The Development and Evaluation of a Compassion Scale

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Abstract

Compassion is the capacity for being moved by the suffering of others and wanting to help alleviate it. Compassion may mediate the health benefits and hazards of social networks and relationships. The monitoring and management of the level of compassion across social networks and relationships may be critical to the preservation of the health benefits and the prevention of the health hazards of social networks and relationships. We developed a 10-item self-report measure of compassion and evaluated its psychometric properties among 310 respondents drawn from the University and its surrounding communities. The mean total score was 3.62 (SD=1.09). The item-to-total correlations ranged from 0.50-0.71. The mean inter-item correlation was 0.33. The internal consistency was 0.82. The scale correlated well with the Sprecher and Fehr's Compassionate Love Scale (r=0.66; p=.000). Two method factors measuring the same construct explained 57% of the variance in the sample. The scale is user-friendly, easy to score, and characterized by good psychometric properties. It can be used to foster the understanding of the impact of the level of compassion on disease occurrence and outcomes across social networks and relationships.

Keywords

Compassion; assessment; measures; health; social; networks; relationships

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The prevailing concept of health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity is expanding the domains of health and demanding a better understanding of the social dimensions of health.[1] The human social environment—encompassing the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact—exacts a significant influence on the health of the population.[2] The long and lengthening list of social

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determinants of health associated with disparities in clinical outcomes is fostering the acknowledgment of the need to redesign the health care system to recognize and respond to the unequal distribution of opportunities and resources in the social environment.[3] Inherent in the need to create psychosocial and physical environments that promote health is the requirement for new methods and metrics to evaluate the impact of interpersonal relationships, social networks, and neighborhood characteristics on physical and social well-being.[4-5]

However, the development of indicators for social well-being have evolved and revolved more around socioeconomic status and neighborhood characteristics than the interpersonal relationships within social networks in spite of the association of low quantity and quality of social relationships with high risk of death.[6] Social relationships and activities have been found to be associated with survival and longevity, particularly among the elderly.[7-9] The mechanism by which social relationships and activities influence health is not fully elucidated. The psychosocial support and participation in the lives of others often advanced as probable mechanisms for the health benefits of social relationships and activities have also been associated with significant morbidity among the caregivers[10-16] Caregivers exhibit lower self-esteem and higher levels of stress and depressive symptoms than non-caregivers[17-23]. The levels of stress and depression of the caregiver increase as the functional status of the care recipient decreases[24-25] and thereby predispose the caregiver to compassion fatigue[26].

Otherwise known as the cost of caring for others in emotional and physical pain, compassion fatigue is characterized deep physical pain by and emotional exhaustion that compromised the ability of the caregiver to feel empathy for the care recipient[27]. Compassion fatigue is hazardous to both the caregiver and the care recipient and may mediate some of the negative health consequences of social relationships and activities[28]. Although there is evidence that compassion defined as the capacity for being moved by the suffering of others and wanting to help alleviate it, may enrich the social environment by reducing stress and enhancing coping skills, self-esteem and the mood of both the caregiver and care recipient[29-31] the level of compassion that facilitates caregiving and forestalls compassion fatigue is unknown. Work on the development of measures of compassion has been limited to the 21-item Compassionate Love Scale (CLS) developed and validated by Sprecher and Fehr's studies with a total of 700 participants drawn from the undergraduate population of a University in the midwestern United States. The scale uses seven response categories (ranging from *not true of me* to *very true of me*) to elicit thought and feelings related to caring, concern, and support for others when they are most in need of help.[32] The CLS is rather long and subjective with no specific domains of compassion that can be targeted for training and education. Given the potential for cultivating objective acts of compassion through specific training and practices[33] this study describes the development of a brief and simple scale for the objective assessment of compassion with specific domains that can be taught and tested across social networks and relationships.

Methods

Participants

We recruited a convenience sample of staff, faculty, and students of the Charles R. Drew University and members of the affiliated community based organizations. Responses to the survey were collected using Survey Monkey software and by self-administered paper and pencil survey at community events between April 1st and September 30th 2011. Study participants received a one-time request by email that included a link to the survey on Survey Monkey. Participation was anonymous and voluntary and no incentives were offered for participation in the survey. The email script, study flyers, survey instrument and

recruitment procedures were all approved by the Institutional Review Board of Charles R. Drew University.

Measures

The Sprecher and Fehr's Compassionate Love Scale and the Compassion Scale were used in this study. The Sprecher and Fehr's Compassionate Love Scale is a 21-item scale for an attitude toward others that encompasses feelings, thinking, and behavior that focuses on caring, concerns, and support for others with a motivation to understand and help them when they are most in need. The scale uses a 1 (not at all true of me) to 7 (very true of me) categorical response scale and has a reported internal consistency reliability of 0.95.

The Compassion Scale is a new 10-item scale developed to measure Generosity, Hospitality, Objectivity, Sensitivity and Tolerance across social networks and relationships using a 1 (none) to 7 (all) categorical response scale.

Procedures

Face and Content validity—Compassion is a construct that cannot be directly observed or measured but deducible from specific acts and behavior. We began by reviewing the literature and religious texts to identify the elementary acts of compassion and develop survey items for the established domains of compassion. We then convened a panel of academic and community experts to judge the relevance and representativeness of the survey items for each of the established domain of compassion. The panel of six comprises a male Buddhist physician researcher, a male Christian physician researcher, a female community Christian pastor, a female Muslim physician researcher, a male community Christian pastor, and a female Christian community leader.

The survey items approved by the academic and community experts were reviewed and revised by the study team to ensure that they were simple, reasonable, and rendered in a logical sequence. The survey instrument was then pilot tested with 60 respondents drawn primarily from the staff and faculty of the University. The results and recommendations from the pilot-test were used to improve the appearance, clarity and readability of the new instrument.

Field test of the Compassion Scale—The Compassion Scale was administered along with the Sprecher and Fehr's Compassionate Love to a sample of 310 adults. The response rate among the staff, students, and faculty of the Charles R. Drew University was 45%.

Analysis plan—Demographic characteristics include age, gender, race/ethnicity, education status, employment status, income level, and marital status. Participants were categorized by age in years into three groups (18-39, 40 to 59 and 60 and above) and by gender into male and female. Race/ethnicity groups were white, African American, Hispanic and others. For the education level, we categorized the subjects into high school and less, college educated, and university graduates. Participants were categorized according to the employment status as employed, retired, disabled, or unemployment; and according to their income level into four groups ($<=10,000; 10,001-20,000; 20,001-40,000 and >=40,000) and according to their marital status into single, married, widowed, and divorced. All the demographic variables were presented as percentages. Compassion Scale scores were compared by age, gender, race/ethnicity, education, employment status, income and marital status.

Construct validity refers to the extent to which the measurement corresponds to the theoretical construct concerning the phenomenon under study. Construct validity of the scale

was tested by performing a factor analysis on the scale items to determine the presence of structures for the scale. The exploratory factor analysis was conducted on the scale items using the principal components analysis (PCA). The numbers of factors was defined by an Eigenvalue=>1. Item means, standard deviations and item-total correlations for the scale are reported. In addition, inter-item correlations, internal consistency reliability and an exploratory factor analysis of the 10-scale items are estimated. Finally, the correlation of the Compassion Scale with the Sprecher and Fehr's Compassionate Love Scale is estimated. We determined the variation and statistical significance of the differences in the compassion scores across the demographic categories using the Analysis of Variance (ANOVA) statistics and p-values < .05 were considered statistically significant. All statistical analyses were done with SPSS Inc. version 18.

Results

The demographic characteristics and compassion scores for the 310 respondents who completed the survey are shown in Table 1. Of the 310 participants, 64% were 40 years and above and two thirds were female (66.8%). More than three quarters of the participants were African American (66.8%) and Hispanics (10.3%). Most of the participants had college degree and higher (87.8%) and were employed (79%). Two thirds of the subjects reported an income of $40,000 and above (67.7%). Less than half of the sampled population was married (41.6%).

Compassion scale scores were significantly higher among female than male respondents (3.73, SD 1.05 versus 3.44 SD 1.14; p < .03), higher level of educational attainment (3.7 SD 0.98 with University education versus 3.0 SD 1.12 with High School or less; p < .001) and higher annual income level (3.75 SD 0.99 with $40,000 or more versus 2.83 SD 1.45 with $10,000 or less; p < .0001). There were no significant differences in scores by age, race, and marital status among the respondents.

The psychometric properties of the Compassion Scale are as given in Table 2. The mean total compassion score was 3.62 (SD=1.09). Item-to-total correlations were high and ranged from 0.50-0.71. Inter-item correlations are shown in Table 3. The mean inter-item correlation was 0.33 with a variance of 0.03. The internal consistency reliability of the scale was 0.82. The mean total score on the Sprecher and Fehr's Compassionate Love Scale in the sample was 4.6 (SD=1.4). The internal consistency reliability of the Sprecher and Fehr's Compassionate Love Scale in our sampled population was 0.97.

The compassion total score was highly correlated with the Sprecher and Fehr's Compassionate Love Scale (r=0.66) indicating that the scales are measuring comparable constructs. The factor loadings for the two-factor orthogonal solution are given in Table 4. The first six items that were worded "How much of your" at the start loaded on the first factor while the last four items were worded "How many times would you" at the start loaded on the second factor. The factor loadings appear to reflect method factors rather than substantively different constructs.

Discussion

It is becoming increasingly apparent that compassion may mediate some of the health benefits and hazards of social networks and relationships. A large quantity of social networks and relationships may mitigate loneliness and social isolation and thereby mediate some of the health benefits of social networks and relationships. However the sustainability of the health and wellbeing of the caregiver and care recipient within social networks and relationships are contingent upon the careful monitoring and management of the level of

compassion across these networks and relationships. There is a significant dearth of data on the predictors, correlates and outcomes of compassion particularly within the context of care giving and receiving across social networks and relationships. The purpose of this study was to develop a scale that can be used to monitor and manage the level of compassion for the optimum health and wellbeing of the caregivers and recipients across social networks and relationships.

The scale is designed to identify the components of compassion critical to care giving within the context of social networks and relationship. The scale is brief and exhibits good psychometric properties[34]. The higher level of compassion exhibited by the female respondents is consistent with the literature. On the Sprecher and Fehr's Compassionate Love Scale for humanity the mean score for each question was 4.56 with a standard deviation of 0.98 for women, and 3.83 with a standard deviation of 1.08 for men. This lower level of compassion may be related to the slight increase in the risk and severity of compassion fatigue reported among men[35]. The implication of this lower level of compassion and the greater risk of compassion fatigue for the quality of care provided by male caregivers is an important subject for future research.

The higher compassion scores with higher levels of education and annual income demonstrated for the first time in this study suggest that people with low income and lower educational level might be at greater risk for compassion fatigue and highlight the need for the education and support of these high risk caregivers across social relationships and networks. As the shrinking hospital bed numbers and the shortening hospital length of stays expand home care needs and shift the burden of care to an ill-prepared pool of caregivers across social networks and relationships[36-37] those in poor and underserved communities may be at a disproportionate risk of compassion fatigue. The extent to which the low level of compassion and the high risk of compassion fatigue will interfere with the quality of care for the care recipients in the poor and underserved communities is unknown. The availability of an objective scale for compassion is expected to foster and facilitate the understanding of the implication of low levels of compassion for the quality of care across social networks and relationships.

The apparent lack of difference in the levels of compassion across age and race may be related to the small numbers of the elderly and non-African American respondents in this study. The Compassion Scale needs to be administered to a much larger and diverse population for further evaluation of the effect of age and race on the level of compassion across social networks and relationships. The specific components of compassion evaluated by this scale can be targeted for evaluation and training of caregivers across social networks and relationships. Programs can be developed to specifically address issues of generosity, hospitality, objectivity, tolerance and sensitivity as they relate to compassion within the context of care giving across social networks and relationships. The understanding of the impact of the level of compassion on disease occurrence and outcomes across social networks and relationships, engendered by this scale is critical to the development and evaluation of interventions that can optimize social networks and relationships for health and wellness.

Acknowledgments

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Table 1

Population characteristics and Compassion Scores of the Survey Respondents

Characteristics	N (%)	Compassion Score	Standard Deviation	Comparison *p* value
Age				
-18-39 years	105 (33.9%)	3.53	1.16	
-40-59 years	145 (46.8%)	3.71	1.08	
-60 + years	54 (17.4%)	3.55	0.95	0.37
Missing	6 (1.9%)			
Gender				
-Male	103 (33.2%)	3.44	1.14	
-Female	206 (66.5%)	3.73	1.05	0.03
Missing	1 (0.3%)			
Race				
-White	32 (10.3%)	3.47	0.99	
-Black	207 (66.8%)	3.62	1.14	
-Hispanic	32 (10.3%)	3.59	1.13	
-Other	39 (12.6%)	3.79	0.87	0.67
Missing	0			
Education				
-High School and Less	36 (11.6%)	3.00	1.13	
-College Educated	92 (29.7%)	3.62	1.22	
-University Graduate	180 (58.1%)	3.74	0.98	0.001
Missing	2 (0.6%)			
Employment				
-Employed	245 (79.0%)	3.69	1.04	
-Retired	35 (11.3%)	3.31	1.35	
-Disabled	19 (6.1%)	3.18	1.07	
-Unemployed	9 (2.9%)	3.77	1.21	0.07
Missing	2 (0.7%)			
Income				
-$10,000 or less	24 (7.7%)	2.83	1.46	
-$10,001-$20,000	24 (7.7%)	3.36	1.11	
-$20,001 - $40,000	45 (14.5%)	3.53	1.11	
-$40,000 and over	210 (67.7%)	3.75	1.00	0.000
Missing	7 (2.4%)			
Marital Status				
-Single	122 (39.4%)	3.52	1.06	
-Married	129 (41.6%)	3.65	1.11	
-Widowed	10 (3.2%)	4.03	1.09	

Characteristics	N (%)	Compassion Score	Standard Deviation	Comparison *p* value
-Divorced	49 (15.8%)	3.74	1.10	0.36
Missing	0			

Missing data were excluded from the analysis.

Table 2

Psychometric Properties of the Clinical Scale for Compassion

Elements of Compassion	Item Sequence	Survey Items associated with the established Elements of Compassion	Mean	Standard Deviation	Item-to-total Correlation
Generosity	Q1	How much of your future savings would you give away now to help a friend in need of financial help?	3.33	1.46	0.63
	Q2	How much of your future savings would you give away now to help a stranger in need of financial help?	2.14	1.20	0.56
	Q3	How much of your free time would you spend to do work for a friend that needs your skills but cannot afford to pay you?	4.91	1.70	0.69
	Q4	How much of your free time would you spend to do work for a stranger that needs your skills but cannot afford to pay you?	3.56	1.76	0.70
Hospitality	Q5	How much of your personal space would you share with a friend?	4.39	1.79	0.68
	Q6	How much of your personal space would you share with a stranger that poses no threat to you?	2.65	1.62	0.71
Objectivity	Q7	How many times would you do the right thing if it puts your friends at risk?	4.10	1.96	0.68
	Q8	How many times would you do the right thing if it puts your family at risk?	3.74	2.075	0.55
Sensitivity	Q9	How many times would you deny yourself the pleasure of something that causes others pain?	4.66	2.19	0.57
Tolerance	Q10	How many times would you allow others the pleasure of something that causes you pain?	2.76	1.74	0.50

Table 3

Item-to-item Correlations in the Clinical Scale for Compassion

Survey Items	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
How much of your future savings would you give away now to help a friend in need of financial help?	1	.60	.50	.50	.44	.43	.23	.20	.23	.20
How much of your future savings would you give away now to help a stranger in need of financial help?		1	.40	.52	.30	.50	.20	.20	.11	.20
How much of your free time would you spend to do work for a friend that needs your skills but cannot afford to pay you?			1	.70	.60	.50	.30	.14	.30	.20
How much of your free time would you spend to do work for a stranger that needs your skills but cannot afford to pay you?				1	.44	.60	.30	.14	.20	.30
How much of your personal space would you share with a friend?					1	.60	.30	.20	.30	.22
How much of your personal space would you share with a stranger that poses no threat to you?						1	.30	.20	.22	.34
How many times would you do the right thing if it puts your friends at risk?							1	.80	.40	.30
How many times would you do the right thing if it puts your family at risk?								1	.30	.20
How many times would you deny yourself the pleasure of something that causes others pain?									1	.33
How many times would you allow others the pleasure of something that causes you pain?										1

Table 4

The Factor Structure and Loading Pattern of the Survey Items

Survey Items	Rotated Component	
	Factor 1	Factor 2
How much of your future savings would you give away now to help a friend in need of financial help?	.725	
How much of your future savings would you give away now to help a stranger in need of financial help?	.685	
How much of your free time would you spend to do work for a friend that needs your skills but cannot afford to pay you?	.772	
How much of your free time would you spend to do work for a stranger that needs your skills but cannot afford to pay you?	.815	
How much of your personal space would you share with a friend?	.699	
How much of your personal space would you share with a stranger that poses no threat to you?	.758	
How many times would you do the right thing if it puts your friends at risk?		.891
How many times would you do the right thing if it puts your family at risk?		.874
How many times would you deny yourself the pleasure of something that causes others pain?		.591
How many times would you allow others the pleasure of something that causes you pain?		.430
Eigenvalues	3.4	2.2
% of Variance	34.4	22.5

Kaiser-Meyer-Olkin Measure of Sampling Adequacy=0.737

Bartlett's Test of Sphericity (Approx. Chi-Square)= 1342.459; p=0.0001

Number of factor extracted was based on Eigenvalues>1

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 3 iterations.