

Article

Adaptation, Cross-Cultural Validation and Assessment of Measurement Properties of the French-Canadian Version of the Knowledge, Comfort, Approach and Attitude Towards Sexuality Scale (KCAASS) for Use in Stroke Rehabilitation

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Abstract

This study aimed to adapt and translate the Knowledge, Comfort, Approach and Attitude towards Sexuality Scale (KCAASS) for stroke rehabilitation clinicians who are Canadian French speakers and to determine its measurement properties. The KCAASS was adapted for stroke rehabilitation by three occupational therapists and translated into Canadian French using a back-translation process. After being pretested, the resulting KCAASS-Stroke-FrCan was disseminated to seven rehabilitation centers in Quebec, Canada. Exploratory factor analysis, Cronbach alphas, intraclass correlation coefficients (ICCs), standard error of measurement (SEM), and minimal detectable change (MDC) were computed. 199 clinicians participated. Factor analysis revealed a four-factor solution. Internal consistency for the total score ($\alpha = 0.942$) and subscales “Knowledge” ($\alpha = 0.834$), “Comfort” ($\alpha = 0.966$), and “Approach” ($\alpha = 0.836$) were very good, and critical for “Attitude” ($\alpha = 0.628$). Test–retest reliability was very good ($0.81; p < 0.001$) for the total score, good for “Knowledge” ($0.69; p < 0.001$) and “Comfort” ($0.74; p < 0.001$), very good for “Approach” ($0.82; p < 0.001$), and poor for “Attitude” ($0.37; p = 0.003$). SEM and MDC were presented. The KCAASS-Stroke-FrCan showed good measurement properties to assess stroke rehabilitation clinicians’ training needs and educational interventions.

Keywords: assessment; sexuality; stroke; cross-cultural validation; Canada

1. Introduction

Approximately 12.2 million people sustain a stroke worldwide every year, and more than 101 million live with the consequences [1]. In 2023–2024, approximately 97,000 new

strokes occurred in Canada, with approximately 989,000 individuals having experienced a stroke at some point in their lives. Additionally, over 400,000 Canadians are living with disabilities as a consequence of their stroke [2]. Stroke can impair people's participation in numerous domains of their daily life [3], including sexuality [4]. It is estimated that more than 50% of individuals with stroke present sexual dysfunctions or difficulties [4]. Although decreased participation in activities related to sexuality has been associated with heightened risks of depression and poorer quality of life post-stroke [5,6], few individuals receive rehabilitation services related to sexuality after their stroke [7]. Numerous studies, including a systematic review of 106 studies [8], have examined the reasons that prevent clinicians from addressing sexuality, and the overriding factor is the perceived lack of knowledge and skills on the subject [9,10]. However, the available literature on the subject does not clearly state or delineate the specific training needs related to sexuality for clinicians working with individuals who have sustained a stroke. Moreover, there are no validated instruments to assess training needs in this specific context of clinical practice.

The Knowledge, Comfort, Approach, and Attitude towards Sexuality Scale (KCAASS) is a self-reported questionnaire with good measurement properties originally designed to assess the sexuality training needs of clinicians working with people with a spinal cord injury (SCI) [11]. It is used internationally in research related to sexuality and clinical practices with this population [12–16]. The KCAASS has been adapted to other health conditions such as lower limb amputation [17] and stroke [14], but these studies either did not thoroughly describe the adaptation method used, the measurement properties or modified the KCAASS in ways that prevent comparison of their results with other studies. The KCAASS has been translated in a number of languages such as Dutch [18] and French (France) [16] but has never been translated and validated for Canadian French [19]. Consequently, there is a need for a valid and culturally adapted version of the KCAASS for French-Canadian clinicians working in stroke rehabilitation.

The objective of this study was to adapt the KCAASS for use in stroke rehabilitation, and to conduct a cross-cultural validation of the adapted version for French-Canadian clinicians (i.e., KCAASS-Stroke-FrCan). Furthermore, this study sought to evaluate specific measurement properties of the KCAASS-Stroke-FrCan, including construct validity, internal consistency, test–retest reliability, and responsiveness.

2. Materials and Methods

2.1. Study Design

This study was conducted using a cross-sectional design. The adaptation and cross-validation process were performed in accordance with the guidelines by Corbière and Fraccaroli [20].

2.2. Population

French-speaking clinicians offering rehabilitation services to individuals who sustained a stroke in Canada were invited to participate. Most potential participants (95%) were from the province of Quebec, the predominantly French-speaking Canadian province. Clinicians from all professional disciplines and contexts of care were included.

2.3. Sampling and Recruitment

Clinicians from seven stroke rehabilitation centers in Quebec were invited to participate. Although the size of each organization varied, each employed approximately 40 clinicians who met the inclusion criteria. The invitation was also sent to stroke rehabilitation clinicians and investigators from the research team's professional network and was posted on social

networks. Based on the minimum sample size recommendations for conducting factor analyses [21], a sample size of 180 participants was required.

2.4. The Original KCAASS

The KCAASS is a self-reported questionnaire that comprises 45 items divided into four subscales, Knowledge ($n = 14$), Comfort ($n = 21$), Approach ($n = 5$), and Attitude ($n = 5$), and can be completed in approximately 15 min. Each item is rated on a 4-point Likert-type scale. For the “Knowledge” subscale, a higher score represents greater training needs. The “Comfort”, “Approach”, and “Attitude” subscales are rated in reverse to calculate the total score. Thus, a lower score on the total score or on the subscales indicates greater training needs. The internal consistency of the KCAASS was shown to be high for the total score ($\alpha = 0.962$) and the subscales “Knowledge” ($\alpha = 0.926$) and “Comfort” ($\alpha = 0.977$), and is moderate for the subscales “Approach” ($\alpha = 0.802$) and “Attitudes” ($\alpha = 0.835$) [11]. A recent study showed that the SEM and MDC for the subscales of the KCAASS translated to French were as follows: 3/56 and 6/56 for “Knowledge”, 6/84 and 11/84 for “Comfort”, 2/20 and 3/20 for “Approach”, and 1/20 and 2/20 for “Attitude” [16].

2.5. Adaptation and Cross-Cultural Validation

The adaptation was conducted through consensus meetings with the first, third, and last authors—bilingual occupational therapists (English and French), all with stroke rehabilitation expertise. The original KCAASS author, M. Kendall, was consulted when questions about item meaning arose. After adaptation, the stroke-specific KCAASS was translated into Canadian French by a professional translator and the first author, using a parallel blinded process. The research team compared both versions and created a French-Canadian version, which was then back-translated by a professional translator and an English-speaking Canadian occupational therapist, who were both blinded from the original English version of the stroke-specific KCAASS. The team reviewed the original and back-translated versions for adjustments. Finally, the adapted KCAASS-Stroke-FrCan was pretested with four French-Canadian stroke clinicians for clarity using a three-level Likert scale. The full process is summarized in Figure 1.

2.6. Measurement Properties the KCAASS-Stroke-FrCan

2.6.1. Data Collection

Data were collected through an online survey using the Research Electronic Data Capture (REDCap) platform, except for 31 participants who completed the survey using a paper format. The survey included a sociodemographic questionnaire and the KCAASS-Stroke-FrCan. Sociodemographic data included age, gender, health organization of employment, years of experience in stroke rehabilitation, stroke healthcare practice context (acute, inpatient rehabilitation, early supported discharge, outpatient rehabilitation, home-based or long-term care). Moreover, when available, participants’ communities were categorized as urban, suburban, or rural. Urban communities are characterized by high population density, extensive built environments, and a concentration of economic, educational, and healthcare resources within a relatively small geographic area. Suburban communities are typically located on the periphery of urban centers and feature moderate population density, mixed residential and commercial land use, and a higher prevalence of private transportation and single-family housing. In contrast, rural communities are defined by low population density, greater geographic dispersion, and limited access to specialized services and infrastructure. To assess test–retest reliability, the survey was sent a second time 14 days after the initial completion. In preparation for the analysis, the data was cleaned and verified. Missing data were systematically identified and imputed as appropriate to

minimize bias and ensure robust validation results. Data was subsequently transferred to SPSS 28 for analysis.

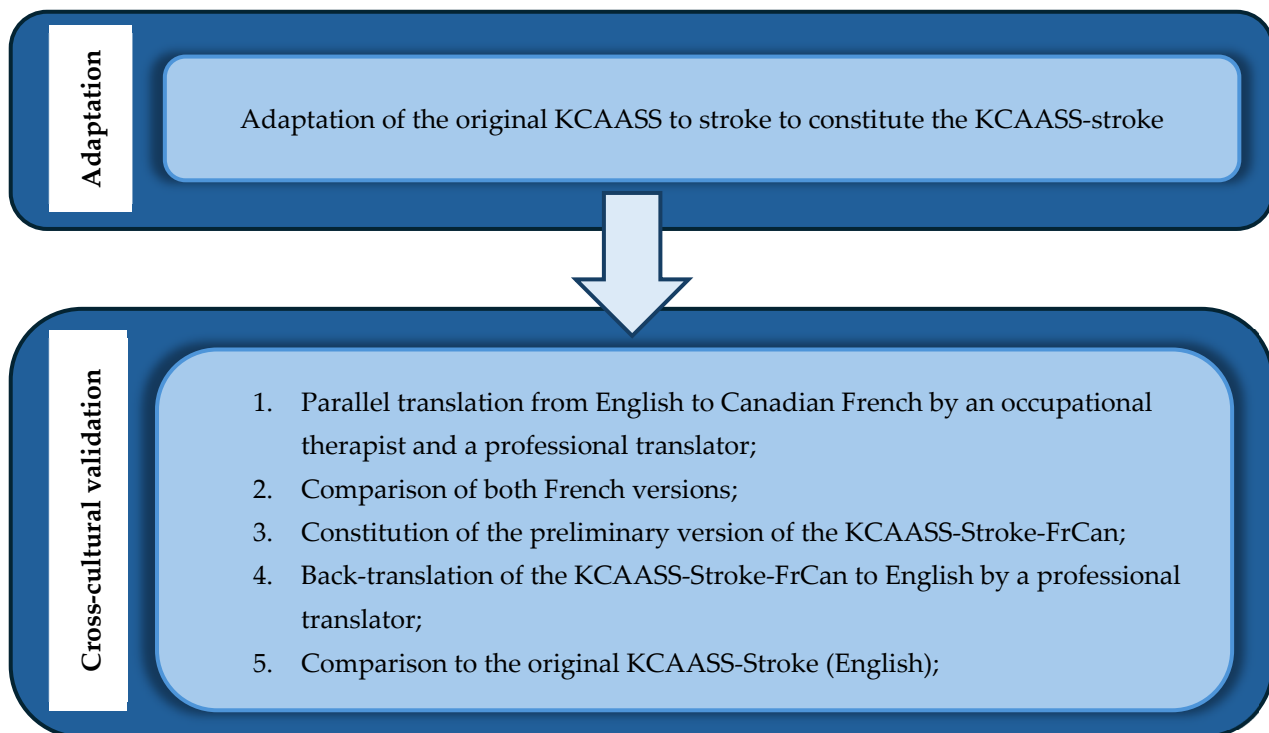


Figure 1. Adaptation and Cross-Cultural Validation Processes of the KCAASS-Stroke-FrCan.

2.6.2. Data Analysis

Descriptive analyses (means and standard deviations, frequencies and percentages) were conducted to describe the sample. Construct validity was assessed using an exploratory factor analysis using the Varimax rotation method [22]. First, the suitability for factor analysis was evaluated using Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The number of factors was determined using the scree plot, eigenvalues exceeding 1, and the percentage of variance explained by each factor. Internal consistency was assessed using Cronbach's alphas [23] and interpreted according to DeVellis [24], namely: $\alpha < 0.60$ = unacceptable; $0.60 \leq \alpha < 0.65$ = critical; $0.65 \leq \alpha < 0.70$ = minimally acceptable; $0.70 \leq \alpha < 0.80$ = acceptable; $0.80 \leq \alpha < 0.90$ = very good; and $0.90 \leq \alpha$ = certain items are redundant. Test-retest reliability was assessed using intraclass correlation coefficients (ICCs) and the standard error of measurement (SEM) [25]. ICCs were interpreted in the following fashion: <0.40 = poor; 0.40 to 0.75 = moderate to good; >0.75 = very good. The SEM was computed using $SEM = SD \times \sqrt{1 - ICC}$, with SD corresponding to the standard error of the difference between the scores, and the intraclass correlation coefficient (ICC) was obtained from the test-retest reliability [26]. Finally, the questionnaire's minimal detectable change (MDC), which represents the smallest change that can be detected beyond random error (95% confidence interval) [27], was calculated by using the following formula: $1.96 \times \sqrt{2} \times SEM$ [28].

3. Results

3.1. Adaptation and Cross-Cultural Validation of the KCAASS-Stroke-FrCan

Modifications were made to the original version of the KCAASS [11] to tailor it for clinicians working with post-stroke patients. First, the terms related to "Spinal cord injury" were replaced with those related to stroke (e.g., hemiparesis vs. paralysis) for items 9,

18, 29, 32 and 41 to 45. Second, since French is a gendered language with some words designated as feminine or masculine, the wording of the items was modified to be gender neutral. Third, item 29 was adapted from “Gay men” to “LGBTQ+ persons (i.e., Lesbian, Gay, Bisexual, Transgender, Queer and others)” to be more culturally relevant and inclusive. The final version of the KCAASS-Stroke is available in Supplementary File S1. The back-translation of the KCAASS-Stroke-FrCan to English showed good equivalence with the original KCAASS-Stroke and no modifications were made to the KCAASS-Stroke-FrCan.

The KCAASS-Stroke-FrCan was then pretested with four allied health professionals and 44/45 items were rated as “very clear”. The original item 28, “Patient says ‘None of my friends would ever go out with someone in a wheelchair’” lacked clarity. The adaptation committee, after consulting with M. Kendall, concluded to modify the wording to “developing an intimate relationship” instead of “going out” as it was clearer and could include casual or serious dating. The final version of the KCAASS-Stroke-FrCan is available in Supplementary File S2 (French-Canadian version).

3.2. Measurement Properties the KCAASS-Stroke-FrCan

3.2.1. Sample Description

A total of 199 clinicians participated, with a mean age of 39.1 ± 9.3 years, of which 185/199 (92%) were females. Among the 14 professional disciplines that were represented, occupational therapists ($n = 58/199$, 29.1%), physical therapists ($n = 44/199$, 22.1%), and speech language pathologists ($n = 24/199$, 12.1%) were the most prominent. Regarding the workplace, 194 (97.5%) participants were from the province of Quebec, including 138 (71.1%) from the greater Montreal area and 20 (10.3%) from Quebec City (urban areas), and 5 (2.6%) participants were from Ontario. Participants worked predominantly in inpatient ($n = 94$, 47.2%) or outpatient/social reintegration ($n = 79$, 39.7%) rehabilitation. Participants' sociodemographic and professional characteristics are detailed in Table 1 and their score on the KCAASS-Stroke-FrCan are presented in Table 2. After completion of the data collection, 3/31 participants that completed the paper version of the survey had one missing data (total of 3/8775 missing data), which were imputed by an expert statistician using multivariate imputation by the chained equations method as implemented in mice R package 1.0 [29].

Table 1. Participants ($n = 199$) Sociodemographic and Professional Data and KCAASS-Stroke-FrCan Scores.

	Mean (SD)/Frequency (%)
Age (Mean (SD))	39.01 (9.28)
Gender	
- Female	185 (93%)
- Male	13 (6.5%)
- Unspecified	1 (0.5%)
Years of experience in stroke healthcare (Mean (SD))	9.37 (7.8%)
Profession Frequency (%)	
- Occupational therapist	58 (29.1%)
- Physical therapist	44 (22.1%)
- Speech language pathologist	24 (12.1%)
- Nurse	18 (9%)
- Psychologist and neuropsychologist	14 (7%)
- Special education technician	13 (6.5%)
- Social worker	11 (5.5%)
- Physician	6 (3%)
- Clinical coordinator	4 (2%)
- Attendants (Orderlies)	2 (1%)
- Dietitian	2 (1%)
- Technologist in physical therapy	2 (1%)
- Kinesiologist	1 (0.5%)

Table 1. *Cont.*

	Mean (SD)/Frequency (%)
Workplace (Frequency (%))	
Quebec	194 (97.5%)
- Site 1—Suburban	52 (26.1%)
- Site 2—Urban	44 (22.1%)
- Site 3—Urban	20 (10%)
- Site 4—Urban	16 (8%)
- Site 5—Urban	14 (7%)
- Site 6—Urban	12 (6%)
- Site 7—Rural	10 (5%)
- Other	26 (13%)
Ontario	5 (2.5%)
Stroke healthcare context (Frequency (%))	
- Acute	11 (5.5%)
- Inpatient	94 (47.2%)
- Early supported discharge	4 (2%)
- Outpatient/Social reintegration	79 (39.7%)
- Home-based services	11 (5.5%)
KCAASS-Stroke-FrCan (Mean (SD))	
- Knowledge (14–56)	30.4 (5.3)
- Comfort (21–84)	59.5 (15.3)
- Approach (5–20)	8.8 (3.3)
- Attitude (5–20)	18.3 (1.5)
- Total (45–160)	117.0 (19.9)

SD: Standard deviation; Site 1: CISSS de la Montérégie-Ouest; Site 2: CIUSSS Centre-Sud-de-l'Île-de-Montréal; Site 3: CIUSSS de la Capitale-Nationale; Site 4: CISSS de Laval; Site 5: CIUSSS Centre-Ouest-de-l'Île-de-Montréal; Site 6: Hôpital de réadaptation Villa Medica; Site 7: CIUSSS de la Mauricie-et-du-Centre-du-Québec.

Table 2. KCAASS-Stroke-FrCan participant ($n = 54$) scores and test–retest reliability and responsiveness values.

KCAASS-Stroke-FrCan Subscale (Range)	Time 1 (Mean (SD))	Time 2 (Mean (SD))	ICC Between Times 1 and 2 (p)	SEM	MDC
Knowledge (14–56)	29.7 (5.0)	29.1 (5.1)	0.69 (<0.001)	2.2	6.2
Comfort (21–84)	59.4 (17.1)	60.5 (14.8)	0.74 (<0.001)	5.8	16.2
Approach (5–20)	9.4 (3.6)	10.0 (3.8)	0.82 (<0.001)	0.94	2.6
Attitude (5–20)	18.5 (1.6)	18.6 (1.4)	0.37 (0.003)	1.33	3.7
Total	116.9 (21.5)	118.2 (19.8)	0.81 (<0.001)	5.6	15.5

SD: Standard deviation; ICC: Intraclass correlation coefficient; SEM: Standard error of measurement; MDC: Minimal detectable change.

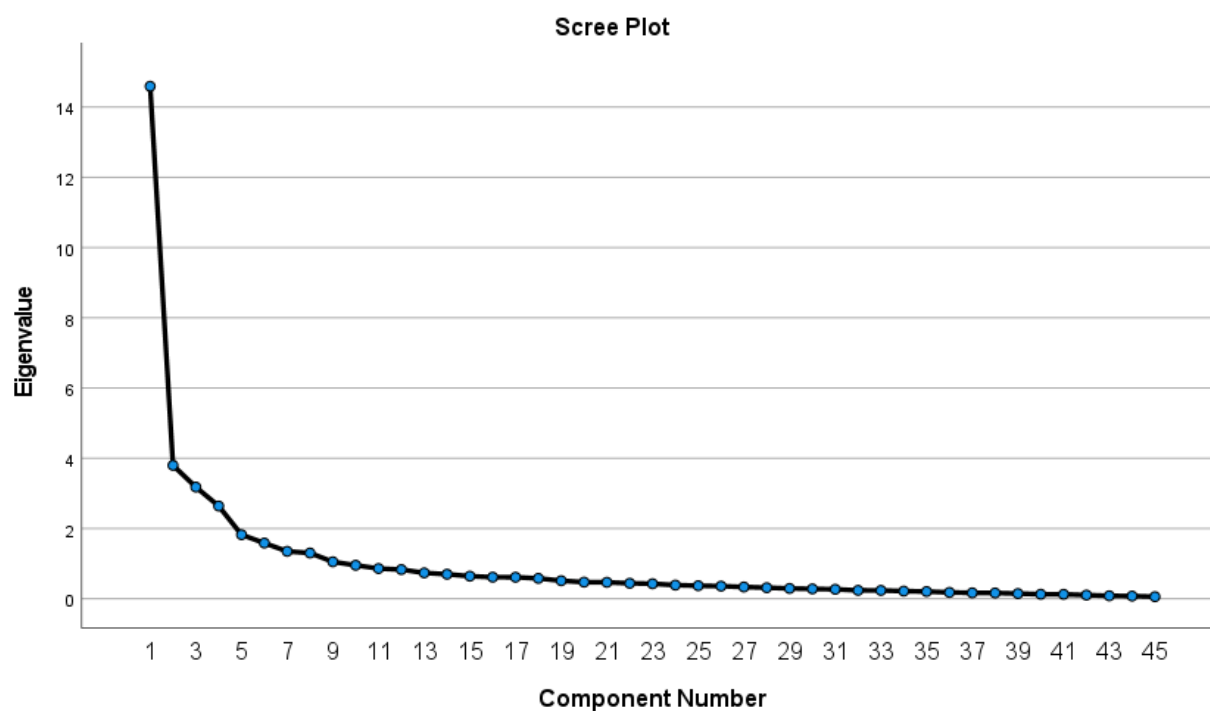
3.2.2. Construct Validity

The exploratory factor analysis of the KCAASS-Stroke-FrCan revealed that all items were included in the model. Assumptions were respected as the Kaiser-Meyer-Oblimin (KMO) test (0.903) showed that the correlation matrix was adequate for the factorial analysis. Also, Bartlett's sphericity test (6422.806; $p < 0.001$) allowed the rejection of the hypothesis that the French-Canadian KCAASS items are not correlated. Table 3 presents the model fit of the one-, two-, three-, and four-factor models. The four-factor model explained the higher variance (53.818%). Eigenvalues for the four factors were, respectively, 14.594 (32.431% variance), 3.800 (8.445% variance), 3.182 (7.071% variance), and 2.642 (5.871% variance). The scree plot confirmed the selection of four factors (see Figure 2). The questionnaire items were categorized into these four dimensions according to factor loadings (see Table 4). Due to the close factor loading values between Factor 1 ("Comfort") and 2 ("Knowledge"), and to match the original assignment of the KCAASS items, items 9 and 11 were manually reassigned to Factor 2. Similarly, for the same reasons, item 16 was assigned to Factor 1 ("Comfort"). Since the same items were loaded on the same factors as in the original KCAASS, they were deemed to replicate the factors of the original version. The four factors were named in French, translated from the original version: Factor 1 (*Confort*, items #15–35), Factor 2 (*Connaissance*, items #1–14), Factor 3 (*Approche*, items #36–40), Factor 4 (*Attitude*, items #41–45).

Table 3. Fit Statistics for One-, Two-, Three-, and Four-factor Measurement Models.

Tested Models	Initial Values	Percentage of Variance	Cumulated Percentage
One-factor	14.594	32.431	32.431
Two-factor	3.800	8.445	40.876
Three-factor	3.182	7.071	47.947
Four-factor	2.642	5.871	53.818

The bold text shows the factor structure that was chosen at the end of the analysis.

**Figure 2.** Scree Plot of the Exploratory Factor Analysis of the KCAASS-Stroke-FrCan.**Table 4.** Factor Analysis with Loading of the 45 Items on the Four-factor Solution.

KCAASS-Stroke-FrCan Items	F1 (Comfort)	F2 (Knowledge)	F3 (Approach)	F4 (Attitude)
1. Anatomy	0.184	0.578	0.155	0.102
2. Positioning	0.198	0.534	0.241	0.141
3. Bladder/bowel	0.169	0.454	0.133	−0.075
4. Devices	0.274	0.436	0.070	−0.092
5. Fertility	0.246	0.399	0.011	0.005
6. Contraception	0.236	0.441	0.210	0.045
7. Teenage issues	0.411	0.486	0.087	−0.060
8. Sexual preference	0.345	0.616	0.121	−0.028
9. Identity	0.437 *	0.319	0.225	0.067
10. Dating	0.323	0.575	0.188	0.026
11. Communication	0.334 *	0.331	0.132	−0.040
12. Inappropriate acts	0.297	0.464	−0.041	0.027
13. Counseling	0.369	0.532	0.038	−0.006
14. Professional issues	0.238	0.380	0.049	0.039
15. Patient erection	0.683	−0.098	−0.147	0.020
16. Loss	0.448	0.160	−0.523 *	0.303
17. Ability to erect	0.773	−0.192	0.029	0.035

Table 4. Cont.

KCAASS-Stroke-FrCan Items	F1 (Comfort)	F2 (Knowledge)	F3 (Approach)	F4 (Attitude)
18. Ability for sex	0.830	−0.200	0.057	−0.080
19. Orgasm	0.866	−0.195	0.081	−0.040
20. Children	0.742	−0.177	0.097	−0.203
21. Catheter	0.750	−0.239	0.146	−0.090
22. Bowel	0.854	−0.162	0.157	−0.077
23. Partner pain	0.789	−0.146	0.059	−0.062
24. Dryness	0.817	−0.103	0.100	−0.087
25. Positions	0.649	−0.188	−0.004	−0.048
26. Attractiveness	0.781	−0.146	0.111	0.026
27. Curiosity	0.758	0.090	0.173	−0.018
28. Attitude	0.785	−0.140	0.025	−0.074
29. Preference	0.725	−0.169	0.105	−0.094
30. Pornography	0.594	−0.007	−0.387	0.118
31. Pleasure	0.851	−0.133	0.090	−0.004
32. Body image	0.856	−0.149	0.123	−0.002
33. Feeling	0.833	−0.080	0.085	−0.074
34. Interest	0.809	−0.072	0.114	−0.014
35. Arousal	0.799	−0.131	0.146	−0.015
36. Masturbation	0.483	0.112	−0.529	0.277
37. Sexual acts	0.468	0.127	−0.579	0.353
38. Personal date	0.438	0.016	−0.518	0.274
39. Touching	0.275	0.207	−0.656	0.167
40. Personal approach	0.335	−0.006	−0.676	0.128
41. Dismissal	−0.124	−0.152	0.238	0.690
42. Partners	0.112	0.061	0.082	0.225
43. Attractiveness	0.065	−0.137	0.445	0.662
44. Arousal	−0.002	−0.118	0.346	0.795
45. Children	−0.061	−0.172	0.367	0.654

* Represents a higher close factor loading value that does not align with the original assignment of the item within each subscale. The bold text shows the factor structure that was chosen at the end of the analysis.

3.2.3. Internal Consistency

Cronbach α coefficients for the total score ($\alpha = 0.942$) and subscales “Knowledge” ($\alpha = 0.834$), “Comfort” ($\alpha = 0.966$) and “Approach” ($\alpha = 0.836$) were very good considering that they were greater than at 0.80, although the Cronbach α coefficients for the total score and subscale Comfort suggest redundancy between certain items. Cronbach α coefficient for the “Attitude” subscale was $\alpha = 0.628$, which is considered critical.

3.2.4. Test—Retest Reliability

The ICC for participants who completed the test twice was very good (0.81; $p < 0.001$) for the total score. For the subscales, ICCs were as follows: good for “Knowledge” (0.69; $p < 0.001$) and “Comfort” (0.74; $p < 0.001$), very good for “Approach” (0.82; $p < 0.001$), and poor for “Attitude” (0.37; $p = 0.003$).

3.2.5. Standard Error of Measurement and Minimal Detectable Change

Table 2 shows the results observed for the SEM and the MDC of the KCAASS-Stroke-FrCan. The SEM was 5.6/160 (3.5%) for the total score, and its value for each subscale was as follows: 2.2/56 (3.9%) for “Knowledge”, 5.8/84 (6.9%) for “Comfort”, 0.9/20 (4.5%) for “Approach”, and 1.33/20 (6.7%) for “Attitude”. The MDC was 15.5/160 (9.7%) for the total score, and its value for each subscale was as follows: 6.2/56 (11.1%) for

“Knowledge”, 16.2/84 (19.3%) for “Comfort”, 2.5/20 (12.5%) for “Approach”, and 3.7/20 (18.5%) for “Attitude”.

4. Discussion

The objective of this study was to adapt the KCAASS for stroke rehabilitation, to conduct a cross-cultural validation of the Canadian French version, and to evaluate specific measurement properties of the tool. Ultimately, the KCAASS-Stroke-FrCan was adapted and cross-culturally validated according to current guidelines [20]. It demonstrated good construct validity, internal consistency, test–retest reliability, and responsiveness similar to the original KCAASS.

4.1. Adaptation and Cross-Cultural Validation

The KCAASS was adapted for persons having sustained a stroke and translated to align with Canadian French, a language distinct from other forms of French, worldwide, in relation to numerous characteristics, including in terms of lexis and phonology [19,30]. Moreover, French differs from English as it has stylistic differences in terms of word order, prepositions, and gender [31]. While preserving the integrity of the original meaning of the items, certain statements were modified in their wording to accurately reflect their intended meanings in Canadian French, due to the absence of direct equivalents from English words (e.g., dating). The adaptation process ensured that the KCAASS-Stroke-FrCan measures key concepts similarly to the original KCAASS, as validated by the pre-test conducted with the study population.

4.2. Measurement Properties of the KCAASS-Stroke-FrCan

4.2.1. Construct Validity and Internal Consistency

To our knowledge, this is the first study to have assessed both the construct validity and internal consistency of a version of the KCAASS since the original study [11]. Our analysis confirmed that the KCAASS-Stroke-FrCan also comprised four distinct factors, whose overall distribution of items was consistent with the subscales of the original KCAASS: “Knowledge”, “Comfort”, “Approach”, and “Attitude” [11]. Moreover, the total score and the “Knowledge”, “Comfort”, and “Approach” subscales showed very good internal consistency, which is consistent with other studies that explored the measurement properties of the KCAASS [11,14–16,32]. The internal consistency of the “Attitude” subscale was critical, or poor, which is in alignment with certain former studies [15,16,32] and in opposition to others [11,14]. Sampling differences could explain these discrepancies. Indeed, our sample was interdisciplinary, multi-site, and mainly from one Canadian province, which is consistent with past studies conducted in Belgium [16] and the Netherlands [15]. In addition, the higher values in the study of Kendall and collaborators [11] could be related to the homogeneity of the sample of 90 participants from the same rehabilitation center, which was composed of 64% nursing staff. Overall, our results confirm the presence of four factors in the KCAASS-Stroke-FrCan and the generally very good internal consistency of the tool.

4.2.2. Test–Retest Reliability

The KCAASS-Stroke-FrCan has also demonstrated good to very good for test–retest reliability, excluding the “Attitude” subscale which was considered poor. To our knowledge, Samain and collaborators [16] are the only others to have assessed the test–retest reliability, with results similar to ours but slightly higher, with the “Attitude” subscale showing the highest difference (0.37 vs. 0.64). We can therefore consider that the performance of the

same person on the KCAASS-Stroke-FrCan would remain relatively stable between two measurement times in the absence of educational intervention.

4.2.3. Responsiveness

The standard error of measurement and the minimal detectable change for the KCAASS-Stroke-FrCan yielded values comparable to those reported by Samain et al. [16] and to the statistically significant changes observed following sexuality training, as measured by the KCAASS in the study published by Fronek et al. [32]. The “Knowledge” and “Approach” subscales were shown to have a proportionally lower SEM than the Comfort and Attitude subscales, suggesting that they may be more accurate and therefore more sensitive to change. This difference between the subscales could also be related to the construct being measured. For example, participants may find it easier to consistently assess their level of knowledge, compared to their level of comfort or attitudes toward certain topics or situations. Moreover, simply completing the questionnaire could lead participants to start a reflection on their level of comfort and attitudes toward integrating sexuality into their practice.

4.3. Strengths and Limitations

This study has several strengths and limitations. The adaptation was led by bilingual, experienced stroke rehabilitation clinicians, and the cross-cultural adaptation followed established guidelines, involving two professional translators and stroke experts. One limitation is that the adaptation team consisted solely of occupational therapists and did not include individuals with lived experience of stroke, which could have improved ecological validity of the process. However, the comparison of the original and back-translated versions showed strong equivalence, suggesting that the KCAASS-Stroke-FrCan was not biased by this perspective. The sample size was adequate for metrological analysis, and participants were from multiple sites in Quebec and Ontario. However, most participants were from inpatient or outpatient settings, limiting generalizability to clinicians working in acute or long-term care.

5. Conclusions

In conclusion, using evidence-based methods to assess clinicians’ training needs is a promising approach for designing relevant educational strategies, especially to address the reported lack of competencies in sexuality among clinicians [8,33]. In this study, the KCAASS was adapted for stroke rehabilitation and cross-validated for Canadian French-speaking clinicians, showing good measurement properties. The KCAASS-Stroke-FrCan is now ready for use in future studies to assess training needs and the impact of educational strategies. Future research should explore whether educational strategies improve KCAASS-Stroke-FrCan scores and whether these improvements correlate with better sexual health services for post-stroke patients. Additionally, it would be useful to examine whether the KCAASS-Stroke-FrCan covers all key dimensions needed for clinical practice changes or if it should be combined with other assessment methods, such as ones assessing motivations, emotions, or environmental factors such as social influences or availability of resources.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/disabilities5040106/s1>. Supplementary File S1: Knowledge, comfort, approach and attitude towards sexuality scale (KCAASS)—Stroke; Supplementary File S2 (French-Canadian version): Échelle des connaissances, comforts, approches et attitudes liées à la sexualité adaptée à l’accident vasculaire cérébral.

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Abbreviations

The following abbreviations are used in this manuscript:

KCAASS	Knowledge, Comfort, Approach and Attitude towards Sexuality Scale
KCAASS-Stroke-FrCan	Knowledge, Comfort, Approach and Attitude towards Sexuality Scale adapted to Stroke and translated in Canadian French
ICC	Intraclass correlation coefficients
SEM	Standard error of measurement
MDC	Minimal detectable change

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