

Development and Validation of the Tamil Version of Gerotranscendence Scale among Institutionalised Elderly People in Chennai, India: A Cross-sectional Study

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ABSTRACT

Introduction: The concept of gerotranscendence reflects a shift in an individual's understanding of self, relationships and existential perspectives in later life. Validated tools to assess this construct in Indian regional languages are limited particularly for populations living in long-term care settings.

Aim: To translate, culturally adapt and validate the Tamil version of the Gerotranscendence Scale (GTS-T) among Institutionalised elderly in Chennai, Tamil Nadu, India.

Materials and Methods: A cross-sectional study was carried out among the 182 elderly residents aged ≥ 65 years. The 10-item GTS was translated into Tamil following standard World Health Organisation (WHO) forward-backward translation and expert review protocols. Content validity was assessed using the Content Validity Index (CVI). Convergent validity was examined through the correlation with the Sense of Coherence (SOC) scale, while discriminant validity was established by comparing GTS-T scores between participants with (Group I, n=40) and without (Group II, n=40) Oral Frailty (OF). Cross-cultural validity was tested using Confirmatory Factor Analysis (CFA) with a three-factor model. Reliability was assessed through

internal consistency (Cronbach's α) and test-retest stability using the Intraclass Correlation Coefficient (ICC).

Results: Among 182, 94 (51.6%) were males and 88 (48.4%) were females with the mean age 71.8 ± 5.4 years. The GTS-T showed significant content validity (I-CVI=0.60-1.00; S-CVI=0.88). CFA supported a three-factor model cosmic, coherence, and solitude with factor loadings above 0.40. Convergent validity demonstrated a moderate positive correlation with the SOC scale ($r=0.56$, $p<0.001$). Discriminant validity was supported by significantly higher GTS-T scores among participants without OF (22.3 ± 3.8) than those with frailty (18.7 ± 4.3 ; $p=0.03$). The scale demonstrated good internal consistency (Cronbach's $\alpha=0.86$) and strong test-retest reliability varied across items (ICC range: 0.192-0.862), indicating heterogeneous temporal stability with some items demonstrating poor reliability.

Conclusion: The GTS-T showed satisfactory psychometric properties, including content, convergent, discriminant and cross-cultural validity along with high internal consistency and test-retest reliability proving its suitability for Tamil-speaking elderly populations.

Keywords: Confirmatory analysis, Content validity, Psychometric properties

INTRODUCTION

Ageing is a complex and multidimensional process influenced by interactions between biological, psychological and the social determinants. These influences accumulate over the life course and manifest as changes in physical capability, cognitive function, emotional regulation and social engagement [1]. According to the most recent national census, individuals aged between 60 years and above constituted 8.6% of India's population representing more than 100 million older adults [2]. More recent demographic estimates show that around 6.9% of the population was aged 65 years and above in 2023 and projections suggest that by 2050 nearly one-fifth of Indians will be over the age of 60 totalling approximately 347 million people [3,4]. This demographic shift has significant implications for public health in India, indicating the importance of focusing not only on medical needs but also the psychosocial and existential dimensions of ageing that directly influence quality of life.

The ageing process is characterised by significant psychological changes that are often as profound as physical ageing [5]. Many older adults undergo shifts in worldview, engage in deeper self-reflection and re-evaluate personal priorities as they navigate late life [6]. Tornstam's theory of gerotranscendence conceptualises this developmental change as a natural progression toward

wisdom, connectedness and transcendence beyond the self [7,8]. Understanding these psychological developments across diverse cultural contexts is essential for shaping comprehensive geriatric care models [9].

GTS, developed by Tornstam, is a widely used scale to measure these existential dimensions in older adults [10]. The scale evaluates the main domains such as self-transcendence, cosmic transcendence and social selectivity providing the structured framework to capture the psychological growth in late life. Cross-cultural adaptation of tools such as the GTS is critical to ensure the cultural relevance, conceptual equivalence and accurate interpretation of psychological constructs across the diverse settings [11]. Previous adaptations of the scale have demonstrated the acceptable validity and reliability reinforcing its applicability in multicultural environments [12,13]. Despite India's rapidly expanding elderly population no validated version of the GTS currently exists in any Indian language. Tamil is one of the most widely spoken regional languages and Tamil-speaking older adults constitute a significant proportion of the geriatric population in South India [14]. Linguistically and culturally adapted GTS has the ability to enable clinicians, researchers and caregivers to assess the existential dimensions of ageing within this community. The present study aimed to develop and validate a Tamil version of the GTS among Institutionalised older adults aged 65 years and above in Chennai, India.

MATERIALS AND METHODS

This cross-sectional validation study was conducted between May 2025 - June 2025 among Institutionalised geriatric population aged 65 years and above residing in selected residential care homes across Chennai, Tamil Nadu, India. The city was split into four geographical zones which is south, east, west and north and from these areas both free and paid old age homes from each zone were chosen using cluster random sampling. Data collection was carried out within these Institutions after obtaining permission from the concerned authorities and ethical approval was obtained from the Institutional Review Board (MADC /IEC/1/08/2025). Written informed consent was obtained from all participants prior to participation.

Inclusion criteria: Participants were elderly residents aged 65 years and above who were able to understand and respond in Tamil were included and individuals with intact orientation and comprehension were included irrespective of systemic health conditions

Exclusion criteria: Elderly individuals who refused to participate, history of major psychiatric illness and current use of psychotropic medications were excluded.

Sample size determination: Sample size estimation was followed by the recommendations of Terwee CB et al., which suggest enrolling at least seven respondents per questionnaire item in addition to hundred participants for Factor Analysis (FA) [15]. As the GTS (Type 2) consists of 10 items, the sample size was estimated to be 70. Adding an additional hundred participants for FA made the final sample size 170. A total of 182 individuals who met the inclusion criteria across the selected Institutions were included.

Study Procedure

GTS translation and cultural adaptation process: The original 10-item GTS (Type 2) [ANNEXURE 1] which measures the domains of cosmic transcendence, coherence and solitude was translated and culturally adapted to Tamil using procedures recommended by International Society for Pharmacoeconomics and Outcomes Research (ISPOR) and World Health Organisation (WHO) and WHO translation guidelines [15,16].

The adaptation process involved the following four sequential steps. The first step was forward translation where the two independent bilingual translators that is one dental public health researcher and one Tamil language expert had translated the English version into Tamil. Both the versions were reviewed and harmonised into Tamil draft followed by backward translation where the two different bilingual experts were blinded to the original English version and backtranslated the Tamil draft into English. Discrepancies found between the back-translated and original versions were discussed and resolved. Thirdly Expert committee review was conducted where the expert panel consisting of six bilingual professionals including psychologists, public health dentists, prosthodontists evaluated the semantic, conceptual and cultural equivalence of the translated items. Necessary modifications were made to produce the pre-final Tamil version and the final step was pilot testing where the pre-final version was pilot tested among the 50 elderly individuals to evaluate the clarity, comprehension and cultural appropriateness. Participants feedback and minor linguistic adjustments were included to derive the final Tamil version (GTS-T) [ANNEXURE 2].

Data collection: Demographic and health-related information including age, gender, education level, medical and habit history were collected through interviewer-administered forms. Participants were then assessed using the GTS-T and the Sense of Coherence (SOC) scale [18]. OF was also evaluated using OF-5 checklists [19]. Each participant interview lasted approximately 20 minutes.

Gerotranscendence Scale (GTS): The Gerotranscendence Scale (GTS) is a self-reported instrument designed to assess the concept of gerotranscendence in older adults. The original scale consists of 10 items covering three dimensions: cosmic transcendence,

coherence, and solitude. Each item is scored on a Likert-type scale, with higher scores indicating a higher level of gerotranscendence for 182 individuals. The total score is obtained by summing the item scores [12,13].

Sense of Coherence Scale (SOC): The SOC scale [18] was used to assess convergent validity. It consists of 13 items scored on 7-point semantic differential scales (1-7 per item; total range 13-91, higher scores indicate stronger SOC across comprehensibility, manageability, and meaningfulness). The SOC scale evaluates an individual's ability to perceive life as comprehensible, manageable, and meaningful. It consists of multiple items scored on a Likert-type scale, with higher scores indicating a stronger SOC. The SOC scale has been widely validated and used in geriatric and psychosocial research.

Oral Frailty-5 (OF-5) Scale: The OF-5 is a screening tool used to assess OF in older adults. It consists of five items including chewing difficulty, swallowing problems, dry mouth, fewer teeth and oral motor function (each yes=1 point). Total score range 0-5; ≥ 2 indicates OF. Participants are classified as frail or non frail based on the total score [19]. In the present study, the OF-5 scale was used to evaluate discriminant validity by comparing GTS-T scores between frail and non frail groups.

STATISTICAL ANALYSIS

The GTS-T was evaluated by six bilingual experts using Farhad Yaghmaie criteria (2003) for relevance, clarity, simplicity and ambiguity [6]. Polit DF et al., recommends CVI ≥ 0.78 (for ≥ 6 experts) and S-CVI/Ave ≥ 0.90 as evidence of excellent content validity. Hence, Item-wise and Scale-wise CVI (I-CVI and S-CVI) were calculated with ≥ 0.80 considered acceptable [20]. CFA was used to assess the cross-cultural validity. The GTS-T was tested using a three-factor structure model representing the dimensions of cosmic, coherence and solitude. Standardised factor loading values above 0.4 were considered acceptable. The convergent validity was examined by correlating GTS-T scores with those of the SOC scale using Spearman's rank correlation. The correlation strengths were categorised as poor (0 - 0.20), fair (0.21 - 0.40), moderate (0.41 - 0.60), good (0.61 - 0.80) and excellent (0.81 - 1.0). In discriminant validity the participants were classified based on OF status using the OF-5 and GTS-T scores were compared between frail and non frail groups using the Mann-Whitney U test. Differences in mean and median scores were analysed to assess the instrument's ability to discriminate between groups. A subset of 80 participants (40 with oral frailty, 40 without) was randomly selected from the full sample (n=182) using stratified random sampling to create balanced, equal-sized groups optimal for Mann-Whitney U test statistical power ($>80\%$ power to detect medium effect sizes, $d=0.5$ at $\alpha=0.05$). This approach maximizes test sensitivity while reserving the complete cohort (n=182) for primary analyses.

Reliability was evaluated through internal consistency and test-retest stability. For temporal stability, a total of 50 participants were reassessed after a four-week interval and test-retest reliability was evaluated using ICC. Stability testing was performed only after confirming no major health or cognitive changes between assessments. Cronbach's alpha values between 0.70 and 0.95 and inter-item correlation values between 0.20 and 0.50 were considered indicative of adequate internal consistency [21].

RESULTS

A total of 182 Institutionalised elderly participants aged 65 years and above were included. Mean age of the participants was 71.8 ± 5.4 years. Among them, 94 (51.6%) were males and 88 (48.4%) were females [Table/Fig-1].

Content Validity

The I-CVI values for the GTS-T ranged from 0.60 to 1.00, with Item 4 demonstrating the lowest value (0.60). The S-CVI value was 0.88,

Category		n (%)
Age (in years)	65-69	78 (42.9)
	70-74	54 (29.7)
	75-79	33 (18.1)
	≥80	17 (9.3)
Gender	Male	94 (51.6)
	Female	88 (48.4)

[Table/Fig-1]: General characteristics of the study participants (N=182).

indicating good content validity of the Tamil version of the questionnaire [Table/Fig-2].

Items	I-CVI
Item 1	0.8
Item 2	1.0
Item 3	1.0
Item 4	0.6
Item 5	0.8
Item 6	1.0
Item 7	0.8
Item 8	1.0
Item 9	0.8
Item 10	1.0

[Table/Fig-2]: Item-wise and Scale-wise Content validity Index (CVI) scores of Gerotranscendence Scale -Tamil (GTS-T). S-CVI 0.88

Item 4 demonstrated an I-CVI of 0.60, with four of six experts rating it as relevant according to Farhad Yaghmaie criteria. Although this value is below the recommended threshold of 0.80, experts agreed that the item was conceptually relevant to gerotranscendence and culturally appropriate. Therefore, considering qualitative expert feedback, the item was retained.

Convergent Validity

Item-level Spearman's rank correlation coefficients between the GTS-T and SOC total score ranged from 0.41 to 0.82, whereas the overall GTS-T total score demonstrated a moderate positive correlation with the SOC total score ($r=0.56$, $p<0.001$). Item 4 showed the highest correlation with the SOC total score, where the correlation coefficient value was more than 0.70 and this was found to be highly statistically significant ($p=0.01$). Items 3 ($r=0.439$, $p=0.06$) and 10 ($r=0.413$, $p=0.08$) demonstrated non significant correlations with the SOC scale. The overall correlation between the GTS-T total score and SOC total score was 0.56 ($p<0.001$) [Table/Fig-3].

Items	r-value	p-value
Item 1	0.472	0.02*
Item 2	0.536	0.012*
Item 3	0.439	0.06
Item 4	0.817	0.001**
Item 5	0.583	0.01*
Item 6	0.612	0.008**
Item 7	0.489	0.04*
Item 8	0.643	0.006**
Item 9	0.561	0.02*
Item 10	0.413	0.08

[Table/Fig-3]: Item wise convergent validity of GTS-T with SOC total score. ^aSpearman's rank correlation coefficient; *p-value<0.05 statistically significant; **p-value <0.01 -highly statistically significant

Discriminant validity: The median (IQR) GTS-T score among participants with OF was 18 (3.0), whereas participants without OF demonstrated a median score of 22 (2.5). This difference was found

to be statistically significant ($p=0.03$). From the results, it is evident that participants without of had higher Gerotranscendence scores than those with of, and thus, the GTS-T was found to have good discriminant validity [Table/Fig-4].

Groups	Mean±SD	Median (IQR)	p-value
Group 1 (With OF), n=40	18.7±4.3	18 (3.0)	0.03*
Group 2 (Without OF), n=40	22.3±3.8	22 (2.5)	

[Table/Fig-4]: Discriminant validity of GTS-T. Mann-Whitney test; *p-value <0.05-statistically significant

Cross-cultural Validity

The CFA was adopted to evaluate the cross-cultural validity of the GTS-T. The scale demonstrated an acceptable fit to the data in the three-factor model, corresponding to the dimensions of Cosmic, Coherence and Solitude. CFA using maximum likelihood estimation supported the hypothesised three-factor structure of the GTS-T with all items showing significant standardised loadings on their respective factors (range: 0.38-0.81) and acceptable overall model fit (CFI=0.93, TLI Tucker-Lewis Index=0.91, Root Mean Square Error of Approximation (RMSEA) = 0.06, Standardised Root Mean Square Residual (SRMSR)=0.05). Construct reliability, average variance extracted and squared inter-construct correlations were calculated at the latent construct level using standardised factor loadings obtained from CFA, whereas the mean±SD values represent item-level descriptive statistics presented in [Table/Fig-5].

Items/Factor loadings	F1	F2	F3	Mean±SD	
Factor 1: The Cosmic Dimension	Item 6	0.776	-0.112	0.082	2.58±0.84
	Item 8	0.748	-0.095	0.091	2.83±0.78
	Item 4	0.712	-0.138	0.066	2.69±0.80
	Item 3	0.668	0.103	-0.072	2.12±0.76
	Item 5	0.621	-0.137	0.063	2.35±0.82
Factor 2: The Coherence Dimension	Item 2	0.118	0.794	-0.147	2.91±0.74
	Item 10	-0.103	0.758	0.122	2.87±0.77
	Item 1	0.384	0.315	-0.281	3.09±0.75
Factor 3: The Solitude Dimension	Item 7	0.071	-0.093	0.814	2.25±0.81
	Item 9	-0.064	0.105	0.772	2.11±0.73

[Table/Fig-5]: Three-factor structure model for GTS-T.

Test-retest Reliability of GTS-T

The test-retest reliability assessment of GTS-T are presented in [Table/Fig-6]. A total of fifty participants completed the questionnaire again after a four-week interval and reliability was evaluated with ICC values. The ICC coefficients are ranged from 0.192 to 0.862. Item 10 showed the lowest test-retest reliability and its ICC value was not statistically significant. Item 4 demonstrated highest ICC with strong statistical significance ($p=0.001$). The kappa statistic obtained was 0.86 demonstrating significant agreement between initial and

Items	Test-retest reliability (ICC)	p-value
Item 1	0.812	0.001**
Item 2	0.784	0.002**
Item 3	0.713	0.004**
Item 4	0.862	0.001**
Item 5	0.741	0.003**
Item 6	0.669	0.006**
Item 7	0.534	0.012*
Item 8	0.615	0.008**
Item 9	0.562	0.011*
Item 10	0.192	0.241

[Table/Fig-6]: Test-retest reliability of GTS-T (n=50). Kappa Statistics 0.86

follow-up questionnaires responses. Item 10 demonstrated poor temporal stability with a non significant ICC value-0.192 ($p=0.241$). This lower stability may reflect the reflective and existential nature of the item, which can vary with short-term changes in mood or situational context among Institutionalised older adults.

Internal Consistency of GTS-T

The inter-item correlation coefficients of the GTS-T ranged from 0.118 to 0.554. The lowest correlation was observed between Item 7 and 10, while the highest was observed between item 4 and 6. The Cronbach's alpha obtained was 0.86, which indicates that the GTS-T has a good internal consistency. While an ICC ≥ 0.70 is commonly considered indicative of good reliability, psychometric literature recognises that lower ICC values may still be acceptable in the context of newly developed or culturally adapted instruments, particularly during the initial validation phase. Therefore, moderate ICC values (0.50-0.69) were considered acceptable when supported by strong internal consistency (Cronbach's α) [Table/Fig-7].

Item	1	2	3	4	5	6	7	8	9	10
1	1.00									
2	0.236	1.00								
3	0.298	0.322	1.00							
4	0.342	0.316	0.329	1.00						
5	0.417	0.261	0.283	0.341	1.00					
6	0.382	0.337	0.362	0.554	0.418	1.00				
7	0.269	0.233	0.286	0.342	0.319	0.331	1.00			
8	0.321	0.308	0.336	0.377	0.384	0.418	0.332	1.00		
9	0.241	0.289	0.311	0.372	0.369	0.404	0.348	0.369	1.00	
10	0.241	0.206	0.238	0.316	0.258	0.331	0.118	0.264	0.243	1.00

[Table/Fig-7]: Internal consistency of the GTS-T: inter-item correlation statistics.

DISCUSSION

The GTS is a well-established instrument used to assess the existential and developmental shifts that occur during late adulthood. Ensuring the cultural and linguistic appropriateness is essential particularly in regions where ageing populations are rapidly increasing and culturally grounded psychosocial measures are still limited. The present study successfully translated, culturally adapted and validated the GTS into Tamil generating linguistically accurate and conceptually equivalent instrument suitable for use among older adults in South India. The strong psychometric performance of the Tamil version aligns with the international evidence demonstrating that gerotranscendence is a measurable, multidimensional construct influenced by cultural, social, and spiritual factors.

The high item-level content validity indicated that the translated items were conceptually equivalent to the original English version. These findings were also consistent with previous adaptations of the GTS into Japanese, Polish, Persian and Iranian studies where the authors similarly reported strong content agreement [12-14,22]. The theoretical framework by Tornstam emphasises a shift from a materialistic to an existential and transcendent view in later life showing the necessity for precise cultural adaptation, given the varied interpretations of existential scales in different sociocultural environments. Convergent validity analysis revealed a moderate positive correlation between the GTS-T items and SOC scale. This finding was consistent with the previous studies where GTS was positively associated with life satisfaction, meaning in life and coherence. Earlier research has shown that higher levels of self-transcendence and coherence predict better mental well-being among older adults, reflecting an adaptive psychological transition during ageing. Similarly, Rashedi V et al., in an Iranian sample reported that GTS significantly influenced life satisfaction and psychological

resilience, demonstrating its relevance across diverse cultural settings [22]. The moderate strength of correlation observed in the present study also suggests that gerotranscendence represents a unique dimension of psychological growth separate from general coping and coherence which are consistent with Tornstam's theoretical model. CFA of the GTS-T revealed a three-factor structure with all standardised loadings suggesting significant item performance. This is consistent with the findings from the Japanese GTS-2 validation which supported similar three dimensions in a large older adult population [12]. In contrast the other adaptations in certain western context have reported alternative structures indicating cultural and linguistic influences on gerotranscendence assessment [23]. Reliability analysis also revealed significant internal consistency and high test-retest reliability aligning with validations from various countries.

GTS-T scores exhibited significant differences between patients with and without OF confirming its good discriminant validity and linking physical health to psychosocial adaptation. Research by

Tip M et al., supports that higher gerotranscendence in nursing home residents correlates with better emotional adaptation to dependency. The GTS-T's ability to distinguish functionally different groups enhances its clinical utility in geriatric care and oral health research and the present study strictly adhered to standard international guidelines for translation and cultural adaptation of psychometric instruments [24]. Language experts and gerontology specialists were involved throughout the process to ensure conceptual and linguistic equivalence of the Tamil version. At the field level the elderly participants were able to comprehend and respond to the questionnaire independently indicating that the GTS-T is a simple culturally appropriate and comprehensive tool for assessing gerotranscendence among Tamil-speaking older adults. Additionally, Tamil is also widely spoken in other south and south-east Asian countries such as Sri Lanka, Malaysia and Singapore where the GTS-T can be effectively utilised for assessing gerotranscendence among Tamil-speaking elderly populations. Findings from recent research indicate that gerotranscendence is associated with oral health perceptions in older adults influencing Oral Health-related Quality of life (OHRL-QoL) beyond clinical dental status. Studies in Japan and India have shown that higher gerotranscendence correlates with better subjective adaptation to oral health challenges and reduced psychological distress related to tooth loss and OF [25,26]. These findings highlight the potential value of incorporating gerotranscendence assessment using tools like GTS-T into gerodontology, supporting a holistic approach to dental care in the elderly. Although the overall scale demonstrated satisfactory reliability, some individual items showed lower test-retest stability, which may reflect the dynamic nature of gerotranscendence therefore, employing larger diverse samples, longer test-retest intervals and longitudinal studies are needed to further evaluate item-level temporal stability and inform potential refinement of the

scale of individual GTS-T items to determine whether refinement or revision of items with low ICC values is required.

Limitation(s)

The study sample was limited to Institutionalised older adults in Chennai that may restrict the generalisability of the findings to rural populations. Self-reported data can also be vulnerable to social desirability bias and undetected cognitive impairment among some participants. Additionally the test-retest reliability was assessed over a short interval preventing evaluation of long-term stability. Future research involving larger and more diverse Tamil-speaking samples including community-based and rural cohorts as well as longitudinal follow-up is needed to further establish predictive validity and long-term reliability.

CONCLUSION(S)

The Tamil version of the GTS demonstrated strong validity and reliability, confirming its suitability for assessing existential development in older Tamil-speaking adults. Its clinical relevance supports wider use in geriatric research.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Dec 30, 2025
- Manual Googling: Apr 21, 2026
- iThenticate Software: Apr 24, 2026 (2%)

ETYMOLOGY: Author Origin

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- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

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[ANNEXURE 1]: English Version of the Gerotranscendence Scale (GTS-10).

The Gerotranscendence Scale (GTS-10) consists of 10 items assessing dimensions of gerotranscendence among older adults. Respondents indicate their level of agreement with each statement.

Factor 1: The Cosmic Dimension (F1)

8. I feel connected with the entire universe
5. I can feel a strong presence of people who are elsewhere
6. I feel that I am a part of everything alive
4. I feel a strong connection with earlier generations
3. Sometimes I feel like I live in the past and present simultaneously

Factor 2: The Coherence Dimension (F2)

2. The life I have lived has coherence and meaning
10. My life feels chaotic and disrupted*

Factor 3: The Solitude Dimension (F3)

7. I like to be by myself better than being with others
9. I like meetings with new people*
1. Being at peace and philosophising by myself is important for my well-being

ANNEXURE 2: Tamil Version

காரணி 1: பிரபஞ்ச பரிமாணம் (F1)

8. நான் முழு பிரபஞ்சத்துடன் இணைந்துள்ளேன் என்று உணர்கிறேன்
5. வேறு இடங்களில் இருக்கும் மக்களின் வலுவான இருப்பை நான் உணர முடிகிறது
6. நான் உயிருடன் இருக்கும் அனைத்திற்கும் ஒரு பகுதியாக இருக்கிறேன் என்று உணர்கிறேன்
4. முந்தைய தலைமுறைகளுடன் எனக்கு வலுவான தொடர்பு உள்ளது என்று உணர்கிறேன்
3. சில நேரங்களில் நான் கடந்தகாலத்திலும் நிகழ்காலத்திலும் ஒரே நேரத்தில் வாழ்கிறேன் என்று உணர்கிறேன்

காரணி 2: ஒத்திசைவு பரிமாணம் (F2)

2. நான் வாழ்ந்த வாழ்க்கைக்கு ஒத்திசைவும் அர்த்தமும் உள்ளது
10. என் வாழ்க்கை குழப்பமாகவும் சீர்குலைந்ததாகவும் உள்ளது*

காரணி 3: தனிமை பரிமாணம் (F3)

7. பிறருடன் இருப்பதைவிட நான் தனியாக இருப்பதையே விரும்புகிறேன்
9. புதிய மக்களை சந்திப்பதை நான் விரும்புகிறேன்*
1. தனியாக அமைதியாக இருந்து சிந்திப்பது என் நலனுக்கு முக்கியமானது