



Self-Management and Transition Readiness Assessment: Concurrent, Predictive and Discriminant Validation of the STAR_x Questionnaire¹

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Introduction The STAR_x Questionnaire was designed with patient and provider input, to measure self-management and transition skills in adolescents and young adults (AYA) with chronic health conditions. With proven reliability and an empirically-based factor structure, the self-report STAR_x Questionnaire requires further validation to demonstrate its clinical and research utility. In this study we examine the concurrent, predictive, and discriminant validity of the STAR_x Questionnaire.

Methods: To examine concurrent validity, the STAR_x Questionnaire was compared to two other published transition readiness tools. Predictive validity was examined using linear regressions between

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URL: <http://www.med.unc.edu/transition> (M. Ferris).

the STAR_x Total Score and literacy, medication adherence, quality of life, and health services use. Discriminant validity was examined by comparing the performance of three chronic illness conditions on the STAR_x Total Score and associated subscales.

Results: The STAR_x Questionnaire and its subscales positively correlated with the scores for both transition readiness tools reflecting strong concurrent validity. The STAR_x Questionnaire also correlated positively with the literacy, self-efficacy, and adherence measures indicating strong predictive validity; however, it did not correlate with either quality of life or health care utilization. The performance of AYA across three different clinical conditions was not significant, indicating the clinical utility of this HCT tool for a variety of chronic health conditions.

Conclusion: The strong validity of the STAR_x Questionnaire, in tandem with its strong reliability, indicated adequate psychometric properties for this generic self-report measure. These strong psychometric properties should contribute to the STAR_x being a viable measure of health care transition for both research and clinical purposes.

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AS CHILDREN WITH chronic health conditions progress into adulthood, they experience many transitions, especially in regards to their health care. It is important for adolescents and young adults (AYA) to not only understand their condition, but also learn to self-manage their disease and become independent. A poor transition to adult care, where the AYA does not learn how to properly manage their disease can lead to poor health outcomes, which has been documented across many chronic health conditions (Ferris & Mahan, 2009; Gurvitz & Saidi, 2014; Lotstein et al., 2013). In order to achieve better outcomes, there is need for assessment of the skills for a successful health care transition (HCT). A systematic approach to assess HCT and self-management skills using tools with strong psychometric properties is warranted. Currently, there are few tools to assess these constructs.

The Successful Transition to Adulthood with Therapeutics = R_x (STAR_x) Questionnaire is a self-report measure to assess self-management and transition readiness skills in AYA with a variety of chronic health conditions (Ferris et al., 2015). We have described the item development, reliability, temporal stability and the six factor-based subdomains of this tool (medication management, provider communication, engagement during appointments, disease knowledge, adult health responsibilities and resource utilization) elsewhere (Ferris et al., 2015), with the current version of the STAR_x Questionnaire demonstrating good reliability. With proven reliability and an empirically-based factor structure, the STAR_x Questionnaire requires further validation to demonstrate its clinical and research utility.

This paper examines the validity of the STAR_x Questionnaire, and includes examination of concurrent, predictive, and discriminant types of validity. We measured how the STAR_x Questionnaire correlated with other measures of transition readiness and self-management, namely the provider-verified UNC TR_xANSITION Scale (Ferris et al., 2012) and the self-administered Transition Readiness Assessment Questionnaire (TRAQ) (Sawicki et al., 2009; Wood et al., 2014). It was hypothesized that the higher scores on the STAR_x Questionnaire would correlate with higher scores on the UNC TR_xANSITION Scale and TRAQ. We also examined how the STAR_x Questionnaire would correlate with potential

transition-related predictors or outcomes such as health literacy, self-efficacy, medication adherence, health care utilization, and quality of life. It was hypothesized that higher scores on the STAR_x Questionnaire would be significantly correlated with higher scores in measures of self-efficacy, health literacy, quality of life, and medication adherence. Conversely, we hypothesized that higher scores on the STAR_x Questionnaire would correlate with lower levels of health care utilization. Lastly, we assessed the STAR_x performance of three groups of AYA with chronic conditions in an effort to demonstrate its applicability to a wide variety of AYA with chronic conditions.

Methods

Data were collected from AYA with chronic health conditions who were seen at six large health systems representing the north-east, south-east, and mid-west regions of the United States, or who came from several states in the USA to attend a community-based therapeutic camp in the southeast region of the country. Studies were IRB-approved through the individual institutions, with one host institution, which coordinated the overall IRB. In the hospital setting, the survey data were collected online using the survey engine Qualtrics™ or via paper-and-pencil formats. Consents/Assents were obtained from all participants prior to completion of the survey.

Measures

Participants at all sites completed a demographics questionnaire which included questions about their age, race/ethnicity, sex, insurance status, current age, diagnosis, age at diagnosis of their chronic condition, and their highest grade in school.

The STAR_x Questionnaire

This self-report survey is comprised of 18 questions that are answered on a Likert scale. The STAR_x Questionnaire provides a total score and six factor-based scores: medication management, provider communication, engagement during appointments, disease knowledge, adult health responsibilities, and resource utilization. Scores range on each item from 0 (never, very hard, or nothing) to 4 (always, very easy, a lot), with an additional answer choice of "I Do Not Take Medicines Right Now," which is rated as a 5. The total raw score can range from 0 to 90, with higher scores reflecting more intact

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