$  (2-tailed).

analyses. Gender was coded dichotomously as 0 for males and 1 for females. Complete moderation results are presented in Table 2.

*Total stressors.* In the first moderation analysis, total number of SLEs, age, gender, DoS, and the interaction term (centered DoS  $\times$  total number of SLEs) were regressed on physical health in the past 12 months. While the overall model was significant,  $R^2 = .40$ ,  $F(5, 460) = 53.80$ ,  $p < .001$ , the interaction term between DoS and the total number of SLEs was nonsignificant,  $R^2 \Delta = .01$ ,  $F(1, 460) = 0.77$ ,  $p = .79$ . DoS emerged a significant predictor of physical health, when controlling for age, gender, and the total number of SLEs ( $B = -0.87$ ,  $SE = 0.12$ ,  $p < .001$ ). The second moderation analysis explored whether DoS would emerge as a moderator in the relationship between total number of SLEs and psychological health, while controlling for age and gender. Again, the overall model was significant,  $R^2 = .60$ ,  $F(5, 460) = 43.62$ ,  $p < .001$ , but the interaction term between DoS and the total number of SLEs was nonsignificant,  $R^2 \Delta = .001$ ,  $F(1, 460) = 1.45$ ,  $p = .23$ . DoS also emerged as a significant predictor of psychological health, even while accounting for the variance attributable to age, gender, and the total number of SLEs ( $B = -0.28$ ,  $SE = 0.02$ ,  $p < .001$ ).

*Negative stressors.* The third and fourth moderation analyses explored whether DoS moderated the relationship between the negative perception of SLEs and physical and psychological health. In the third moderation analysis, negative perception of SLEs, age, gender, DoS, and the interaction term (centered DoS  $\times$  negative perception of SLEs) were regressed on physical health in the past 12 months. While controlling for the effects of age, gender, and negative perception of SLEs, DoS significantly predicted greater physical health ( $B = -0.82$ ,  $SE = 0.12$ ,  $p < .001$ ). Results showed that the overall model was significant,  $R^2 = 0.41$ ,  $F(5, 459) = 55.54$ ,  $p < .001$ . The interaction between DoS and negative perception of SLEs did not emerge as significant,  $R^2 \Delta = .005$ ,  $F(1, 459) = 1.71$ ,  $p = .19$ . The last moderation analysis explored DoS as a moderator of the relationship between negative perception of SLEs and psychological health. As shown in Table 2, the overall model was significant,  $R^2 = .39$ ,  $F(5, 459) = 49.84$ ,  $p < .001$ ; however, the interaction between DoS and negative perception of SLEs was not significant when regressed on psychological health,  $R^2 \Delta = .01$ ,  $F(1, 459) = 2.91$ ,  $p = .09$ . Though no significant moderation was

**Table 2**  
*Hierarchical Multiple Regressions of Differentiation of Self and Stressful Life Events on Psychological and Physical Health: Testing Moderation 1*

Step and predictor variable	Psychological health (GSI)				Physical health (HS-SNSA)					
	<i>B</i>	<i>SE</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\Delta F$	<i>B</i>	<i>SE</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\Delta F$
Analysis 1 and 2			.60		43.62***			0.40		53.80***
<i>Step 1</i> <sup>a</sup>										
Gender	0.09**	0.03				0.09***	0.01			
Age	-0.003	0.001				0.68***	0.18			
Number of SLEs	0.01**	0.004				0.01	0.02			
DoS	-0.28***	0.02				-0.87***	0.12			
<i>Step 2</i> <sup>b</sup>				.001	1.45				0.01	.77
Number of SLEs × DoS	-0.01	0.01				-0.01	0.03			
Analysis 3 and 4			.39		48.94***			.41		55.54***
<i>Step 1</i> <sup>a</sup>										
Gender	0.07*	0.03				0.64***	0.19			
Age	-0.002	0.001				0.09***	0.01			
Negative perception of SLEs	-0.02***	0.004				-0.05	0.02			
DoS	-0.27***	0.02				-0.82***	0.12			
<i>Step 2</i> <sup>b</sup>				.01	2.91				.005	1.71
Negative perception of SLEs × DoS	0.01	0.01				-0.05	0.01			

*Notes.* GSI = Global Severity Index; HS-SNSA = Health Survey of the Spanish National Statistical Agency; DoS = differentiation of self; SLEs = stressful life events.  
<sup>a</sup>Main effects of controls, predictor variable, and moderator on criterion. <sup>b</sup>Interaction effects of the predictor variable and moderator on criterion.  
 \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

found, DoS emerged as a significant predictor of greater psychological health while covarying age, gender, and negative perception of SLEs ( $B = -0.27, SE = 0.02, p < .001$ ).

### *Testing for Mediation Effects*

Finally, to test whether DoS mediated the associations between life stress and health outcomes, four mediation analyses were conducted using a bootstrapping procedure (Preacher & Hayes, 2008). Parameter estimates were based on 10,000 bootstrapped samples. Confidence intervals for the indirect effects were computed, with intervals excluding zero indicating statistically significant indirect effects with  $p < .05$  (Shrout & Bolger, 2002). The size of the indirect effects was computed using the completely standardized indirect effect (Hayes, 2013). Results of the four mediation analyses are shown in Table 3.

*Total stress.* The first two mediation analyses tested the indirect effect of DoS on the relationship between total number of SLEs and physical and psychological health. The first mediation analysis examined whether DoS mediated the link between total number of SLEs and physical health. After accounting for gender and age, total number of SLEs was negatively associated with DoS levels,  $t(462) = -3.51, p < .01$ , which, in turn, was negatively related to physical health scores,  $t(461) = -8.20, p < .001$ . The indirect effect was small but significant (Completely SIE = 0.06,  $SE = 0.02$ , 95% CI [0.03, 0.10]), indicating that as DoS levels increased, the link between life stress and physical health decreased. Thus, evidence for a significant full mediation effect was supported by the confidence intervals that did not contain zero, and the effect of total number of SLEs on physical health was nonsignificant in the presence of the mediator. This model accounted for 2% of the variance in physical health scores. In the second test of mediation, the relationship between total number of SLEs and psychological health was partially mediated by DoS levels, evidenced by the confidence interval that did not contain zero (see Table 3). This model indicates that as total number of SLEs increased, psychological health decreased .06 standard deviations, through reductions in DoS levels (Completely SIE =  $-0.08, SE = 0.02$ , 95% CI [0.04, 0.13]). This mediation model accounted for 1% of the variance in GSI scores.

*Negative stressors.* Similarly, DoS significantly mediated the association between negative perception of SLEs and psychological health (Completely SIE =  $-0.10, \beta = .01, SE = 0.02$ , 95% CI [ $-0.15, -0.06$ ]) in the third test of mediation. As the negative perception of SLEs decreased one standard deviation, psychological health improved .10 standard deviations through an increase in DoS levels. See Table 3 for this mediation model and bootstrapped estimates of the indirect effect. This mediation model accounted for 4% of the variance in GSI scores. Lastly, participants' negative perception of SLEs was associated with increases in the number of recent physical illnesses through reductions in DoS (Completely SIE =  $-0.07, \beta = -.02, SE = 0.02$ , 95% CI [ $-0.11, -0.04$ ]), though the effects were smaller. This mediation model accounted for 3% of the variance in physical illness scores.

## DISCUSSION

The present study aimed to (a) characterize the links between DoS and psychological and physical health in a Spanish sample and (b) test the mediating and moderating role of DoS in the stress-health association. The results of the present study provided further evidence for the cross-cultural validity of Bowen's family systems theory (BFST). Evidence emerged to suggest that DoS appears to serve a mediating role, rather than moderating role, in the relationship between SLEs and psychological symptoms and physical health illnesses. In the present study, both negative perception of SLEs and the total number of SLEs were negatively related with greater levels of DoS and, in turn, DoS was positively related to psychological and physical health. Interpretation of these findings suggests that the associations between both one's perception that SLEs are undesirable and the quantity of stressors that one experiences, and physical and mental health are partially accounted for by one's capacity for differentiation.

We did not find evidence in support of the moderating role of differentiation. Our results are consistent with other studies that tested the moderation and mediation effects of DoS (e.g., Hooper & DePuy, 2010; Krycak et al., 2012; Murray et al., 2006; Skowron, 2004). Unlike Murdock and Gore (2004), who found that differentiation determined the link between perceived stress and



Table 3 <i>Bootstrap Analysis of the Magnitude and Statistical Significance of Indirect Effects (Mediator Variable: DoS) 1</i>						
Independent variable	Dependent variable	B mean indirect effect (SE)	95% CI mean indirect effect [LL, UL]	Completely standardized indirect effect (SE)	95% CI Completely standardized indirect effect [LL, UL]	
Total number of SLEs	Physical health (past 12 months)	0.023 (0.007)	[0.015, 0.039]	0.058 (0.016)	[0.028, 0.095]	
Negative perception of SLEs	Physical health (past 12 months)	-0.029 (0.007)	[-0.047, -0.016]	-0.068 (0.016)	[-0.105, -0.039]	
Total number of SLEs	Psychological health (GSI)	0.017 (0.003)	[0.005, 0.017]	0.088 (0.024)	[0.042, 0.133]	
Negative perception of SLEs	Psychological health (GSI)	-0.009 (0.002)	[-0.014, -0.006]	-0.103 (0.021)	[-0.147, -0.064]	

*Notes.* All indirect effects are significant. DoS = differentiation of self; SLEs = stressful life events; GSI = Global Severity Index.

psychological well-being, the present study found evidence that DoS operated as a partial mediator of perceived and actual number of SLEs and two outcomes: (a) number of physical diseases experienced in the past year and (b) psychological symptoms. The present sample differs from Murdock and Gore's (2004) U.S. college student sample both in average age, with the present sample being, on average, 44 years of age, and in cultural composition (Spanish vs. American). Bowen theorist, Michael Kerr, asserted that the defining of a self is observed clinically as individuals become self-sustaining and live apart from family-of-origin members (Rodríguez-González & Kerr, 2011). Thus, differences in the process of differentiating could exist in this present adult sample relative to Murdock and Gore's (2004) sample of college students who may have varying degrees of independence from their parents. Additionally, we operationalized stress both as a count of the number of changes in one's lifetime (e.g., new job, death of a loved one) and as the negative perception of those stressful events in the past year as a proxy for subjective negative stress. Future studies might consider assessing stress and stressful life circumstances in multiple ways (i.e., perceived, type, severity, chronicity) to ascertain whether the role between stress, DoS, and health depends upon the way stress is captured, both in its perceived negative impact and in its chronicity.

This study extends empirical support for the relationship between DoS and psychological and physical health to a Spanish culture, and is consistent with the findings of other investigations conducted in the U.S. (Chung & Gale, 2006; Ross & Murdock, 2014; Skowron, 2004). Specifically, we found that DoS explains nearly one-third of the variance in psychological health scores and 10% of the variance in physical health, after controlling for the effects of age, gender, and the total number of SLEs. Findings show an association between higher levels of DoS and lower rates of physical illnesses and psychological symptoms. Importantly, we utilized broad measures of physical and psychological health in a non-clinical population (i.e., persons without chronic or terminal illness). Prior research has shown that persons experiencing chronic illness experience sustained heightened levels of stress and anxiety, such that they subsequently are more vulnerable to the effects of that same stress (Davis, Zautra, & Reich, 2001). Along those lines, BFST theorizes that chronic, ongoing stress influences differentiation more so than acute stressors (e.g., the death of a significant close other; Bowen, 1978). Therefore, our indices of psychological and physical health improve the generalizability of our results because they explain how DoS operates in the relationship between stress and health outcomes, without the inherent confounds for persons experiencing chronic illness, such as the populations that were previously studied (i.e., indicators of overweight and obesity, Hooper & Doehler, 2011; fibromyalgia, Murray et al., 2006).

In addition to the results of this study, several empirical studies have echoed our findings and found differentiation to have a consistent significant mediation effect within different cultural contexts (i.e., United States & South Korea, Chung & Gale, 2006; Japan, Kudo & Fujiu, 2009; United States, Ross & Murdock, 2014; Skowron, 2004). This replicated finding leads us to a necessary reflection about the stability of the level of differentiation across the lifetime of the individual. One possibility is that this result suggests that basic levels of DoS are more malleable across the lifespan than BFST asserts (Bowen, 1978). Another possibility might be that these empirical data are reflecting changes in the functional levels of differentiation, which are theorized to be more easily influenced by chronic anxiety and stress within persons in close relationships (Bowen, 1978). Indeed, the present study gathered data on the number of stressors that individuals experienced across the lifetime, and thus it is plausible that the stress-DoS association falls in line with the proposition that chronic stress is more likely to influence functional DoS. The pseudo-self is thought to reflect changes that the individual makes—becoming more or less rigid or flexible, capable or helpless—when emotional pressure from the family system necessitates changes with the goal of reducing conflict in the system (Bowen, 1978; Kerr & Bowen, 1988). Bowen theorized that when pseudo-self levels are sustained over time, the basic level of self might also be affected (Bowen, 1978; Kerr & Bowen, 1988). The mediation effect found in this study and other prior empirical studies (Hooper & Doehler, 2011; Krycak et al., 2012) implies that the pseudo-self, regardless of its transient nature, is also relevant for health. Longitudinal studies are needed to assess the causal links between SLEs and DoS. Does DoS vary under conditions of acute stress for persons with higher or lower levels of differentiation? Does chronic familial anxiety and stress predict levels of DoS, above and beyond the influence of acute stressors?

Regarding physical health and its relationship with DoS, our results are consistent with previous studies that consider the association between DoS and physical health (Hooper & Doehler, 2011; Knauth & Skowron, 2004; Murray et al., 2006; Protinsky & Gilkey, 1996; Skowron, 2004). Specifically, we found that persons with a more negative perception of SLEs within the past year also showed lower levels of DoS, and this was subsequently related to negative physical health outcomes. We found a similar significant indirect effect of DoS on psychological health. We also found that negative perception of SLEs experienced during the past year was associated with lower levels DoS, and lower DoS was linked with poorer psychological health outcomes. Research has shown that major stressful events have a negative impact on health (e.g., Falconier et al., 2015; Rosengren et al., 2004), and our results suggest that one of the pathways is through deficits in DoS (e.g., greater levels of emotional cutoff and heightened emotional reactivity).

### *Clinical Application*

The results of this study have implications for family therapists and other professionals working with families (e.g., psychologists, counselors, nurses, social workers). First, the results show that DoS is one potential mechanism by which the effects of stress on physical and mental health are conferred. Therefore, our findings suggest the relevance of interventions that include a focus on strengthening an individual's capacities for healthy connection in relationships and the ability to also respond to stress in thoughtful and nonreactive ways. Moreover, our findings contribute to the increasing body of empirical research that supports that family interventions have significant benefits for patients and their families (Martire et al., 2004; Theodoratou-Bekou, Andreopoulou, Andriopoulou, & Wood, 2012). Clinicians working with families can employ a multigenerational approach to intervention, encouraging clients to establish more person-to-person relationships, facilitating increased awareness about the emotional processes in one's own family, or by coaching clients to avoid the use of triangulation in the midst of heightened emotions (Bowen, 1978; Haefner, 2014; Rodríguez-González & Kerr, 2011). Few studies have examined if differentiation is a malleable target for the therapy process, and more research (e.g., longitudinal and clinical trials) is needed to clarify if family systems interventions are successful at promoting client differentiation.

Our results highlight the importance of professionals also working on their own self-differentiation process (McGoldrick & Carter, 2001), as Bowen (1978) theorized that this personal work enables practitioners to be more successful in assisting their clients develop a differentiated self. More highly differentiated health professionals might better enable clients to develop healthy ways of relating in the face of stress, thereby improving client psychological and physical well-being. This area is rarely researched, and future studies should clarify inconsistent empirical findings on if and how the therapist's differentiation benefits the therapeutic relationship and client outcomes (Bartle-Haring, Shannon, Bowers, & Holowacz, 2016; Lambert & Friedlander, 2008).

### *Limitations and Future Directions*

The findings of this study provide important clarifications regarding the role of differentiation in the stress-health connection, but several caveats must be considered. First, given the cross-sectional data in this study, the directionality of the associations between key study variables remain unclear. Future studies might employ a longitudinal study design to clarify temporal relationships between stress, DoS, and health, a necessary condition of statistical mediation, and answer questions related to whether stress (e.g., chronic versus acute) generates a decrease in the levels of DoS that has repercussions on subsequent health outcomes (Lal & Bartle-Haring, 2011). Next, though the self-report measure of DoS in this study is used widely and has undergone psychometric validation with a Spanish sample (Rodríguez-González et al., 2015), BFST researchers might consider ways to assess DoS via other modes of assessment, including observations and interviews. Examining multiple indicators of physical health or illness in future studies, including medical records, medical diagnoses, and biological measures of health, might determine whether the relationship between stress and health is stronger when multimodal methods of health measurement are used and might further validate these preliminary findings on differentiation and health. Given the complementary nature of the biobehavioral family model, future studies might include observational measures of individual and family-level behavioral social interactions as well as biological measures of health to ascertain how Bowen constructs, such as differentiation, contribute to the

complex family-health connection. In addition, given that we examined a non-clinical sample with relatively high education levels, it is unclear if the findings would generalize to lower socioeconomic and at-risk populations. Despite these limitations, a key strength of the findings is that this preliminary study addresses important questions about how DoS operates within a Spanish sample and tests Bowen's proposition that DoS is universally relevant (Bowen, 1978; Hooper & DePuy, 2010; Lampis, 2016).

## CONCLUSION

Taken together, these results replicate previous findings that DoS is a possible psychological mechanism in the transmission of SLEs onto health outcomes. Moreover, they show evidence that DoS has important implications for physical and mental well-being. Our results also support a growing body of literature that confirms the cross-cultural relevance of BFST (e.g., Ferreira, Fraenkel, Narciso, & Novo, 2015; Lampis, 2016; Rodríguez-González et al., 2016) and extend these findings by demonstrating that the BFST offers relevance for adults in Spanish cultures. Additional intervention and psychotherapy process research is needed to assess whether and how the therapeutic process might influence levels of differentiation in order to promote client resiliency in the face of anxiety and life stress.

## REFERENCES

- American Psychological Association. (2007). *Stress in America: Mind/body health: For a healthy mind and body, talk to a psychologist*. Washington, DC: American Psychological Association.
- Bartle-Haring, S., Rosen, K. H., & Stith, S. M. (2002). Emotional reactivity and psychological distress. *Journal of Adolescent Research, 17*, 568–585. <https://doi.org/10.1177/074355802237464>.
- Bartle-Haring, S., Shannon, S., Bowers, D., & Holowacz, E. (2016). Therapist differentiation and couple clients' perceptions of therapeutic alliance. *Journal of Marital and Family Therapy, 42*, 716–730. <https://doi.org/10.1111/jmft.12157>.
- Bowen, M. (1978). *Family therapy in clinical practice*. New York, NY: Jason Aronson.
- Campbell, T. L. (1986). Family's impact on health: A critical review. *Family Systems Medicine, 4*, 135–328. <https://doi.org/10.1037/h0089692>.
- Chung, H., & Gale, J. (2006). Comparing self-differentiation and psychological well-being between Korean and European American students. *Contemporary Family Therapy: An International Journal, 28*, 367–381. <https://doi.org/10.1007/s10591-006-9013-z>.
- CINFA. (2017). *VII estudio CINFASalud: "Percepción y hábitos de la población española entorno al estrés"*. Madrid, Spain: CINFA & SEAS.
- Davis, M. C., Zautra, A. J., & Reich, J. W. (2001). Vulnerability to stress among women in chronic pain from fibromyalgia and osteoarthritis. *Annals of Behavioral Medicine, 23*, 215–226. [https://doi.org/10.1207/S15324796ABM2303\\_9](https://doi.org/10.1207/S15324796ABM2303_9).
- Derogatis, L. R. (1993). *Brief Symptom Inventory (BSI): Administration, scoring and procedures manual* (3rd ed.). Minneapolis, MN: NCS Pearson.
- Falconier, M. K., Nussbeck, F., Bodenmann, G., Schneider, H., & Bradbury, T. (2015). Stress from daily hassles in couples: Its effects on intradyadic stress, relationship satisfaction, and physical and psychological well-being. *Journal of Marital and Family Therapy, 41*, 221–235. <https://doi.org/10.1111/jmft.12073>.
- Ferreira, L. C., Fraenkel, P., Narciso, I., & Novo, R. (2015). Is committed desire intentional? A qualitative exploration of sexual desire and differentiation of self in couples. *Family Process, 54*, 308–326. <https://doi.org/10.1111/famp.12108>.
- Findler, L. (2014). The experience of stress and personal growth among grandparents of children with and without intellectual disability. *Intellectual and Developmental Disabilities, 52*, 32–48. <https://doi.org/10.1352/1934-9556-52.1.32>.
- Haefner, J. (2014). An application of Bowen family systems theory. *Issues in Mental Health Nursing, 35*, 835–841. <https://doi.org/10.3109/01612840.2014.921257>.
- Hayes, A. (2013). *Introduction to mediation, moderation and conditional process analysis. A regression-based approach*. New York, NY: The Guilford Press.
- Hooper, L. M., & DePuy, V. (2010). Mediating and moderating effects of differentiation of self on depression symptomatology in a rural community sample. *The Family Journal, 18*, 358–368. <https://doi.org/10.1177/1066480710374952>.
- Hooper, L. M., & Doehler, K. (2011). The mediating and moderating effects of differentiation of self on body mass index and depressive symptomatology among an American college sample. *Counseling Psychology Quarterly, 24*, 71–82. <https://doi.org/10.1080/09515070.2011.559957>.

- Instituto Nacional de Estadística. (2006). *Encuesta nacional de salud - cuestionario de adultos (16 años o más)* (p. 5). Retrieved from [http://www.ine.es/metodologia/t15/ens\\_adu06.pdf](http://www.ine.es/metodologia/t15/ens_adu06.pdf)
- Kerr, M. E., & Bowen, M. (1988). *Family evaluation: An approach based on Bowen theory*. New York, NY: W. W. Norton.
- Knauth, D. G., & Skowron, E. A. (2004). Psychometric evaluation of the Differentiation of Self Inventory for adolescents. *Nursing Research*, *53*, 163–171. <https://doi.org/10.1097/00006199-200405000-00003>.
- Knopp, K., Rhoades, G. K., Allen, E. S., Parsons, A., Ritchie, L. L., Markman, H. J., et al. (2017). Within- and between-family associations of marital functioning and child well-being. *Journal of Marriage and Family*, *79*, 451–461. <https://doi.org/10.1111/jomf.12373>.
- Krycak, R. C., Murdock, N. L., & Marszalek, J. M. (2012). Differentiation of self, stress, and emotional support as predictors of psychological distress. *Contemporary Family Therapy: An International Journal*, *34*, 495–515. <https://doi.org/10.1007/s10591-012-9207-5>.
- Kudo, K., & Fujii, H. (2009). A study on the relationships between vulnerability to negative life events and differentiation of self among high school students. *Japanese Journal of Counseling Science*, *42*(3), 237–246.
- Lal, A., & Bartle-Haring, S. (2011). Relationship among differentiation of self, relationship satisfaction, partner support, and depression in patients with chronic lung disease and their partners. *Journal of Marital and Family Therapy*, *37*, 169–181. <https://doi.org/10.1111/j.1752-0606.2009.00167.x>.
- Lambert, J. E., & Friedlander, M. (2008). Relationship of differentiation of self to adult clients' perceptions of the alliance in brief family therapy. *Psychotherapy Research*, *18*, 160–166. <https://doi.org/10.1080/10503300701255924>.
- Lampis, J. (2016). Does partners' differentiation of self-predict dyadic adjustment? *Journal of Family Therapy*, *38*, 303–318. <https://doi.org/10.1111/1467-6427.12073>.
- Lee, H. J., & Szinovacz, M. E. (2016). Positive, negative, and ambivalent interactions with family and friends: Associations with well-being. *Journal of Marriage and Family*, *78*, 660–679. <https://doi.org/10.1111/jomf.12302>.
- Martire, L. M., Lustig, A. P., Schulz, R., Miller, G. E., & Helgeson, V. S. (2004). Is it beneficial to involve a family member? A meta-analysis of psychosocial interventions for chronic illness. *Health Psychology*, *23*, 599–611. <https://doi.org/10.1037/0278-6133.23.6.599>.
- McGoldrick, M., & Carter, B. (2001). Advances in coaching: Family therapy with one person. *Journal of Marital and Family Therapy*, *27*, 281–300. <https://doi.org/10.1111/j.1752-0606.2001.tb00325.x>.
- Miller, R. B., Anderson, S., & Keala, D. K. (2004). Is Bowen theory valid? A review of basic research. *Journal of Marital and Family Therapy*, *30*, 453–466. <https://doi.org/10.1111/j.1752-0606.2004.tb01255.x>.
- Murdock, N. L., & Gore, P. A., Jr (2004). Stress, coping, and differentiation of self: A test of Bowen theory. *Contemporary Family Therapy: An International Journal*, *26*, 319–335. <https://doi.org/10.1023/B:COFT.0000037918.53929.18>.
- Murray, T. L., Jr, Daniels, M. H., & Murray, C. E. (2006). Differentiation of self, perceived stress, and symptom severity among patients with fibromyalgia syndrome. *Families, Systems, & Health*, *24*, 147–159. <https://doi.org/10.1037/1091-7527.24.2.147>.
- Nichols, M. P., & Schwartz, R. C. (2004). *Family therapy: Concepts and methods* (6th ed.). Boston, MA: Allyn & Bacon.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. <https://doi.org/10.3758/BRM.40.3.879>.
- Priest, J. B., Roberson, P. N. E., & Woods, S. B. (2018). In our lives and under our skin: An investigation of specific psychobiological mediators linking family relationships and health using the biobehavioral family model. *Family Process*. Advance online publication. <https://doi.org/10.1111/famp.12357>
- Protinsky, H., & Gilkey, J. K. (1996). An empirical investigation of the construct of personality authority in late adolescent women and their level of college adjustment. *Adolescence*, *31*(122), 291–295.
- Rodríguez-González, M. (2017). ¿La familia importa? Una revisión de la investigación empírica sobre el impacto de la diferenciación del self en la salud física y psicológica [Family matters? A review of the empirical research about the impact of differentiation of self on physical and psychological health]. In J. C. Núñez Pérez (Ed.), *Perspectivas psicológica y educativa de las N.E.E.* (pp. 245–251). Oviedo, Spain: SCINFOPER.
- Rodríguez-González, M., & Kerr, M. E. (2011). Introducción a las aplicaciones de la teoría familiar sistémica de Murray Bowen a la terapia familiar y de pareja [An introduction to the couple and family therapy applications of the Murray Bowen's family systems theory]. *Cuadernos de Terapia Familiar*, *77*(1), 7–15.
- Rodríguez-González, M., Skowron, E. A., Cagigal, V., & Muñoz, I. (2016). Differentiation of self, mate selection, and marital adjustment: Validity of postulates of Bowen theory in a Spanish sample. *The American Journal of Family Therapy*, *44*, 11–23. <https://doi.org/10.1080/01926187.2015.1099415>.
- Rodríguez-González, M., Skowron, E. A., & Jódar, R. (2015). Spanish adaptation of the Differentiation of Self Inventory-Revised (DSI-R). *Terapia Psicológica*, *33*, 47–58. <https://doi.org/10.4067/S0718-48082015000100005>.

- Rodríguez-Naranjo, C., & Caño, A. (2010). Development and validation of an Attributional Style Questionnaire for adolescents. *Psychological Assessment, 22*, 837–851. <https://doi.org/10.1037/a0020426>.
- Rosengren, A., Hawken, S., Ôunpuu, S., Sliwa, K., Zubaid, M., Almahmeed, W. A., et al. (2004). Association of psychosocial risk factors with risk of acute myocardial infarction in 11119 cases and 13648 controls from 52 countries (the INTERHEART study): Case-control study. *The Lancet, 364*, 953–962. [https://doi.org/10.1016/s0140-6736\(04\)17019-0](https://doi.org/10.1016/s0140-6736(04)17019-0)
- Ross, A. S., & Murdock, N. L. (2014). Differentiation of self and well-being: The moderating effect of self-construal. *Contemporary Family Therapy: An International Journal, 36*, 485–496. <https://doi.org/10.1007/s10591-014-9311-9>.
- Sandage, S. J., & Jankowski, P. J. (2010). Forgiveness, spiritual instability, mental health symptoms, and well-being: Mediator effects of differentiation of self. *Psychology of Religion and Spirituality, 2*, 168–180. <https://doi.org/10.1037/a0019124>.
- Sarason, I. G., Johnson, J. H., & Siegel, J. M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. *Journal of Consulting and Clinical Psychology, 46*, 932–946. <https://doi.org/10.1037/0022-006X.46.5.932>.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7*, 422–445. <https://doi.org/10.1037/1082-989X.7.4.422>.
- Skowron, E. A. (2004). Differentiation of self, personal adjustment, problem solving, and ethnic group belonging among persons of color. *Journal of Counseling & Development, 82*, 447–456. <https://doi.org/10.1002/j.1556-6678.2004.tb00333.x>.
- Skowron, E. A., & Dendy, A. K. (2004). Differentiation of self and attachment in adulthood: Relational correlates of effortful control. *Contemporary Family Therapy: An International Journal, 26*, 337–357. <https://doi.org/10.1023/B:COFT.0000037919.63750.9d>.
- Skowron, E. A., & Friedlander, M. L. (1998). The Differentiation of Self Inventory: Development and initial validation. *Journal of Counseling Psychology, 45*, 235–246. <https://doi.org/10.1037/0022-0167.45.3.235>.
- Skowron, E. A., & Schmitt, T. A. (2003). Assessing interpersonal fusion: Reliability and validity of a new DSI fusion with others subscale. *Journal of Marital and Family Therapy, 29*, 209–222. <https://doi.org/10.1111/j.1752-0606.2003.tb01201.x>.
- Skowron, E. A., Van Epps, J. J., Cipriano-Essel, E. A., & Woehrle, P. L. (2014). Teoría de Bowen e investigación empírica: El papel de la TFSB para guiar intervenciones efectivas y una investigación translacional e interdisciplinar: Desarrollos actuales y líneas de futuro [Bowen Theory and empirical research. A role for Bowen Family Systems Theory in guiding cross-disciplinary, translational research and effective intervention: Current developments and future directions]. In M. Rodríguez-González & M. Martínez Berlanga (Eds.), *La teoría familiar sistémica de Bowen: Avances y aplicación terapéutica* (pp. 61–94). Madrid, Spain: McGraw Hill.
- Skowron, E. A., Wester, S. R., & Azen, R. (2004). Differentiation of self-mediates college stress and adjustment. *Journal of Counseling & Development, 82*, 69–78. <https://doi.org/10.1002/j.1556-6678.2004.tb00287.x>.
- Theodoratou-Bekou, M., Andreopoulou, O., Andriopoulou, P., & Wood, B. (2012). Stress-related asthma and family therapy: Case study. *Annals of General Psychiatry, 11*, 1–10. <https://doi.org/10.1186/1744-859X-11-28>.
- Wood, B. L. (1993). Beyond the “psychosomatic family”: A biobehavioral family model of pediatric illness. *Family Process, 32*, 261–278. <https://doi.org/10.1111/j.1545-5300.1993.00261.x>.