Psychometric Evaluation of Indonesian Version of Connor-Davidson Resilience Scale in Adolescent Survivors of Disaster (PST)

Okki Dhona Laksmita, SN
School of Nursing, College of Nursing, Taipei Medical University, Taiwan, Taipei, Taiwan
Pi-Chen Chang, PhD, RN
School of Nursing, College of Nursing, Taipei Medical University, Taipei City, Taiwan
Min-Huey Chung, PhD, RN
School of Nursing, College of Nursing, Taipei Medical University, Taipei, Taiwan
Yuan-Mei Liao, PhD, RN
School of Nursing, College of Nursing, National Yang-Ming University, Taipei City, Taiwan

Purpose:
Assessing adolescent survivors’ resilience in the long-term period after disaster need an appropriate measurement. The Indonesian version of 25-item Connor-Davidson Resilience Scale (CD-RISC) is provided; however, no published study clearly explains its factorial structure, construct validity, and reliability. Moreover, a psychometric testing of the scale has never been reported among adolescent survivors of disaster. It is very important to examine whether the scale has adequate internal consistency and construct validity for its use in different background, population, and culture.

Methods:
A cross-sectional study design was conducted among 599 adolescent survivors aged 12-18 years old who live in the post 2010 Mount Merapi volcanic eruption in Yogyakarta, Indonesia, from 3 junior and 4 senior high schools. Those who experienced the volcanic eruption and complete both of parents’ informed and students’ assent form were also included in the study. We assessed their resilience using Indonesian version of 25-item CD-RISC and examined both its exploratory and confirmatory factor analysis through SPSS-21 and AMOS-21 software to determine the construct validity and reliability of the scale. Among the 599 participants, we randomly divided into 2 groups using SPSS-21 software; Group 1 (n=300) for exploratory factor analysis (EFA) and Group 2 (n=299) for confirmatory factor analysis (CFA).

Results:
Among adolescent survivors of disaster, both of groups have the same characteristics in terms of age, gender, grade, school, residency, religion, with whom they live, and parents’ profiles (p>0.05). EFA yielded a new 4-factor model (Group 1, n= 300) that explain 52.17% variances and excluding item number 4 which was different with the original 5-factor model. We then conducted the CFA for both of the original 5-factor and 4-factor model using Group 2 (n=299). The present 4-factor model confirmed the best model among the other models examined [\(\chi^2/df= 2.571\), the root-mean-square error approximation (RMSEA)= 0.073, the goodness of fit index (GFI)= 0.848, the comparative fit index (CFI)= 0.830, and the Tucker-Lewis index (TLI)= 0.808] and demonstrated good internal consistency (Chronbach\(\alpha\) overall scale=0.903, factor 1= 0.804, factor 2= 0.712, factor 3= 0.713, and factor 4= 0.655).

Conclusion:
The findings support validation data for the Indonesian version of 25-item CD-RISC which was approved with 24 items and 4 factors, as well as evidence on the resilience construct for the use of the scale among adolescent survivors of disaster in Indonesia.
Title:
Psychometric Evaluation of Indonesian Version of Connor-Davidson Resilience Scale in Adolescent Survivors of Disaster (PST)

Keywords:
Connor-Davidson Resilience Scale, adolescent and disaster survivor

References:


Abstract Summary:
The present study is about psychometric testing of Indonesian version of 25-item Connor-Davidson Resilience Scale (CD-RISC) in adolescent survivors of a volcanic eruption in Yogyakarta, Indonesia. Pediatricians, mental health professional, and methodologist need to know about the importance of resilience measurement testing to find an appropriate assessment.

Content Outline:
I. Introduction
   A. Long-term impact of disaster
   B. Adolescent survivors
C. Resilience measurement

II. Body

A. Methods

1. Study design
   a) Type of study
   b) Sampling
   c) Inclusion and exclusion criteria

2. Data collection
   a) Study site
   b) Data collection procedure

3. Connor-Davidson Resilience Scale (CD-RISC)
   a) Initially development
   b) Score calculation
   c) Score interpretation
   d) Reliability and validity from previous studies

4. Statistical analysis
   a) Descriptive statistics
   b) Exploratory Factor Analysis (EFA)
   c) Confirmatory Factor Analysis (CFA)
   d) Reliability testing

B. Results

1. Descriptive statistics of demographic characteristics

2. EFA of the CD-RISC

3. CFA of the CD-RISC

4. Goodness of fit of the model
5. Reliability testing

C. Discussion

D. Study limitations

III. Conclusion

A. Conclusion of the psychometric testing in an Indonesian version of 25-item CD-RISC in adolescent disaster survivors

First Primary Presenting Author

Primary Presenting Author

Okki Dhona Laksmita, SN
Taipei Medical University, Taiwan
School of Nursing, College of Nursing
Master student
Taipei
Taiwan

Professional Experience: 2010-2014--Baccalaureate degree in School of Nursing, Faculty of Medicine, Universitas Gadjah Mada, Indonesia 2014-2016--Internship program in School of Nursing, Faculty of Medicine, Universitas Gadjah Mada, Indonesia 2016-present--Master student in School of Nursing, Taipei Medical University, Taiwan

Author Summary: The presenter is a second year student of international master program in School of Nursing, Taipei Medical University. Her study interest is children's mental health and well-being. She started to study this field since she did a bachelor thesis research in 2014 about intervention study to reduce anxiety among preschoolers in post-disaster setting. Then, currently in her thesis research, she is trying to investigate predictors of resilience among adolescent survivors in post-disaster setting.

Second Secondary Presenting Author

Corresponding Secondary Presenting Author

Pi-Chen Chang, PhD, RN
Taipei Medical University
School of Nursing, College of Nursing
Associate Professor
250 Wu-Hsing St
Taipei City
Taiwan

Professional Experience: Positions and Employment 2001-Associate professor, Taipei Medical University, College of Nursing, Taipei, Taiwan. 1998-2004 Assistant Professor, Taipei Medical University, College of Nursing, Taipei, Taiwan 1993-1995 Research assistant, University of Texas at Austin, Austin, TX, USA 1992-1993 Instructor, Chang Gung University, School of Nursing, Taoyuan, Taiwan 1989-1992 Research assistant, University of Arizona, Tucson, AZ, USA 1987-1989 Staff Nurse, National Taiwan University Hospital, Taipei, Taiwan Other service experiences 2001- Deputy Secretary General, Child Health Promotion Society of the Taiwan, R.O.C 2001- Delegate at the Faculty Senate, Taipei Medical University 2001- Grant Reviewer, Division of Nursing, Department of Life Science, Ministry of Science
and Technology 2012 - Reviewer, Journal of Nursing Research 2003-2008 Deputy Chairman, Maternal and Child Health Advisory Board. Taiwan Nurses’ Association 2006 – Tenure/Promotion External Reviewer: Chang Gung University of Science and Technology Hung Kuang University National Taiwan University National Taipei University of Nursing and Health Science

**Author Summary:** Professor Chang has twenty years professional experiences in nursing education and clinical practices. She is an associate professor at the College of Nursing, Taipei Medical University with a specialty in pediatric nursing. Her research areas focus on child and adolescent health promotion including sleep and obesity.

Third Author

Min-Huey Chung, PhD, RN
Taipei Medical University
School of Nursing, College of Nursing
Professor
Taipei
Taiwan

**Professional Experience:** 2016-present -- Professor, School of Nursing, Taipei Medical University, Taipei, Taiwan 2011-2016 -- Associate Professor, School of Nursing, Taipei Medical University, Taipei, Taiwan 2008-2011 -- Assistant Professor, School of Nursing, Taipei Medical University, Taipei, Taiwan

**Author Summary:** Dr. Min-Huey Chung is a Professor in the School of Nursing, Taipei Medical University, Taiwan (R.O.C.). She is specialized in nursing, psychiatry, and sleep research.

Fourth Author

Yuan-Mei Liao, PhD, RN
National Yang-Ming University
School of Nursing, College of Nursing
Associate Professor
Taipei City
Taiwan

**Professional Experience:** Registered nurse/ Taipei Veterans General Hospital: 2.5 years. Lecturer/ Taipei Medical University: 7 years. Assistant Professor/ Taipei Medical University: 3.5 years. Associate professor/ Taipei Medical University: 8 years.

**Author Summary:** Yuan-Mei Liao is an Associate Professor at the Taipei Medical University. Dr. Liao is engaged in several research projects related to women’s health and symptom management. Dr. Liao turned her attention to urologic healthcare since 1998, and her dedication to women’s health is unwavering.