



Development And Psychometric Evaluation of the Cervical Cancer Belief Scale (CCBS)



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Background

- ❖ Instruments designed to measure beliefs about cervical ca screening among black women in Botswana & the surrounding region are presently not available.
- ❖ Instruments that are available are those that have been developed for and tested on white women in developed countries.
- ❖ Beliefs of these women about cervical ca may be different from those of Black women in SSA
- ❖ Reliable and culture specific instruments need to be developed [to address an identified need](#).
- ❖ **Aim:** To develop and evaluate the psychometric properties of the CCBS

Research Questions

1. Does the CCBS demonstrate content validity?
2. Is the CCBS internally consistent (reliable)?

- ❖ The Health Belief Model guided the study

The study was done in 4 phases

Method

Phase 1: Item Generation

- ❖ 60 items were generated, 15 per each of four conceptually defined HBM constructs.
- ❖ Perceived susceptibility, Perceived severity, Perceived benefits, and Perceived barriers.
- ❖ Items were generated from extensive literature review and qualitative data.

Phase 2: Content Validity

- ❖ Content validity testing by a panel of 4 experts (Advanced practice nurses of African descent)
- ❖ Items were rated on a 3-point scale as:
3 = “relevant “, 2 = “Somewhat relevant” and 1= “not relevant”
- ❖ Agreement of 75 - 100% of the experts was necessary for retention of the item.
- ❖ 5 items were delete: 4 = perceived susceptibility and 1 = severity
- ❖ 55 items were retained for instrument dev.
- ❖ Perceived susceptibility =11, severity =14, benefits=15, & barriers = 15
- ❖ All measuring on a 4-point Likert scale ranging from strongly disagree (1) to strongly agree (4).

Method

Phase 3: Pilot testing

- ❖ Pilot testing of the instrument on a convenient sample of 30 asymptomatic women at the University of Botswana.
- ❖ Items with questionable clarity were revised and reworded.
- ❖ The middle point “not sure was added” was added to the scale as recommended.

Phase 4: Reliability Testing

Sample

- ❖ Admin of instrument to a convenient sample of 300 asymptomatic Black women aged 30 years and above, and living in Gaborone (the capital of Botswana);
- ❖ Able to complete an English questionnaire and had heard about Pap smear.
- ❖ Permission was sought from relevant authorities in the USA & in Botswana.
- ❖ The informed consent letters written in English.
- ❖ Data collection by trained research assistants.
- ❖ Data analysis using SPSS statistical package

Results

Validity

- ❖ CVI of the items ranged from .50 – 1.00.
- ❖ CVI for the entire CCBS scale = .96

Reliability

- ❖ **Confirmatory Factor Analysis** of the 55 items found that a number of items did not adequately load in a four factor solution.
- ❖ The number of items was reduced to those that exhibited reasonable reliability, had a low percentage of ‘not sure’ responses, and low frequency of missing values.
- ❖ Thirty six (36) items were retained:
Perceived Barriers (14 items), Perceived Benefits (8 items), Perceived Severity (4 items), & Perceived Susceptibility (10) ..
- ❖ Reliability analysis of the 36 items using Cronbach’s Alpha gave generally satisfactory results with values from .53 to .89.
 - Perceived Barriers: 14 Items (.89)
 - Perceived Benefits: 8 Items (.68).
 - Perceived Severity: 4 Items (.53).
 - Perceived Susceptibility: 10 Items (.78)

Conclusion

- ❖ The CCBS has demonstrated evidence of validity.
- ❖ Cronbach’s Alpha gave generally satisfactory results.
- ❖ [The use of ‘not sure’ in the response scale rated as 3 on the 5 point Likert scale could have been problematic.](#)
- ❖ Analysis of the revised version of the instrument is on-going with “not sure” removed
- ❖ This study is a continuation of my program of research, which started with my dissertation findings. Guided by the HBM my dissertation findings indicated a relationship between personal beliefs about cervical cancer and women’s use of available cancer screening [services](#).

References

- ❖ DeVellis, R. (1991). Scale development: Theory and Application. Newbury Park: Sage Publications.
- ❖ McFarland, D. (2003). Cervical cancer and Pap smear screening in Botswana: Knowledge and Perceptions. International Nursing Review, 50(3), 167-175.

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