



# The Moderating Role of Anxiety Sensitivity Social Concerns in Stress and Quality of Life among Adults with Skin Disease

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## INTRODUCTION

### Background

- Stress plays an important role in skin disease outcomes (Picardi & Abeni, 2001); however, few studies have examined psychological factors contributing to this association.
- Anxiety sensitivity social concerns (AS-S), or the propensity to fear the social consequences of observable anxiety symptoms (Taylor et al., 2007), is a purported risk factor that may amplify the experience of stress.
- Preliminary evidence suggests that high AS-S is uniquely associated with psychodermatological disease status (Dixon et al., 2016); therefore, AS-S may function to worsen outcomes among individuals with skin disease.

### Aim and Hypothesis

- The current study: (1) characterized stress and AS-S, and (2) examined the moderating role of AS-S in the relation between stress and skin disease quality of life among adults with active skin diseases.
- We hypothesized that as AS-S increased, stress would be more strongly associated with domains of skin disease quality of life (i.e., psychological/emotional, symptoms, functioning), even when accounting for skin disease symptom severity.

## METHOD

### Participants

- Participants were high-performing workers with active skin symptoms recruited through Amazon's Mechanical Turk.
- The final sample ( $N = 237$ ) was mostly female (67.9%), predominantly White (84.8%), and the mean age was 34.18 years ( $SD = 9.57$ ). Participants endorsed active skin conditions and identified their "primary" skin disease (see Table 1).

Table 1. Primary skin disease

	% (n)
Acne	33.8 (80)
Eczema (atopic dermatitis)	13.9 (33)
Hives/Rash	8.9 (21)
Psoriasis	8.4 (20)
Dermatitis	8.0 (19)
Skin growth	7.6 (18)
Dry, flaky skin	4.2 (10)
Rosacea	3.4 (8)
Other	11.8 (28)

### Measures

- AS-S: Anxiety Sensitivity Index – 3 – Social Concerns subscale (ASI-3; Taylor et al., 2007)
- Stress: Depression Anxiety Stress Scale – 21 – Stress subscale (DASS-21; Lovibond & Lovibond, 1995)
- Skin disease quality of life: The Skindex-16 (Chren et al., 2001)
- Participant characteristics: Sociodemographic and dermatology-related medical questions. Global self-reported severity of skin disease, rated from 0 (normal, no issues) to 10 (very severe), was used as a covariate.

## RESULTS

### Descriptive Statistics

- Stress: 60.3% = normal stress, 7.6% = mild, 18.6% = moderate, 10.1% = severe, 3.4% = extremely severe.
- AS-S: Scores ( $M = 11.39$ ;  $SD = 6.14$ ) were generally consistent with those reported in anxiety disorder samples (Wheaton et al., 2012).
- See Table 2 for zero-order correlations and descriptive statistics.

Table 2. Zero-order correlations and descriptive statistics for study variables

	1	2	3	4	5	6
1. Symptom Severity	-					
2. Stress	.11	-				
3. AS Social	.12	.52***	-			
4. Psychological QOL	.46***	.24***	.31***	-		
5. Physical Symptoms QOL	.45***	.23***	.19**	.46***	-	
6. Functioning QOL	.41***	.31***	.34***	.70***	.38***	-
Mean	5.30	14.23	11.39	61.12	36.14	33.16
Standard Deviation	1.97	10.47	6.14	26.12	24.94	30.68
Range of Scores	2 – 10	0 – 42	0 – 24	0 – 100	0 – 100	0 – 100

Note. Symptom severity = self-reported 0 normal – 10 very severe scale of dermatology symptom severity; stress = DASS-21 Stress scale; AS (anxiety sensitivity) Social = Anxiety Sensitivity Index – 3 Social Concerns subscale; Psychological = Skindex-16 Psychological/Emotional scale, Physical Symptoms = Skindex-16 Symptoms scale, Functioning QOL = Skindex-16 Functioning Scale  
\*\*  $p < .01$ , \*\*\*  $p < .001$

### Moderation

- AS-S moderated the association between stress and skin-related emotional ( $B = 0.05$ ,  $SE = 0.03$ ,  $p = 0.043$ ,  $\Delta R^2 = 0.013$ ) and functioning ( $B = 0.08$ ,  $SE = 0.03$ ,  $p = 0.010$ ,  $\Delta R^2 = 0.021$ ), but not physical functioning ( $B = 0.00$ ,  $SE = 0.03$ ,  $p = 0.966$ ,  $\Delta R^2 = 0.00$ ). See Figures 1 and 2 for a depiction of significant interactions.

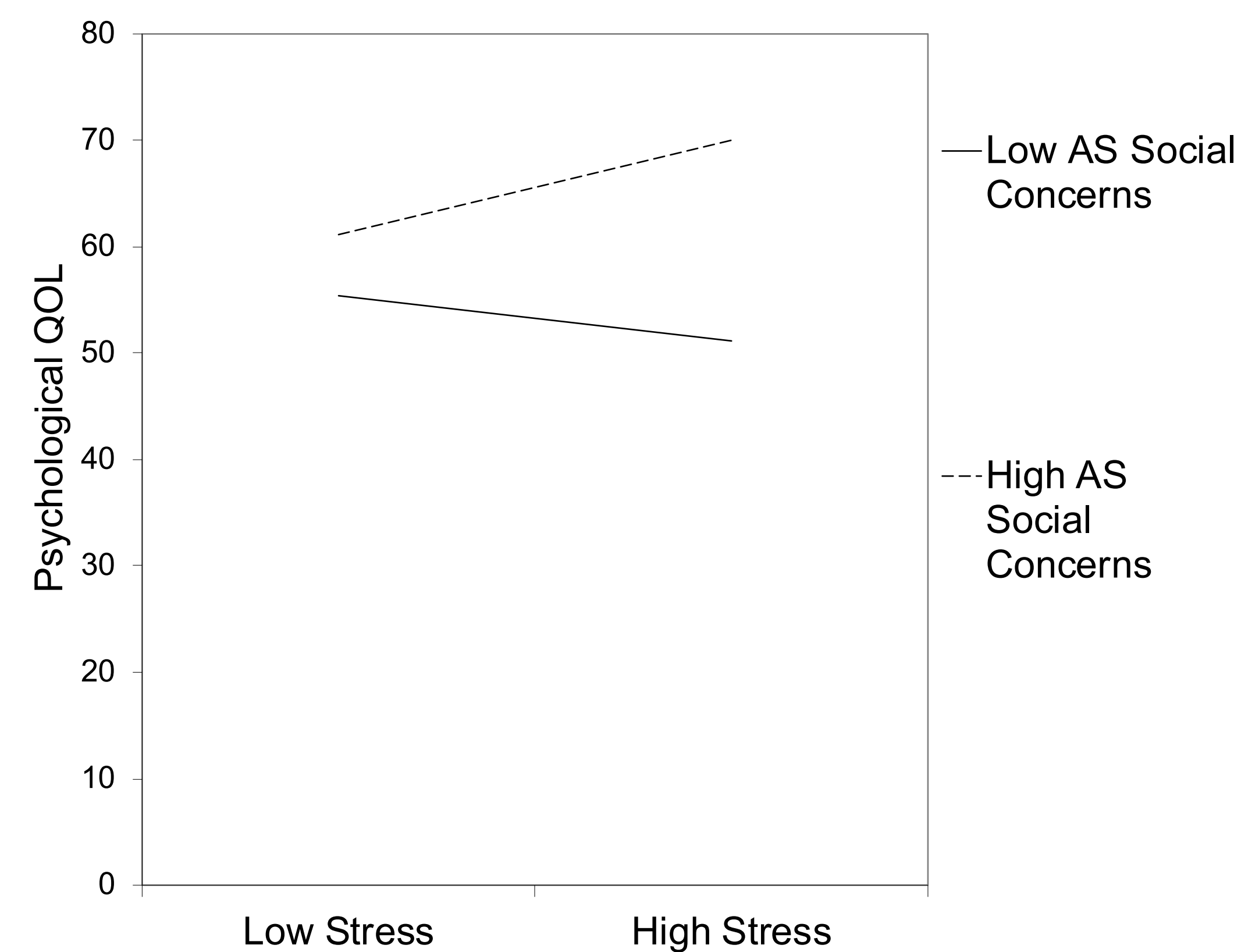


Figure 1. Stress and skin-related psychological quality of life for individuals depicted at high and low levels of AS-S (1 SD above and below the mean AS).

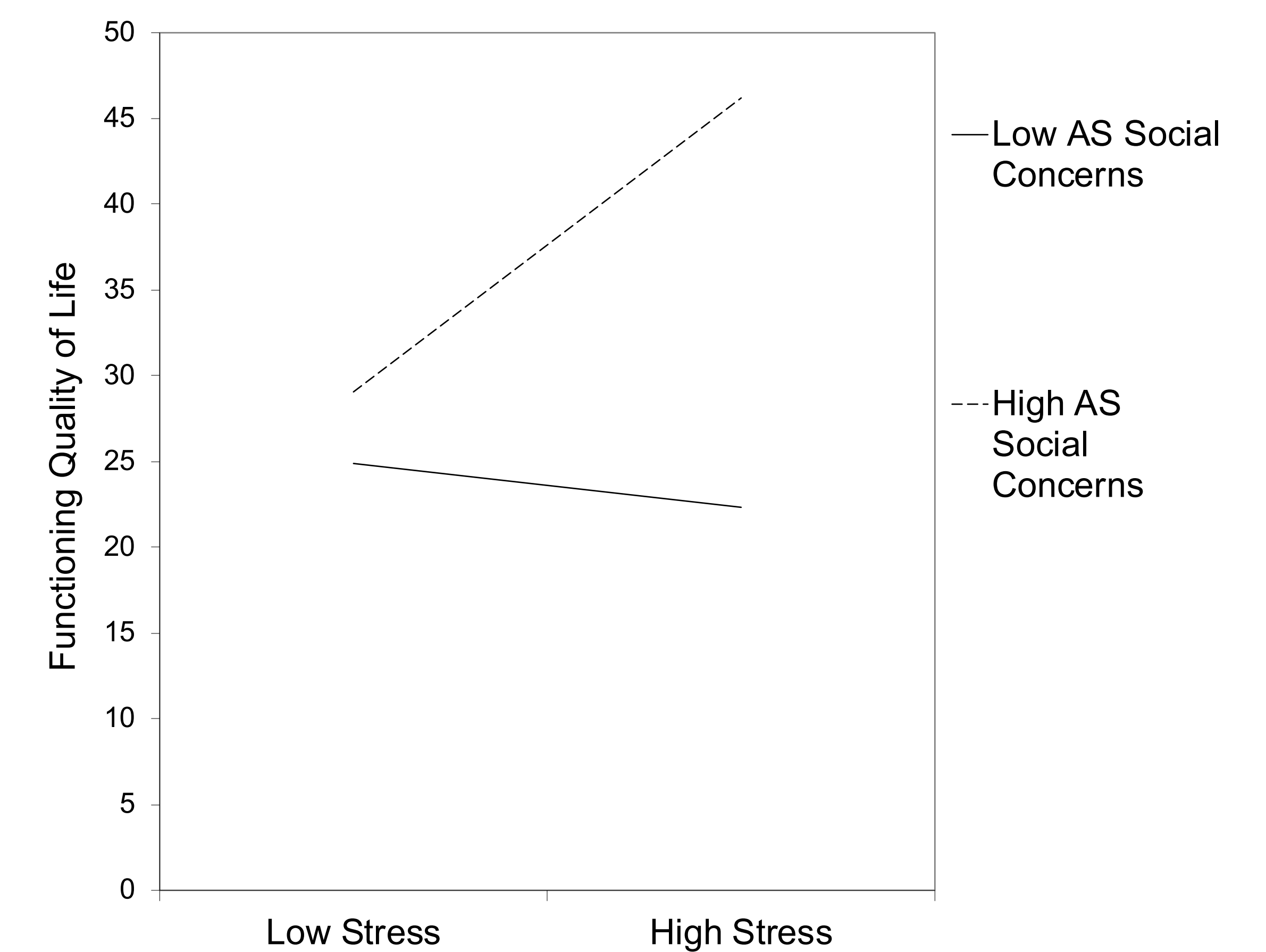


Figure 2. Stress and skin-related functioning quality of life for individuals depicted at high and low levels of AS-S (1 SD above and below the mean of AS).

## DISCUSSION

### Conclusion

- Stress was significantly associated with the psychological and functional aspects of quality of life at high, but not low, levels of AS-S.
- AS-S is a potential vulnerability factor that may exacerbate the effects of skin disease.
- Individuals with high AS-S may be prone to notice and fear the social repercussions of physiological symptoms associated with stress and skin disease, worsening the impact of skin disease on psychological symptoms and daily functioning.
- AS-S was not a moderator of the relation between stress and physical symptoms QoL. However, this QoL measure assesses invisible symptoms such as pain and itching, and therefore may not be influenced by fear of negative evaluation by others.

### Limitations & Future Directions

- The study relied on self-report measures and did not verify skin disease information by a medical provider.
- Participants were recruited online; however, validity questions were included to address careless responding, and prior findings demonstrate online studies produce valid data via anonymous platforms (Joinson, 1999; Shapiro et al., 2013).
- The current study is limited by the cross-sectional study design. Longitudinal studies examining these factors are an important next step in this line of research.
- Future empirical work should examine the utility and efficacy of anxiety sensitivity based treatments for patients with skin disease and heightened anxiety sensitivity.