



# A Psychometric Evaluation and Revision of the Solastalgia Subscale from the Environmental Distress Scale

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## BACKGROUND

- Solastalgia is the negative emotional experiences from witnessing degradation and loss to their home environment.
- Measured with the Solastalgia subscale from the Environmental Distress Scale (9 items).
- Scale development included: Cronbach's alpha, test-retest reliability over an unspecified period, and a PCA to show subscale means loaded onto a single factor.

## PURPOSE

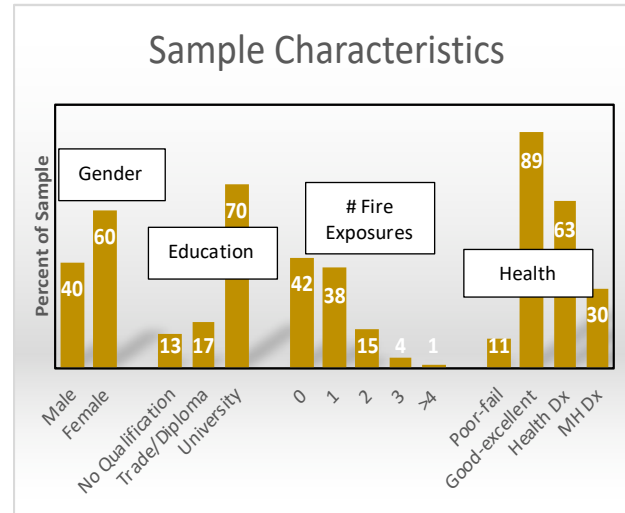
- Rigorously evaluate the psychometrics of the Solastalgia scale (factorial structure, item performance, internal consistency, concurrent validity) and revise it based on large samples of bushfire-affected community members.

## INITIAL/REVISED SCALE ITEMS

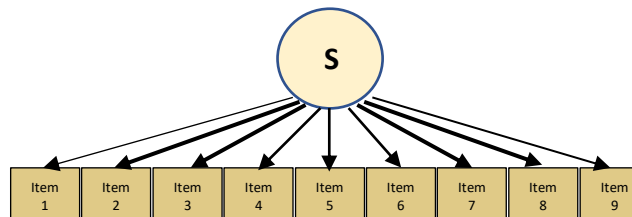
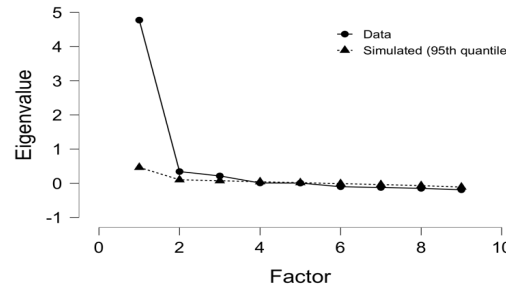
- My sense of belonging to his place has been undermined by recent changes due to drought and bushfire.
- I am sad that familiar aspects of this place are disappearing (e.g., animals, plants, landmarks).
- I am worried that aspects of this area that I value are being lost.**
- I miss having the peaceful feeling that I once enjoyed by being in this place.**
- I am upset at the ways this area looks now.**
- My lifestyle is being threatened by change in my local area.**
- Unique aspects of nature that made this place special are being lost forever.
- I am saddened by unwelcomed change I see in my landscape.**
- I feel powerless to stop unwanted changes to this place

## METHODS AND SAMPLE

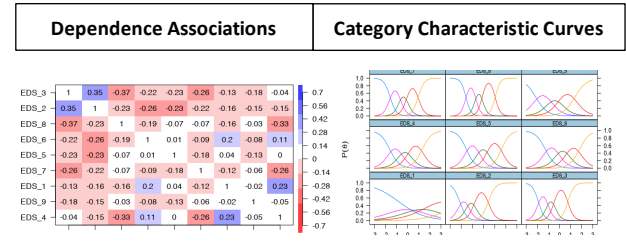
- Online English survey collected March-April 2020; N=2084



## EFA (Initial Scale) SUGGESTS UNIDIMENSIONALITY (n=781)



## IRT (Initial Scale): POOR DISCRIMINATION & REDUNDANCY



## CFA (Brief Scale): MEASUREMENT INVARIANCE

- Equivalent across subsamples
- Equivalent across age
- Equivalent across gender
- Correlation between Initial and Brief Scale = .971**

## VALIDITY (New Dataset, N=1740)

(All correlations  $p < .001$ )

	Initial Scale	Brief Scale
<b>DASS Depression</b>	.209	.191
<b>DASS Anxiety</b>	.199	.191
<b>DASS Stress</b>	.219	.200
<b>Nature Relatedness</b>	.409	.409
<b>(-) Climate Emotions</b>	.360	.334
<b>Local Env Change</b>	-.240	-.245
<b>I can reduce CC</b>	.238	.239
<b>Individually reduce CC</b>	.225	.224
<b>Collectively reduce CC</b>	.221	.208

## INTERNAL CONSISTENCY

	Initial Scale	Brief Scale
<b>Sample 1</b>	$\alpha = .903$	$\alpha = .877$
<b>Sample 2</b>	$\alpha = .905$	$\alpha = .876$