A Cluster Analysis on Cognitive Symptoms of Midlife Women: Racial/Ethnic Differences

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Purpose: A high prevalence rate of cognitive symptoms has been reported among middle women in their menopausal transition. However, little is known about the differences in cognitive symptoms among different racial/ethnic groups of midlife women. Cluster analyses are known to help identify groups with similar characteristics, which subsequently clarify the association of specific factors to being included in the category. Thus, a cluster analysis is expected to help clarify the association of race/ethnicity to cognitive symptoms experienced by midlife women during their menopausal transition. The aim of this secondary analysis was to determine the clusters of midlife women according to their cognitive symptoms and to examine the association of race/ethnicity to the cognitive symptoms by clusters.

Methods: This was a secondary data analysis of the questionnaire data in previous two Internet studies (collected from 2005 to 2013). The samples included 1,054 midlife women who were aged 40 to 60 years old and who had access to the Internet. The instruments used to collect the data were comprised of multiple questions on demographic characteristics, perceived health, and menopausal status and the Cognitive Symptom Index for Midlife Women. The data from the original studies were de-identified, and analyzed using SPSS (version 24.0) software. First of all, a hierarchical cluster analysis with an agglomerative approach and a tree view was performed to identify the cluster groups of midlife women by cognitive symptoms. Then, differences in background characteristics, perceived general health, and menopausal status among the finalized clusters were evaluated with descriptive statistics, Chi-square tests and multinomial logistic regression analyses.

Results: The participants’ mean age was 48.97 years (SD=5.69). Approximately 88% of them held bachelor or graduate degrees. Nearly 44% of them reported they were able to afford their basic life expenses (e.g., foods, housing, etc.) with their family income. Nearly 68% were married or partnered, 51% had 1 or 2 children, 32% reported that they had supports from family members or friends in most of the time, and 77% were born in the United States. The percentages of non-Hispanic Whites, Hispanics, non-Hispanic African Americans, and non-Hispanic Asians were: 30%, 24%, 24%, and 22%, respectively. About 40% had a normal BMI. About 74% reported that their perceived health is good. Over 55% had no known diseases. Over 53% were in early or late peri-menopausal status.

The analysis indicated four clusters including the low total symptom group (58%; Cluster 1), the low total symptom and moderate psychosomatic and psychosomatic symptom group (36%; Cluster 2), the moderate total symptom group (6%; Cluster 3), and the high total symptom group (5%; Cluster 4). Significant differences were identified in the level of education, employment status, family income, marital status, level of social support, country of birth, race/ethnicity, BMI, perceived general health, diagnosed disease, and menopausal status among the clusters (p<.01). Also, significant racial/ethnic differences were identified in the total numbers and total severity scores of physical symptoms and the total severity scores of total symptoms in Cluster 1. Significant racial/ethnic differences were also found in the total severity scores of total symptoms in Cluster 2.
Only in Cluster 2, the race/ethnicity was a significant factor influencing the women's cognitive symptoms. The lack of social support (social support available at none of the time), low family income (very hard to pay basics with family income), middle educational level (partial college), single/separated status, Asian ethnicity, poor perceived general health (as unhealthy), having a diagnosed disease, and pre- and peri-menopausal status were significantly associated with being in Cluster 2. Only the lack of social support (social support available at none of the time), low educational level, poor perceived general health (as unhealthy or don't know) and having a diagnosed disease were significantly associated with being in Cluster 4. More social support, higher educational level, better perceived status, and having no diagnosed disease were significantly associated with being in Cluster 1 compared with being in Cluster 4. Further analyses in Cluster 3 could not be conducted because of the small sample size in the cluster.

**Conclusion:** The findings partially supported the significant relationship of race/ethnicity to cognitive symptoms experienced by midlife women in their me

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**Symposium**

**Keywords:**

Cluster analysis, Cognitive symptom and midlife women

**References:**


Abstract Summary:
The purpose of this presentation is to report the findings of the clusters of midlife women by cognitive symptoms in multi-ethnic groups and discuss the racial/ethnic differences in the clusters.

Content Outline:
- Background
  - A brief literature review on cognitive symptoms of midlife women and the cluster analysis method.
- Purpose statement
  - Purpose of the study
  - Hypotheses tested
- Methods
  - Study Design: A secondary analysis
  - Samples and settings
  - Instruments
  - Data selection and analysis methods
- Findings
  - The identified clusters of midlife women in their cognitive symptoms
  - The association of race/ethnicity to the cognitive symptoms by clusters.
- Discussions
- Conclusions and implications for future research and health care

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