

Erica E. Fortune, PhD<sup>1</sup>, Alexandra K. Zaleta, PhD<sup>1</sup>, Melissa F. Miller, PhD, MPH<sup>1</sup>, Laura K. Briggs, PhD<sup>1</sup>, Stacey Karpen Dohn, PhD, LPC<sup>2</sup>, & Jennafer Kwiat, PhD, MHS<sup>3</sup>

<sup>1</sup> Cancer Support Community, Research and Training Institute, Philadelphia, PA, USA <sup>2</sup> Whitman-Walker Health & <sup>3</sup> Whitman-Walker Institute, Washington, DC, USA

## BACKGROUND

Psychosocial distress screening is an essential component of whole-person care for those living with chronic illness. People Living with HIV (PLWH) often exist at the intersection of multiple identities and lived experiences that affect their quality of life (QOL), both physically and emotionally, resulting in potential for distress and increased risk for comorbidities. This study presents efforts to develop HIV Support Source, a new, multidimensional psychosocial distress screening measure for adult PLWH.

## METHODS

385 PLWH (ages 18+) recruited from 7 partner sites serving LGBTQIA+ communities and/or PLWH across the US completed a survey with 35 HIV Support Source distress items (response categories: 0=Not at all to 4=Very seriously concerned) and cross-validation measures including an HIV Stigma Scale, WHOQOL-HIV, and PROMIS-Depression and Anxiety. Scale reduction was informed by item endorsement, iterative exploratory / confirmatory factor analysis (EFA; CFA), Pearson correlations, and expert recommendations (clinicians, researchers, and site staff). Accuracy of 2-item depression and anxiety risk scales was assessed with AUC and sensitivity/specificity analysis.

## PARTICIPANTS

N = 385	Mean / n	SD / %
<b>Age (yrs) (Range: 19 – 74)</b>	43	13
<b>Race and Ethnicity</b>		
Non-Hispanic Black	174	47%
Non-Hispanic White	135	36%
Hispanic, Latino/Latina	34	9%
<b>Gender Identity</b>		
Men	290	75%
Women	60	16%
Transwomen	21	6%
Genderqueer/Non-binary	8	2%
Transmen	2	<1%
<b>Undetectable Viral Load</b>	328	85%
<b>Time Since Diagnosis (yrs)</b>		
<=5 years	84	22%
6 – 14 years	122	32%
15+ years	142	37%

## SCALE REDUCTION AND FINAL MEASURE

Factors and Items	N=385				N=224				
	%≥3	%≥2	IDI	Item-Factor r	F1	F2	F3	F4	h2
<b>EMOTIONAL WELL-BEING</b>									
Feeling nervous or afraid**	13.5	29.4	.40	.86	.88				.76
Feeling lonely or isolated*	19.8	33.8	.56	.87	.82				.73
Feeling sad or depressed*	19.3	41.0	.50	.80	.64				.64
Relationships with family, children and/or friends	16.5	30.9	.53	.77	.58				.54
Worrying about the future and what lies ahead**	28.9	52.3	.76	.80	.51				.62
<b>FINANCIAL &amp; PRACTICAL NEEDS</b>									
Money and finances	35.8	55.6	.76	.84	.87				.79
Housing	23.4	35.9	.47	.76	.64				.40
Health insurance	18.1	31.8	.44	.68	.52				.34
Oral health or dental care	26.7	43.7	.56	.77	.51				.45
<b>PHYSICAL WELL-BEING</b>									
Exercising and being physically active	27.5	52.1	.54	.76		.72			.50
Feeling too tired to do the things you want or need to do	18.3	46.0	.39	.73		.56			.41
Pain and/or physical discomfort	18.0	34.5	.50	.78		.55			.51
Body image and feelings about how you look	24.9	44.5	.68	.78		.45			.57
<b>HIV TREATMENT &amp; SEXUAL HEALTH</b>									
Telling sexual partners about your HIV status	21.6	31.4	.41	.80			.70		.57
Making decisions about HIV treatments	15.5	26.1	.50	.83			.60		.55
Sex and physical intimacy	18.6	31.2	.51	.80			.51		.49
<b>TOBACCO &amp; SUBSTANCE USE</b>									
Tobacco, alcohol, or other substance use	10.2	21.5	.26	N/A					N/A

\*2-item depression risk scale \*\*2-item anxiety risk scale

IDI = Item discrimination index; h2=communality (the total amount of variance a variable shares with all factors)



- After removing items with limited variability, low endorsement, low factor loadings (<.30), or weak correlation with validation measures, 16 items remained across 4 factors plus a single item assessing substance use.
- The final Exploratory Factor Analysis (EFA) explained 55% of model variance (RMSR=0.03, TLI=0.91, RMSEA=0.07).

## EVALUATION OF PSYCHOMETRIC PROPERTIES

	# items	M/SD <sup>†</sup>	α	HIV Support Source Intercorrelations				PROMIS-29 Subscales									
				F1	F2	F3	F4	Depression	Anxiety	Social Function	Physical Function	Fatigue	Sleep Disturbance	Pain Interference	Berger Stigma	WHO QOL	DT
<b>Total distress score (HIV-SS 16+)</b>	17	21.4 / 14.7	.91	.86	.82	.83	.73	.60	.55	-.56	-.35	.55	.46	.43	.37	-.57	.57
<b>F1: Emotional Well-Being</b>	5	1.27 / 1.07	.88	--	.59	.64	.47	.72	.67	-.60	-.38	.59	.46	.41	.33	-.61	.65
<b>F2: Financial &amp; Practical Needs</b>	4	1.44 / 1.12	.75	--	--	.55	.54	.46	.39	-.41	-.21	.39	.34	.31	.27	-.47	.43
<b>F3: Physical Well-Being</b>	4	1.41 / 1.01	.76	--	--	--	.50	.47	.44	-.54	-.44	.57	.46	.49	.24	-.46	.51
<b>F4: HIV Treatment &amp; Sexual Health</b>	3	1.01 / 1.13	.73	--	--	--	--	.20	.18	-.20	-.11 <sup>†</sup>	.18	.19	.17 <sup>†</sup>	.41	-.24	.15 <sup>†</sup>

All Pearson correlations significant p<.001, except <sup>†</sup>p<.05

HIV-SS Risk Scale	Comparison Measure	AUC	Risk Scale Cutoff	Sensitivity	Specificity	N
HIV-SS-D2	PROMIS Depression <=60	0.90	≥ 3	0.90	0.80	373
HIV-SS-A2	PROMIS Anxiety <=62	0.83	≥ 3	0.79	0.70	376

- Confirmatory Factor Analysis (N=150) confirmed the four-factor structure (CFI=0.88, TLI=0.85, RMSEA=0.09).
- The screener has high internal reliability (α=0.91) and strong convergent validity: greater distress was associated with lower QOL (r=-.57) and greater perceived stigma (r=.37).
- Analysis of 2-item risk scales demonstrated high sensitivity (.79-.90) and adequate specificity (.70-.80), using cut-off scores of ≥3 for both depression and anxiety.
- 2-item risk scales show: 42% at risk for clinical depression; 45% at risk for clinical anxiety.

## CONCLUSIONS AND IMPLICATIONS

- HIV Support Source is a psychometrically robust measure of psychosocial distress among adult People Living with HIV (PLWH).
- In full program implementation, it can facilitate distress screening, referral, and follow-up to rapidly assess unmet needs and enhance well-being of PLWH.
- Implementation goals include understanding how to best engage and screen PLWH in diverse settings, including community-based care settings and health care centers, and sites serving LGBTQIA+ communities.

## ACKNOWLEDGMENTS

Support for this study was provided by Gilead Sciences.

We thank the following partners for their participant recruitment support: APNH: A Place to Nourish Your Health, New Haven, CT; CAP: Cascade AIDS Project, Portland, OR; Cempa Community Care, Chattanooga, TN; Equitas Health, Columbus, OH; Howard Brown Health Center, Chicago, IL; Mazzoni Center, Philadelphia, PA; Open Arms Healthcare Center, Jackson, MS.

## REFERENCES

- Beer, L., Tie, Y., Padilla M., & Shouse, R. L. (2019). Generalized Anxiety Disorder symptoms among persons with diagnosed HIV in the United States. *AIDS*, 33(11), 1781-1787. doi:10.1097/QAD.0000000000002286
- Gokhale, R. H., Weiser, J., Sullivan, P. S., Luo, Q., Shu, F., & Bradley, H. (2019). Depression prevalence, antidepressant treatment status, and association with sustained HIV viral 7 suppression among adults living with HIV in care in the United States, 2009-2014. *AIDS Behav.*, 23(12), 3452-3459. doi:10.1007/s10461-019-02613-6
- Nanni, M. G., Caruso, R., Mitchell, A. J., & Grass, L. (2015). Depression in HIV infected patients: A review. *Curr Psychiatry Rep.*, 17(1). doi: 10.1007/s11920-014-0530-4