

SPECIMEN FORMAT FOR THESES OF MONTH

Faculty : School of Home Science

Department : Psychology

Branch/ Area: : Positive Psychology

Sub Subject Heading: : Positive Psychology Constructs: Development and Measurement

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Title of the thesis : Positive Psychology Constructs: Development and Measurement

(i) In Roman Script -

(ii) In roman Script -

Nomenclature of Degree: : Ph. D in Counselling Psychology

Month & Year of Enrolment: : January, 2021

Month & Year of Registration: : January, 2021

Month & Year of Submission: : November 2023

Month & Year of Award : March 2024

Name of Supervisor : Dr. S. Gayatri Devi

Designation of Supervisor : Professor and Head

Centre/department/school in which research was conducted : Department of Psychology

University's Name & Address : Avinashilingam Institute for Home Science and Higher Education for Women

Abstract within 300 words:

The present study examines the factor structure of the C.A.R.E Inventory. This psychological assessment tool was developed by the researcher in response to the COVID pandemic when there was a lacuna of locally developed assessment tools to assess positivity and hence develop such positive psychology constructs for empirical assessment. After ethical approval, items were generated based on a survey of 780 adults on the specific positive psychology constructs necessary during the present pandemic scenario and its aftermath. The participants gave the maximum rating for four main positive psychology constructs based on which the acronym C.A.R.E was devised where:

C: stands for Compassion and Self-Compassion

A: stands for Achieving a Purpose in Life

R: stands for Relationship Building

E: stands for Enhancing Positive Emotions

Following this, items were generated and subjected to content validity with subject experts and stakeholders. After establishing the required content validity ratio, normality assessments were conducted followed by exploratory and confirmatory factor analysis for a final sample of 862 adults. CFA models reveal that the 36 item C.A.R.E Inventory has sufficient model fit indices, namely the normed chi-square (3.68), Comparative Fit Index (CFI=0.943), Incremental Fit Index (IFI=0.943), Tucker-Lewis Index (TLI=0.939), Normed Fit Index (NFI=0.924), and Relative Fit index (RFI=0.918), all above 0.9, indicating good model fit. Root Mean Square Error of Approximation (RMSEA) value of 0.056 and a Standardized Root Mean Squared Residual (SRMR) value of 0.0295, all of it indicates a good fit for the model. All items had a factor loading of above 0.07. This psychological tool is hence ready for use globally as it has no culturally biased items. Moreover, an intervention module with the name C. A. R. E Intervention Module, an activity based intervention aimed to improve the four aforesaid constructs is also developed and validated using four randomized control trial experiments.

i) Major objectives :

The research objectives for this study are to develop and validate the C. A. R. E. Inventory; and to develop and validate the C. A. R. E. Intervention Module.

ii) Hypothesis:

The research hypotheses for the study are as follows

- The model developed has sufficient model fit indices indicating goodness of fit
- The C. A. R. E. inventory has sufficient construct reliability and test-retest reliability
- The C. A. R. E. inventory has sufficient content, convergent, discriminant and concurrent validity
- The C. A. R. E. intervention module is validated by randomized control trials

iii) Methodology:

Tools Used

The following standardized psychological tools are used through the assessment and intervention

- Self compassion scale (Raes et al., 2011)
- Brief resilience scale (Smith et al., 2008)
- Life orientation scale revised consisting of 10 items. (Scheier, Carver & Bridges, 2004).
- The adult trait hope scale (Snyder et al., 1991)
- The pain catastrophizing scale (PCS) (Sullivan, 1995)
- WHO well being scale (WHO-5, 1998)
- The subjective happiness scale (Lyubomirsky, 1999)
- The Holmes-Rahe stress inventory (Holmes & Rahe, 1967)
- The form of self criticizing/attacking and self reassuring scale (FSCRS) (Gilbert et al., 2004)
- Beck's anxiety inventory (Beck et al., 1988)
- The Beck's depression inventory (Beck et al., 1996a)
- The UCLA loneliness scale (Russell, 1996).

The tools to be validated are

- The C. A. R. E. inventory
- The C. A. R. E. intervention module

The following steps are followed in developing the C. A. R. E. inventory

- Item Generation
- Content Validity from Stakeholders and Experts
- Normality Testing
- Inter correlations

- Exploratory Factor Analysis
- Confirmatory Factor Analysis

Item Generation

The next step of the tool construction was item generation. C. A. R. E. inventory Version 1 was created with 80 items (20 for each construct). Further Versions 2, 3, 4, 5 and 6 were created with consultation from subject experts and stakeholders. Further language correction was done by two professors from the Department of English of the Avinashilingam Institute for Home Science and Higher Education for Women. This version was also sent to Professor Martin Seligman explaining the further steps involved in validation. This version of the inventory had 40 items measuring the 4 positive psychology constructs with answers in Likert-type response scale of, “Always, Often, Sometimes, Rarely, Never”. Scoring of 0 to 4 is given for the items according to responses. Always gets a score of 4 and so on. Twelve items had reverse language and hence reverse scoring. On Seligman’s approval to go ahead, the Version 7 consisting of 40 items (10 items for each of the 4 constructs identified) was subjected to Content Validity.

Twelve subject experts from all over India and 25 stakeholders (adults chosen randomly) were given the C. A. R. E. inventory to be validated. The Content Validity Ratio (CVR) was computed using the formula given below

$$\text{Content Validity Ratio CVR} = (N_e - N/2) / (N/2)$$

Where N_e = Number of raters with ratings of 3 (Relevant item) and 4 (Highly Relevant Item)

N = Total Number of Raters

Using the above formula CVR* for subject experts was 0.95**, and CVR* for stakeholders was 0.88** (**Acceptable value for CVR is 0.99 for 5 raters, 0.85 for 8 raters, and 0.62 for 10 raters) (**Polit, Beck & Owen, 2007).

Ethical Approval

At the same time, ethical approval for the study was sought from the Institutional Human Ethics Committee of Avinashilingam Institute for Home Science and Higher Education for Women. The approval was granted vide AUW/IHEC/PSY-21-22/FHP-20.

Pilot Study

A Pilot Study was conducted with a sample of 208 adults chosen through simple random sampling. The C. A. R. E. inventory was administered to the participants. Data was collected and analyzed using the SPSS Software Version 21 and the AMOS Graphics Version 22. It was decided to go for the final data collection.

Sample for the final study

The sample for the final study consisted of 1000 adults selected randomly, all from 10, tier 2 cities (according to the classification of Indian cities given by the Indian government to allot house rent allowance to its employees and provide tax exemptions).

Inclusion criteria

- Participants willing to involve themselves were only included
- All participants who could read and understand basic English were included
- For the intervention, only participants who had recovered from COVID infection and could produce a proof of their medical health were included to avoid any risk to their health due to participation

Exclusion criteria

- Participants who had issues travelling and wanted to relocate were allowed to leave the study
- Participants who contacted COVID during the course of the intervention were excluded

The data was collected and analyzed.

iv) Findings:

Data for the final study was collected in hybrid mode (Both virtual and offline assessment was used) from 1000 adults chosen through simple random sampling. Eight hundred and sixty two responses were valid and were analysed using SPSS software version 21 and the AMOS graphics Version 22. There were omissions missing data from the other 132 responses and hence were left out in the data analysis. The following are the results of the study.

The C. A. R. E. inventory version 1 was created with 80 items (20 for each construct). Further Versions 2, 3, 4, 5 and 6 were created with consultation from subject experts and stakeholders. Further language correction was done by two professors from the Department of English of the

Avinashilingam Institute for Home Science and Higher Education for Women. This version was also sent to Professor Martin Seligman explaining the further steps involved in validation. This version of the inventory had 40 items measuring the 4 positive psychology constructs with answers in Likert-type response scale of, “Always, Often, Sometimes, Rarely, Never”. Scoring of 0 to 4 is given for the items according to responses. Always gets a score of 4 and so on. Twelve items had reverse language and hence reverse scoring. On Seligman’s approval to go ahead, the Version 7 consisting of 40 items (10 items for each of the 4 constructs identified) was subjected to Content Validity. Following content validity by 12 subject experts and 25 stakeholders, all 40 items of the instrument were subjected to an exploratory factor analysis with varimax rotation. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis (KMO = 0.94). Bartlett’s Test of Sphericity Chi-Square (780) = 30096.96, $p < 0.001$, indicating that correlation structure is adequate for factor analyses (Field, 2009). The maximum likelihood factor analysis with a cut off point of 0.40 and the Kaiser’s criterion of Eigen values greater than 1 yielded a 4 factor solution as the best fit for the data, accounting for 69.70% of the cumulative variance.

This was followed by a confirmatory factor analysis for a final sample of 862 adults. CFA models reveal that the 36 items C.A.R.E Inventory has sufficient model fit indices, namely the normed chi-square (3.68), Comparative Fit Index (CFI=0.943), Incremental Fit Index (IFI=0.943), Tucker-Lewis Index (TLI=0.939), Normed Fit Index (NFI=0.924), and Relative Fit index (RFI=0.918), all above 0.9, indicating good model fit. Root Mean Square Error of Approximation (RMSEA) value of 0.056 and a Standardized Root Mean Squared Residual (SRMR) value of 0.0295, all of it indicates a good fit for the model. All items had a factor loading of above 0.07. This psychological tool is hence ready for use globally as it has no culturally biased items.

Moreover, an intervention module with the name C. A. R. E. Intervention Module, an activity based intervention aimed to improve the four aforesaid constructs is also developed and validated using four randomized control trial experiments. All the four trials indicate that the C. A. R. E. intervention module is effective in increasing positive psychology constructs such as happiness, hope, well being and in reducing negative affects like depression, loneliness, pain catastrophization and stress.

Summary and Conclusions

The study on “Positive Psychology Constructs: Development and Measurement” began with the research objectives of

- to develop and validate the C. A. R. E. Inventory
- to develop and validate the C. A. R. E Intervention Module

For the purpose of fulfilling the first objective, initially items were generated, validated for content, subjected to exploratory factor analysis and finally confirmatory factor analysis. The confirmatory factor analysis was repeated three times in order to arrive at items with the best model fit indices. For the developed 36 items C.A.R.E. inventory, the model fit indices received were acceptable.

The reliability and validity coefficients were calculated as below:

Reliability statistics

- Cronbach’s alpha: 0.92
- Test-retest reliability: 0.89
- Construct reliability: 0.96, 0.92, 0.96 and 0.95 for each of the constructs respectively

Validity statistics

- Content validity: 0.95 for subject experts, and 0.88 for stakeholders
- Convergent validity: 0.71, 0.60, 0.75, and 0.67 from the AVE scores
- Discriminant validity: 0.84, 0.77, 0.86 and 0.81 from the R2 scores

For development and validation of the C.A.R.E. intervention module, items were generated, followed by content validation. The final module after content validation consisted of 7 activities developed for each of the four constructs and hence consisted of 28 activity sessions each of 20 to 30 minutes duration that could be conveyed and practiced face to face or virtually. After every 4 sessions, a feedback session was held with the participants to understand their feedback and also to clarify any doubts. Following this, four randomized control trial experiments were conducted. All the four trials indicated the effectiveness of the C. A. R. E. intervention module

Conclusions

The following conclusions can be drawn

- The C.A. R.E. inventory has been standardized by establishing sufficient reliability and validity.
- The C. A. R. E. intervention module has been validated using four randomized control trials.

Examiners

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