Research on Social Work Practice
1–9

DOI: 10.1177/10497315231221969
journals.sagepub.com/home/rsw
Sage

The Nonviolent Communication Behaviors Scale: Cross-Cultural Validity and Association with Trauma and Post-Traumatic Stress

Hong Wang Fung[1], Anson Kai Chun Chau[2,*], Guangzhe Frank Yuan[3,#], Caimeng Liu[4], and Stanley Kam Ki Lam[5]

Abstract

Purpose: This study examined the cross-cultural validity of nonviolent communication (NVC) behaviors as measured using the Nonviolent Communication Behaviors Scale (NVCBS) and explored their potential relationship with post-traumatic stress (PTS). **Methods:** We analyzed data from two samples (N = 412 Chinese adults and N = 283 English-speaking adults). **Results:** The best-fitting model of NVCBS was the proposed three-factor model ("self-connection," "authentic self-expression," and "empathic listening"), with configural, metric, and scalar invariance established across samples with different languages and sociocultural backgrounds. The NVCBS had satisfactory internal consistency and convergent validity and was negatively associated with PTS. The findings were replicated across the two samples. **Discussion:** NVC behaviors can be reliably and validly measured using the NVCBS. Given its brevity and measurement invariance across cultures, the NVCBS is a promising tool to facilitate future studies on NVC. Moreover, a lack of NVC behaviors may be a social-behavioral feature associated with PTS.

Keywords

nonviolent communication (NVC), the nonviolent communication behaviors scale (NVCBS), betrayal trauma, post-traumatic stress disorder (PTSD), cross-cultural psychology

Nonviolent communication (NVC) is a communication approach that emphasizes the importance of giving from the heart and establishing connections with others in a way that fosters compassion (Rosenberg & Chopra, 2015). NVC is also known as compassionate communication because of its focus on empathy and understanding. NVC has three core aspects: (a) self-connection (including self-empathy), (b) authentic self-expression, and (c) empathic listening (Press, n.d.; Rosenberg & Chopra, 2015). The process of NVC involves four steps: observation without judgment, identification of accompanying feelings, understanding how those feelings signal needs, and requesting concrete action to meet the needs of all parties without making demands (Museux et al., 2016; Rosenberg & Chopra, 2015). By adopting NVC, individuals gain a valuable tool for examining their own needs and those of others. Therefore, NVC can foster empathy and understanding, thus help reduce conflicts, promote greater social harmony, and create a peaceful world (Hunsinger & Latini, 2013; Rosenberg & Chopra, 2015). Because of these beneficial features, the United Nations (n.d.) has recognized the value of NVC in maintaining peace and resolving conflicts.

NVC is not only relevant to education, workplace, and communication training, but is also relevant to health and social services. NVC has the potential to prevent violence, reduce conflicts, improve well-being, and tackle emotional or mental health problems. There has been an increasing number of studies on the potential benefits of NVC in recent years. For example, researchers found that NVC-based training could improve communication, empathy, compassionate behaviors,

[1]Department of Social Work, Hong Kong Baptist University, Hong Kong, Hong Kong
[2]CUHK Institute of Health Equity, The Chinese University of Hong Kong, Hong Kong, Hong Kong
[3]Department of Health Promotion, Education, and Behavior, Arnold School of Public Health, University of South Carolina, Columbia, SC, USA
[4]College of Teacher Education, Institute of Education Science, Leshan Normal University, Leshan, China
[5]Nethersole School of Nursing, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong, Hong Kong
[*]School of Psychology, University of New South Wales, Sydney, New South Wales, Australia
[#]School of Education Science, Leshan Normal University, Leshan, Sichuan, China

Corresponding Author:
Hong Wang Fung, Department of Social Work, Hong Kong Baptist University, Kowloon, Hong Kong.
Email: andyhwfung@gmail.com

Stanley Kam Ki Lam, Nethersole School of Nursing, Faculty of Medicine, The Chinese University of Hong Kong, Shatin, Hong Kong.
Email: stanleylam@cuhk.edu.hk

and emotional and interpersonal skills in health and social service providers (e.g. Kansky & Maassarani, 2022; Museux et al., 2016; Wacker & Dziobek, 2018). Some studies also demonstrated that NVC training may improve mental well-being. In particular, Yang and Kim (2021) reported that NVC training could improve self-efficacy in alcohol cessation and anger management in patients with alcohol problems. Zandkarimi et al. (2019) also showed that NVC training could reduce stress and anxiety in a sample of Iranian women. More importantly, Rezaei et al. (2019) found that NVC training could improve mother–child interaction, thus having the potential to prevent childhood maltreatment.

However, current research on the potential benefits of NVC is hampered by a lack of validated measures, as none of the evaluation studies had utilized a measure specific to NVC. To address this gap, a recent study developed a 7-item self-report measure, known as the Nonviolent Communication Behaviors Scale (NVCBS), and this scale was found to be reliable and valid in a sample of Chinese young adults (Cheung et al., 2022). The NVCBS had three hypothetical subscales that measure the three core aspects of NVC, suggesting face validity of the novel scale. In that study, an exploratory factor analysis yield a one-factor structure (Cheung et al., 2022), which has yet to be confirmed in an independent sample. Despite its potential as a useful measure that can facilitate future NVC studies, the measurement invariance of NVCBS across different languages and cultural contexts should be established to facilitate multicultural comparisons of findings. In addition, more research is needed to examine whether NVC behaviors could be reliably and validly assessed. Against this background, this study examined whether NVC behaviors could be reliably and validly measured using the NVCBS in two samples with different languages and sociocultural backgrounds. To confirm its construct validity, we examined whether the NVCBS scores would be positively correlated with self-kindness and interpersonal communication competences while negatively correlated with self-judgement. Self-kindness and self-judgement were measured using two subscales of the Self-Compassion Scale (SCS), while interpersonal communication competences were measured using a subscale of the Perceived Holistic Competencies Measure (PHCM), as will be explained below. These hypotheses were based on the idea that NVC involves accepting oneself and others as well as peaceful and honest communication (Rosenberg & Chopra, 2015).

Another goal of the present study was to explore the potential relationship between NVC behaviors and betrayal trauma (i.e. trauma perpetrated by a close and trusted person [e.g. parents, caregivers]) and post-traumatic stress (PTS). Betrayal trauma survivors often experience difficulties in accepting and expressing themselves and maintaining healthy interpersonal relationships due to the long-lasting effects of betrayal trauma (Cloitre et al., 2020), and therefore, we hypothesized that betrayal trauma may be negatively associated with NVC behaviors. In many cases, childhood betrayal trauma survivors live in an abusive environment and do not have a chance to learn how to accept, regulate, and express their emotions, or set healthy boundaries and communicate peacefully with others (Fung, Lam et al., 2022). Trauma and PTS could also lead to aggression and anger issues (Taft et al., 2017). Childhood maltreatment survivors often encounter relationship conflicts (Fitzgerald, 2021) and difficulties in interpersonal emotion regulation (Henschel et al., 2019). As a result, maladaptive coping due to early traumatization might lead to overt, aggressive behaviors such as conflicts with others or even violence and criminal behaviors (Fox et al., 2015). Considering the fact that both intrapersonal (e.g. self-blame) and interpersonal (e.g. being unable to express oneself honestly and peacefully) conflicts are major features of betrayal trauma survivors, it has been recently proposed that they may relatively lack NVC behaviors, and that they might benefit from NVC training (Cheung et al., 2022). Therefore, this study also tested the hypotheses that NVC behaviors would be negatively correlated with childhood betrayal trauma, but not with non-betrayal trauma, and that NVC behaviors would be associated with PTS. Since replication is important to validate scientific findings, we also tested the hypotheses in two completely different samples. It is important to note that we only aimed to examine and replicate the psychometric properties and correlates of the measure across two socioculturallay different samples. Direct comparison of the two samples would not be relevant to our research questions, as two samples were not matched in any way.

Method

Participants

This study analyzed survey data from two projects. Both projects used online methods to collect data. Online recruitment has now been widely used for social service and medical research purposes, and Internet-based assessments are also proven to be reliable and valid (Chan, 2016; Chan et al., 2017; Fung et al., 2020; Ritter et al., 2004; Whitaker et al., 2017). Additionally, both projects included attention check items in the online surveys to ensure the validity of the responses. As noted above, the two samples were not matched in any way. We only aimed to test the hypotheses and replicate the findings across two different samples.

Sample 1: Chinese Adults Living in Hong Kong. This project obtained ethical approval at the institutional review board at the Chinese University of Hong Kong. Data were collected in November and December 2022. Potential participants were recruited in social networking sites (i.e. Facebook and Instagram) to complete an online survey on trauma and PTS. The recruitment poster stated that the project was about health conditions, life experiences, and post-traumatic reactions among Hong Kong adults.

To be eligible for participation, potential participants must meet the following criteria: (a) aged between 18 to 64, (b)

willing to provide informed consent and participate voluntarily, (c) a resident of Hong Kong and currently living there, and (d) have Internet access. Individuals with a clinical diagnosis of a learning or reading disorder, dementia, or cognitive impairments were excluded.

A total of 412 participants provided informed consent, met all inclusion criteria, and completed the online survey. All of them lived in Hong Kong. Their ages ranged from 18 to 64 years (M = 38.58; SD = 12.96). Most of them were female (81.3%), had a bachelor's degree (56.6%), and were currently employed (74.0%). Some participants (30.2%) reported having seen a psychiatrist in the past 12 months. Part of the data unrelated to NVC from this project has been published elsewhere (Lam et al., 2023).

Sample 2: English-Speaking Adults from Diverse Regions. This project obtained ethical approval at the institutional review board at the Leshan Normal University, China. Data were collected during the Spring of 2023. Potential participants were recruited in social networking sites (i.e. Facebook and Instagram) to complete an online survey related to social experiences and mental health problems. The recruitment poster stated that it was an international project which aimed to investigate the complex relationships among social environments and physical and psychological health among young adults.

To be eligible for participation, potential participants must meet the following criteria: (a) between the ages of 18 and 24, (b) capable of reading and writing in English, (c) willing to provide informed consent and participate voluntarily, and (d) have Internet access. Individuals with a clinical diagnosis of a learning or reading disorder, dementia, or cognitive impairments were excluded.

A total of 283 English-speaking participants provided valid responses to the survey. Their ages ranged from 18 and 24 (M = 20.04; SD = 1.88). Participants lived in 10 different countries/regions, mainly from Canada (25.44%), the United Kingdom (22.61%), New Zealand (14.84%), and the United States (14.13%). Most participants were female (91.2%), only a few of them (17.3%) had a bachelor's degree. About half of them were currently employed (52.30%). About one-third of participants (35.69%) reported having seen a psychiatrist in the past 12 months. Part of the data unrelated to NVC from this project has been published elsewhere (Fung, Cong et al., 2023).

The sample characteristics of each sample are reported in Table 1.

Measures

Participants in both projects completed online surveys in their respective languages. The surveys included questions about demographic backgrounds and the following standardized self-report measures.

The NVCBS. The NVBS is a 7-item self-report measure which assesses three specific types of behaviors characteristic of NVC (i.e. self-connection, empathic listening, and authentic self-expression) (Press, n.d.; Rosenberg, 2005; Rosenberg & Chopra, 2015). Satisfactory internal consistency (α = 789 to .810) and test-retest reliability (ICC = .781), as well as good construct validity (r = .211 with empathy, r = −.200 with negative beliefs about emotions) were reported in the original validation study with a Chinese sample of young adults (Cheung et al., 2022). Two sample items are "being open and flexible when communicating with others" and "willing to make requests for my own needs and remaining open to any response after requesting, not obsessed with a particular outcome" (1 = Never; 4 = frequently). The psychometric properties of the English version of the NVCBS are reported below.

Table 1. Sample Characteristics.

Variables (Mean/SD/Percentage)	Sample 1 (N = 412 Hong Kong Adults)	Sample 2 (N = 283 English-Speaking Young Adults Living in 10 Different Countries/Regions)
Age (range)	18 to 64	18 to 24
Age	38.57 (12.96)	20.04 (1.88)
Gender (Female)	81.1%	91.2%
Education level (bachelor's degree or above)	56.6%	17.3%
Currently employed	74.0%	52.30%
Past-year psychiatric service usage	30.2%	35.69%
Childhood betrayal trauma	1.26 (1.37)	2.08 (1.58)
Childhood non-betrayal trauma	0.59 (0.84)	1.30 (1.20)
Post-traumatic stress	34.35 (22.14)	9.24 (4.39)
Self-kindness	2.99 (0.92)	5.05 (1.96)
Self-judgment	3.28 (0.89)	7.49 (1.86)
Interpersonal and leadership competences	21.90 (5.62)	/
NVC: Self-connection	5.16 (1.35)	5.17 (1.35)
NVC: Empathic listening	8.27 (1.83)	8.85 (1.84)
NVC: Authentic self-expression	5.10 (1.42)	4.84 (1.43)

The Brief Betrayal Trauma Survey (BBTS). The BBTS is a 24-item reliable self-report questionnaire which asks about both betrayal and non-betrayal trauma during childhood and adulthood (Goldberg & Freyd, 2006). The BBTS was found to be reliable in Chinese populations (Fung, Chien et al., 2022). Only the 12 items for childhood trauma were included in this study. The BBTS had acceptable internal consistency in our samples (Sample 1: $\alpha = .675$; Sample 2: $\alpha = .765$).

The Self-kindness and Self-judgment subscales of the SCS. The SCS is a 26-item self-report measure of self-compassion with excellent reliability, with six established factors, including self-kindness, common humanity, mindfulness, self-judgment, isolation, and overidentification (Neff, 2003; Neff et al., 2019). The Chinese version of the SCS also has good reliability ($\alpha = .84$) and construct validity, and it also has a six-factor structure (Chen et al., 2011). In Sample 1, the self-kindness (5 items) ($\alpha = .877$) and self-judgment (5 items) ($\alpha = .835$) subscales were used. In Sample 2, only the SCS-Short Form (Raes et al., 2011) was used, thus there were only 2 items for the self-kindness ($\alpha = .609$) and self-judgment ($\alpha = .648$), respectively.

The PTSD Checklist for DSM-5 (PCL-5). The PCL-5 is a 20-item self-report measure of *PTS* (Blevins et al., 2015; Geier et al., 2019), and it has also been validated in the Chinese context (Fung et al., 2019). Moreover, an abbreviated four-item PCL-5 was also found to be a valid screening too (Geier et al., 2020). In Sample 1, the full PCL-5 was used ($\alpha = .969$). In Sample 2, only the four-item PCL-5 was used ($\alpha = .823$).

The Interpersonal and Leadership Competencies Subscale of the PHCM. The PHCM is a 27-item self-report Chinese measure of perceived holistic competencies (Chan & Luk, 2021). The Interpersonal and Leadership Competencies Subscale, which has seven items, specifically assesses perceived interpersonal and communication skills and leadership (e.g. "Work with others and listen to others' opinions," "Communicate with others effectively in different contexts") (1 = very poor, 5 = very good). This subscale was used in Sample 1 ($\alpha = .884$).

Data Analysis

We first established the measurement invariance of the NVCBS across samples. The one-factor structure supported by the exploratory factor analysis in Cheung et al. (2022), as well as the original hypothetical three-factor structure, was tested in the combined samples. Since the NVCBS is a Likert-type scale with four response options, the data was treated as categorical (Rhemtulla et al., 2012), with the factor models estimated using polychoric correlation matrix and Weighted Least Squares, Mean and Variance Adjusted estimator. The absolute fit of the models was assessed with the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Squared Error of Approximation (RMSEA) and Standardized Root Mean Squared Residual (SRMR). According to recommendations in Hu and Bentler (1998) and Marsh et al. (2004), CFI and TLI values >0.90 were acceptable and >0.95 were excellent. RMSEA and SRMSR values <0.10 were considered acceptable and <0.05 were considered excellent. The fit of the models was compared with the Satorra-Bentler Chi-Square Difference test (Satorra & Bentler, 2001), where a significant result indicated the preference for a three-factor model over the one-factor model.

After the best-fitting factor model was identified, the measurement invariance of the models was tested between the Chinese and English samples. It was tested through a series of hierarchical models where increasingly restrictive equality constraints were imposed on parameters across samples. For the tests for measurement invariance tests with categorical indicators, Svetina et al. (2020)'s approach was followed. Therefore, the sequence of models tested was (a) configural model, equating the pattern of factor loadings across groups with freely estimated factor loadings and thresholds; (b) metric model, equating item thresholds between samples; and (c) scalar model, equating both thresholds and unstandardized factor loadings across samples. Measurement invariance was supported if the comparison between the two models fulfilled these criteria: a non-significant $\chi 2$, $\Delta CFI < 0.01$, and $\Delta RMSEA < 0.05$ (Cheung & Rensvold, 2002; Rutkowski & Svetina, 2017). If the metric model fits as well as the configural model, it suggests that the scale scores measure the same construct across groups (i.e., metric invariance). Furthermore, if the scalar model fits as well as the metric model, it justifies mean comparisons of scale scores between samples (i.e. scalar invariance).

After the investigation of measurement invariance of NVCBS across samples, we examined the internal consistency and construct validity of the NVCBS in both samples separately. We also conducted correlation and multiple regression analyses to examine the relationship between NVCBS scores and other major variables, including childhood trauma and PTS.

Finally, it is important to justify that our sample sizes were large enough. As a rule of thumb, a minimum of 10 observations per variable is necessary. As the NVCBS has seven items, a sample of at least 70 participants would be required for factor analysis. Since all questions on the online surveys in both samples were mandatory after participants provided online written informed consent, there were no missing data.

Results

Factor Structure of NVCBS and Its Measurement Invariance Across Two Different Samples

In the combined sample, the three-factor model was found to have a better fit than the one-factor model ($\chi^2(3) = 77.737, p < .001$). Also, the three-factor model was optimal for the Chinese ($\chi^2(11) = 12.549$, $p = .324$, $CFI = 0.999$, $TLI =$

Table 2. Fit Statistics for Configural, Metric, Scalar, and Scalar Modified Invariance Models by Samples.

	X^2(df)	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$ (df)	ΔCFI	ΔRMSEA
Configural	44.910 (22)	0.990	0.981	0.055	0.033	/	/	/
Metric	55.015 (29)	0.990	0.986	0.047	0.033	10.105(7), $p = 0.549$	0.000	0.008
Scalar	58.541 (33)	0.989	0.986	0.047	0.036	3.526(4), $p = 0.150$	0.001	0.000

0.998, RMSEA = 0.019, SRMR = 0.020) and English ($\chi^2(11) = 30.105$, $p = .002$, CFI = 0.96, TLI = 0.931, RMSEA = 0.078, SRMR = 0.051) samples, respectively. Therefore, the three-factor model was chosen to be the optimal model for both samples. In this model, the self-connection subscale included Items 1 and 4; the empathic listening subcale included Items 5, 6 and 7; the authentic self-expression subscale included Items 2 and 3.

Table 2 shows the results for the measurement invariance models following Svetina et al. (2020)'s approach. Our results revealed that the scalar model fitted the data as well as the configural and metric models for the Chinese and English samples, with changes in fit indexes below their respective cut-offs. These results indicated that the scalar invariance across the samples was evident for the NVCBS.

Internal Consistency and Convergent Validity of the NVCBS

The internal consistency of the NVCBS was acceptable in both samples (α = .711 in Sample 1 and α = .688 in Sample 2).

As reported in Table 3, all three NVCBS subscales were positively correlated with self-kindness (Sample 1: r = .357 to .582, $p < .001$; Sample 2: r = .289 to .437, $p < .001$), while negatively correlated with self-judgment (Sample 1: r = −.132 to −.345, $p < .01$; Sample 2: r = −.172 to −.325, $p < .001$), demonstrating the construct validity of the NVCBS.

Moreover, in Sample 1, the NVCBS subscales were all positively correlated with interpersonal and leadership competences (r = .317 to .561, $p < .001$), further demonstrating the construct validity of the NVCBS in this sample.

Associations of NVC Behaviors with Demographic Variables and Post-Traumatic Stress

Correlation analyses showed that the NVCBS subscales were not correlated with any demographic variable in both samples, expect for age (r = .179, $p < .01$) in Sample 1. The findings are reported in Table 3.

In Sample 1, authentic self-expression was negatively correlated with childhood betrayal trauma (r = −.113, $p < .05$). In Sample 2, all three NVCBS subscales were negatively correlated with childhood betrayal trauma (r = −.122 to −.176, ps < .05) (see Table 3). In both samples, all three NVCBS subscales were negatively correlated with PTS symptoms (r = −.118 to −.313, ps < .05) (see Table 3).

In addition, after controlling for the effects of childhood trauma, NVC behaviors still had a significant, negative association with PTS in both samples. In Sample 1, authentic self-expression was associated with PTS (β = −.188, $p = .001$); in Sample 2; self-connection was associated with PTS (β = −.243, $p < .001$) (see Table 4).

Discussion and Applications to Practice

This study is the first to demonstrate that NVC behaviors can be reliably and validly measured using the NVCBS. The NVCBS was found to have configural, metric, and scalar invariances across Chinese and English cultures and languages. In addition, we found that childhood betrayal trauma, but not non-betrayal trauma, was negatively correlated with at least some NVC behaviors (e.g. authentic self-expression) in both samples. Moreover, NVC behaviors had a unique, negative association with PTS, even after controlling for the effects of childhood trauma.

One of the major contributions of the present study is to provide further evidence for the psychometric properties of the NVCBS, which has just been newly developed in Chinese (Cheung et al., 2022) and the English version had not been used before. The hypothetical three-factor structure was observed in both samples, with measurement invariance and acceptable internal consistency. Moreover, the positive correlation between NVCBS scores and self-kindness and interpersonal competences and negative correlation between NVCBS scores and self-judgment demonstrate the construct validity of the measure. Therefore, the NVCBS can be readily used to investigate the correlates of NVC-related behaviors or evaluate the effectiveness of NVC training in both Chinese and English contexts in the future. Given its brevity, acceptable reliability, and good validity, the NVCBS is a promising tool to facilitate future studies on NVC in Chinese- and English-speaking populations. Educators and social and healthcare service practitioners, including teachers and social workers, can use the NVCBS to evaluate programs that aim to improve the interpersonal behaviors of students and clients. With the NVCBS, social workers and other service providers can be more confident in evaluating NVC-specific intervention services. Researchers who want to evaluate whether NVC interventions are evidence-based may also use the NVCBS as one of the primary outcome measures in clinical trials.

Another major finding of the study pertains to the relationship between NVC behaviors and childhood betrayal trauma

and PTS. The results support the hypothesis that childhood betrayal trauma had a negative correlation with some NVC behaviors, with converging findings indicating a small association with the "authentic self-expression" aspect of NVC (Sample 1: r = −.113, Sample 2: r = −.122). Additionally, the study found that NVC behaviors were uniquely associated with post-traumatic psychopathology (Sample 1: rs = −0.138–−0.259; Sample 2: rs = −0.118–−0.313), which remained robust after controlling for childhood trauma. This implies that a lack of NVC behaviors may not necessarily be a behavioral consequence of childhood betrayal trauma. Rather, a lack of NVC may be a social-behavioral feature associated with post-traumatic psychopathology, which is a major consequence of trauma. Therefore, it implies that social workers and healthcare practitioners should be aware of the possible interpersonal needs of trauma survivors with PTS. These clients may need not only psychological and medical treatments but also interpersonal and communication skills training. In the clinical literature, it is commonly known that people with PTS often suffer from interpersonal difficulties and dysfunctional communication (Fredman et al., 2017; Fung, Liu et al., 2023). As intrapersonal and interpersonal conflicts are major problems facing people with post-traumatic psychopathology resulting from betrayal trauma (Cloitre et al., 2020; Fung et al., 2021; Fung, Chien et al., 2023), more research on the relationship between NVC behaviors and trauma-related mental health problems are needed. In particular, we found that PTS was predicted by different NVC behaviors in our samples. Therefore, there may be cultural differences in this regard. Previous studies have shown that there are cultural differences in seeking interpersonal support (Mortenson et al., 2009), emotional regulation strategies (Nagulendran & Jobson, 2020), and communication patterns (Park et al., 2012). Therefore, more cross-cultural studies are needed to understand the patterns, correlates, and effects of different communication behaviors. Furthermore, the potential benefits of providing NVC-based training for trauma survivors warrant future research too (Cheung et al., 2022).

This study suffered from several limitations. First, we relied on self-report data, and PTS could not be confirmed using diagnostic interviews. Second, the use of online convenience samples with self-selection bias may limit the generalizability of the findings. Third, childhood trauma was retrospectively reported, and it may be subject to recall bias. Fourth, we could not reveal the causal relationship between the variables because of the cross-sectional design. Fifth, as noted above, while we aimed to replicate the findings across two samples, the samples had different sociocultural backgrounds and were not matched in any way. Furthermore, different versions of the PCL-5 and the SCS

Table 3. Correlation Between Nonviolent Communication (NVC) Behaviors and Other Major Variables in Two Samples.

	Sample 1 (N = 412 Chinese Adults)			Sample 2 (N = 283 English-Speaking Young Adults)		
Variables	NVC: Self-Connection	NVC: Empathic Listening	NVC: Authentic Self-Expression	NVC: Self-Connection	NVC: Empathic Listening	NVC: Authentic Self-Expression
NVC: Self-connection	1	-	-	1	-	-
NVC: Empathic listening	.417***	1	-	.322***	1	-
NVC: Authentic self-expression	.440***	.471***	1	.394***	.420***	1
Self-kindness	.385***	.357***	.582***	.326***	.289***	.437***
Self-judgment	−.132**	−.169**	−.345***	−.217***	−.172**	−.325***
Interpersonal and leadership competences	.317***	.561***	.416***	/	/	/
Age	.091	.013	.179**	.018	−.007	.059
Gender (Female)	−.081	−.036	−.031	−.072	.016	-.035
Education level (undergraduate or above)	.035	.062	-.013	.074	.098	.019
Past-year psychiatric service usage	−.086	.038	−.040	−.025	−.109	.054
Childhood betrayal trauma	−.095	−.011	−.113*	−.176**	−.130*	−.122*
Childhood non-betrayal trauma	.056	.089	−.032	−.093	−.047	−.110
Post-traumatic stress	−.156**	−.138**	−.259***	−.313***	−.118*	−.149*

Notes: *$p < .05$, **$p < .01$, ***$p < .001$.

Table 4. Multiple Regression Predicting Post-Traumatic Stress from Nonviolent Communication (NVC) Behaviors.

	Sample 1 (N = 412 Chinese Adults)					Sample 2 (N = 283 English-Speaking Young Adults)				
Variables	β	*p*	F	ΔR2	ΔF	β	*p*	F	ΔR2	ΔF
Step 1			29.919***	.128	29.919***			44.230***	.240	44.230***
Childhood betrayal trauma	.306	<.001				.373	<.001			
Childhood non-betrayal trauma	.113	.020				.179	.004			
Step 2			17.827***	.052	8.647***			23.230***	.055	7.255***
Childhood betrayal trauma	.279	<.001				.332	<.001			
Childhood non-betrayal trauma	.121	.011				.178	.003			
NVC: Self-connection	−.036	.494				−.243	<.001			
NVC: Empathic listening	−.043	.420				.011	.848			
NVC: Authentic self-expression	−.188	.001				.003	.964			

Notes: *$p < .05$, **$p < .01$, ***$p < .001$.

were utilized in the two samples. These inconsistencies, although demonstrating the reliability and validity of the scale even in diverse samples, should be considered when interpreting the results. Against these caveats, our investigation was based on two culturally distinct samples. This allowed us to draw preliminary conclusions on the cross-cultural relationships between NVC behaviors and other theoretically relevant variables, which were assessed with validated measures. Having said that, despite the efforts of replicating the findings in two culturally different samples, our findings may not be applicable to the general population or other certain groups, such as minorities or marginalized populations. Therefore, it is important to conduct further studies on diverse populations to ensure that the findings are representative of the general population and applicable to specific populations. Finally, the responsiveness of the NVCBS (i.e. whether it can capture change after interventions) as an outcome measure has not been evaluated. Thus, future studies should examine whether the effects of NVC interventions could be reliably measured using the NVCBS. To further confirm the validity of the measure, researchers should also try to compare the NVCBS scores between individuals who have received NVC trainings and those who have not. In conclusion, this study provided evidence supporting the validity of the NVC behaviors as measured using the NVCBS across two different samples. While the two samples are completely different, the results could be replicated across the two samples. It is a promising and readily used measure that can facilitate future studies on NVC. We also provided first data showing that a lack of NVC behaviors might be a potentially important feature associated with PTS, pointing to the need for further research on the relationship between NVC behaviors and trauma-related psychopathology.

Acknowledgements

The first author received The RGC Postdoctoral Fellowship Scheme 2022/2023 from the Research Grants Council (RGC) of Hong Kong.

Data Availability

Data that support the findings of this study are available from the corresponding author upon reasonable request.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Considerations

Data used in this paper were collected in a study approved by the Survey and Behavioural Research Ethics Committee of the Chinese University of Hong Kong (Reference number: SBRE-22-0051) as well as a study approved by the institutional review board at the Leshan Normal University (Reference Number: LNU-20230221R).

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Hong Wang Fung https://orcid.org/0000-0002-4606-2173

References

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, *28*(6), 489–498. https://doi.org/10.1002/jts.22059

Chan, C. (2016). A scoping review of social media use in social work practice. *Journal of Evidence-Informed Social Work*, *13*(3), 263–276. https://doi.org/10.1080/23761407.2015.1052908

Chan, C., Fung, H. W., Choi, T. M., & Ross, C. A. (2017). Using online methods to develop and examine the Hong Kong Chinese translation of the Dissociative Experiences Scale. *Journal of Evidence-Informed Social Work*, *14*(2), 70–85. https://doi.org/10.1080/23761407.2017.1298073

Chan, C. K. Y., & Luk, L. Y. Y. (2021). Development and validation of an instrument measuring undergraduate students' perceived holistic competencies. *Assessment & Evaluation in Higher Education*, *46*(3), 467–482. https://doi.org/10.1080/02602938.2020.1784392

Chen, J., Yan, L.S., & Zhou, L.H. (2011). Reliability and validity of Chinese version of self-compassion scale. *Chinese Journal of Clinical Psychology*, *19*(6), 734–736.

Cheung, C. T. Y., Cheng, C. M.H., Lam, S. K. K., Ling, H. W. H., Lau, K. L., Hung, S. L., & Fung, H. W. (2022). Reliability and validity of a novel measure of nonviolent communication behaviors. *Research on Social Work Practice*, *33*(7), 790–797. https://doi.org/10.1177/10497315221128595

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *9*(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5

Cloitre, M., Cohen, L. R., Ortigo, K. M., Jackson, C., & Koenen, K. C. (2020). *Treating survivors of childhood abuse and interpersonal trauma: STAIR Narrative Therapy* (2nd ed.). The Guilford Press.

Fitzgerald, M. (2021). Developmental pathways from childhood maltreatment to young adult romantic relationship functioning. *Journal of Trauma & Dissociation*, *22*(5), 581–597. https://doi.org/10.1080/15299732.2020.1869653

Fox, B. H., Perez, N., Cass, E., Baglivio, M. T., & Epps, N. (2015). Trauma changes everything: Examining the relationship between adverse childhood experiences and serious, violent and chronic juvenile offenders. *Child Abuse & Neglect*, *46*, 163–173. https://doi.org/10.1016/j.chiabu.2015.01.011

Fredman, S. J., Beck, J. G., Shnaider, P., Le, Y., Pukay-Martin, N. D., Pentel, K. Z., Monson, C. M., Simon, N. M., & Marques, L. (2017). Longitudinal associations between PTSD symptoms and dyadic conflict communication following a severe motor vehicle accident. *Behavior Therapy*, *48*(2), 235–246. https://doi.org/10.1016/j.beth.2016.05.001

Fung, H. W., Chan, C., Lee, C. Y., & Ross, C. A. (2019). Using the Post-traumatic Stress Disorder (PTSD) checklist for DSM-5 to screen for PTSD in the Chinese context: A pilot study in a psychiatric sample. *Journal of Evidence-Based Social Work*, *16*(6), 643–651. https://doi.org/10.1080/26408066.2019.1676858

Fung, H. W., Chan, C., Lee, C. Y., Yau, C. K. M., Chung, H. M., & Ross, C. A. (2020). Validity of a web-based measure of borderline personality disorder: A preliminary study. *Journal of Evidence-Based Social Work*, *17*(4), 443–456. https://doi.org/10.1080/26408066.2020.1760162

Fung, H. W., Chan, C., Ross, C. A., & Wang, E. K. S. (2021). Clinical features of a Chinese sample with self-reported symptoms of pathological dissociation. *Journal of Trauma & Dissociation*, *22*(3), 378–393. https://doi.org/10.1080/15299732.2020.1869651

Fung, H. W., Chien, W. T., Chan, C., & Ross, C. A. (2023). A cross-cultural investigation of the association between betrayal trauma and dissociative features. *Journal of Interpersonal Violence*, *38*(1-2), 1630–1653. https://doi.org/10.1177/08862605221090568

Fung, H. W., Chien, W. T., Ling, H. W. H., Ross, C. A., & Lam, S. K. K. (2022). The mediating role of post-traumatic stress disorder symptoms in the relationship between childhood adversities and depressive symptoms in two samples. *Child Abuse & Neglect*, *131*, 105707. https://doi.org/10.1016/j.chiabu.2022.105707

Fung, H. W., Cong, C. W., Tan, C.S., Yuan, G. F., Liu, C., He, K. L., Hung, S. L., & Lee, V. W. P. (2023). Is teacher violence a form of betrayal trauma? Relationship with mental health problems among young adults. *Child Abuse & Neglect*, *145*, 106436. https://doi.org/10.1016/j.chiabu.2023.106436

Fung, H. W., Lam, S. K. K., Chien, W. T., Hung, S. L., Ling, H. W. H., Lee, V. W. P., & Wang, E. K. S. (2022). Interpersonal stress mediates the relationship between childhood trauma and depressive symptoms: Findings from two culturally different samples. *Australian & New Zealand Journal of Psychiatry*, *57*(7), 1052–1061. https://doi.org/10.1177/00048674221138501

Fung, H. W., Liu, C., Yuan, G. F., Liu, J., Zhao, J., Chien, W. T., Lee, V. W. P., Shi, W., & Lam, S. K. K. (2023). Association among negative life events, sense of security, and depressive symptoms in Chinese adolescents after the 2013 Ya'an Earthquake. *Disaster Medicine and Public Health Preparedness*, *17*, e352. https://doi.org/10.1017/dmp.2022.300

Geier, T. J., Hunt, J. C., Hanson, J. L., Heyrman, K., Larsen, S. E., Brasel, K. J., & deRoon-Cassini, T. A. (2020). Validation of abbreviated four-and eight-item versions of the PTSD checklist for DSM-5 in a traumatically injured sample. *Journal of Traumatic Stress*, *33*(3), 218–226. https://doi.org/10.1002/jts.22478

Geier, T. J., Hunt, J. C., Nelson, L. D., Brasel, K. J., & deRoon-Cassini, T. A. (2019). Detecting PTSD in a traumatically injured population: The diagnostic utility of the PTSD checklist for DSM-5. *Depression and Anxiety*, *36*(2), 170–178. https://doi.org/10.1002/da.22873

Goldberg, L. R., & Freyd, J. J. (2006). Self-reports of potentially traumatic experiences in an adult community sample: Gender differences and test-retest stabilities of the items in a brief betrayal-trauma survey. *Journal of Trauma & Dissociation*, *7*(3), 39–63. https://doi.org/10.1300/J229v07n03_04

Henschel, S., Doba, K., & Nandrino, J.L. (2019). Emotion regulation processes and psychoform and somatoform dissociation in adolescents and young adults with cumulative maltreatment. *Journal of Trauma & Dissociation*, *20*(2), 197–211. https://doi.org/10.1080/15299732.2018.1502714

Hu, L.T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*(4), 424–453. https://doi.org/10.1037/1082-989X.3.4.424

Hunsinger, D. V. D., & Latini, T. F. (2013). *Transforming church conflict: Compassionate leadership in action*. John Knox Press.

Kansky, R., & Maassarani, T. (2022). Teaching nonviolent communication to increase empathy between people and toward wildlife to promote human–wildlife coexistence. *Conservation Letters*, *15*(1), e12862. https://doi.org/10.1111/conl.12862

Lam, S. K. K., Ng, A. S. Y., Zhou, C. R., Hung, S. L., & Fung, H. W. (2023). Persistence and psychological predictors of ICD-11 complex PTSD: A six-month longitudinal study in Hong Kong. *Journal of Loss and Trauma*, 1–21. https://doi.org/10.1080/15325024.2023.2267433

Marsh, H. W., Hau, K.T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal*, *11*(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2

Mortenson, S. T., Burleson, B. R., Feng, B., & Liu, M. (2009). Cultural similarities and differences in seeking social support as a means of coping: A comparison of European Americans and Chinese and an evaluation of the mediating effects of self-construal. *Journal of International and Intercultural Communication*, *2*(3), 208–239. https://doi.org/10.1080/17513050902985331

Museux, A.C., Dumont, S., Careau, E., & Milot, É (2016). Improving interprofessional collaboration: The effect of training in nonviolent communication. *Social Work in Health Care*, *55*(6), 427–439. https://doi.org/10.1080/00981389.2016.1164270

Nagulendran, A., & Jobson, L. (2020). Exploring cultural differences in the use of emotion regulation strategies in posttraumatic stress disorder. *European Journal of Psychotraumatology*, *11*(1), 1729033. https://doi.org/10.1080/20008198.2020.1729033

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity*, *2*(3), 223–250. https://doi.org/10.1080/15298860390209035

Neff, K. D., Tóth-Király, I., Yarnell, L. M., Arimitsu, K., Castilho, P., Ghorbani, N., Guo, H. X., Hirsch, J. K., Hupfeld, J., Hutz, C. S., Kotsou, I., Lee, W. K., Montero-Marin, J., Sirois, F. M., de Souza, L. K., Svendsen, J. L., Wilkinson, R. B., & Mantzios, M. (2019). Examining the factor structure of the Self-` in 20 diverse samples: Support for use of a total score and six subscale scores. *Psychological Assessment*, *31*(1), 27–45. https://doi.org/10.1037/pas0000629

Park, H. S., Levine, T. R., Weber, R., Lee, H. E., Terra, L. I., Botero, I. C., Bessarabova, E., Guan, X., Shearman, S. M., & Wilson, M. S. (2012). Individual and cultural variations in direct communication style. *International Journal of Intercultural Relations*, *36*(2), 179–187. https://doi.org/10.1016/j.ijintrel.2011.12.010

Press, P. (n.d.). *What is the connection between mindfulness and nonviolent communication?* https://www.nonviolentcommunication.com/learn-nonviolent-communication/nvc-mindfulness/

Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the Self-Compassion Scale. *Clinical Psychology & Psychotherapy*, *18*(3), 250–255. https://doi.org/10.1002/cpp.702

Rezaei, Z., Behpajooh, A., & Ghobari-Bonab, B. (2019). The effectiveness of nonviolent communication program training on mother-child interaction in mothers of children with intellectual disability. *Journal of Rehabilitation*, *20*(1), 40–51. https://doi.org/10.32598/rj.20.1.40

Rhemtulla, M., Brosseau-Liard, PÉ, & Savalei, V. (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychological Methods*, *17*(3), 354–373. https://doi.org/10.1037/a0029315

Ritter, P., Lorig, K., Laurent, D., & Matthews, K. (2004). Internet versus mailed questionnaires: A randomized comparison. *Journal of Medical Internet Research*, *6*(3), e29. https://doi.org/10.2196/jmir.6.3.e29

Rosenberg, M. B. (2005). *Speak peace in a world of conflict: What you say next will change your world*. PuddleDancer Press.

Rosenberg, M. B., & Chopra, D. (2015). *Nonviolent communication: A language of life: Life-changing tools for healthy relationships* (3rd ed.). PuddleDancer Press.

Rutkowski, L., & Svetina, D. (2017). Measurement invariance in international surveys: Categorical indicators and fit measure performance. *Applied Measurement in Education*, *30*(1), 39–51. https://doi.org/10.1080/08957347.2016.1243540

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, *66*(4), 507–514. https://doi.org/10.1007/BF02296192

Svetina, D., Rutkowski, L., & Rutkowski, D. (2020). Multiple-group invariance with categorical outcomes using updated guidelines: An illustration using M plus and the lavaan/semtools packages. *Structural Equation Modeling: A Multidisciplinary Journal*, *27*(1), 111–130. https://doi.org/10.1080/10705511.2019.1602776

Taft, C. T., Creech, S. K., & Murphy, C. M. (2017). Anger and aggression in PTSD. *Current Opinion in Psychology*, *14*, 67–71. https://doi.org/10.1016/j.copsyc.2016.11.008

United Nations. (n.d.). *Unlocking your emotions to achieve the SDGs: Nonviolent communication*. https://www.un.org/en/academic-impact/unlocking-your-emotions-achieve-sdgs-nonviolent-communication

Wacker, R., & Dziobek, I. (2018). Preventing empathic distress and social stressors at work through nonviolent communication training: A field study with health professionals. *Journal of Occupational Health Psychology*, *23*(1), 141–150. https://doi.org/10.1037/ocp0000058

Whitaker, C., Stevelink, S., & Fear, N. (2017). The use of Facebook in recruiting participants for health research purposes: A systematic review. *Journal of Medical Internet Research*, *19*(8), e290. https://doi.org/10.2196/jmir.7071

Yang, J., & Kim, S. (2021). Effects of a nonviolent communication-based training program for inpatient alcoholics in South Korea. *Perspectives in Psychiatric Care*, *57*(3), 1187–1194. https://doi.org/10.1111/ppc.12673

Zandkarimi, G., Kamelifar, L., & Heshmati-Molaee, N. (2019). Nonviolence communication to reduce stress, anxiety and depression in young Iranian women: A randomized experiment. *Child and Adolescent Social Work Journal*, *36*(5), 549–555. https://doi.org/10.1007/s10560-018-0584-y