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Psychometric Validation of Nepali Version of Supportive Care Needs Survey Short-Form (SCNS-SF 34 N) among Nepali Cervical Cancer Patients

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ABSTRACT

Background: Supportive Care Needs Survey Short Form 34 (SCNS-SF 34) is commonly used tool for the assessment of supportive care needs among cancer patients. Cervical cancer is common cancer among women in Nepal and they are suffering from various types of problems compared with other cancer patients. It is necessary to assess the validity and reliability of the questionnaire after translating it in another language and going to be used. The study aimed to assess the validity and reliability of SCNS-SF-34 Nepali version among Nepali cervix cancer patients.

Methods: 334 participants were recruited purposively from 5 cancers hospital. Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), structure validity, internal consistency convergent validity, and discriminant validity were calculated and confirmed.

Results: Using EFA, a five-factor structure was developed considering higher loading factor for multiple loaded items which was similar with the dimensions of the original version of the SCNS-SF34 accounting for 65.48% of the total variance. CFA confirmed that the construct validity of SCNS-SF 34 N was found at acceptable level. Cronbach's alpha coefficients was found from 0.789 to 0.929 for all five domains and 0.887 for the whole scale. Independent 't' test between known subgroups on age, marital status, stage of disease and treatment modalities confirmed discriminant validity.

Conclusions: It was confirmed that the SCNS-SF 34 N is a valid and reliable instrument for the assessment of the supportive care needs among cervix cancer patients in Nepal.

Keywords: *Psychometric, Validity, reliability*

INTRODUCTION

Cervix cancer (CC) is the common cancer among women globally [1,2] and 1.4 million females are suffering from this disease globally [2]. Approximately 5,70,000 and 3,11,000 new cases and death cases respectively from this disease and it is growing as fourth common disease coming after breast cancer (2·1 million cases), colorectal cancer (0·8 million) and lung cancer (0·7 million) globally[3]. CC is the second common cancer disease among women living at South East Asia region and in context of low and middle income countries (LMICs) like Nepal it is growing as main cause of cancer related death [4]. In Nepal it is standing as first most common cancer among Nepali women and mostly and commonly occurs between 15 and 44 years of age. Every year 2,332 and 1,367 new cases and death cases respectively occurring here in Nepal [5].

For the identification of valid and reliable instrument, psychometrically valid and reliable culture based instrument is necessary and crucial, which helps in exact assessment of perceived supportive care needs of cancer patients and their family in all phases of cancer disease. [6–9]

For the assessment of perceived SCNs of cancer patients, numerous need assessment tools are mostly developed and validated in English speaking countries. Among them Supportive Care Needs Survey (SCNS) is a commonly,

widely used strong instrument for the identification of perceived SCNs of cancer patient and family. [1,10] SCNS can assess and recognize the perceived SCNs of cancer patients by covering the five domains (psychological, health system and information, physical and daily living, patient care and support, and sexuality). It is one of the best, reliable, valid, complete and strong tool for the assessment of perceived need of cancer patients in terms of the kind and extent of perceived SCNs of cancer patient. [10,11]

Now three versions of SCNS are available: SCNS: 59-item long-form (SCNS-LF59)[11], 34-item short-form (SCNS-SF34) [12] and 9-item screening tool (SCNS-ST9)[6]. SCNS-LF59 comprises 59 items, it is developed from Cancer Needs Questionnaire and it is purely original form SCNS. [11] SCNS-SF34 is the another version developed for further increment of practical utilization by original author and it was developed after psychometric assessment. [12]

SCNS-SF34 consisted of 34 items covering five domains which are analytically same as longer version SCNS-LF59 psychological (10 items), health system information (11 items), physical daily living (5 items), patient care support (5 items), and sexuality (3 items). [12,13] Because of less number of items than longer form and without dropping its originality SCNS-SF34 can reduce respondent burden in routine cancer care than SCNS-LF59. [11,12]

Till the date, the SCNS-SF34 has been translated and psychometrically validated in various languages, including Australia [12] in cancer patients, China [6] in cancer patients, Italy[14] in patients with melanoma , Turky [7] in breast cancer patients, German[15] in cancer patients, Dutch [9] in head & neck cancer patients. Till the date no psychometrically validated Nepali version of SCNS-SF34 so this study aimed to assess the psychometric properties of Nepalese version of SCNS-SF 34 among person with cervix cancer.

METHODS

Setting, sample and participants

Bhaktapur Cancer Hospital (BCH), Bhaktapur, Nepal and Bisweswar Prasad Koirala Memorial Cancer Hospital (BPKMCH), Bharatpur, Chitwan, Nepal cancer Hospital & Research center; Harisiddhi, National Hospital &Cancer center; Jawalakhel, Kathmandu Cancer Center; Tathali, Nepal were selected purposively as a setting of the study. The population of the study consisted of cancer patients with inclusion criteria of t patients' diagnosed with cervical cancer , undertaking treatment, physically and mentally able to complete the questionnaire and able to understand Nepali language.[19,20]/[7,16] Calculated sample size was 340 as per rule of thumb at least 10 subjects per item of the instrument scale along with item analysis and EFA and CFA were suggested [17,18] but the sample became 334 due to sample mortality. Data were collected from May 2020 to September 2020.

Process / Procedure

This study was formally approved by the School of Nursing & Health, Zhengzhou University, Henan China (ZZU IRB 2019-028) and Nepal Health Research Council (Ref. No 1706). The eligible respondents were identified by the main researcher and trained survey interviewer nurses (Nurse having Bachelor degree) from in and outpatient departments of selected hospitals. The informed written consent was obtained from eligible respondents after explanation of the purpose of the study and also assured the standard of care would not modify irrespective whether they participated in the study or not. Afterward they were requested to complete a set of self-report questionnaires on the same day either at hospital (inpatients) or at home (outpatients). The first researcher and trained interviewer nurses checked the questionnaire thoroughly immediately after returning the questionnaire to avoid the missing response. Respondents who did not return the questionnaire were followed by phone call. Six respondents did not return the questionnaire due to severe illness and death.

Development of the SCNS-SF34 N (Nepali)

SCNS-SF 34 is recognized as a valid and reliable need assessment tool for identifying the supportive care needs by means of self-reporting questionnaire regarding patients' perceived supportive care needs [12,13,15]. It assesses the existing need and the degree of need for supportive care on the last one month of 34 items by using five point and two level response scale (1—no need, not applicable; 2—no need, satisfied; 3—low need; 4—moderate need; 5—high need). The initial response scale comprises of two broad categories of need, i.e. 'no need' and 'need'. The "no need" scale is additionally subdivided into two categories namely "not applicable and satisfied". Not applicable indicates there were no problems to the patient on the related item and satisfied indicates that for that particular item patient needed support but this support was managed by himself. The "need" scale is additionally subdivided into three categories namely 'low need', 'moderate need' and 'high need' representing the level of SCNs.[12] The 34 items are categorized in 5 domains (psychological needs

(10 items), healthcare system and information needs (11 items), physical and daily living needs (5 items), patient care and support needs (5 items) and sexuality needs (3 items). A high score in the tool indicates that perceived SCNs is in high level. [12]

Beaton's guideline was used to develop the SCNS-SF34 N (Nepali).it includes the seven scientific stage namely: 1. Translation into the target language 2. Synthesis of the forward translations 3. Backward translations, 4. Consensus conference, 5. pretest patient survey, 6. Approval of research team 7. approval of original authors. [6,21,22] Content validity was assessed by consulting 10 experts working and educating in oncology and research area, clarity of the questionnaire was assessed by consulting 15 respondents using Likert scale.[7,23] Correlation of questionnaire was assessed by means of test retest method by consulting 50 respondents. [14,23]

The preliminary final version was pretested among 34 (10% of total sample) CC patients in Nepal to determine understanding level, word appropriateness, identification of offensive or aggressive words, identification of simple words and acceptability of the translated questionnaire.[21,23]

The preliminary Nepali version of SCNS-SF34N has found item content validity (I-CVI) > 0.78 and scale content validity (S-CVI) 0.89, 0.91 and 0.90 respectively in semantic, cultural, and conceptual aspects. It also found Cronbach's α 0.90, correlation significant at the 0.01 level (2-tailed), and clarity of the questionnaire 91.29%. The standard error of measurement (SEM) and small detectable changes (SDC) for overall care need scores were 2.70 and 7.47 respectively. [23]

Comparative measures for validity testing

To allow comparisons within each item, inter item correlation was assessed for the establishment of convergent validity by means of Spearman's rank correlation coefficients in between each item of SCNS-SF34 N. [24–26]

Statistical analysis

Statistical Package for Social Science (SPSS) version 20(IBM, NY, USA) was used for the analysis of collected data. Sociodemographic and clinical characteristics of the respondents were analyzed by using descriptive statistics (frequency, percentage, mean, standard deviation). [6,14]

Exploratory factor analysis (EFA, principal component analysis with varimax rotation) was used for the examination of factor validity. To test the suitability of the data for EFA, The Kaiser-Mayer-Olkin (KMO) and Bartlett's tests were used to identify the sample adequacy and appropriateness of sample size respectively. [14]

The suitable parameter of KMO statistic (0.917), exceeded the threshold of 0.5, and Bartlett's test was significant (chi2 = 26,958.140, p <0.001), which indicates that the data were suitable for factor analysis.[6]

Factor loadings >0.4 and Eigenvalues >1.0 were taken into consideration for acceptance. Items were recognized to the factor with the priority of highest loading and the factor structure was calculated for the explanation of the variance. floor and ceiling effect were occurred if more than 50% of the participants attained the lowermost (0) or uppermost (100) score for each factor. [6,15,27] Cronbach's alpha with a coefficient value >0.7 considered as acceptable which was calculated through internal consistency. [6,8,9,15,27]

Construct validity of the instrument was established by means of Confirmatory factor analysis (CFA) in Amos version 23. The magnitude of the loadings on each variable was assessed one by one and the extent of variance accounted for was also assessed. Components' relationships with assigned items in the model were assessed in the path analysis. Different fit indices were used to evaluate the overall fit model for the measures through structural equation modeling to confirm the structure validity of the instrument. Varimax with Kaiser Normalization rotation with least squares > 0.4 an eigenvalue value >1 value in factor loading were taken into consideration for acceptance. During Varimax rotation, all items with values less than 0.4 were deleted again rest of the items were reloaded for getting the acceptable result of factor analysis. [28,29]

For the assessment of convergent validity, Spearman's rank correlation coefficients test was used between each item of SCNS-SF34 N (Nepali). [24–26]

For the assessment of discriminant validity, independent sample t test was used to test the differences in the mean score for each domain between numerous subgroups of participants with different sociodemographic and clinical characteristics. [6,8,15,30]

RESULTS

Demographics and clinical characteristics of respondents

A total of 98.2% (334/340) of eligible participants from selected hospitals and within the selected inclusion criteria provided informed consent and returned the completed questionnaires. A total 6 eligible respondents were missed because they leave hospital without

returning the questionnaire and they did not response in phone call also. (Refer to Table 1).

Table 1: Demographics characteristics of respondents (n=334)

Variables	Frequency	Percent
Age		
<= 64.00	248	74.25
65.00+	86	25.74
Mean: 54.59 , SD:12.71		
Religion		
Hindu	284	85
Other	50	14.9
Education		
Illiterate	194	58.1
Literate	140	41.9
Marital status		
Married	239	71.6
Single/Widow	92	27.5
Unmarried	3	0.9
Residence		
Urban	112	33.5
Rural	222	66.5
Occupation		
Agriculture	167	50.0
Housewife	143	42.8
Job	15	4.4
Business	9	2.7
Economic status		
Enough to sustain for one year	235	70.4
Not enough to sustain for one year	68	20.4
Extra Saving	31	9.3
Dietary status		
Vegetarian	77	23.1
Non vegetarian	257	76.9
Family type		
Nuclear	131	39.2
Joint	181	54.2
Extended	22	6.6
Relationship status		
Not in a relationship	118	35.3
In a relationship - not living together	18	5.4
In a relationship - living together	198	59.3
Currently sexually active		
No	232	69.5
Yes	102	30.5
Stage of disease		
Stage I	35	10.5
Stage II	165	49.4
Stage III	115	34.4
Stage IV	9	5.6
Treatment modalities		
Operation	4	1.2
Radiation	59	17.7
Operation+ Chemotherapy	11	3.3
Operation +Radiation	13	3.9
Radiation +Chemotherapy	211	63.2
Operation+ Chemotherapy+ Radiation	36	10.8
Duration of disease in year		
<= 1.00 year	317	94.9
1.01+ year	17	5.08
Mean Duration= 0.46, SD=0.66		
Total	**334**	**100**

The frequency (n) and proportion (%) were used

Factor structure and factor loadings

The KMO statistics and Bartlett's test were used to identify the data were either suitable for factor analysis or not. The suitable parameter of KMO statistic (0.917), exceeded the threshold of 0.5, and Bartlett's test was significant (chi2 = 26,958.140, p <0.001), which indicates that the data were suitable for factor analysis.

EFA extracted a seven-factor structure loading however then considering higher loading factor for multiple loaded item and a five-factor structure was developed accounting for 65.48% of the total variance. The KMO measure of sampling adequacy value was 0.889, and

Bartlett's test was significant (8240.401, p value <0.001) indicating that the data were suitable for factor analysis. Floor or ceiling effects has not found. (Refer to Table 2)

Table 2: Principle component analysis (EFA, Varimax rotation), reliability of SCNS-SF34 N (n =334)

Item no.	Items	Factor structure and loadings				
		Psy	**HSI**	**PDL**	**PCS**	**Sex**
32	Being treated like a person not just another case	0.819				
10	Worry that the results of treatment are beyond your control	0.818				
13	Keeping a positive outlook	0.701				
14	Feelings about death and dying	0.676				
11	Uncertainty about the future	0.749				
8	Feelings of sadness	0.740				
9	Fears about the cancer spreading	0.670				
6	Anxiety	0.638				
7	Feeling down or depressed	0.622				
33	Being treated in a hospital or clinic that is as physically pleasant as possible	0.605				
17	Concerns about the worries of those close to you	0.589				
12	Learning to feel in control of your situation	0.440				
26	Being adequately informed about the benefits and side-effects of treatments before you choose to have them		0.811			
27	Being informed about your test results as soon as feasible		0.785			
29	Being informed about things you can do to help yourself to get well		0.753			
24	Being given information (written, diagrams, drawings) about aspects of managing your illness and side-effects at home		0.735			
34	Having one member of hospital staff with whom you can talk to about all aspects of your condition, treatment and follow-up		0.717			
30	Having access to professional counselling (e.g., psychologist, social worker, counsellor, nurse specialist) if you, family or friends need it		0.714			
28	Being informed about cancer which is under control or diminishing (that is, remission)		0.708			
25	Being given explanations of those tests for which you would like explanations		0.638			
23	Being given written information about the important aspects of your care		0.579			
4	Work around the home			0.791		
2	Lackof energy/tiredness/Fatigue			0.721		
5	Not being able to do the things you used to do			0.709		
1	Pain			0.702		
3	Feeling unwell a lot of the time			0.701		
18	More choice about which cancer specialists you see				0.997	
19	More choice about which hospital you attend				0.828	
20	Reassurance by medical staff that the way you feel is normal				0.680	
21	Hospital staff attending promptly to your physical needs				0.599	
22	Hospital staff acknowledging, and showing sensitivity to, your feelings and emotional needs				0.520	
16	Changes in your sexual relationships					0.943
15	Changes in sexual feelings					0.938
31	To be given information about sexual relationships					0.920
	% of the total variance	33.026	12.537	9.766	5.575	4.681
	Alpha coefficient	0.912	0.921	0.884	0.78	0.929
	Mean (0–100)	68.29	58.23	59.88	55.22	53.22
	SD	3.77	3.12	5.49	4.74	17.84
	Median	68.6	58.16	62.28	54.86	44.68
	% lowest score (floor)	62.43	52.84	50.75	47.83	41.24
	% highest score (ceiling)	73.73	62.35	64.82	59.58	73.73

Factor loadings >0.4 and Eigenvalues >1.0 were taken into consideration for acceptance floor and ceiling effect were occurred if more than 50% of the participants attained the lowermost (0) or uppermost (100) score for each factor Psy: Psychological; HIS: Health system information; PCS: Patient care support; PDL: Physical daily living; Sex: Sexuality

Confirmatory factory analysis was performed for the establishment of construct validity of SCNS-SF 34 N Nepali version. KMO of the tool was 0.889, which shows the data was suited for factor analysis. Factor structure and model fit of the data was checked on AMOS, all the fit indices were below their cut of value (CFI = 0.789), and Factor loadings >0.4, Eigenvalues >1.0 in each items indicating that the data adequately fit for model. CFA confirmed that the construct validity of SCNS-SF 34 was found at acceptable level. (Refer to Figure 1)

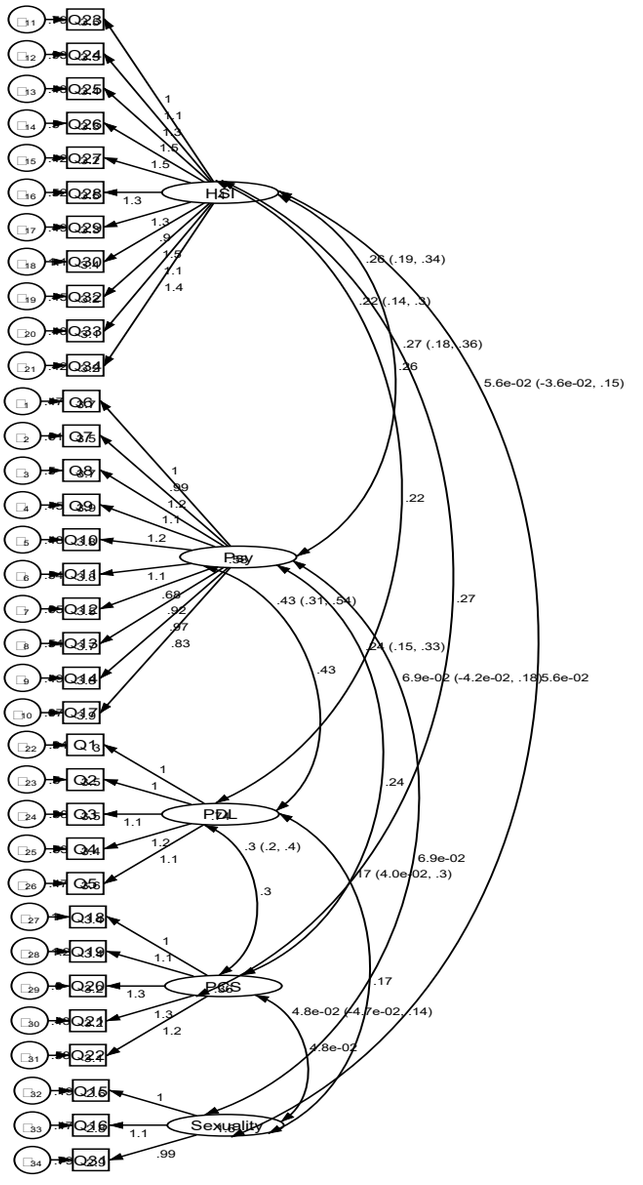

Figure 1: Confirmatory factor analysis (CFA) of SCNS-SF34 N

Reliability

Internal consistency was achieved at acceptable level, with Cronbach's alpha coefficients ranging from 0.789 to 0.929for all five domains and 0.887 for the whole scale (Refer to Table 2).

Convergent validity

For the assessment of convergent validity inter item correlation was assessed. Physical daily living needs is strongly correlated with psychological (599**), patient care support (.469**) and health system information (0.400**). Psychological need is strongly correlated with physical daily living (0.599**), patient care support (0.480**) and health system information (0.526**). Sexuality need is correlated with physical and daily living need 0 (.115*). (Refer to Table 3).

Table 3: Convergent validity of five domains of SCNS-SF-34N (n=334)

		PDL	Psy	Sex	PCS	HSI
PDL	r	1	.599**	.115*	.469**	.400**
	p-value		<0.001	.036	<0.001	<0.001
Psy	r	.599**	1	.056	.480**	.526**
	p-value	<0.001		.311	<0.001	<0.001
Sex	r	.115*	.056	1	.054	.085
	p-value	.036	.311		.327	.122
PCS	r	.469**	.480**	.054	1	.643**
	p-value	<0.001	<0.001	.327		<0.001
HSI	r	.400**	.526**	.085	.643**	1
	p-value	<0.001	<0.001	.122	<0.001	

Spearman's rank correlation coefficients in between each item of SCNS-SF34 N, **. Correlation is significant at the 0.01 level (2-tailed).
*.Correlation is significant at the 0.05 level (2-tailed). *Psy: Psychological; HIS: Health system information; PCS: Patient care support; PDL: hysical daily living; Sex: Sexuality*

Discriminant validity

For the analysis of dichotomous variable 't' test was used and as shown in Table 4, illiterate cervical cancer patients reported higher levels of SCNs than those with literate CC patients (*P-value>0.001)*. Non housewife cervical cancer patients reported higher levels of than those with housewife cervical cancer patients (*P-value* <0.001). (Refer to Table 4)

Table 4: Comparison of SCNS-SF34 N mean domain scores between known subgroups (n =334)

		SCNS-SF34 N (Nepali) domain														
	N	Psy			HSI			PDL			PCS			Sex		
		Mean	SD	P Value	Mean	SD	P Value	Mean	SD	P Value	Mean	SD	P Value	Mean	SD	P Value
Age																
<= 64.00	248	3.73	0.77	0.946	3.3	0.83	0.253	3.34	1	0.102	3.25	0.83	0.925	2.99	1.3	<0.001
65.00+	86	3.73	0.87		3.42	0.85		3.55	0.98		3.24	0.83		2.17	1.32	
Religion																
Hindu	284	3.77	.79	0.059	3.32	.84	0.561	3.39	.99	0.897	3.27	.85	0.463	2.86	1.34	0.020
Other	50	3.54	.82		3.39	.80		3.41	1.06		3.17	.70		2.37	1.35	
Education																
Illiterate	194	3.83	0.74	.001	3.44	0.78	.000	3.53	0.98	.000	3.36	0.75	.000	2.64	1.37	.024
Literate	140	3.71	0.79		3.23	0.90		3.44	0.96		3.22	0.91		2.82	1.33	
Residence																
Urban	112	3.70	.81	0.584	3.27	.87	0.340	3.23	1.07	0.035	3.24	.76	0.871	2.74	1.41	0.644
Rural	222	3.75	.79		3.36	.82		3.48	.95		3.26	.87		2.81	1.33	
Marital status																
With life partner	239	3.69	.82	0.106	3.29	.87	0.197	3.35	1.02	0.178	3.18	.86	0.018	3.27	1.12	<0.001
Without life partner	95	3.84	.72		3.42	.75		3.51	.94		3.42	.71		1.55	1.09	
Economic status																
Enough to survive for one year	266	3.76	.78	0.215	3.36	.83	0.177	3.48	.97	0.002	3.28	.84	0.245	2.83	1.34	0.172
Not enough to survive for 1 year	68	3.63	.84		3.21	.84		3.06	1.01		3.15	.78		2.58	1.39	
Dietary status																
Vegetarian	77	3.72	.87	0.878	3.61	.75	0.001	3.34	1.12	0.582	3.55	.70	<0.001	2.59	1.42	0.150
Non vegetarian	257	3.74	.77		3.24	.84		3.41	.96		3.16	.85		2.84	1.33	
Family type																
Nuclear	131	3.65	.77	0.152	3.18	.83	0.010	3.23	1.03	0.014	3.24	.83	0.835	2.61	1.43	0.057
Joint	203	3.78	.81		3.42	.83		3.50	.96		3.26	.83		2.90	1.29	
Occupation																
Non House wife	191	3.88	.68	<0.001	3.48	.78	<0.001	3.64	.93	<0.001	3.39	.86	<0.001	2.95	1.31	<0.001
Housewife	143	3.53	.89		3.12	.86		3.07	.98		3.07	.76		2.55	1.39	
Cancer stage																
Early (I, II)	202	3.75	.78	0.594	3.33	.82	0.901	3.43	.87	0.475	3.23	.84	0.647	2.95	1.31	0.006
Advanced (III, IV)	132	3.70	.81		3.32	.86		3.35	1.16		3.28	.82		2.53	1.39	
Treatment modalities																
Rx. With Radiation	319	3.73	.80	0.501	3.35	.82	0.010	3.40	.99	0.573	3.26	.81	0.256	3.19	2.74	0.004
Rx. Without Radiation	15	3.87	.54		2.79	1.00		3.25	1.13		3.01	1.23		3.15	3.76	
Duration of disease																
<= 1.00 year	317	3.73	.80	0.817	3.36	.84	0.002	3.39	1.01	0.639	3.28	.84	0.018	2.76	1.33	0.158
1.01+ year	17	3.69	.76		2.71	.56		3.51	.76		2.79	.55		3.24	1.73	
Relationship status																
Not living together	136	3.89	0.74	.020	3.45	0.78	.053	3.46	0.96	.368	3.39	0.73	.038	3.84	0.79	.000
Living together	198	3.66	0.80		3.24	0.87		3.34	1.00		3.16	0.88		3.23	1.16	
Sexual contact																
No	232	3.77	.76	0.167	3.34	.88	0.684	3.46	.97	0.071	3.27	.84	0.543	2.38	1.34	<0.001
Yes	102	3.64	.86		3.30	.73		3.25	1.04		3.21	.82		3.71	.81	

SD: standard deviation, independent sample t test was used, P-value>0.05 are considered to be significant.

Psy: Psychological; HIS: Health system information; PCS: Patient care support; PDL: Physical daily living; Sex: Sexuality

DISCUSSION

For the extension of validity and reliability of the SCNS-SF34 and to fill the gap of supportive care assessment in Nepal, this study concentrated on assessment of validity and reliability of the Nepali version of the SCNS-SF34 N in a sample of 334 CC patients.

During the validity and reliability assessment, its language, construct validity, internal consistency, content, structural and divergent validity were dealt with. Translation procedure and content validity were separately written in another paper, so here mainly focuses on internal consistency, construct, structural, convergent and discriminant validity. [23]

In this study more than 95% filled completely all the 34 items of questionnaire and a missing data rate lower than 5%. Thus, our findings are similar with the study done in German found that nearly 80% filled completely all the 34 items of questionnaire and a missing data rate lower than 10%. [15]

The SCNS-SF 34 N (Nepali) maintained a high level of Internal consistency which was achieved at acceptable level, with Cronbach's alpha coefficients ranging from 0.789 to 0.929 for all five domains and composite reliability score was 0.887 for the whole scale. These findings are supported by other studies: Internal consistency was high with Cronbach's alpha coefficients for the five factors ranging from 0.86 to 0.96 [12], Cronbach's alpha values ranged from 0.82 to 0.94 [15], Cronbach's alpha coefficients ranged from 0.854 to 0.942 for the five domains and 0.947 for the whole scale [6] and this findings is also supported by the another study in which split half method that was used for the internal consistency with the α value for the first half is 0.87 while it is 0.92 for the second half, the Spearman-Brown coefficient for the whole of the scale is 0.74 and The Guttman Split-Half coefficient is 0.73. [7]

Principal component analysis through EFA of the SCNS-SF 34N discovered five dimensions explaining 65.48% of the total variance that are almost same as the original English version (Psychological, health system and information, physical and daily living, patient care and support, and sexuality needs) German [15], China(Mainland),[6] and Turkey[7]. Findings of our study are contrast with the study Dutch version of the SCNS-SF34 which discovered a four-factor structure, which combined the health systems and information domain and the patient care and support domain into a single domain. [9]

The Bartlett's sphericity test that was used to assess the structural validity of the SCNS-SF 34 gave out a value of 8240.401and a level of <0.001. This result shows that the data set is appropriate for a factor analysis. KMO sample value was 0.889. The fact that the KMO criterion is 0.88 means that the sample size is quite appropriate for factor analysis. This findings are consistent with the findings of these study done in German, China and Turkey German [15], China(Mainland),[6] and Turkey. [7]

CONCLUSIONS

The SCNS-SF 34 N is a valid and reliable instrument in the context of Nepal in terms of identifying the SCNs of CC patients. The scale contains a total of 34 items. Its validity and reliability have been established via language validity, content validity, internal consistency, construct validity structure validity, discriminant validity and Alpha coefficient. It is recommending to use this SCNS-SF 34 N for the identification of other cancer patients' SCNs for the arrange of intervention according to priority basis.

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