Online Supplement Appendix Table 1. Scale Construction

	Number of Items	Scale Construction	Score Range	High Score Interpretation
Group 2 variables				
Demands on the caregiver				
Caregiving provided in past 12 months	1	Translation to 0-100	(0 -- 100)-	Negative
Concern with medication discontinuation	1	Translation to 0-100	(0 -- 100)-	Negative
Confidence in medication effectiveness	1	Translation to 0-100	(0 -- 100)+	Positive
Intensity of caregiving assistance provided -				
Activities of Daily Living (ADLs) and Instrumental IADLs	9	Item sum	(0 -- 32)-	Negative
Monitoring behavior	7	Item sum	(0 -- 28)-	Negative
Group 3 variables				
Coping resources & supports				
Support	5	Item sum and then translate to 0-100	(0 -- 100)+	Positive
Group 4 variables				
Cognitive appraisals of caregiving				
Perceived financial burden	1	Translation to 0-100	(0 -- 100)-	Negative
Perceived lack of emotional rewards	1	Translation to 0-100	(0 -- 100)+	
Outcome variable				
Perceived Stress Scale Score (PSS)	10	Item sum	(0-39)-	Negative
Formula to translate a scale score to a 0-100 range: Y=(X-min)*100/(max-min) where X is the original scale score, min is the minimum value in the original scale and max is the maximum score in the original scale.				

Online Supplement Appendix Table 2. Modifying Effect Test

Variables	LR Test p value
Interaction effect with one-degree of freedom[a]	.263
Overall Interactions	
Group 1 variables	
Caregiver age	.949
Care recipient age	.098
First diagnosed within 5 years vs. other time periods	.494
Caregiver number of chronic conditions	.046
Interaction of each demand and other variable with Support	
Group 2 variables	
Caregiver employed vs. not employed	.672
Caregiver retired vs. employed or not employed	.873
Primary caregiver vs. not primary caregiver	.042
Caregiving provided in past 12 months	.208
Concern with medication discontinuation	.566
Confidence in medication effectiveness	.278
Number of hospitalizations in past 12 months	.825
Intensity of assistance with -	
Activities of Daily Living (ADLs) and Instrumental IADLs	.023
Monitoring behavior	.736
Interaction of Support variable with demands and other blocks	
Group 3 variable	
Support	.117

[a] In the one-degree of freedom approach, first the Group 2 variables (Demands) and Group 3 variable (Support) were regressed on the Perceived Stress Scale Score (PSS). Then, each demand variable was multiplied by its respective coefficient from the main effect only model (to create a demand effect factor), and was then regressed on PSS. A similar procedure was then applied to the Support variable to get a support effect factor. These two factors were then multiplied together to create one overall interaction term which was then tested in the regression model with PSS. Apart from the one-degree of freedom test, the overall effects of each demand variable with the support variable and the support variable with the demand variable as a block were also tested through a likelihood ratio test.

Online Supplement Appendix Table 3. Structural Equation Models of Caregiver Psychological Distress Based on the Perceived Stress Scale Score with Tests of Mediation by Cognitive Appraisals of Caregiving as Financially Burdensome and as Emotionally Unrewarding (N = 1,142)[a]

	Direct effects				Indirect effects				Total effects			
	Coefficient	Coefficient (Standardized)	95% CI	p	Coefficient	Coefficient (Standardized)	95% CI	p	Coefficient	Coefficient (Standardized)	95% CI	p
Caregiving perceived as financial burden as dependent variable[b]												
Group 1 variables												
Caregiver and care recipient characteristics												
Caregiver age	0.18	0.07	0.02 to 0.34	.03	No Path				0.18	0.07	0.02 to 0.34	.03
Care recipient age	-0.38	-0.18	-0.52 to -0.24	<.001	No Path				-0.38	-0.18	-0.52 to -0.24	<.001
Diagnosis within 5 years	-0.71	-0.01	-5.74 to 4.32	.78	No Path				-0.71	-0.01	-5.74 to 4.32	.78
Caregiver number of chronic conditions	1.26	0.08	0.35 to 2.17	<.01	No Path				1.26	0.08	0.35 to 2.17	<.01
Group 2 variables												
Demands on the caregiver												
Primary caregiver vs. not primary caregiver	7.04	0.09	2.19 to 11.89	<.01	No Path				7.04	0.09	2.19 to 11.89	<.01
Caregiving provided in past 12 months	0.19	0.14	0.10 to 0.28	<.001	No Path				0.19	0.14	0.10 to 0.28	<.001
Concern with medication discontinuation	0.07	0.07	0.02 to 0.12	.01	No Path				0.07	0.07	0.02 to 0.12	.01
Confidence in medication effectiveness	-0.03	-0.02	-0.10 to 0.04	.39	No Path				-0.03	-0.02	-0.10 to 0.04	.39
Number of hospitalizations in past 12 months	0.59	0.05	-0.19 to 1.37	.14	No Path				0.59	0.05	-0.19 to 1.37	.14
Intensity of assistance with -												
Activities of Daily Living (ADLs) and Instrumental IADLs[c]	0.47	0.12	0.19 to 0.75	<.01	No Path				0.47	0.12	0.19 to 0.75	<0.01
Monitoring behavior[d]	1.15	0.19	0.73 to 1.57	<.001	No Path				1.15	0.19	0.73 to 1.57	<.001
Group 3 variables												
Coping resources & supports												
Support [e]	-0.22	-0.17	-0.29 to -0.15	<.001	No Path				-0.22	-0.17	-0.29 to -0.15	<.001

	Direct effects				Indirect effects				Total effects			
	Coefficient	Coefficient (Standardized)	95% CI	p	Coefficient	Coefficient (Standardized)	95% CI	p	Coefficient	Coefficient (Standardized)	95% CI	p
Caregiver perceived lack of emotional rewards as dependent variable[b]												
Group 1 variables												
Caregiver and care recipient characteristics												
Caregiver age	0.11	0.04	-0.08 to 0.30	.25	No Path				0.11	0.04	-0.08 to 0.30	.25
Care recipient age	0.09	0.04	-0.07 to 0.25	.27	No Path				0.09	0.04	-0.07 to 0.25	.27
Diagnosis within 5 years	4.02	0.05	-1.77 to 9.81	.17	No Path				4.02	0.05	-1.77 to 9.81	.17
Caregiver number of chronic conditions	-0.27	-0.02	-1.32 to 0.78	.61	No Path				-0.27	-0.02	-1.32 to 0.78	.61
Group 2 variables												
Demands on the caregiver												
Primary caregiver vs. not primary caregiver	-5.72	-0.07	-11.30 to -0.14	.04	No Path				-5.72	-0.07	-11.30 to -0.14	.04
Caregiving provided in past 12 months	-0.02	-0.01	-0.12 to 0.08	.71	No Path				-0.02	-0.01	-0.12 to 0.08	.71
Concern with medication discontinuation	0.10	0.11	0.04 to 0.16	<.01	No Path				0.10	0.11	0.04 to 0.16	<0.01
Confidence in medication effectiveness	-0.22	-0.18	-0.30 to -0.14	<.001	No Path				-0.22	-0.18	-0.30 to -0.14	<.001
Number of hospitalizations in past 12 months	-0.14	-0.01	-1.04 to 0.76	.76	No Path				-0.14	-0.01	-1.04 to 0.76	.76
Intensity of assistance with -												
Activities of Daily Living (ADLs) and Instrumental IADLs[c]	-0.61	-0.15	-0.93 to -0.29	<.001	No Path				-0.61	-0.15	-0.93 to -0.29	<.001
Monitoring behavior[d]	0.60	0.09	0.11 to 1.09	.02	No Path				0.60	0.09	0.11 to 1.09	.02
Group 3 variables												
Coping resources & supports												
Support [e]	-0.19	-0.14	-0.28 to -0.10	<.001	No Path				-0.19	-0.14	-0.28 to -0.10	<.001

	Direct effects				Indirect effects				Total effects			
	Coefficient	Coefficient (Standardized)	95% CI	P	Coefficient	Coefficient (Standardized)	95% CI	P	Coefficient	Coefficient (Standardized)	95% CI	P

Caregiver psychological distress (Perceived Stress Score) as dependent variable[f]												
Group 1 variables												
Caregiver and care recipient characteristics												
Caregiver age	-0.03	-0.06	-0.07 to 0.01	0.13	0.01	0.02	0.00 to 0.02	.01	-0.03	-0.05	-0.07 to 0.01	.13
Care recipient age	No Path	0.01			-0.01	-0.02	-0.02 to -0.00	.01	-0.01	-0.01	-0.04 to 0.02	.53
Diagnosis within 5 years	0.01	0.00	-1.09 to 1.11	0.99	0.08	0.00	-0.14 to 0.30	.48	0.09	0.01	-1.03 to 1.21	.87
Caregiver number of chronic conditions	0.48	0.14	0.28 to 0.68	<0.001	0.03	0.01	-0.01 to 0.07	.17	0.51	0.15	0.31 to 0.71	<.001
Group 2 variables												
Demands on the caregiver												
Caregiver employed vs. not employed	0.91	0.06	-0.03 to 1.85	0.06	No Path				0.91	0.06	-0.03 to 1.85	.06
Caregiver retired vs. employed or not employed	-2.13	-0.06	-4.24 to -0.02	0.05	No Path				-2.13	-0.06	-4.24 to -0.02	.05
Primary caregiver vs. not primary caregiver	0.77	0.05	-0.30 to 1.84	0.16	0.07	0.00	-0.17 to 0.31	.57	0.85	0.05	-0.23 to 1.93	.12
Caregiving provided in past 12 months	-0.01	-0.02	-0.03 to 0.01	0.32	0.01	0.02	0.01 to 0.01	<.001	-0.00	-0.00	-0.02 to 0.02	1.00
Concern with medication discontinuation	0.01	0.06	-0.00 to 0.02	0.10	No Path				0.02	0.09	0.01 to 0.03	<.01
Confidence in medication effectiveness	-0.03	-0.11	-0.05 to -0.01	<0.001	-0.01	-0.03	-0.01 to -0.01	<.001	-0.03	-0.13	-0.05 to -0.01	<.001
Number of hospitalizations in past 12 months	0.10	0.04	-0.07 to 0.27	0.26	0.01	0.01	-0.03 to 0.05	.58	0.12	0.04	-0.06 to 0.30	.18
Intensity of assistance with -												
Activities of Daily Living (ADLs) and Instrumental IADLs[c]	0.12	0.14	0.06 to 0.18	<0.001	No Path				0.12	0.14	0.06 to 0.18	<.001
Monitoring behavior[d]	0.17	0.13	0.08 to 0.26	<0.001	0.05	0.04	0.02 to 0.08	<.001	0.22	0.16	0.13 to 0.31	<.001
Group 3 variables												
Coping resources & supports												
Support [e]	-0.03	-0.12	-0.05 to -0.01	<0.01	-0.01	-0.04	-0.02 to -0.00	<.01	-0.04	-0.16	-0.06 to -0.02	<.001
Group 4 variables												
Cognitive appraisals of caregiving[b]												
Perceived financial burden	0.03	0.14	0.02 to 0.04	<0.001	No Path				0.03	0.14	0.02 to 0.04	<.001
Perceived lack of emotional rewards	0.03	0.12	0.02 to 0.04	<0.001	No Path				0.03	0.12	0.02 to 0.04	<.001

[a] The maximum likelihood with missing values estimation method was used to minimize the impact of missing values in the model.

[b] The score range is 0-100, with a higher score indicating greater perceived financial burden or greater perceived lack of emotional rewards.
[c] The score range is 0-32 (8 questions with a maximum of 4 points per question), with a higher score indicating more caregiver assistance.
[d] The score range us 0-28 (7 questions with a maximum of 4 points per question), with a higher score indicating more caregiver assistance.
[e] The score range is 0–100, with a higher score indicating greater availability.
[f] The score range is 0-39, with a higher score indicating more psychological distress.

Online Supplement Appendix Table 4.   Fit Statistics for Structural Equation Models

	Value	Description	Interpretation
RMSEA	.03 (.000, .060) Probability RMSEA <= .05 = .839	Root mean squared error of approximation	Values of .07 or below indicate a well-fitting model
CFI	.993	Comparative fit index	Values of .90 or greater indicate a well-fitting model
TLI	.941	Tucker-Lewis index	Values of .95 or greater indicate a well-fitting model

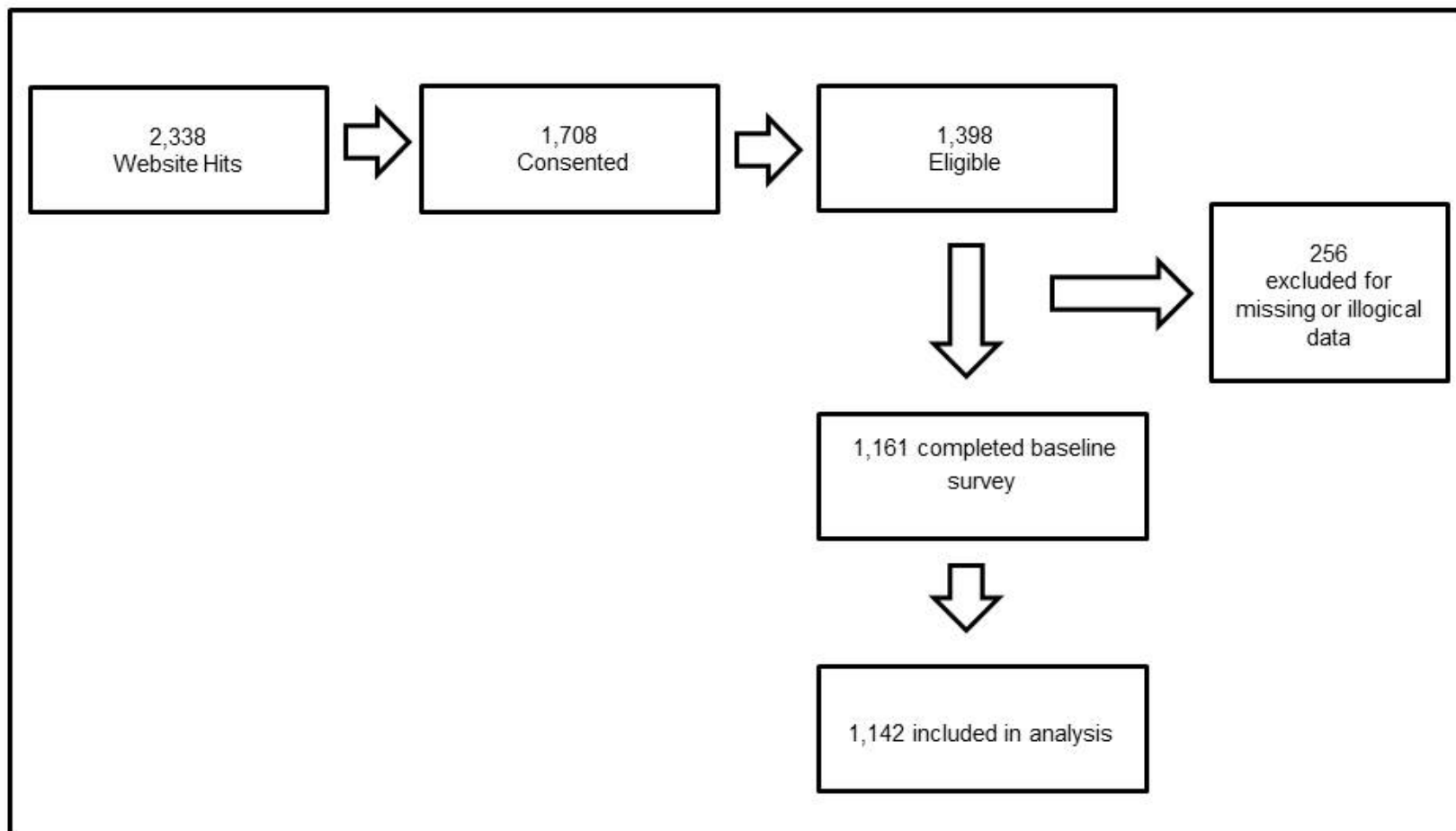Online Supplement Appendix Figure 1 CONSORT Diagram

Figure 1. Structural Equation Models of Caregiver Psychological Distress (N = 1,142)

ε3

.88

| Primary Caregiver (.06) | −.071 | Less Rewarding (.12) | .042 | R age (−.01) |

−.012

.11

.05

−.18

Amt unpaid help past 12 mo (−.00)

.02

.011

Concern with med discontinuation (.09)

.06

−.15

.043

.05

.0064

−.016

−.063

.00079

.12

ε1

.74

Confidence in med effectiveness (−.13)

−.11

.092

Psychological Distress (.16)

.14

.14

C age (−.05)

Diagnosied past 5 yrs (.01)

No. chronic conditions (.15)

.04

Hosp past 12 mo (.04)

.087

.14

Assist with ADLs (.14)

.074

.14

.13

.06

−.18

.072

.11

−.023

.06

.06

Assist with Supervision (.16)

.046

.0094

.078

Social Support (−.16)

C retired (−.06)

.12

.14

.19

−.17

C employed (.06)

Financial Burden (.14)

.74

ε2

| Group 1: Caregiver and care recipient characteristics | Group 2: Demands on the caregiver |
| Group 3: Coping resources & supports | Group 4: Cognitive appraisals of caregiving |

[a]Numbers displayed by arrows are standardized direct effect coefficients
[b]Numbers contained in text boxes are standardized total effect coefficients
[c]Variable label abbreviations include C = caregiver and R = care recipient