Translation and Validation of Korean Version of the Menstrual Distress Questionnaire

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Background/Purpose

- Increasing numbers of people from diverse ethnic backgrounds are living within either one region or country
  - Needs for cross-cultural and international collaborative nursing studies have been continuously highlighted
- Minimizing the risk to a study's validity
  - Appropriate use of understandable language is essential with instruments used in a non-English language studies
  - However, many studies either continue to use arbitrarily translated instruments, which give little to no consideration to cultural components, or they use the translated version without first testing its quality
- Purposes of this study
  - Describe translation and validation processes of a translated Korean version of the Menstrual Distress Questionnaire (MDQ-K) which is a frequently used instrument for assessing premenstrual symptoms
    - The Korean version of the modified MDQ exists, but it only uses selected items from the original MDQ, which limits its use
      - Ex) employing either the scoring system or interpretation guideline of the original MDQ, comparing findings of studies that used the original MDQ
    - An official Korean version of the original MDQ, the MDQ-K, was developed and tested in this study to overcome these limitations

Methods

- The MDQ-K was developed in four steps
  1) Obtaining permission to translate
  2) Forward-and-backward translation
  3) Expert review by five professors from Korean nursing schools whose research focus is menstrual health
  4) Pilot testing with 102 bilingual Korean female students who were studying in the U.S.
- Data collection
  - Participants were recruited between July and October of 2015 through online communities
  - Questionnaires
    - Answered both the original MDQ and the MDQ-K on the same day
    - Additional questions related to menstrual health (e.g., age at menarche, gravidity, menstrual patterns)
    - Degrees of acculturation using the Suinn-Lew Asian Self Identity Acculturation Scale
- Data Analysis
  - The reliability of the MDQ-K was calculated by analyzing its internal consistency using Cronbach's alpha, and the construct validity was assessed using a paired t-test

Results

- **Sociodemographic and Baseline Information of Participants (N = 102)**

Variables		Mean ± SD or N (%)
Age (years old)		25.94 ± 4.10
Educational status	Undergraduate	36 (35.3)
	Graduate	62 (60.8)
	Non-degree program	4 (3.9)
Major	Health-related	13 (12.75)
	Art	11 (10.78)
	Education	10 (9.80)
	Applied science	10 (9.80)
	Media, Communication,	10 (9.80)
	Culture	8 (7.84)
	Engineering	6 (5.88)
	Business/Management	5 (4.90)
	Economics/Finance/Accounting	5 (4.90)
	Design/ Interior	4 (3.92)
	Linguistics	4 (3.92)
	International relations	16 (15.69)
	Others	
Degree of acculturation		2.29 (0.22)
Gravidity (Yes)		4 (3.9)
Age at menarche (years old)		13.14±1.34
Duration of menstruation (days)		5.53 (1.26)
Regularity of menstruation (Irregular)		27 (26.4)
Perception of general health (Negative)		12 (11.8)
Diagnosed disease (Yes)		8 (7.8)
Medication intake (Yes)		8 (7.8)
Smoking	Previous smoker	3 (2.9)
	Current smoker	2 (2.0)
Alcohol consumption (Yes)		88 (86.27)
Caffeine intake (Yes)		98 (96.08)

- **Relaibility Analyses of Menstrual Distress Questionnaire (English and Korean versions) (46 items)**

Value	English Version	Korean Version
Scale mean (SD)	33.49 (26.13)	34.37 (26.40)
Item mean (SD)	0.73 (0.57)	0.75 (0.57)
Inter-item Correlation Mean (SD)	0.32 (0.03)	0.33 (0.02)
Cronbach's alpha	. 96	.96

- **Paired t-tests for Paired Items (N = 102)**

Item	Mean (SD) English	Mean (SD) Korean	t value	Item	Mean (SD) English	Mean (SD) Korean	t value
Q 1	.76 (.98)	.81 (1.05)	-1.092	Q 24	.46 (.88)	.49 (.90)	-.624
Q 2	.90 (1.04)	.94 (1.04)	-.942	Q 25	.56 (.89)	.49 (.92)	1.304
Q 3	.82 (1.08)	.78 (1.01)	.553	Q 26	.69 (1.00)	.63 (.91)	1.097
Q 4	.96 (1.13)	1.00 (1.16)	-.665	Q 27	1.12 (1.27)	1.14 (1.23)	-.391
Q 5	1.86 (1.03)	1.95 (1.10)	-1.290	Q 28	.99 (1.13)	1.06 (1.20)	-1.044
Q 6	.71 (.96)	.61 (.92)	1.636	Q 29	.24 (.62)	.29 (.66)	-1.393
Q 7	.93 (.97)	.91 (.99)	.445	Q 30	.43 (.71)	.49 (.75)	-1.136
Q 8	1.29 (1.15)	1.36 (1.08)	-1.538	Q 31	1.02 (1.18)	1.09 (1.18)	-1.538
Q 9	.54 (.98)	.58 (.98)	-.815	Q 32	1.29 (1.29)	1.32 (1.32)	-.831
Q 10	.69 (.98)	.75 (1.04)	-.948	Q 33	1.37 (1.21)	1.42 (1.26)	-1.295
Q 11	.61 (.93)	.48 (.81)	1.601	Q 34	1.00 (1.11)	.97 (1.14)	.575
Q 12	.27 (.71)	.23 (.65)	.894	Q 35	1.05 (1.16)	1.19 (1.28)	-1.619
Q 13	.30 (.72)	.28 (.70)	.575	Q 36	.63 (.88)	.64 (.86)	-.241
Q 14	.30 (.63)	.41 (.84)	-1.883	Q 37	.52 (.68)	.59 (.78)	-1.186
Q 15	1.07 (1.15)	1.02 (1.04)	.844	Q 38	.34 (.61)	.34 (.67)	0.000
Q 16	1.07 (1.14)	1.19 (1.10)	-1.534	Q 39	.53 (.82)	.62 (.81)	-1.449
Q 17	1.13 (1.18)	1.18 (1.22)	-.713	Q 40	.40 (.65)	.50 (.73)	-2.075*
Q 18	.71 (1.05)	.71 (1.07)	0.000	Q 41	.33 (.64)	.36 (.75)	-.537
Q 19	.86 (1.05)	.93 (1.13)	-.818	Q 42	.15 (.48)	.13 (.44)	.498
Q 20	.87 (1.09)	.90 (1.11)	-.505	Q 43	.28 (.74)	.28 (.77)	0.000
Q 21	1.06 (1.19)	1.08 (1.24)	-.352	Q 44	.38 (.84)	.42 (.83)	-1.421
Q 22	1.10 (1.17)	.75 (1.03)	3.697***	Q 45	.26 (.60)	.36 (.70)	-1.848
Q 23	.84 (1.28)	.75 (1.22)	1.578	Q 46	.28 (.59)	.34 (.73)	-2.161*
				Total Score	33.49 (26.13)	34.37 (26.40)	-1.912

Conclusions

- The MDQ-K demonstrated acceptable psychometric properties
- Possible explanations for discrepancies on items 22, 40, 46
  - Participants' English proficiency levels being not enough to fully understand those items in the original English version
  - Confusion regarding some of the medical terminologies used
  - Occurrence of survey bias, including either down-reporting or over-reporting, which is often seen when translating a single word
  - Response bias especially regarding demand characteristics, which were often observed in the survey participants.
- Implications for future nursing research and practice
  - A comprehensive validation process as well as a rigorous translational process is necessary before administering a translated questionnaire
  - Various factors should be put into consideration for the participants whose first language is not English (e.g., participants' English proficiency level, equivalence of translated questionnaire to the original language)

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