

### Abstract

**Introduction:** To find out the relationship between diabetes, self-control and each phase of Prochaska and DiClemente's five Stages of Change model, a test of the validity of the Seino's Self-Control Scale (SSCS) was conducted. Additionally, the most relevant factor of SSCS associated with hemoglobin A1c was determined.

**Methods:** A cross-sectional study of 272 outpatients with and without type 1 or type 2 diabetes at one hospital in Tokyo was conducted in 2019. The research was a questionnaire survey consisting of SSCS, the Stages of Change, and the self-report of HbA1c.

**Results:** Using confirmatory factor analysis, SSCS revealed six factors the same as the previous study in both with and without diabetes. The factors identified were *Facing Reality*, *Prioritizing*, *Impulse Control*, *Resolving Problems*, *Anxiety Control*, and *Social Support*. Using multiple linear regression analysis for these six factors while setting HbA1c as an outcome, the SSCS factors associated with HbA1c varied across the Stages of Change.

**Discussion:** Results showed SSCS was validated. Based on finding Self-Control factors that are associated with HbA1c level at the different Stages of Change, we propose the designing intervention plans for behavior change in the *Preparation*, *Action*, and *Maintenance* stages. This study represents an important first step in understanding self-control through the Stages of Change among patients with type 1 and type 2 diabetes.

*Keywords:* diabetes, self-control, behavior, transtheoretical model, stages of change, outpatients