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Development and Validation of Perceived Self-Transformation Scale for the Satir Model

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Abstract

The Satir model greatly impacts the thinking and practice of therapists in the field of family therapy. This two-phase study aimed to validate a self-report instrument, the Perceived Self-Transformation Scale, which measures the self-transformation proposed by the Satir model. A panel of expert reviewers evaluated the content validity of the items developed by the authors. Exploratory and confirmatory analyses with 500 Chinese subjects yielded a 17-item scale with four factors, namely, self-connectedness, self-doubt, others-oriented, and openness to share. Concurrent validity of the scale was supported in the second phase of the study where 96 Chinese subjects participated. Results indicated that the scale is a reliable and valid outcome measure for the Satir model. The study can contribute to transforming Virginia Satir's work into an evidence-based practice.

Keywords Counselling · Personal growth · Satir model · Self-transformation · Well-being

The Satir Transformational Systemic Therapy (STST)

Virginia Satir was a pioneer of family therapy who published her first book *Conjoint Family Therapy* in 1964 (Satir 1964). She developed key contemporary therapeutic strategies that are still in use today (Banmen 2002; Innes 2002; Rasheed et al. 2011). She believed that an individual is fully capable of achieving meaningful personal growth that is either nurtured or blocked by the impact of his/her family system (Rasheed et al. 2011; Satir 1988; Satir and Baldwin 1983; Smith 2002). Thus, the Satir approach is known as the Satir growth model. It is also named as the Satir Transformational Systemic Therapy (STST) (Satir et al.

1991; Simon 2002). The word *transformation* in counselling and psychotherapy refers to enduring changes in behaviour and its related thoughts, feelings, motivations, and bodily responses (Brubacher 2006). Satir model presents transformation as composite changes in the way that people connect with themselves and others, including how people perceive, feel, think, communicate, and experience self-esteem and the flow of the innate positive growth tendency in their body, mind, spirit, and interpersonal relations (Satir et al. 1991). Such changes are more enduring than reduction of dysfunctional symptoms. Satir divided the transformation process into three different stages. The first stage, Making Contact, emphasizes on establishing a therapeutic relationship between therapist and family. The second stage, Chaos, is marked by confusion, disorder, and frustration for family members, while the final stage involves integrating new ideas and strategies to deal with problems at hand (Satir and Baldwin 1983). Others have further elaborated the transformation process in five or six stages. For instance, a five-stage change model has been proposed, which includes (a) Late Status Quo, (b) Resistance, (c) Chaos, (d) Integration and (e) New Status Quo (Weinberg et al. 2000). In the first stage of Late Status Quo, clients' behaviours are bounded by the implicit and explicit rules that are formed in a particular group that they are familiar with. Clients would attach survival value to those rules, even if they are harmful to them. They are unaware of the imbalance between the group and

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its environment. Therapists should encourage clients to seek new information outside the group at this stage. In the second stage of Resistance, clients confront a foreign element (the new information outside the group) that threatens the stability of familiar power structures. Clients would resist by denying the foreign element's validity, avoiding the issue or blaming others for causing the problem. Following the Resistance stage, clients would enter the Chaos stage, in which old values of the client may no longer be valid. Clients have to find a transforming idea that would tell them how the foreign element can benefit them. This marks the next stage of Integration. At this stage, clients need reassurance and help from therapists to find new resources for coping with difficulties. Once the change is well conceived and assimilated, clients would be in a new group that is better accorded with the environment, and this shapes the last stage of New Status Quo. To accomplish this transformation, Satir asserted three essential elements in her model: (a) providing families hope and instilling the belief that change is possible; (b) providing families a new angle of viewing their problems and new skills for coping stressful conditions; (c) awakening clients to the truth that they are able to make choices to change their lives.

The Satir Model and its Application on Family Therapy

Satir's work, no doubt, greatly impacts the thinking and practice of therapists in the field of family therapy (Nichols and Schwartz 1998). However, there are few empirical studies on the Satir model. A recent review article summarized the findings from a limited number of research applying Satir's therapeutic approaches, which included two unpublished master theses and two empirical studies conducted from year 2000 to 2008 (Wretman 2016). Results from these studies consistently supported the beneficial outcomes brought by the application of the Satir model. For instance, Der Pan (2000) conducted an empirical study using a quasi-experimental design to examine the effect of the STST-based intervention on students' family relationships in 56 Taiwanese college students (mean age = 22 years). The author found that the participants' relationships with their family members, measured by the Family Relationship Scale and Family-Self Scale, were significantly improved in the experimental groups compared to that of the control group. In another study, Wong and Ng (2008) demonstrated significant associations among intra-, inter- and trans-personal types of congruence in 11 Singaporean-Chinese therapists (ages 25–59) using the Congruence Scale (Lee 2002) and found significant associations between congruence, self-esteem, and overall life satisfaction. Despite the fact that Virginia Satir was a pioneer in adopting a systemic perspective in

family therapy, the number of empirical studies that examine the effectiveness of the Satir model remains very limited.

Current Assessment of the Satir Model

One possible reason for the dearth of empirical support for the Satir model is the lack of validated measures that capture therapeutic changes proposed by the Satir model. To date, there is only one published scale that specifically measures individual attributes related to changes brought about by the Satir model. Lee (2002) developed and validated the Congruence Scale based on the Satir model in 86 middle-aged subjects, predominately female and Caucasian. The Congruence Scale consists of 38 items using a 7-point Likert scale ranging from strongly disagree (score 1) to strongly agree (scores 7). The 38 items were categorized into four factors: the Intrapsychic-Interpersonal, Spiritual dimension, Creative, and Communal dimensions. The author concluded that this scale was not only suitable for evaluation of the experience and outcome of Satir workshops, but also the treatment outcomes in family therapy using the Satir therapeutic model. However, the scale only measures one construct, namely congruence, among the multi-dimensional aspects of therapeutic changes in Satir model. In addition, the sample of the study is primarily Caucasian, the application of the scale in other ethnic groups need further study.

The aim of this study was to develop and validate a self-report instrument, the Perceived Self-Transformation Scale (PSTS) to measure the self-transformation (Sayles 2002). The development of the PSTS was based on ten core components in the Satir model, including (a) self-awareness—the ability to value the internal experience including feelings, thoughts and expectations of oneself (b) acceptance—the ability to accept thoughts, feelings and vulnerabilities of oneself (c) appreciation—the ability to appreciate the resources of oneself (d) agency—the commitment of oneself to make change and practice of the new coping strategy (e) taking responsibility—with responsible attitude toward own choices, thoughts, feelings and expectations (f) choice making—the ability to make better choices (g) self-esteem, (h) congruence—a state of awareness, openness, and connection in interpersonal, intrapsychic and universal-spiritual dimensions that constitute Satir's systemic understanding of a person (Lee 2002) (i) family of origin—the subjects' satisfaction about the relationships within their family of origin and (j) curiosity—openness to new and unfamiliar experiences that may aid changes. These components are important for one to be aware of the problems of the self, accept the problems and then make changes. This study included two phases. Items development and construct validation were conducted in phase one, which included 517

participants. Concurrent validation of the PSTS was carried out in phase two, which included an independent cohort of 96 participants.

Phase 1—Method

Participants

A total of 517 Chinese participants were involved in the initial phase of the development of the PSTS. Seventeen participants were included to review the initial items of the PSTS during the items development phase. We intended to include people who are familiar with the Satir model, so that they could give comments on the precision and accuracy of each item, as well as the comprehensiveness of the scale. There are a few institutions that offer training for the Satir model in Hong Kong, for example, The Green Pastures Whole Person Development Centre, The Samaritan Befrienders Hong Kong and The Hong Kong Satir Center for Human Development. This project was collaborated with The Hong Kong Satir Center for Human Development that emphasizes on the use of this model in family therapy and counselling. Nine experts in the Satir model were recruited from the Center, and they were all trained in the Hong Kong Satir Center for Human Development. They had at least 8 years of experience with the Satir model and they were all experienced counsellors. Another 8 laypersons who had no experience in the Satir model were referred by the experts. Demographic data of these 17 subjects were not captured. Another 500 participants were recruited from the Hong Kong Satir Center for Human Development for construct validation. They were predominantly female (77.4%); most of them fell into the age range of 31–50 years (62.4%). The majority of them (87.8%) had a bachelor degree or higher. More than half of them were married (52.6%); 42.6% were single, and 4.8% were either divorced or widowed. With regard to their religion, most of them were either Christian (40.6%) or without religion (38.2%). Among the participants, 29.4% did not have previous experience with the Satir model; 33.2% had attended the Satir workshops for < 2 years; 19.0% had attended the Satir workshops for 2–5 years, and 18.2% had attended Satir workshops for 6 years or more. Details of their demographic characteristics are provided in Table 1.

Procedures

Items Development

The authors (PPYL and CLPC) generated 54 initial items that were hypothesized to operationalize perceived

Table 1 Demographic data for phase 1 (N = 500)

Age (%)	
≤ 20	0.4
21–30	21.0
31–40	32.8
41–50	29.6
51–60	13.2
> 60	3.0
Gender (male: female)	113: 387
Education level (%)	
High school	12.2
College	47.0
Postgraduate	40.8
Marital status (%)	
Single	42.6
Married	52.6
Divorced	3.8
Widowed	1.0
Religion (%)	
No religion	38.2
Christian	40.6
Catholic	11.2
Buddhist	7.8
Others	2.2
Experience in Satir model (%)	
0 year	29.4
< 2 years	33.2
2–5 years	19.0
6–10 years	9.0
11–15 years	6.8
16–20 years	1.4
> 20 years	1.0
No reported	0.2

self-transformation based on the Satir model. The identity of the two authors who developed the items were unbeknown to the 500 participants in order to minimize potential subject bias. The items were generated with reference to dimensions that are believed to be core constructs in self-transformation according to the Satir model, including (a) self-awareness, (b) acceptance, (c) appreciation, (d) agency, (e) taking responsibility, (f) choice making, (g) self-esteem, (h) congruence, (i) family of origin and (j) curiosity. A six-point Likert scale ranging from strongly agree (scores 6) to strongly disagree (score 1) was adopted in the self-report measures.

Refinement of Items

We invited 17 reviewers including 9 experts, defined by more than 8 years of experience with the Satir model, to

evaluate qualitatively on the content of the initial 54 items (Table 5 in Appendix), as well as the usefulness of the scale. They were instructed to clarify, rewrite in their entirety, or eliminate items that were ambiguous, redundant, or irrelevant to the Satir model. The following criteria were given to the reviewers in the expert panel: (a) The item can *accurately* reflect the influence of Satir intervention; (b) The item can *precisely* capture changes before and after participated in Satir intervention; (c) Each item reflects a *single* conceptualized dimension only, and (d) Items included in the scale can *comprehensively* reflect the influence of the Satir model. Another 8 laypersons who were not familiar with the Satir model were asked to confirm the clarity of the questions. After compiling the written comments from the review panels, the initial pool of items were revised, and one item was found to be problematic and was deleted, yielding 53 items that conceptualized self-transformation.

Evaluation of the Scale

A convenient sampling method was adopted. The purpose of use of this scale is to assess the self-transformation in people who will either receive treatment with the Satir model or apply the Satir model in their therapy sessions. We, therefore, invited the Hong Kong Satir Center for Human Development to help randomly send invitation to people in their contact list, including their clients who received therapy with the Satir model, participants who have joined their training workshop, and fellows who practice the Satir model in the center. The center also asked participants to refer subjects, e.g., their friends, relatives and family members, to join the study. Potential subjects bias could exist due to their different previous experience with the center. However, such bias may be minimized as subject recruitment was done randomly from the contact list from the center. The preliminary PSTS with 53 items was distributed to 507 participants. The completion rate of the questionnaire was 98.6%, yielding a final sample of 500 for factor analyses. The 500 samples were randomly divided into half. The first 250 samples were used for exploratory factor analysis (EFA); the remaining 250 samples were used for confirmatory factor analysis (CFA). The construct validity was identified using EFA in 250 samples. A principal-components analysis (PCA) using varimax rotation was adopted. The criterion of eigenvalues > 1.0 was applied. Factor loadings, item-total correlations and Cronbach's alpha were examined to identify problematic items. A cut-off loading of 0.4 was applied to eliminate items with low association with the construct (Ferguson and Cox 1993).

Confirmatory factor analyses (CFA) were then employed to further refine the construct and evaluate the model fit in another 250 samples. Goodness-of-fit was indicated by standard criteria including ratio of Chi square to its degrees of freedom (CMIN/DF) < 3; comparative fit index (CFI) and Tucker–Lewis index (TLI) > 0.9, and root mean square error of approximation (RMSEA) < 0.08 (Kline 2005).

Data Analysis

Descriptive statistics, internal consistency, EFA, and Pearson's correlation were performed using IBM SPSS Statistics 23.0. CFA was conducted using IBM SPSS Amos v20.0. *P*-values less than 0.05 are regarded as statistically significant.

Ethical Considerations

This study was approved by Human Research Ethics Committee for Non-Clinical Faculties of The University of Hong Kong (EA570114). All participants were volunteers in this study, and each participant completed a written informed consent form.

Phase 1—Results and Discussion

Factor Analysis

Results from EFA showed that 21 out of the 53 items had a factor loading of at least 0.4; following the criterion of eigenvalue > 1, four factors were identified. The four-factor structure with 21 items accounted for 48.5% of the total variance. The 21 items retained most of the core constructs in self-transformation according to the Satir model except (a) taking responsibility and (b) family of origin. The construct validity of the four-factor model was further confirmed by CFA in another 250 samples. Four problematic items were identified at this stage based on the modification indices and being eliminated, yielding a final set of 17 items (PSTS-17) for the second stage of evaluation. The resultant 17 items retained most of the core constructs in self-transformation except (a) taking responsibility, (b) family of origin and (c) choice making. The goodness-of-fit indices Chi square (χ^2) = 214.69, degrees of freedom = 111, CMIN/DF = 1.934, CFI = 0.919, TLI = 0.901 and RMSEA = 0.061 demonstrated good construct validity of the four-factor model with 17 items. The four factors were labelled as *Self-connectedness* (factor 1, items 1–6); 2. *Self-doubt* (factor 2, items 7–10); *Others-oriented* (factor 3, items 11–14), and *Openness to share* (factor 4, items 15–17). Factors were labelled according to the meaning of items and the core constructs reflected in the items that were included in each factor. The higher the scores, the greater the perceived presence of the characteristics in the total and subscales of the PSTS-17, except for the reverse coded self-doubt subscale, for which higher

Table 2 Factor loadings of the 17 items

Items	Factor loadings			
	Factor 1	Factor 2	Factor 3	Factor 4
1. I appreciate I am willing to face difficulties	**0.6705**	0.1267	0.0682	0.2165
2. I am aware of my emotional responses when facing stress	**0.5114**	0.0971	0.0191	0.1841
3. I am willing to spend time to understand myself	**0.6098**	0.1384	0.0188	0.2783
4. I can feel my vitality	**0.6077**	0.2923	0.1453	0.0687
5. When I feel upset or puzzled, I observe and understand myself with my curiosity	**0.6966**	0.1249	0.2364	-0.0054
6. I am willing to make changes	**0.4921**	0.0878	0.0836	0.0896
7. People dislike me because I am not good enough	0.1265	**0.6213**	0.3434	0.0797
8. I doubt my value of existence sometimes	0.1930	**0.7590**	0.1697	0.0772
9. When I have some negative feelings (e.g. anger, anxiety, fear), I don't like myself	0.2068	**0.5295**	0.2215	0.0855
10. Sometimes I think that I am useless	0.2482	**0.7698**	0.1846	0.0960
11. I satisfy other people first regardless of my own needs	0.0617	0.1967	**0.5551**	0.0316
12. I try to avoid facing conflicts	0.1616	0.0500	**0.6111**	0.0904
13. When I have different opinions with others, I hide my own opinions	0.1557	0.1575	**0.5538**	0.2403
14. I try my best to live up to others' expectations	− 0.0031	0.1425	**0.6203**	− 0.0389
15. I tell others my worries and puzzle	0.3064	0.1059	0.0314	**0.8194**
16. I express my own needs	0.3304	0.2947	0.2990	**0.4445**
17. I share my feelings with others	0.4566	0.0795	− 0.0027	**0.5590**

Items that were grouped to the factor were bold

scores reflect lower levels of self-doubt. Table 2 presents the factor loading of each item (≥ 0.4) in the four factors. Item 17 "I share my feelings with others" was regarded as problematic because it had a factor loading > 0.4 in both factor 1 and 4. The double loading across factor 1 and 4 may be explained by the fact that we have to be aware of our own feelings (*Self-connectedness*) before we can share with others (*Openness to share*). This item was retained, however, in factor 4 (with a higher factor loading than factor 1) in order to maintain a minimum of 3 items in the factor (Table 6 in Appendix).

Internal Consistency

The Cronbach's alpha of the PSTS-17 was 0.85, indicating a good reliability. The Cronbach's alphas for Self-connectedness, Self-doubt, Others-oriented and Openness to share were 0.76, 0.84, 0.68 and 0.69 respectively, suggesting an acceptable to good reliability.

Phase 2

In phase 2, the concurrent validity of the PSTS-17 was determined in 96 participants who were enrolled for the Satir personal growth workshop at the Hong Kong Satir Center for Human Development during the study period.

The Satir personal growth workshop is an intensive training programme that comprises of three and a half consecutive days of 21 h. It is based on the Satir model with the emphasis on strengthening self-awareness and self-esteem as well as facilitating congruent communication.

Phase 2—Method

Participants

The 96 respondents were predominately female (83.3%); they were mainly young adults from 21 to 50 years old (90.6%). The majority of them (90.6%) had a bachelor degree or higher. With regard to their marriage status, 45.8% were married, 46.9% were single, and 7.3% were divorced. Most of them were either Christian (45.8%) or without religion (42.7%). In summary, our studied cohort were mainly female Chinese with high education background. Details of their demographic characteristics are provided in Table 3.

Procedure

The PSTS-17 was distributed to 96 participants (phase 2) who enrolled in the Satir workshop during the study period to measure concurrent validity of PSTS-17. The following battery of validation scales in Chinese were selected for validation of the PSTS-17 and its subscales: (a) Rosenberg Self-esteem Scale. It consists of 10 items using a 4-point Likert
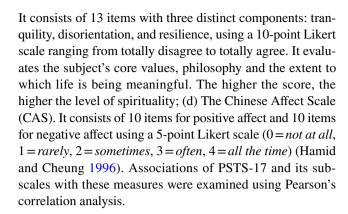
Table 3 Demographic data for phase 2 (N = 96)

Age (%)	
21–30	29.2
31–40	33.3
41–50	28.1
51–60	9.4
Gender (male: female)	16: 80
Education level (%)	
High school	9.4
College	53.1
Postgraduate	37.5
Occupation (%)	
Social sector	37.5
Education sector	13.0
Business sector	24.8
Health sector	9.9
Others	14.9
Marital status (%)	
Single	46.9
Married	45.8
Divorce	7.3
Religion (%)	
No religion	42.7
Christian	45.8
Catholic	6.5
Buddhist	3.2
Others	2.1
Measures [mean (SD)]	
PSTS-17 total	16.39 (1.78)
Self-connectedness	4.74 (0.60)
Self-doubt	3.39 (1.28)
Others-oriented	4.06 (0.92)
Openness to share	4.20 (0.90)
Positive affect	2.86 (0.59)
Negative affect	1.88 (0.66)
Self-esteem	2.75 (0.47)
GHQ-12	2.13 (0.58)
S-BMS13	6.56 (1.48)

GHQ general health questionnaire, *S-BMS* spirituality subscale of the body-mind spirit well-being inventory, *PSTS* perceived self transformation scale, *SD* standard deviation

scale ranging from strongly agree to strongly disagree. The higher the score, the higher the reported self-esteem (Rosenberg 1965); (b) A short form of General Health Questionnaire (GHQ-12) (Pan and Goldberg 1990). It is the most commonly used assessment tool for common mental disorders, in addition to being a general measure of psychiatric well-being. It consists of 12 items using a 4-point Likert scale. The higher the score, the higher the levels of self-reported psychiatric impairment; (c) The spirituality subscale of the Body-Mind Spirit Well-Being Inventory (S-BMS-13) (Ng et al. 2005).

It consists of 13 items with three distinct components: tranquility, disorientation, and resilience, using a 10-point Likert scale ranging from totally disagree to totally agree. It evaluates the subject's core values, philosophy and the extent to which life is being meaningful. The higher the score, the higher the level of spirituality; (d) The Chinese Affect Scale (CAS). It consists of 10 items for positive affect and 10 items for negative affect using a 5-point Likert scale ($0 = $ *not at all*, $1 = $ *rarely*, $2 = $ *sometimes*, $3 = $ *often*, $4 = $ *all the time*) (Hamid and Cheung 1996). Associations of PSTS-17 and its subscales with these measures were examined using Pearson's correlation analysis.

Phase 2—Results and Discussion

Concurrent Validity

Concurrent validity was tested using the correlation of the PSTS-17 that reflects a general state of self-transformation and its subscales with four measures that focus on the areas of affect, self-esteem, mental health status and spirituality. Pearson's correlation analysis indicated that the general state of *Self-transformation* had a significant and moderate negative correlation with negative affect in the CAS (r = −0.338, p < 0.0001) and GHQ-12 (r = −0.319, p = 0.002). The PSTS-17 also had a significant and strong positive correlation with self-esteem (r = 0.513, p < 0.0001) and S-BMS-13 (r = 0.576, p < 0.0001). For the subscales analysis, *Self-connectedness* had a significant small correlation with self-esteem (r = 0.292, p = 0.004), and a significant moderate positive correlation with S-BMS-13 (r = 0.445, p < 0.0001). *Self-doubt* had a significant moderate negative correlation with negative affect (r = −0.382, p < 0.0001) and GHQ-12 (r = −0.443, p < 0.0001). *Self-doubt* also had a significant strong positive correlation with self-esteem (r = 0.804, p < 0.0001) and S-BMS-13 (r = 0.680, p < 0.0001). *Others-oriented* had a significant moderate negative correlation with self-esteem (r = −0.428, p < 0.0001) and S-BMS-13 (r = −0.328, p = 0.001). *Others-oriented* also had a significant moderate positive correlation with GHQ-12 (r = 0.319, p = 0.002). *Openness to share* had a significant moderate negative correlation with negative affect (r = −0.306, p = 0.002) and a small negative correlation with GHQ-12 (r = −0.248, p = 0.015). *Openness to share* also had a significant moderate positive correlation with S-BMS-13 (r = 0.302, p = 0.003). The correlation matrix is shown in Table 4.

General Discussion

Results from the current study indicate that the PSTS-17 is a reliable and valid measure for the core constructs of self-transformation in the Satir model for Chinese cohort

Table 4 Concurrent validity of the PSTS-17 and its subscales (N = 96)

Measures	Pearson's correlation coefficient r (*p*-value)				
	Global PSTS-17	Self-connectedness	Self-doubt	Others-oriented	Openness to share
Positive affect	0.163 (0.112)	0.093 (0.369)	0.177 (0.085)	−0.062 (0.551)	0.099 (0.339)
Negative affect	**−0.388** (< 0.0001)	−0.148 (0.151)	**−0.382** (< 0.0001)	0.117 (0.257)	**−0.306** (0.002)
Self-esteem	**0.513** (< 0.0001)	**0.292** (0.004)	**0.804** (< 0.0001)	**−0.428** (< 0.0001)	0.194 (0.059)
GHQ-12	**−0.319** (0.002)	−0.194 (0.059)	**−0.443** (< 0.0001)	**0.319** (0.002)	**−0.248** (0.015)
S-BMS-13	**0.576** (< 0.0001)	**0.445** (< 0.0001)	**0.680** (< 0.0001)	**−0.328** (0.001)	**0.302** (0.003)

GHQ general health questionnaire, *PSTS* perceived self transformation scale, *S-BMS* spirituality subscale of the Body-Mind Spirit Well-Being Inventory. Significant correlation coefficients were bold

in Hong Kong. The PSTS-17, as well as its subscales demonstrated good correlations with affect, self-esteem, mental health status and spirituality that are emphasized in the "transformation". Details of these subscales were discussed in the later part of this section. The concurrent validity of the PSTS-17 was evidenced by significant associations with perceived negative affect, self-esteem, mental health problems and spirituality, but not perceived positive affect. Although there is a general concept on the positive outcomes brought by Satir interventions, one should note that positive affect is not the direct opposite to negative affect. Instead, they are two independent dimensions (Vohs and Finkel 2006). Our findings propose that Satir interventions-induced positive outcomes may be via the reduction of negative affect. The strengths of the current study are that we included both experts in the Satir model and laypersons in the review panel to evaluate the content and usefulness of the PSTS, which increase the generalizability of its application to the general public. Furthermore, we adopted a relatively large sample size to validate the construct, which fulfills the requirement of including a minimum of 10 responses for each item in doing factor analysis (Nunnally 1978).

The Four Dimensions Assessed by the PSTS-17

Self-Connectedness

This subscale includes six items that assess how well a person connects to self. For instance, "I appreciate I am willing to face difficulties" measures self-appreciation; "I am aware of my emotional responses when facing stress" measures self-awareness; "I am willing to spend time to understand myself" and "When I feel upset or puzzled, I observe and understand myself with my curiosity" measure the level of curiosity towards self; "I can feel my vitality" measures the self-esteem of a person, and "I am willing to make changes" measures the willingness of a person to take action to make changes. According to the STST, self-appreciation, awareness, curiosity to self, self-esteem and willingness to take action for a change are core components that need to be

cultivated for personal growth and development (Satir and Baldwin 1983). In particular, awareness of problems and willingness to change are very important in the initial stage to both the therapist and the client in determining the success of family therapy. Findings from the concurrent validity examination further confirmed that the self-connectedness subscale was associated with self-esteem and spirituality. Although cultivation of self-connectedness is likely to impact emotions (Khoury et al. 2015), our findings suggest that the subscale of self-connectedness is unrelated to perceived affect and mental health problems.

Self-Doubt

This subscale includes four items that assess the level of self-doubt in the affective and self-esteem dimensions. It mainly focuses on the acknowledgement of one's negative feelings. For example, items such as "People dislike me because I am not good enough", "I doubt my value of existence sometimes" and "When I have some negative feelings (e.g. anger, anxiety, fear), I don't like myself" assess the level of acknowledgement of a person of his/her negative feelings, which is the emphasis in the Chaos stage that is vital to the transformation process (Satir and Baldwin 1983). Another item focusing on self-esteem is also grouped into this subscale, i.e. "Sometimes I think I am useless". High level of self-doubt was associated with high level of perceived negative affect and mental health problems. It is also strongly associated with self-esteem and spirituality. Changes in this subscale would be a good indicator of the progress from the Satir's therapy.

Others-Oriented

Satir emphasized that congruent communication could happen only when a person could attend concurrently to "the Self", "the Other" and "the Context" (Miller and McLendon 2010). This subscale includes four items that assess the part of "the Other" in the universe of one's reality. For example, "I satisfy other people first regardless of my own needs",

"When I have different opinions with others, I hide my own opinions", and "I try my best to live up others' expectations". Miller and McLendon (2010, p. 8) stated that "when one is oriented towards the Other, protection will likely be a diminished assertion of the Self and a placating response emerges". This subscale demonstrated an inverse correlation of others-oriented with self-esteem and spirituality, and a positive correlation with mental health problems. These findings echo the importance of paying concurrent attention to the Self in order to achieve congruence.

Openness to Share

This subscale measures the tendency of a person to share his/her feelings and needs with others. Sharing is an important component in establishing trust and a good relationship between the therapist and client in a therapy as well as among family members. Sharing helps validate, integrate and transform appreciations to benefits and complaints to solutions within a family (Brothers 1991). Support was provided for the concurrent validity of this subscale in that greater tendencies to share were associated with less perceived negative affect and mental health problems, and high spirituality.

Application of PSTS-17

To the best of our knowledge, this is the first validated scale that measures the concept of transformation in the Satir transformational systemic therapy. The PSTS-17 was validated by participants with varying types and levels of experience (0–20 years or above) with the Satir model, including clients, participants and therapists. The purpose of use of this scale is to evaluate the self-transformation. Target users should have experience in practicing or at least knowledge in the Satir model. This scale can be administered to clients in need before and after a series of therapy sessions utilizing the Satir model, or to counsellors before and after joining a Satir training workshop, to evaluate changes in the self-transformation. The authors did not intentionally involve any elements of Chinese culture in this scale. However, the scale is developed by Chinese and the scale is also in Chinese, some Chinese culture might be unintentionally embedded in the scale. According to Cheung and Chan (2002), an effective transformation or change must survive in the cultural milieu. We, therefore, believe that this scale would be suitable for assessing self-transformation in Chinese, particularly Hong Kong Chinese.

Limitations

There are several limitations in the current study. First, the finalized questionnaire (PSTS-17) was distributed only once, the test–retest reliability of the construct was not estimated in this study. Second, subjects were relatively homogeneous in this study, as highly educated females were overrepresented in the sample. The validity and reliability of this construct need to be further evaluated in both genders and in people with different education levels. Given that all participants were from the same center in this study, potential subjects bias could exist due to their different previous experience with the center. Such bias may be minimized as subject recruitment was done randomly from the contact list from the center. Finally, as the study was conducted with a Chinese population, its generalizability to other populations would need further evaluation, for example, the wording of some of the items might be interpreted differently by a native English-speaking population such as the Chinese "self" and "self-esteem" (Chang 1996), which needs to be revisited in that context.

Conclusion

The PSTS-17 assesses four dimensions related to Satir's therapeutic approaches: self-connectedness, self-doubt, others-oriented and openness to share. The finding suggest it is a reliable and valid measure for the constructs of self-transformation in Chinese cohort in Hong Kong. This study provides a testable framework for the Satir Transformational Systemic Therapy and hopefully could contribute to the transformation of Virginia Satir's work into an evidence-based practice.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Appendix

See Tables 5 and 6.

Table 5 自我轉變量表 (Perceived Self-Transformation Scale)

	Chinese	English	非常同意 Strongly agree	同意 Agree	有些同意 Slightly agree	有些不同意 Slightly disagree	不同意 Disagree	非常不同意 Strongly disagree
1	我留意到我在遇到壓力時的情緒反應。	I am aware of my emotional reactions under stress	6	5	4	3	2	1
2	我留意到此時此刻我的內在經歷。	I am aware of my inner experience in the moment	6	5	4	3	2	1
3	當我憤怒時,我留意到自己的感受和想法。	When I feel angry, I am aware of my feelings and thoughts	6	5	4	3	2	1
4	我會告訴他人我的困惑和擔憂。	I will share my puzzle and worries with others	6	5	4	3	2	1
5	當我出現一些負面的感受時(例如:憤怒), 我會不喜歡自己。	I dislike myself for having certain feelings, e.g. anger	6	5	4	3	2	1
6	我接納我的過去。	I accept my past	6	5	4	3	2	1
7	當事情弄垮了, 我會怪責自己。	I blame myself when things go wrong	6	5	4	3	2	1
8	我未能接受自己的一些缺點。	I cannot accept some of my limitations	6	5	4	3	2	1
9	我接納我的父母。	I accept my parents	6	5	4	3	2	1
10	我經常感到自己做得不夠好。	I always feel that I am not good enough	6	5	4	3	2	1
11	因爲我不夠好,所以別人不喜歡我。	It must be I am not good enough if someone is not happy with me	6	5	4	3	2	1
12	我質疑自己的存在價值。	I doubt my value of existence	6	5	4	3	2	1
13	我對自己一些想法感到困擾及束縛。	I feel puzzled and restricted by some of my thoughts	6	5	4	3	2	1
14	我接納我有不同的感受 - 正面的和負面的	I accept all my feelings—positive or negative	6	5	4	3	2	1
15	當別人的做法與我期望不同會令我很困擾。	People irritate me when they don't do things the way I expect them to be done	6	5	4	3	2	1
16	當我面對痛苦時,我會給予自己肯定的訊息	when I am in pain. I give myself affirmative message	6	5	4	3	2	1
17	我欣賞自己願意面對困難	I appreciate myself in face difficulties	6	5	4	3	2	1
18	我經常給予自己肯定的訊息。	I always give myself messages of affirmation	6	5	4	3	2	1
19	當自己已盡力時,我會讚賞自己。	When I have tried my best, I appreciate myself	6	5	4	3	2	1
20	我常對他人表達欣賞與感謝。	I express appreciations for others	6	5	4	3	2	1
21	我會向人分享我的一些感受。	I will share with others my feelings	6	5	4	3	2	1
22	我會冒險,嘗試作出改變。	I will take risk and try to make changes	6	5	4	3	2	1
23	我會表達自己的需要。	I will express my needs	6	5	4	3	2	1
24	我感到很難表達自己的需要。	I find it hard to express my needs	6	5	4	3	2	1
25	我盡量避免面對衝突。	I avoid addressing conflicts	6	5	4	3	2	1
26	我今天的難題,是受家人影響的。	My present difficulty is the result of my family influence	6	5	4	3	2	1
27	我過去的經歷成爲我成長的障礙。	My past experience is blocking my personal growth	6	5	4	3	2	1
28	對於一些不喜歡的習慣仍然繼續,我覺得難以改變。	I find it hard to change some of my habits despite I don't like them	6	5	4	3	2	1
29	我怨恨曾傷害我的人。	I have resentment against people who have hurt me	6	5	4	3	2	1
30	我不懂得如何作最好的選擇。	I don't know how to make the best choice for myself	6	5	4	3	2	1

Table 5 (continued)

	Chinese	English	非常同意 Strongly agree	同意 Agree	有些同意 Slightly agree	有些不同意 Slightly disagree	不同意 Disagree	非常不同意 Strongly disagree
31	一些我的固有想法限制了我的自由。	My freedom is limited by some of my thoughts	6	5	4	3	2	1
32	我盡量嘗試滿足別人對我的期望。	I try my best to live up to others' expectations of me	6	5	4	3	2	1
33	如其處於被動,我會主動作選擇。	Instead of acting passively, I exercise my power to make choices	6	5	4	3	2	1
34	總括來說,我對自己感到滿意。	In general, I am satisfied with myself	6	5	4	3	2	1
35	我愛自己。	I am loving towards myself	6	5	4	3	2	1
36	有些時候,我覺得自己完全沒有用。	Sometimes I feel I am useless	6	5	4	3	2	1
37	我是有價值的。	I am worthy	6	5	4	3	2	1
38	我覺得自己沒有什麼值得引以自豪的地方。	I find nothing that I can proud of myself	6	5	4	3	2	1
39	我相信我有能力解決生活上的難題。	I know I have resources to solve life's problems	6	5	4	3	2	1
40	我感受到自己的生命力。	I am in touch with my life force	6	5	4	3	2	1
41	我願意接納別人對我的愛。	I am open to others' love towards me	6	5	4	3	2	1
42	當他人與我意見不和時,我會馬上與他們講道理。	When there is a disagreement, I will immediately put forward my reasoning to the other party	6	5	4	3	2	1
43	當他人與我意見不合時,我會批評他們。	When there is a disagreement, I will criticize the other party	6	5	4	3	2	1
44	當我和他人意見不和時,我會轉換話題,緩和一下氣氛。	When there is a disagreement, I will change the subject of the conversation so as to lessen the tension	6	5	4	3	2	1
45	當我和他人意見不合時,我會若無其事,不聞不問。	When there is a disagreement, I will ignore the other party and turn away	6	5	4	3	2	1
46	當我有不滿時,我會表達並提議改善方法。	When I have dissatisfaction, I will express and make suggestions	6	5	4	3	2	1
47	當我和他人意見不和時,我會收起自己的意見。	When there is a disagreement, I will shut up	6	5	4	3	2	1
48	我會不顧自己的需要,先去滿足他人。	I will put aside my own needs in order to satisfy others	6	5	4	3	2	1
49	家人對我壞的影響多於好的影響。	My family's influence on me is more harmful than beneficial	6	5	4	3	2	1
50	我了解我與父母相似和相異之處。	I know I have some similarity with my parents but at the same time I am different with them in other aspects	6	5	4	3	2	1
51	我欣賞我與父母有相似和相異之處。	I appreciate that I have some similarity with my parents but at the same time are different with them in other aspects	6	5	4	3	2	1
52	當我和別人的意見不和時,我有興趣了解和明白對方的感受和想法。	When there is a disagreement, I am curious to learn more about how the other party is feeling and thinking	6	5	4	3	2	1
53	我花時間去了解和明白自己。	I spend time to understand myself	6	5	4	3	2	1
54	當我不安和困惑時,我會用好奇心去觀察和了解自己。	When I am distressed or puzzled, I will use my curiosity to observe and understand myself	6	5	4	3	2	1

Table 6 Perceived Self-Transformation Scale (PSTS-17)

請在以下每一項的六種答案中圈出你認爲最能表達你的情況的答案。Please circle the answer that could best describe your situation for each of the following sentence

	非常不同意 Strongly Disagree	不同意 Disagree	有些不同意 Slightly Disagree	有些同意 Slightly Agree	同意 Agree	非常同意 Strongly Agree
1 我欣賞自己願意面對困難。 I appreciate I am willing to face difficulties	1	2	3	4	5	6
2 我留意到我在遇到壓力時的情緒反應。 I am aware of my emotional responses when facing stress	1	2	3	4	5	6
3 我願意花時間去了解和明白自己。 I am willing to spend time to understand myself	1	2	3	4	5	6
4 我體驗到自己的生命力。 I can feel my vitality	1	2	3	4	5	6
5 當我感到不安和困惑時,我會用好奇心去觀察和了解自己。 When I feel upset or puzzled, I observe and understand myself with my curiosity	1	2	3	4	5	6
6 我願意作出改變。 I am willing to make changes	1	2	3	4	5	6
7 因爲我不夠好,所以別人不喜歡我。 People dislike me because I am not good enough	1	2	3	4	5	6
8 有些時候,我質疑自己的存在價值。 I doubt my value of existence sometimes	1	2	3	4	5	6
9 當我出現一些負面的感受時(例如: 憤怒、焦慮、恐懼),我會不喜歡自己。 When I have some negative feelings (e.g. anger, anxiety, fear), I don't like myself	1	2	3	4	5	6
10 有些時候,我覺得自己完全沒有用。 Sometimes I think that I am useless	1	2	3	4	5	6
11 我會不顧自己的需要,先去滿足他人。 I satisfy other people first regardless of my own needs	1	2	3	4	5	6
12 我盡量避免面對衝突。 I try to avoid facing conflicts	1	2	3	4	5	6
13 當我和他人意見不合時,我會收起自己的意見。 When I have different opinions with others, I hide my own opinions	1	2	3	4	5	6
14 我盡量嘗試滿足別人對我的期望。 I try my best to live up to others' expectations	1	2	3	4	5	6
15 我願意告訴他人我的困惑和擔憂。 I tell others my worries and puzzle	1	2	3	4	5	6
16 我會表達自己的需要。 I express my own needs	1	2	3	4	5	6
17 我會向人分享我的一些感受。 I share my feelings with others	1	2	3	4	5	6

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