

# Design and Psychometric Evaluation of Adolescent Reproductive and Sexual Health Self-Care Questionnaire Based on Protection Motivation Theory

Marjan Havaei, Leili Salehi and Sara Esmaelzadeh-Saeieh

*Albort University of Medical Sciences, Iran*

**Keywords:** Adolescents, sexual and reproductive health, validity, reliability

## Background & Aim

Many teens around the world are sexually active and this ratio increases from mid to late adolescence (1) First sex increases the risk of sexually transmitted infections (STIs), including HIV, and can lead to unwanted pregnancies and preterm delivery (2).

It is estimated that 21 million girls between the ages of 15 and 19 and 2 million girls under the age of 15 become pregnant each year in low- and middle-income countries (3,4).

In addition to affecting adolescent health, early marriage or childbearing often prevents girls from continuing their education and perpetuates the cycle of poverty (5,6,7).

Global statistics show that every 2 minutes, a teenager between the ages of 15 and 19 becomes infected with the HIV virus (8). In Iran, this number reaches 90,000 people, a significant part of whom are young people and adolescents (9).

Statistics show that the prevalence of sexual relationship among adolescents in Iran is 19.1%.

This information indicates that about one sixth of adolescents and young people in the country are at risk of reproductive and sexual health (10). Although the statistics obtained are much lower than the global statistics, it should be noted that due to the sensitivity of the issue, the statistics obtained are probably lower than the actual amount.

One of the educational theories in health education that is used to understand and predict health intentions and behaviors is protection motivation theory (11,12).

This theory is based on two presumptive cognitive pathways: threat pathway assessment and coping pathway. Threat pathway assessment consists of four structures in two groups, one group including perceived severity and perceived sensitivity and the other group

perceived reward assessment which includes internal rewards and are external rewards.

The balance between these two assessment pathways determines the intention or "protection motivation" to initiate, continue, or inhibit an adaptive response. This intention may lead to protective action (13-16).

## Methods

This was a methodological study which is data collection was carried out in two phases. The first phase was conducted to generate an items pool and the second phase was conducted to evaluate the designed questionnaire.

During qualitative phase, we conducted review of literature and interviewed with students. and item pool was generated. Then, the opinions of experts about the early version of the questionnaire were collected during delphi rounds. Experts were given items for Delphi rounds, and they were asked to indicate their agreement with each item based on a 5-point Likert scale (strongly disagree). The agreement of 80% of the members was considered as consensus among experts. And prefinal version was provided and questionnaire assessed regarding content and face validity. For content validity the questionnaire, CVR (content validity ratio) and CVI (material validity index) were computed by a group of experts (10 public health specialists). During the estimation of the material validity index, all items were held in the questionnaire, as CVI exceeded 0.79. Face validity refers to perceptions and understanding of the target population regarding the scale. In this stage, both quantities and qualitative methods were used. During qualitative section, 10 students evaluated the questionnaire with regard to the importance of the items based on a 5-point Liker scale to calculate the Item Impact Score (Impact Score = Frequency (%) × Importance).

During Quotative phase the psychometric properties of the questionnaire was assessed. And 250 students filled the questionnaire for EFA and 200 for confirmatory factor analyses.

Comparative Fit Index, Incremental Fit Index, Normed Fit Index, Non-Normed Fit Index, Root Mean Square Error of Approximation, and Standardized Root Mean Square Residual were used.

To assess the reliability of the questionnaire, the Cronbach's alpha and Intra class Correlation Coefficient was determined for each element. For ICC measurement, 15 students were completed the questionnaire two times with ten days' interval and the ICC of 0.4 or above was considered appropriate. The CFA i.e., confirmatory factor analysis were performed using the LISREL 8.80 for Windows. SPSS version 19.0 was used for all other statistical analyses. The items of questionnaire were scored by using weighted sum scores (multiplying the score of each item into its factor loading and then summing all of them)

### Results

All 450 students took part in the main study (250 for EFA and 200 for CFA). An initial questionnaire was developed during the qualitative phase. After content and face validity, some items were changed or deleted. Then 250 adolescents completed the questionnaire. The results obtained from exploratory factor analysis indicated a 7-factor solution (Perceived severity, Perceived Susceptibility, Response Cost, Response efficacy, Self-efficacy, Rewards) that jointly accounted for 87.5% variance observed. The Cronbach's alpha for the factors ranged from 0.71 to 0.96 and the stability of the questionnaire varied from 0.78 to 0.85. The confirmatory factor analysis indicated that the model fitted data well (GFI = 0.98, CFI = 0.99, RMSEA = 0.05, Chi-square/df < 3, p < 0.001).

### Conclusion

The findings suggest that the sexual and reproductive self-care questionnaire is a valid and reliable questionnaire. It is simple and easily scored and comprises significant concept for assessing sexual and reproductive self-care.

### References

1. Chandra-Mouli V., McCarrah D.R., Phillips S.J., Williamson N.E., Hainsworth G. Contraception for adolescents in low and middle income countries: Needs, barriers, and access. *Reprod Health*. 2014;11:1.
2. Williamson N. Facing the challenge of adolescent pregnancy. United Nations Population Fund; New York, NY: 2013. State of world population 2013. Motherhood in childhood; p. 132.
3. UNFPA. Girlhood, not motherhood: Preventing adolescent pregnancy. New York: UNFPA; 2015.
4. Darroch J, Woog V, Bankole A, Ashford LS. Adding it up: Costs and benefits of meeting the contraceptive needs of adolescents. New York: Guttmacher Institute; 2016.
5. Michaud P.A., Ambresin A.E. The health of adolescents around a world in transition. *Georgian Med News*. 2014;5:5459. Available at: <http://www.geomednews.org/shared/issues/med230.pdf#page=59>
6. United Nations International Children's Emergency Fund (UNICEF) 2012. Progress for children: A report card on adolescents. Available at: [http://www.unicef.org/publications/files/Progress\\_for\\_Children\\_No.\\_10\\_EN\\_04272012.pdf](http://www.unicef.org/publications/files/Progress_for_Children_No._10_EN_04272012.pdf)
7. United Nations Population Fund . 2013. Motherhood in childhood: Facing the challenge of adolescent pregnancy. Available at: <http://www.unfpa.org/webdav/site/global/shared/swp2013/EN-SWOP2013-final.pdf>
8. United Nations Children's Fund. For every child, end AIDS the Seventh Stocktaking Report, 2016. Accessed December 18, 2018.
9. AIDS report. prevention Cfda. Ministry of Health and Medical Education; 2017.
10. Khalajabadi Farahani F, Khoei E, Mohammad K. Meta analysis of premarital heterosexual relationships among young people in Iran over the past 15 years (2001-2015) *J Fam Res*. 2015;12:339-67.
11. Milne S, Sheeran P, Orbell S. Prediction and intervention in health-related behavior: A meta-analytic review of protection motivation theory. *Journal of Applied Social Psychology*. 2000;30(1):106-43.
12. Pack RP, Li X, Stanton BF, Cottrell LA. Psychosocial correlates of dual methods for contraception and STI protection in urban adolescents. *ISRN obstetrics and gynecology*. 2011;2011.
13. Allahverdipour H. Passing from traditional health education, moving toward health education basis on Theory. *Int J Health Prom Edu* 2004; 1:75.
14. Rogers R. Cognitive and physiological processes in fear appeals and attitude change are revised theory of protection motivation. 2th. New York Guilford Publication. 1983;P.153-76.
15. Milne S, Sheeran P, Orbell SH. Prediction and intervention in health related behavior: a meta analytic

review of protection motivation theory. J Appl Soc Psychol 2000; 30: 106-43.

16. Xiao H, Li Sh, Chen X, Yu B, Gao M, Yan H. Protection motivation theory in predicting intention to engage in protective behaviors against schistosomiasis among middle school students in rural China. PLoS Negl Trop Dis 2014; 8:3246.