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# **Development and Psychometric Evaluation of a Questionnaire to Measure Factors Related to Hookah Smoking Initiation among Women: A Sequential Exploratory Mixed Methods Design**

**Thesis Submitted in Partial Fulfillment of Requirement for Ph.D.**  
**Reproductive Health**

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## Abstract

**Background:** Hookah smoking has recently emerged as a popular alternative to cigarette smoking particularly among young adults and women. In Iranian women, the use of hookah is the most common method of tobacco smoking. The aims of this study were to: develop the “Hookah Smoking Initiation Questionnaire for Women”; and, determine the psychometric properties of the questionnaire.

**Methods:** This was a sequential exploratory mixed methods design including two qualitative and quantitative phases. The study was conducted during 2012 to 2014 in Tehran, Iran. In the qualitative part, a sample of 36 Tehranian women participated in deep semi-structured interviews in order to develop a preliminary item pool. Consequently, in the quantitative part, psychometric properties of the questionnaire were determined using 323 women with history of hookah smoking.

**Findings:** from Qualitative data three themes emerged including, positive attitudes toward hookah; family and social facilitators; and sensory characteristics of hookah. The exploratory factor analysis indicated that the questionnaire could best be explained by six factors: *To draw the attention of the others; Need to have fun and relax; Hookah smoking in the family; Availability; Curiosity and Having a positive attitude towards hookah.* The construct and content validity, and the reliability of the scale were found to be satisfactory.

**Conclusion:** The results revealed the “Hookah Smoking Initiation Questionnaire” to be a psychometrically valid and reliable tool for evaluating hookah smoking initiation determinants. However, future research is needed to refine the questionnaire and to assess its applicability in different cultural settings.

**Key words:** Ghelyan, Tobacco, Women, Questionnaire, Mixed methods