Development of the Research and Clinical Versions of the COVID-19 Impact Domain Scale: Multidimensional Measures of the Impact of COVID-19

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Abstract

COVID-19 has caused profound, enduring effects across domains (e.g., social activities). Yet, no scale measures the various effects of COVID-19, despite the importance of providing environmental context and delineating the role of cultural influence. Thus, we created a measure using undergraduates (n = 196; 48% male; 60.7% White) who responded to a pool of items created from an extensive search of social media, news articles, and literature. We used principal components analyses to refine the pool to a 54-item research version (CIDS-R) that provides detailed and precise estimates and an 18-item clinical version (CIDS-C) that provides quick and robust estimates of nearly identical psychometric properties. Structural analyses support a multidimensional use, measuring 1) health, 2) quality of life, 3) finances, 4) loved ones, 5) jobs, 6) safety, 7) school, 8) mental health, and 9) social activities, and a composite score. The scales demonstrated excellent internal consistencies (α = .804 - .992) with good detection sensitivity (Cohen's d = 0.61 - 1.67) and divergent (e.g., job impact with positive affect; r = .000), convergent (e.g., composite score with global quality of life; r = -.536), criterion (e.g., positively related to the severity of COVID-19; η^2 = .066 - .067), and incremental validity (Cohen's f^2 = .041 - .132). Finally, the results suggested that the COVID-19 pandemic negatively affected People of Color and women more than White people and men (Cohen's d = 0.33 – 0.75). These findings suggest that the CIDS-R and CIDS-C provide valid, internally consistent, sensitive measures of the effects of the COVID-19 pandemic; an essential, novel tool for quantifying the effects of COVID-19.

Keywords: COVID-19, pandemic, effects of COVID-19, marginalization, cultural influences, person-in-environment perspective

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The COVID-19 (coronavirus disease-2019) pandemic has caused unprecedented negative effects over several years across life domains, including physical health, mental health, job stability, and social activities (Alkire et al., 2021; Brülhart et al., 2021; Huang et al., 2022; Rogers et al., 2021; Shoychet et al., 2022). For example, COVID-19 and its variants have infected 750 million people and caused nearly 7 million recorded deaths worldwide as of 2022 (World Health Organization, 2023). Some have estimated that the COVID-19 pandemic caused a 16 trillion-dollar loss worldwide in its first year and that the cumulative cost of lost wages, health bills, and premature death to be in the trillions for many years to come (Cutler & Summers, 2020). Further, individuals reported significantly worse mental health and exacerbation of mental health conditions (Fried et al., 2022; Mayorga et al., 2022). Despite the importance of understanding societal, cultural, and environmental characteristics in research and risk factors, oppression, and needs assessments for clients in clinical settings (Frazier, 2020; Mukhtar & Rana, 2021), there remains a significant lack of measures that assess the breadth of the effects of COVID-19 on individuals' lives. In the current study, we aimed to create two flexible measures, a research version (long-form; CIDS-R) and a clinical version (short-form; CIDS-C), that assess the overall impact of COVID-19, but also as a multidimensional measure that assesses ten significantly affected life domains, supported by an extensive search of social media, news articles, and the scientific literature. We aimed for the measure to provide a precise, valid, and internally consistent measure of the ways the COVID-19 pandemic has affected individuals' lives across domains.

There are no peer-reviewed scales, and only one scale designed to measure the general impact of COVID-19 on individuals' lives, the Coronavirus Impact Scale (CIS; Stoddard et al., 2021), is a pre-print. The scale is an 11-item ordinal measure of the effects of COVID-19 on 11 life domains (i.e., routines, employment, food access, medical care access, mental health treatment access, access to social support, stress, family discord, personal experience with COVID-19, and familial experience with COVID-19). Individuals rate items on a categorical scale of 1 to 4, with different options for each question, allowing for 11 different ordinal subscale scores. The scale appears to have utility in clinical settings as a brief measure of the effects of COVID-19 across certain life domains. However, there are some important limitations to this measure and the lack of measures in the literature.

We created the COVID-19 Impact Domain Scales (CIDS), both a research (54 items; CIDS-R) and a clinical version (18 items; CIDS-C), to address the Coronavirus Impact Scale's and the existing literature's limitations. Although the Coronavirus Impact Scale study was thorough, there are several important limitations we aim to address. First, some of the psychometric properties of the CIS are somewhat limited, with factor loadings for the unidimensional model that are rather low, ranging between, $\lambda = .27\text{-}.85$, and raw Cronbach's alphas estimate that are relatively low, ranging between, $\alpha = .64\text{-}.75$, across five samples. We aimed to achieve much stronger internal consistencies and structure to improve the consistency and accuracy of the measures due to the important clinical care and theoretical implications for vulnerable populations, including students, older adults, caregivers, and refugees (Cheung, 2022). Further, the construct validity of the CIS is somewhat limited to measures of general anxiety and stress. The problem of exclusive focus on mental and physical health also appeared on a different scale, also titled the Coronavirus Impact Scale (Min et al., 2022), which almost

exclusively focuses its item content and construct validity on physical and mental health. Although physical and mental health domains are important, neglecting the important cultural, environmental, and social contexts (Flisiak et al., 2022; Dhanani & Franz, 2022) and the range of other ways the COVID-19 pandemic has affected individuals (e.g., job-related stress, education challenges, and social separation; Kerker et al., 2023; Mishra & Mishra, 2023; Sugimoto et al., 2023) may lead to researchers and clinicians missing important information for their studies and clinical care. Ultimately, these domains, including physical and emotional health, warrant a more robust estimate beyond a single item, which we aimed to provide in the current study.

The CIS has other minor limitations beyond item content and framing, which we aimed to address by creating separate research and clinical versions. First, the subscale data are ordinal, which significantly limits the ability of the subscales to be used in research (e.g., parametric analyses and some structural equation modeling). We aimed to create an interval and continuous scale by using six items for each domain, which will allow for 30 possible scores per domain scale, which is enough variation to be used as a continuous measure in analysis (i.e., greater than five options; Hancock et al., 2019), thus allowing individuals to measure the impact of COVID-19 for research studies. However, a long measure may not be appropriate for clinical settings, so we also aimed to create a brief, clinical version to provide important information quickly while respecting the clients' well-being. Further, the framing of the CIS is oriented to individuals with families and caregivers, significantly limiting the generalizability of this scale to other populations in both research and clinical settings. We aimed to create a scale that any person can complete (e.g., students in college settings and young adults in therapy settings), especially those from vulnerable populations who may have been disproportionally affected by COVID-19 (Dhanani & Franz, 2022) . Finally, we aimed to assess if our measure provides new and

worthwhile information, we collected data on the CIS (Stoddard et al., 2021) to assess criterion and incremental validity. Although we aim to address the limitations of the CIS, we will further address the limitations within the literature.

The literature lacks a measure package of the effects of COVID-19 that achieves the following. First, no scales comprehensively assess various domains of the contextual, social, and environmental effects of COVID-19. Many scales measure individual parts of COVID-19 impact (e.g., the COVID Anxiety Scale; Lee, 2020; COVID-19 Exposure and Family Impact Scales; Kazak et al., 2021). We aim to create multidimensional measures that assess ten different general life domains so that researchers and clinicians can obtain a comprehensive overview and context of their participant and client presentations. Second, the need for scales assessing the various impact of COVID-19 on life domains has resulted in limited research in this area and limited measurement in clinical settings. We aimed to provide a measure for researchers to open a line of research on how the effects of the COVID-19 pandemic have affected individuals' functioning and help professionals develop a context for client concerns and presentation. Finally, we aim to develop scales that have flexibility of use, allowing for a full multidimensional assessment to develop a rich, detailed understanding, individual domain scale administrations for targeting specific questions, and a brief measure to capture the impact of COVID-19 on individuals' lives broadly. We aim to independently validate a long-form (6 items per domain; CIDS-R) and short-form (2 items per domain; CIDS-C) version of the scales so researchers and clinicians can choose the most relevant domain scales to deliver or deliver a long-form or short-form measure, depending on the need and setting.

The current study aims to develop and validate a measure of the effects of COVID-19, the CIDS-R for a more robust and thorough measurement in studies and the CIDS-C for quick

measurement in a clinical setting. We hypothesized that we will delineate many domains currently unmeasured in the literature, including job effects, social impairments, and quality of life. We also aimed to develop composite scores for a summation of the impact of COVID-19 on individuals' lives, whether study participants or therapy clients. These scales will provide researchers and clinicians with an improved, flexible, and multi-dimensional tool to assess the many effects of COVID-19 on individuals' lives.

Method

2.1 Participants

Participants were undergraduate students (n = 224) from a Midwestern University who participated in the study for course credit. We displayed the demographic information in Table 1. We removed individuals who failed either of the two attention checks (e.g., please select moderately true; n = 28; 12.50%), allowing for a final sample of 196 participants. All data, syntax, and materials are on an Open Science Framework page, which can be accessed at the following link: https://osf.io/rvxn6/?view_only=236ff5ada44549e985eae4c17262104f.

2.2 Procedure

The item creation was based on a comprehensive search of the internet on people's testimonies about the effects COVID-19 have had on their lives and the literature. We searched through social media websites (e.g., Reddit, Twitter, and Quora), major news networks (e.g., New York Times, Washington Post, and NBC News), and scientific databases (e.g., PsychInfo and Google Scholar). Across individuals' testimonies, the authors determined that ten significant themes emerged, which were 1) health, 2) quality of life, 3) finances, 4) loved ones, 5) jobs, 6) safety, 7) school, 8) mental health, 9) social activities, and 10) policy. We then created at least ten items for each domain based on the search findings, resulting in a final pool of 116 items.

We created a Qualtrics survey (Qualtrics LCC, Provo, UT, USA), including the items in the item pool and various other scales for validity. Participants found our study via the SONA System (SONA Systems, Ltd., Tallinn, Estonia) for the Department of Psychology during the Spring of 2022. Participants completed informed consent, completed the survey, then completed a debriefing. The entire study took no longer than 30 minutes.

2.3 Measures. See Table 2 for means, standard deviations, and Cronbach's alpha values for the following scales.

Table 1

Demographic characteristics

Demographics	Full Sample
Mean Age (SD)	19.59 (3.57)
Range	18-60
Gender	
Female	92 (46.9%)
Male	94 (48.0%)
Nonbinary	8 (4.1%)
Other	2 (1.0%)
Race	
White	119 (60.7%)
Asian	9 (4.6%)
Black	59 (30.1%)
Indian	1 (0.5%)
Native American	3 (1.5%)
Pacific Islander	0 (0.0%)
Prefer not to say	4 (2.0%)
Ethnicity	
Non-Hispanic	180 (91.8%)
Hispanic	16 (8.2%)
COVID-19 Experiences	
Never had COVID-19	91 (46.4%)
Asymptomatic	20 (10.2%)
Mild symptoms	45 (23.0%)
Moderate symptoms	30 (15.3%)
Severe symptoms	8 (4.1%)
Hospitalization	2 (1.0%)

Note. n = 196. Some participants were removed for failing any of the attention checks.

2.3.1 Fear of COVID-19 Scale. The Fear of COVID-19 scale is a 7-item unidimensional measure of one's general fear about COVID-19 (Ahorsu et al., 2020). Participants rate items on a 5-point Likert-type scale from 1 = *strongly disagree* to 5 = *strongly agree*. The scale has a strong unidimensional factor structure, convergent validity with psychopathology measures and strong internal consistency.

2.3.2 WHOQOL-BREF. The World Health Organization Quality of Life – Bref is scale that measures an individuals' quality of life dimensions (World Health Organization, 1996). Participants rate 26 items on various 5-point Likert-type scales. The scale has six dimensions which are 1) global quality of life, 2) global health, 3) physical quality of life, 4) psychological quality of life, 5) environmental quality of life, and 6) relationship quality of life. The scale has demonstrated strong psychometric properties and has been translated into multiple languages.

2.3.3 Positive and Negative Affective Schedule (PANAS). The Positive and Negative Affective Schedule (PANAS) is a measure of positive and negative affectivity (Watson et al., 1988). The PANAS is a 20-item Likert-type scale that ranges from 1 = *very slightly or not at all* to 5 = *extremely*. EFA results suggest a consistent two-factor structure, one for positive and one for negative affectivity. The scale has also demonstrated excellent internal consistency for seven temporal instructions (e.g., this moment, today, or the past week) and excellent construct validity. The PANAS in the current study measured affect in the present moment.

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Table 2

Descriptive statistics and correlations among the scales used in the current study

Scale	*M*	*SD*	FCS	GQOL	GHQOL	PHQOL	PSQOL	EQOL	RQOL	PA	NA	CAS	CIS
FCS	1.69	0.84	.918										
GQOL	3.71	0.90	-.237***	-									
GHQOL	3.45	1.06	-.263***	.492***	-								
PHQOL	2.99	0.57	-.159*	.560***	.411***	.577							
PSQOL	3.31	0.60	-.130	.666***	.486***	.659***	.476						
EQOL	3.60	0.76	-.300***	.679***	.458***	.608***	.626***	.860					
RQOL	3.49	0.91	-.175*	.429***	.335***	.428***	.462***	.460***	.635				
PA	2.35	0.72	-.056	.246***	.201**	.320***	.431***	.272***	.197**	.789			
NA	2.01	0.62	.270***	-.243***	-.112	-.114	-.091	-.183*	-.135	.591***	.721		
CAS	1.13	0.36	.489***	-.254***	-.219**	-.144*	-.181*	-.274***	-.296***	-.037	.244***	.858	
CIS	1.69	0.50	.336***	-.479***	-.303***	-.338***	-.369***	-.572***	-.278***	-.250***	.145*	.390***	.807

Note. n = 196. FCS = Fear of COVID-19 Scale, GQOL = Global Quality of Life, GQOL = Global Health Quality of Life, PHQOL = Physical Health Quality of Life, PSQOL = Psychological Quality of Life, EQOL = Environmental Quality of Life, RQOL = Relationship Quality of Life, PA = Positive Affect, NA = Negative Affect, CAS = COVID-19 Anxiety Scale, CIS = Coronavirus Impact Scale. Diagonal in the correlation table is the Cronbach's α for scales with more than one item, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

2.3.4 COVID Anxiety Scale. The COVID-19 Anxiety Scale is a unidimensional measure of anxiety that occurs when thinking about the COVID-19 pandemic (Lee, 2020). Individuals rate 5 items on a 5-point scale from 1 = *not at all* to 5 = *nearly every day for the last two weeks*. The scale has a strong unidimensional structure in both a principal components analysis and confirmatory factor analysis and demonstrated measurement invariance across age, and gender. Further, the scale demonstrated strong construct validity with measures of psychopathology and had a strong internal consistency.

2.3.5 Coronavirus Impact Scale. The Coronavirus Impact Scale is an 11-item unidimensional measure of the effects the COVID-19 pandemic has had on an individual's life (Stoddard et al., 2021). Individuals rate items on a 4-point scale from 1 = *no effect* to 4 = *strong effect* (i.e., items have their own unique labels for each option). The scale demonstrated an adequate unidimensional factor structure, construct validity, and internal consistency in the original sample.

Results

Preliminary Analyses

We first checked the data for outliers, skewness, and kurtosis of the scale scores only, as we did not use the individual items in any parametric analyses. Several variables contained outliers as defined as two standard deviations above the mean, including the COVID-19 Anxiety Scale (23), Coronavirus Impact Scale (2), negative affect (5), global quality of life (4), global health quality of life (3), physical quality of life (1), environmental quality of life (3), relationship quality of life (6), and Fear of COVID-19 Scale (1). However, all outliers were valid cases, and therefore we did not eliminate them from the analyses (Orr et al., 1991). An analysis of skewness and kurtosis revealed no non-normal distributions, which is defined as an absolute

value of skewness of greater than 2 or an absolute value of kurtosis of greater than 7 (West et al., 1995) except for the COVID-19 Anxiety Scale with skewness of 3.73 and kurtosis of 15.19. The COVID-19 Anxiety Scale is only used in correlations, so we did not transform the variable. Skewness for the other variables ranged from -0.59 to 1.09 and kurtosis ranged from -0.77 to 0.98. Missing data were deleted case-wise. We displayed the correlational among the scales used in the current study in Table 2.

Structural Validity

One of the goals of the CIDS-R and CIDS-C was to independently validate a set of domains and composite scales so that researchers and clinicians can selectively administer the domains that are most relevant to the person of interest or setting without administering all items. As such, we used a similar technique in creating the Multidimensional Psychological Flexibility Inventory (MPFI; Rolffs et al., 2016), where we used ten separate principal component analyses for each domain scale and extracted one component to determine the items that best capture the hypothesized domains. Note that we used a principal components analysis because we were not anticipating these measures to be latent, rather observed self-reported effects. For the CIDS-R, we selected the top six items that load onto the component the strongest. This number of items will allow for higher internal consistency estimates and provide a more thorough assessment (Pallant, 2011). Further, this number of items will allow for 30 possible scores per subscale, which is enough variation to be used as a continuous measure in analysis for researchers (i.e., greater than five options; Hancock et al., 2019). We selected the top two items from the prior analyses for the clinical version, allowing for a brief measure for use in clinical settings. We used SPSS v28 (IBM Corporation, LLC, Armonk, NY, 2022) to conduct the principal component analyses. The domain scale contained 10 to 16 items in the initial pool, which resulted in a ratio

between 19.60:1 to 12.25:1, which meets the recommended minimum ratio of 5:1 to give an adequate sample size for reproducibility in a population (Hair et al., 2010).

Independent Scales

We started by selecting the items for the CIDS-R, and we were able to select the six items with the strongest loadings across the ten domain scales. These items produced a clear structure and had high internal consistency. We displayed the loadings, internal consistencies, and descriptive statistics in Table 3. We then selected the two items with the strongest loadings across the ten domain scales from the prior analysis to make the clinical version. These items produced excellent descriptive statistics, including high inter-item correlations, which we displayed in Table 3. Note that the CIDS-R has higher precision because of the number of items, as evinced by the smaller standard deviations displayed in Table 3. We then conducted dependent samples *t*-tests to determine if the domain scales produce similar scores. Six of the research domain scales produced statistically significantly smaller scores than the clinical domain scales and the largest difference was between the health domain scales (i.e., $MDiff = -0.31$, $p < .001$). However, although statistically significant, these differences may not have practical implications. We address this difference in the Normative Data section.

Table 3

Principal component loadings, internal consistencies, and descriptive statistics for each of the ten domain scales in the CIDS-R and CIDS-C

Domain	Health		QOL		Finances		LO		Job	
Item	Item	λ	Item	λ	Item	λ	Item	λ	Item	λ
1	4	.717	5	.869	3	.901	9	.799	8	.829
2	5	.714	11	.852	2	.885	5	.791	6	.823
3	7	.696	14	.839	9	.879	10	.742	11	.796
4	3	.682	10	.838	10	.867	6	.739	5	.766
5	8	.655	3	.837	5	.860	1	.730	4	.766
6	1	.642	7	.833	1	.847	7	.711	10	.757
				CIDS-R						
α	.804		.933		.950		.875		.893	
M	1.85		2.09		2.24		2.60		1.87	
SD	0.83		1.14		1.26		1.17		1.05	
				CIDS-C						
r	.478***		.726***		.859***		.581***		.814***	
M	2.15		2.10		2.38		2.72		1.71	
SD	1.07		1.25		1.41		1.31		1.16	
t	-0.31***		-0.10		-0.13***		-0.11***		-0.17***	
Domain	Safety		School		MH		Social		Policy	
Item	Item	λ	Item	λ	Item	λ	Item	λ	Item	λ
1	3	.892	4	.858	1	.880	5	.851	8	.909
2	5	.875	3	.837	5	.857	6	.788	5	.867
3	2	.869	7	.826	4	.855	8	.777	3	.856
4	1	.823	2	.810	8	.813	9	.766	6	.845
5	9	.772	5	.782	7	.796	4	.764	1	.838
6	6	.765	9	.780	11	.785	10	.755	7	.709
				CIDS-R						
α	.923		.917		.930		.892		.933	
M	1.86		2.74		2.58		3.02		2.16	
SD	0.97		1.26		1.28		1.20		1.24	
				CIDS-C						
r	.841***		.747***		.826***		.831***		.843***	
M	1.93		2.95		2.59		3.07		2.17	
SD	1.18		1.40		1.42		1.44		1.38	
t	-0.06**		-0.21***		-0.01		-0.06		-0.01	

Note. n = 196. QOL = Quality of Life, LO = Loved Ones, MH = Mental Health, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

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Composite Scores

We then conducted principal component analyses, extracting one component for all items in CIDS-R and CIDS-C to determine if a composite score was viable. All items loaded onto the single component for the CIDS-R, λ = .44 - .78, and the clinical version, λ = .57 - .77 (which meets an acceptable minimum criterion of loading strength; Stevens, 1992), except for the policy scale items on the CIDS-R, λ = -.04 - .20, and clinical versions, λ = -.03 - .05. Therefore, we considered removing the policy items from both versions, but we first tested the policy domain scales' construct validity to determine if it provided important and accurate information. Thus, a composite score without the policy items for the research (α = .972; M = 2.31, SD = 0.87) and clinical versions (α = .992; M = 2.40, SD = 0.91) is a viable and highly internally consistent option to determine an overall impact of COVID-19 on individuals' lives. The two versions' composite scores were nearly perfectly correlated (r = .984, p < .001), suggesting that scores on the clinical version correspond well to the CIDS-R, despite difference in the number of items.

Construct Validity

Convergent & Divergent Validity

We demonstrated the convergent and divergent validity of the domain scales and composite scores for the CIDS-R and CIDS-C through bivariate correlations. We displayed the convergent and divergent validity correlations in Table 4. The results revealed that many of correlations are sufficiently large enough to warrant convergent validity (e.g., safety and fear of COVID-19 scale or quality of life and global quality of life) across both versions. Further, the domain and composite scores demonstrated weak or no correlations with positive affect (e.g., job impact; r = .000). Notably, the policy subscale across the CIDS-R and CIDS-C further show that the subscale did not fit with the other subscales and do not have construct validity, we removed it

from the CIDS-R and CIDS-C. The convergent and divergent validity evidence for the final items suggests strong structural validity.

Table 4

Construct validity of the CIDS-R and CIDS-C

	FCS	GQOL	GHQOL	PHQOL	PSQOL	EQOL	RQOL	PA	NA	CAS	CIS
						CIDS-R					
H	.437***	-.390***	-.442***	-.293***	-.320***	-.405***	-.163*	-.145*	.192**	.238***	.524***
QOL	.398***	-.510***	-.343***	-.327***	-.445***	-.515***	-.391***	-.091	.314***	.366***	.616***
F	.338***	-.444***	-.266***	-.345***	-.253***	-.508***	-.219**	-.005	.318***	.326***	.495***
LO	.437***	-.440***	-.313***	-.319***	-.283***	-.440***	-.304***	-.045	.330***	.313***	.659***
J	.288***	-.287***	-.250***	-.207**	-.218**	-.369***	-.078	.000	.248***	.212**	.539***
SA	.712***	-.269***	-.332***	-.141*	-.167**	-.269***	-.147*	-.105	.199**	.299***	.410***
SC	.343***	-.395***	-.308***	-.437***	-.344***	-.391***	-.328***	-.164*	.194**	.239***	.463***
MH	.425***	-.508***	-.422***	-.452***	-.502***	-.504***	-.372***	-.189**	.272***	.346***	.554***
SO	.385***	-.402***	-.235**	-.223**	-.223***	-.353***	-.276***	-.047	.231***	.296***	.582***
P	-.258**	-.136	.072	.005	.058	-.140	-.047	.102	.035	.011	.100
CO	.530***	-.536***	-.416***	-.411***	-.411***	-.556***	-.346***	-.117	.338***	.388***	.700***
						CIDS-C					
H	.421***	-.347***	-.426***	-.335***	-.315***	-.384***	-.172*	-.191**	.129	.182*	.478***
QOL	.351***	-.489***	-.324***	-.333***	-.435***	-.510***	-.399***	-.086	.288***	.299***	.573***
F	.299***	-.421***	-.270***	-.333***	-.247***	-.502***	-.212**	-.038	.268***	.306***	.462***
LO	.372***	-.422***	-.293***	-.253***	-.268***	-.406***	-.260***	-.083	.284***	.314***	.629***
J	.202**	-.257***	-.203**	-.148*	-.183*	-.380***	-.077	.019	.209**	.234***	.433***
SA	.654***	-.256***	-.301***	-.126	-.152*	-.266***	-.076	-.120	.157*	.262***	.410***
SC	.252***	-.381***	-.281***	-.403***	-.328***	-.354***	-.331***	-.220**	.134	.215**	.400***
MH	.366***	-.519***	-.378***	-.408***	-.500***	-.483***	-.369***	-.181*	.261***	.311***	.530***
SO	.290***	-.326***	-.151*	-.156*	-.085	-.259***	-.221**	.053	.238***	.233***	.455***
P	-.302***	-.077	.097	.064	.085	-.051	.016	.109	.010	-.067	.016
CO	.499***	-.545***	-.410***	-.398***	-.398***	-.561***	-.342***	-.132	.314***	.375***	.691***

Note. n = 196. H = Health, QOL = Quality of Life, F = Finances, LO = Loved Ones, J = Jobs, SA = Safety, SC = School, MH = Mental Health, SO = Social Activities, P = Policy, CO = composite score of the COVID-19 Impact Domain Scales, FCS = Fear of COVID-19 Scale, GQOL = Global Quality of Life, GQOL = Global Health Quality of Life, PHQOL = Physical Health Quality of Life, PSQOL = Psychological Quality of Life, EQOL = Environmental Quality of Life, RQOL = Relationship Quality of Life, PA = Positive Affect, NA = Negative Affect, CAS = COVID-19 Anxiety Scale, CIS = Coronavirus Impact Scale,, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 5

Correlations among the CIDS-R and CIDS-C

Scale	H	QOL	F	LO	J	SA	SC	MH	SO	CO
H	.910***	.419***	.490***	.445***	.350***	.634***	.491***	.533***	.318***	.722***
QOL	.528***	.955***	.483***	.555***	.418***	.412***	.463***	.731***	.468***	.785***
F	.528***	.541***	.957***	.378***	.486***	.362***	.394***	.489***	.424***	.717***
LO	.547***	.656***	.490***	.927***	.323***	.395***	.382***	.497***	.483***	.706***
J	.555***	.532***	.550***	.541***	.877***	.293***	.291***	.359***	.374***	.606***
SA	.591***	.444***	.388***	.490***	.421***	.957***	.376***	.445***	.338***	.656***
SC	.534***	.554***	.497***	.528***	.505***	.435***	.941***	.534***	.311***	.676***
MH	.622***	.739***	.545***	.633***	.511***	.503***	.665***	.924***	.421***	.797***
SO	.436***	.598***	.523***	.709***	.465***	.442***	.526***	.565***	.848***	.666***
CO	.750***	.812***	.742***	.811***	.720***	.665***	.758***	.849***	.774***	.931***

Note. n = 196. H = Health, QOL = Quality of Life, F = Finances, LO = Loved Ones, J = Jobs, SA = Safety, SC = School, MH = Mental Health, SO = Social Activities, CO = composite. The bottom diagonal are correlations among the CIDS-R, top diagonal are correlations among the CIDS-C, and the diagonal contain correlations between the CIDS-R and CIDS-C domain or composite scale, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Criterion Validity

We demonstrated the criterion validity of the domain scales and composite scores for the CIDS-R and CIDS-C through bivariate correlations with the CIS and a one-way ANOVA to assess group differences of those with different COVID-19 symptom experiences. Regarding the CIS, the composite score of the CIDS-R (r = .700) and CIDS-C (r = .691) versions were highly positively correlated with the CIS. The correlations between the CIDS-R and CIDS-C, as displayed in the diagonal of Table 5, are very high (rs = .848 - .957), suggesting that the resulting scores on both versions have within-scale criterion validity.Regarding the group differences, a one-way analysis of variance (ANOVA) with Tukey HSD post-hoc corrections suggested that those who report severe sickness from COVID-19 report larger impacts of COVID-19 on their lives with medium effects for the CIDS-R, $F(5, 195) = 2.78$, $p = .019$, $\eta^2 = .068$, and the CIDS-C, $F(5, 195) = 2.75$, $p = .020$, $\eta^2 = .067$. We displayed the score distributions of the CIDS-R and CIDS-C composite scores across reported COVID-19 severity in Figure 1. Overall, the domain

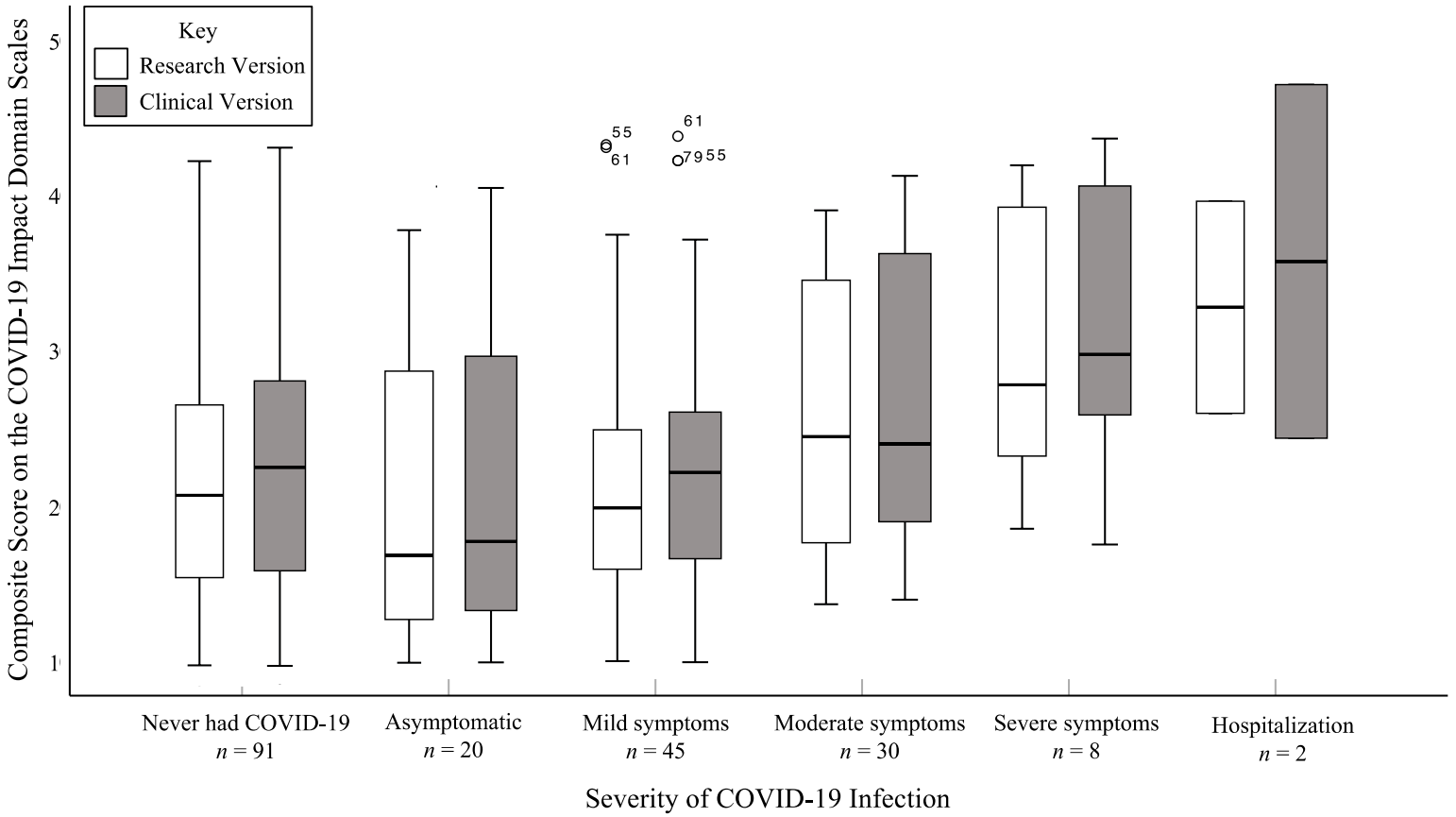
and composite scores for the CIDS-R and CIDS-C, with the evidence for face, convergent, divergent, and structural validity, appear to measure the proper constructs.

Incremental Validity

We then analyzed the incremental validity of the CIDS-R and CIDS-C composite scores in explaining the impact on quality of life over the CIS. To demonstrate this incremental validity, we conducted 12 hierarchical linear regressions (HLR), one for each subscale of the WHOQOL-Bref for the composite CIDS-R and CIDS-C. In the first step of each model, we added the CIS to explain variability in the WHOQOL-Bref subscale. Then, in the second step, we added the composite score of either the CIDS-R and CIDS-C (conducting one HLR for both; the first step is unaffected by the variables in the second step) to determine variation in the quality of life domains above and beyond that explained by the CIS, which we displayed in Table 6. The results reveal that both composite scores of the CIDS demonstrate significant incremental validity over the CIS in every quality-of-life domain, except for the environmental quality of life subscale, where it performed equally well. In most analyses, the addition of the CIDS composite score reduced the variability explained by the CIS to non-significance. These results suggest that the CIDS has excellent incremental validity over the CIS, thereby providing new and important information over the best existing measure.

Figure 1

Composite scores on the CIDS-R and CIDS-C by COVID-19 infection severity



Note. n = 196. Box and whisker plot the composite scores on the CIDS-R and CIDS-C grouped by self-reported severity of their worst previous COVID-19 infections. The top and bottom sides of the boxes are the 25th and 75th quartiles, respectively. The horizontal line that splits the box is the median, and the error bars represent the minimum and maximum scores. The white circles indicate participant outlier scores. A one-way analysis of variance (ANOVA) suggested that those who report severe sickness from COVID-19 report larger impacts of COVID-19 on their lives compared to those who were asymptomatic or never had COVID-1

Table 6

Hierarchical linear regressions assessing the incremental validity of the Research and Clinical COVID-19 Impact Domain Scales compared to the Coronavirus Impact Scale

	Global Quality of Life			Global Health Quality of Life		
	Step 1	Step 2 - CIDS-R	Step 2 - CIDS-C	Step 1	Step 2 - CIDS-R	Step 2 - CIDS-C
	β	β	β	β	β	β
CIS	-.479***	-.194*	-.192*	-.303***	-.026	-.039
CIDS		-.408***	-.416***		-.396***	-.383***
Adjusted R^2	23.0%	30.7%	32.0%	9.2%	17.2%	16.0%
Cohen's f^2		.111	.132		.097	.081
	Physical Quality of Life			Psychological Quality of Life		
	Step 1	Step 2 - CIDS-R	Step 2 - CIDS-C	Step 1	Step 2 - CIDS-R	Step 2 - CIDS-C
	β	β		β	β	β
CIS	-.338***	-.092	-.113	-.369***	-.158	-.178
CIDS		.350***	-.325***		-.302***	-.277***
Adjusted R^2	11.4%	17.7%	16.9%	13.6%	18.3%	17.6%
Cohen's f^2		.077	.066		.058	.049
	Environmental Quality of Life			Relationship Quality of Life		
	Step 1	Step 2 - CIDS-R	Step 2 - CIDS-C	Step 1	Step 2 - CIDS-R	Step 2 - CIDS-C
	β	β	β	β	β	β
CIS	-.572***	-.354***	.351***	-.278***	-.066	-.077
CIDS		-.310***	-.320***		-.303**	-.292**
Adjusted R^2	32.7%	37.6%	38.0%	7.7%	12.4%	11.3%
Cohen's f^2		.079	.085		.054	.041

Note. n = 196. β = standardized coefficient, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 7

One-sample t-tests for domain and composite scales for the Research and Clinical COVID-19 Impact Domain Scales compared to the COVID-19 Impact Scale showing the subscale means are larger than 1 (i.e., no impact at all)

Statistic	Mean	Difference	*p*-value	Cohen's *d*	*d* 95% LL	*d* 95% UL
Scale				CIDS-R		
H	1.85	0.85	<.001	1.03	0.85	1.20
QOL	2.09	1.09	<.001	0.96	0.79	1.12
F	2.24	1.24	<.001	0.98	0.81	1.15
LO	2.60	1.60	<.001	1.37	1.18	1.57
J	1.87	0.87	<.001	0.83	0.67	0.99
SA	1.86	0.86	<.001	0.89	0.72	1.05
SC	2.74	1.74	<.001	1.38	1.19	1.58
MH	2.58	1.58	<.001	1.23	1.05	1.42
SO	3.02	2.02	<.001	1.67	1.46	1.89
CO	2.31	1.31	<.001	1.51	1.31	1.72
Scale				CIDS-C		
H	2.15	1.15	<.001	1.07	0.90	1.25
QOL	2.10	1.10	<.001	0.88	0.72	1.05
F	2.38	1.38	<.001	0.98	0.81	1.15
LO	2.72	1.72	<.001	1.30	1.11	1.49
J	1.71	0.71	<.001	0.61	0.46	0.76
SA	1.93	0.93	<.001	0.79	0.63	0.95
SC	2.95	1.95	<.001	1.39	1.20	1.59
MH	2.59	1.59	<.001	1.12	0.94	1.30
SO	3.07	2.07	<.001	1.44	1.24	1.64
CO	2.40	1.40	<.001	1.53	1.33	1.74

Note. n = 196. H = Health, QOL = Quality of Life, F = Finances, LO = Loved Ones, J = Jobs, SA = Safety, SC = School, MH = Mental Health, SO = Social Activities, CO = composite score, LL = lower limit, UL = upper limit.

Detection of Impact

We then determined if the domain and composite scales of the CIDS-R and CIDS-C sufficiently detect the impact of COVID-19 on individuals' lives. To assess this effect, we tested if the scale means were significantly different from 1 (i.e., indicating no impact at all) using one-sample t-tests, which we displayed in Table 7. The results revealed that every subscale and the composite scale for both the CIDS-R and CIDS-C could detect the effects of COVID-19 on individuals' lives and with large effects.

Demographic Variation

We then examined if scores on the scales differed by demographic variation. We created a Person of Color variable due to the low representation of various non-White races, which contained anyone who identified as Asian, Black, Indian, Native American, Pacific Islander, or multiracial. We removed individuals who reported their gender as nonbinary, also due to low representation. We then conducted a series of t-tests to determine group differences across race and gender and correlations between the scales and age. We used the False Discovery Rate and Benjamini-Hochberg adjusted *p*-values to control for inflation of the Type I error rate from multiple comparisons. The results consistently suggest that COVID-19 negatively affected POC and women more than White people and men. The effect sizes for these significant effects ranged from, $d = 0.33 – 0.75$, suggesting that these effects were mostly small to medium. Not that the impact of COVID-19 did not relate to age. We displayed the results in Table 8.

Normative Data

We displayed the normative data in Table 9 to compare scores to the data used in this validation study. The data in Table 9 are the percent of the sample in the current study reporting the same or less impact than the score in the mean column. Note that we removed the percent sign removed and that for the composite scores, we did not display all possible options (i.e., 216 scores) for ease of interpretation. We provided normative data for the interpretation of all domain scales from the CIDS-R and CIDS-C directly next to each other to address the statistically significant mean differences noted in Table 3.

Table 8

Demographic variation of the Research and Clinical COVID-19 Impact Domain Scales

Scale	Race					Gender					Age		
	White	POC	Raw *p*	BHA *p*	Cohen's *d*	Men	Women	Raw *p*	BHA *p*	Cohen's *d*	*r*	Raw *p*	BHA *p*
CIDS-R													
H	1.75 (0.81)	2.00 (0.84)	.043	.061	*ns*	1.58 (0.66)	2.09 (0.91)	< .001	< .001	-0.64	.059	.431	> .999
QOL	1.88 (0.96)	2.41 (1.32)	.003	.020	-0.48	1.76 (0.88)	2.32 (1.25)	< .001	.001	-0.52	.033	.660	> .999
F	2.03 (1.18)	2.56 (1.33)	.005	.014	-0.43	2.10 (1.16)	2.39 (1.37)	.128	.136	*ns*	.003	.966	> .999
LO	2.41 (1.13)	2.90 (1.17)	.004	.013	-0.42	2.28 (1.01)	2.83 (1.22)	< .001	.002	-0.49	.022	.764	> .999
J	1.79 (1.02)	1.99 (1.10)	.196	.231	*ns*	1.57 (0.79)	2.14 (1.21)	< .001	< .001	-0.56	.019	.800	> .999
SA	1.73 (0.94)	2.07 (0.98)	.016	.036	-0.36	1.50 (0.73)	2.18 (1.05)	< .001	< .001	-0.75	.037	.621	> .999
SC	2.53 (1.19)	3.07 (1.29)	.003	.015	-0.44	2.35 (1.14)	3.07 (1.31)	< .001	< .001	-0.59	-.044	.554	> .999
MH	2.53 (1.24)	2.66 (1.34)	.484	.484	*ns*	2.13 (1.14)	2.91 (1.26)	< .001	< .001	-0.65	-.004	.959	> .999
SO	2.86 (1.21)	3.26 (1.17)	.021	.042	-0.34	2.79 (1.07)	3.15 (1.31)	.040	.046	-0.30	.013	.867	> .999
CO	2.17 (0.83)	2.53 (0.88)	.005	.013	-0.42	2.01 (0.71)	2.55 (0.93)	< .001	< .001	-0.65	.027	.716	> .999
CIDS-C													
H	2.00 (1.09)	2.30 (1.03)	.127	.159	*ns*	1.87 (0.90)	2.40 (1.14)	< .001	.001	-0.52	.028	.707	> .999
QOL	2.40 (1.05)	2.45 (1.43)	.002	.020	-0.48	1.77 (1.00)	2.34 (1.36)	< .001	.001	-0.48	.030	.687	> .999
F	2.56 (1.33)	2.75 (1.46)	.002	.040	-0.45	2.30 (1.34)	2.46 (1.49)	.446	.446	*ns*	-.004	.956	> .999
LO	2.90 (1.29)	2.98 (1.32)	.024	.040	-0.33	2.46 (1.21)	2.89 (1.37)	.025	.031	-0.33	.070	.348	> .999
J	1.99 (1.12)	1.78 (1.23)	.483	.508	*ns*	1.48 (0.88)	1.90 (1.37)	.014	.019	-0.36	.033	.656	> .999
SA	2.07 (1.13)	2.16 (1.21)	.023	.042	-0.34	1.50 (0.84)	2.26 (1.29)	< .001	< .001	-0.70	.048	.519	> .999
SC	3.07 (1.39)	3.18 (1.39)	.060	.080	*ns*	2.60 (1.35)	3.27 (1.42)	< .001	.002	-0.48	-.048	.520	> .999
MH	2.66 (1.35)	2.75 (1.52)	.221	.246	*ns*	2.18 (1.27)	2.86 (1.45)	< .001	.002	-0.50	.002	.983	.983
SO	3.26 (1.57)	3.34 (1.36)	.039	.060	*ns*	2.87 (1.36)	3.24 (1.51)	.080	.089	*ns*	.024	.744	> .999
CO	2.53 (0.87)	2.63 (0.92)	.004	.016	-0.43	2.11 (0.75)	2.62 (0.99)	< .001	< .001	-0.58	.027	.721	> .999

Note. n = 196. Means and standard deviations provided next to the inferential statistics. H = Health, QOL = Quality of Life, F = Finances, LO = Loved Ones, J = Jobs, SA = Safety, SC = School, MH = Mental Health, SO = Social Activities, CO = composite score, POC = person of color, Raw p = unadjusted p-value, BHA p = Benjamini-Hochberg adjusted p-value, *ns* = no significant effect. We provided Cohen's ds only for significant effects.

Table 9

Normative data (percentile rank) of the domain and composite scales for the CIDS-R and CIDS-C

Scale	H		QOL		F		LO		J		SA		SC		MH		SO		CO	
M	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C	R	C
1.00	21	38	0	38	25	35	10	20	31	62	32	26	9	17	12	26	6	19	2	3
1.17	29	38	34	38	33	35	13	20	40	62	40	26	16	17	19	26	9	19	6	6
1.33	37	38	41	38	38	35	19	20	49	62	44	26	20	17	26	26	11	19	11	11
1.50	47	53	49	53	44	44	26	31	53	71	54	37	27	26	28	37	13	24	23	19
1.67	57	53	52	53	51	44	31	31	61	71	59	37	31	26	32	37	17	24	29	21
1.83	63	53	56	53	53	44	36	31	66	71	63	37	33	26	38	37	21	24	36	33
2.00	69	65	60	65	56	58	40	41	69	77	67	50	37	38	44	50	26	32	43	41
2.17	73	65	63	65	59	58	45	41	72	77	71	50	39	38	50	50	30	32	49	46
2.33	79	65	69	65	62	58	49	41	77	77	74	50	41	38	55	50	35	32	60	52
2.50	81	73	70	73	66	64	52	52	80	81	78	60	46	45	58	60	41	40	63	62
2.67	84	73	74	73	68	64	56	52	84	81	81	60	52	45	61	60	44	40	71	66
2.83	87	73	75	73	69	64	61	52	85	81	84	60	58	45	62	60	51	40	76	73
3.00	91	79	80	79	72	73	64	62	87	87	86	68	61	58	66	68	54	56	77	77
3.17	93	79	82	79	76	73	69	62	88	87	88	68	64	58	70	68	58	56	80	78
3.33	94	79	84	79	78	73	73	62	89	87	88	68	67	58	71	68	62	56	84	80
3.50	95	87	86	87	82	76	75	75	89	90	91	74	70	66	74	74	63	63	87	84
3.67	97	87	89	87	84	76	80	75	89	90	93	74	76	66	77	74	67	63	90	88
3.83	97	87	90	87	87	76	85	75	91	90	95	74	79	66	79	74	72	63	95	90
4.00	98	91	23	91	88	87	87	84	94	95	97	80	82	78	82	80	79	74	97	94
4.17	100	91	92	91	90	87	88	84	94	95	99	80	86	78	85	80	80	74	98	97
4.33	100	91	94	91	92	87	91	84	96	95	100	80	88	78	87	80	84	74	99	99
4.50	100	94	96	94	93	89	93	92	96	95	100	88	90	84	90	88	86	78	100	100
4.67	100	94	96	94	95	89	95	92	99	96	100	88	92	84	93	88	90	78	100	100
4.83	100	94	97	94	95	89	99	92	99	96	100	88	93	84	95	88	92	78	100	100
5.00	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Note. n = 196. H = Health, QOL = Quality of Life, F = Finances, LO = Loved Ones, J = Jobs, SA = Safety, SC = School, MH = Mental Health, SO = Social Activities, CO = composite score, R = CIDS-R, C = CIDS-C, *M* = mean scores. Percent of sample reporting the same or less impact than the score. Percent sign removed for ease of interpretation.

Discussion

The purpose of the current study was to create two versions of a multidimensional scale that measure the effects of COVID-19 on individuals' lives across ten important life domains with a composite score option, and to address the limitations of the existing scales in the literature. The results suggest that the CIDS-R and CIDS-C are psychometrically valid, internally consistent, sensitive, and flexible (e.g., unidimensional or selectively multidimensional) measures of the effects of COVID-19. The final CIDS-R contains 54 items, and the CIDS-C contains 18 items. The CIDS-R and CIDS-C contain valid domain and composite scores, strong structural, divergent, convergent, criterion, and incremental validity with high internal consistency and sensitivity to detecting problems caused by COVID-19. Further, the CIDS-R and CIDS-C both suggest that the COVID-19 pandemic affected People of Color more than White people and women more than men, which is in line with recent research noting differences in risk factors (Almeida et al., 2020; Laster Pirtle, 2020; Reverby, 2021), suggesting further validity. Although the CIDS-R and CIDS-C have nearly identical psychometric properties and strong domain and composite scale correlations, the CIDS-R provides more precise (i.e., smaller standard deviations) and detailed estimates, whereas the clinical version provides quick and robust estimates. The CIDS-R and CIDS-C open avenues for researchers and clinicians to provide context for participants' behavior and reporting for clients' presenting concerns.

Recommendations

There are several ways to administer the CIDS-R and CIDS-C that are consistent with the psychometric properties. Individuals may administer the entire measure to assess nine domains and a composite score or only the domain scales of interest. The principal component analyses, construct, and incremental validity demonstrated that each domain scale functioned as an

independent scale with high internal consistency and sensitivity. This flexibility allows researchers and clinicians to assess the domains of interest quickly and selectively, thereby promoting efficiency without sacrificing accuracy (Akena et al., 2012). Although we label the long-form version as a research measure and the short-form version as a clinical measure, individuals may use the CIDS-R in clinical settings and the CIDS-C in research settings, depending on the goals. For more precise and detailed data, individuals may choose the CIDS-R, however, a 54-item measure in a clinical setting may lead to fatigue effects, especially if patients complete the CIDS-R with other measures (Halperin et al., 2015; Yung et al., 2022). For briefer data that are psychometrically robust, individuals may choose CIDS-C, however, an 18-item measure in a research setting limits the ability to use certain analyses (e.g., structural equation modeling with maximum likelihood; Kline, 2016), provides less precise estimates (i.e., larger standard errors), which may reduce the power to detect significant effects (Arend & Schäfer, 2019). Thus, the CIDS-R and CIDS-C have wide flexibility of use to meet the demands of specific goals or questions.

To calculate the CIDS-R and CIDS-C domain scales, one will add the responses for each domain score in the CIDS-R (six items by five responses; a range of 6 - 30) and the CIDS-C (two items by five responses; a range of 2 - 10). Then, to standardize the score to compare to the normative data or between the CIDS-R and CIDS-C, divide these sum scores by six for the CIDS-R and two for the CIDS-C. To calculate the composite scores, individuals should add all the items together for both the CIDS-R (54 items by five responses; a range of 54 - 270) and the CIDS-C (18 items by five responses; a range of 18 - 90). Then, to standardize the scores to compare to the normative data or between the CIDS-R and CIDS-C, divide these sum scores by 54 for the CIDS-R and 18 for the CIDS-C. Researchers and clinicians may directly compare

these standardized or mean scores across the other domain and composite scales, noting differences in percentile ranks in Table 9.

There are several ways to administer the CIDS-R and CIDS-C that are consistent with the psychometric properties. Individuals may administer the entire measure to assess nine domains and a composite score or only the domain scales of interest. The principal component analyses, construct, and incremental validity demonstrated that each domain scale functioned as an independent scale with high internal consistency and sensitivity. This flexibility allows researchers and clinicians to assess the domains of interest quickly and selectively, thereby promoting efficiency without sacrificing accuracy (Akena et al., 2012). Although we label the long-form version as a research measure and the short-form version as a clinical measure, individuals may use the CIDS-R in clinical settings and the CIDS-C in research settings, depending on the goals. For more precise and detailed data, individuals may choose the CIDS-R, however, a 54-item measure in a clinical setting may lead to fatigue effects, espically if patients complete the CIDS-R with other measures (Halperin et al., 2015; Yung et al., 2022). For briefer data that are psychometrically robust, individuals may choose CIDS-C, however, an 18-item measure in a research setting limits the ability to use certain analyses (e.g., structural equation modeling with maximum likelihood; Kline, 2016), provides less precise estimates (i.e., larger standard errors), which may reduce the power to detect significant effects (Arend & Schäfer, 2019). Thus, the CIDS-R and CIDS-C have wide flexibility of use to meet the demands of specific goals or questions.

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Limitations

There are several noteworthy limitations to these data. Most importantly, the sample in the current study were undergraduates, which limits generalizability to other populations, especially those in clinical settings. Despite this limitation, this sample contained various experiences with COVID-19, as displayed in Table 1 and Figure 1, which may help capture a variety that reflects the general population. Moreover, some studies have demonstrated that student samples are an adequate population for testing structural analyses, measure psychometrics, and examining clinical constructs (e.g., Gao, 2020; Mahfouz et al., 2020; Renshaw & Hindman, 2017; Zhang et al., 2020). Further, the sample had access to most domains (i.e., all participants were in school, and many have jobs) that other samples may not have access to (i.e., clinical samples likely contain more people who are not in school; see Polo et al., 2019 for a meta-analysis). Second, the data were cross-sectional, limiting our ability to examine predictive validity and test-retest reliability (Spector, 2019). The effects of COVID-19 measured by these scales may predict future hardships for individuals, yet, without those data, those predictions remain unclear. Finally, all the data in this study were self-reported, which means

that we did not have any objective verified measures of impact (e.g., doctors' notes). Despite these limitations, the study provided useful information to assist researchers and clinicians in providing societal, cultural, and environmental context for their participants' and clients' behaviors and concerns.

Future Directions

There are several future directions researchers may consider. First, although the psychometrics described in the current study were excellent, replication and extension in new samples, including longitudinal samples and vulnerable populations, will help refine the measures. It is important to know the robustness of this scale's psychometric properties across samples, not just within one sample (Zwaan et al., 2018). Second, researchers may consider using this scale to determine how the effects of COVID-19 on individuals' lives affect constructs previously untested due to a lack of a robust multidimensional measure. Some of these effects may moderate or mediate effects in research, especially the contextual factors in etiological and treatment mechanism studies (e.g., see Sideli et al., 2020 for a systematic review). Finally, researchers may consider a further examination with the policy domain scale. Although the data suggest that it does not fit in the CIDS and has poor construct validity, the principal components analysis and internal consistency suggest that it may be measuring something important to professionals that is moderately correlated with the fear of COVID-19. We have included the policy items in the OSF for future use. As such, there are many new future directions that researchers may consider building on this study.

Conclusion

The COVID-19 pandemic has undoubtedly caused profound and enduring effects on our lives across domains (e.g., social activities, mental health, and school). We conducted a study to

create multidimensional scales to address the limitations in the literature and measure these effects, including a 54-item research version (CIDS-R) that provides detailed and precise estimates and an 18-item clinical version (CIDS-C) that provides quick and robust estimates of nearly identical psychometric properties to the research version. The results suggest that the CIDS-R and CIDS-C provide valid, internally consistent, sensitive measures of how the COVID-19 pandemic has affected individuals' lives. Many opportunities and avenues may involve these measures to help researchers and healthcare professionals better understand their participants' and clients' behaviors and self-reports. Using these scales to provide precise and quantitative context for the societal, cultural, and environmental problems professionals encounter, we may be able to improve our knowledge, contextual treatments, social justice, and political change, thereby improving the lives of our clients, especially the vulnerable and marginalized individuals.

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APPENDIX A

Research Version of the COVID-19 Impact Domain Scales (CIDS-R)

Please indicate how much the following questions apply to you.

1 = Not at all
2 = A little
3 = Moderately
4 = Quite a bit
5 = Very much

Health

1. My health problems from the COVID-19 pandemic hold me back in life
2. I am not as healthy as I used to be because of the COVID-19 pandemic
3. My fears about my health have increased because of the COVID-19 pandemic
4. I am not as in shape as I was before the COVID-19 pandemic
5. I worry that I am vulnerable to getting seriously ill if I catch COVID-19
6. I am not as physically active as I was before the COVID-19 pandemic

Quality of Life

1. the COVID-19 pandemic has made my life miserable
2. My life seems dull in comparison to how it was before the COVID-19 pandemic
3. I hate what my life has become because of the COVID-19 pandemic
4. I do not enjoy my life like I used to before the COVID-19 pandemic
5. I do not find life to be as meaningful as it was before the COVID-19 pandemic
6. I experience less peace of mind now than I did before the COVID-19 pandemic

Finances

1. I am not as financially secure as I was before COVID-19
2. I find that money has become a bigger issue for me than it was before the COVID-19 pandemic
3. I struggle to pay for things more now than before the COVID-19 pandemic
4. I lost a significant amount of money because of the COVID-19 pandemic
5. I can no longer buy as many things that I enjoy because of the COVID-19 pandemic
6. I had to change my spending habits because of the COVID-19 pandemic

Loved Ones

1. I worry about my loved ones' future more now than I did before the COVID-19 pandemic
2. I missed out on quality time with a loved one because of the COVID-19 pandemic
3. My relationship with a loved one is not as strong as it was compared to before the COVID-19 pandemic
4. I feel bad because I missed out on important holidays with my loved ones because of the COVID-19 pandemic
5. It has been hard to stay connected with a loved one during the COVID-19 pandemic
6. I grew emotionally distant from a loved one because of the COVID-19 pandemic

Job

1. The COVID-19 pandemic made engaging with my job more challenging
2. I wanted to leave my job because of the COVID-19 pandemic
3. I worried that I would lose my job because of the COVID-19 pandemic
4. I worried that I would get laid off/fired because of the COVID-19 pandemic

5. I had to work harder at my job because of the COVID-19 pandemic
6. I felt more cynical about my job because of the COVID-19 pandemic

Safety

1. I no longer feel as safe as I did compared to before the COVID-19 pandemic
2. I worry that I am in danger because of the COVID-19 pandemic
3. I do not feel as safe in public places as I used to because of the COVID-19 pandemic
4. I do not feel as safe around other people as I used to because of the COVID-19 pandemic
5. I take extra precautions so that I can feel safer because of the COVID-19 pandemic
6. I do not feel safe around my friends because of COVID-19

School

1. I struggled to go to class because of the COVID-19 pandemic
2. My grades suffered because of the COVID-19 pandemic
3. The COVID-19 pandemic made engaging with my schoolwork more challenging
4. I wanted to leave school because of the COVID-19 pandemic
5. I found it hard to engage with school because of the COVID-19 pandemic
6. I worried that I would fail out of school because of the COVID-19 pandemic

Mental Health

1. I feel like I am sadder/depressed now than I was before the COVID-19 pandemic
2. I find that I am more anxious/scared now than before the COVID-19 pandemic
3. My mental health has suffered because of the COVID-19 pandemic
4. I experience burn out much quicker than I did before the COVID-19 pandemic
5. I experience more burn out than I did before the COVID-19 pandemic
6. I am more stressed now than I was before the COVID-19 pandemic

Social

1. I lost quality time with friends because of the COVID-19 pandemic
2. I missed out on holidays because of the COVID-19 pandemic
3. I was not able to carry out holiday traditions because of the COVID-19 pandemic
4. I miss the way my social life used to be before the COVID-19 pandemic
5. I do not feel as connected with my friends as I did before the COVID-19 pandemic
6. I do not feel as close to some of my friends because of the COVID-19 pandemic

APPENDIX B

Clinical Version of the COVID-19 Impact Domain Scales (CIDS-C)

Please indicate how much the following questions apply to you.

1 = Not at all
2 = A little
3 = Moderately
4 = Quite a bit
5 = Very much

Health

1. My fears about my health have increased because of the COVID-19 pandemic
2. I am not as in shape as I was before the COVID-19 pandemic

Quality of Life

1. My life seems dull in comparison to how it was before the COVID-19 pandemic
2. I do not find life to be as meaningful as it was before the COVID-19 pandemic

Finances

1. I find that money has become a bigger issue for me than it was before the COVID-19 pandemic
2. I struggle to pay for things more now than before the COVID-19 pandemic

Loved Ones

1. I missed out on quality time with a loved one because of the COVID-19 pandemic
2. It has been hard to stay connected with a loved one during the COVID-19 pandemic

Job

1. I worried that I would lose my job because of the COVID-19 pandemic
2. I worried that I would get laid off/fired because of the COVID-19 pandemic

Safety

1. I do not feel as safe in public places as I used to because of the COVID-19 pandemic
2. I do not feel as safe around other people as I used to because of the COVID-19 pandemic

School

1. My grades suffered because of the COVID-19 pandemic
2. The COVID-19 pandemic made engaging with my schoolwork more challenging

Mental Health

1. I feel like I am sadder/depressed now than I was before the COVID-19 pandemic
2. My mental health has suffered because of the COVID-19 pandemic

Social

1. I missed out on holidays because of the COVID-19 pandemic
2. I was not able to carry out holiday traditions because of the COVID-19 pandemic