RESEARCH ARTICLE

Reliability and Construct Validity of the Malay Version of the Cyclist Motivation Instrument (CMI)

Cheah W Lian [1]✉, Helmy Hazmi [1], Emmanual R Razali Lukas [2], Irvy E Joannes [2], Jaeverny H Berry [2] and Luther Lim[2]

Abstract

With increasing interest in cycling, there is a need to understand what motivates cyclists to cycle. The Cyclist Motivation Instrument (CMI) has been shown to be a valid and reliable instrument to measure the motivation factors elsewhere. The present study was to assess the reliability and construct validity of the Malay version of the Cyclist Motivation Instrument among cyclists in Kuching, Sarawak, Malaysia. A total of 180 cyclists consented to participate in the study and were given the Malay version of the CMI to complete. Back translation method was used to ensure the face validity of the questionnaire. Reliability was determined using Cronbach's alpha for internal consistency. Construct validity was assessed using exploratory factor analysis. The internal consistency for all components was satisfactory with Cronbach's alpha coefficients of 0.799 to 0.880 and therefore confirmed the adequacy of these components. Exploratory factor analysis using Principal Component Analysis with a Varimax rotation showed 32 items were loaded into six factors orthogonal solution with 67.8% of the variance. In conclusion, all components of CMI were found to be reliable and valid for determining factors motivating cyclists to cycle.

Keywords: Cycling, motivating factors, psychometric testing

✉Contact email:wlcheah@fmhs.unimas.my (CW. Lian)

[1] Department of Community Medicine & Public Health, Faculty of Medicine and Health Sciences, University Malaysia Sarawak

[2] Faculty of Medicine and Health Sciences, University Malaysia Sarawak

Introduction

Cycling is a form activity of riding a bicycle for transport, recreation or sport. For many centuries, the bicycle has been an efficient means of transportation because of its ability to avoid traffic congestion, and it does not consume any fuel. Today, recreational cycling has become a popular health-enhancing physical activity. Statistics have shown that in country like Australia, ninety percent of the population aged 15 years or above are involved in recreational cycling in a non-organised capacity (Bell et al. 2006), and it is categorized as the fourth most popular physical recreation activity (Rissel et al. 2006). In Malaysia, a total of 15, 335 cyclists were recorded in year 2011 (Baikbike 2011). Cycling is an easy and low-impact activity that helps to reduce the risk of a range of health problem, notably heart disease and cancer - the leading preventable causes of premature death. Results from many epidemiological and experimental research supported that cycling has a positive impact on health. A longitudinal study among 30,640 subjects in Copenhagen found that those who did not cycle to work has a higher mortality rate (39%) compared to those who did (Cavill et al. 2007). Another study also reported similar findings where a regular cyclist enjoyed a fitness level that is equivalent to being five to ten years younger (Tuxworth et al. 1986).

With the increased interest in cycling, there is a need to understand what motivates people to cycle and sustain their interest that will improve their health and wellbeing. One of the health behaviour theories that explain the motivation in cycling is the socio-ecological theory (Bronfenbrenner 1979). This socio-ecological framework emphasized the importance of understanding the social, physical and policy environment to explain the intrapersonal determinants of participation (Giles-Corti et al. 2005). Based on this theory, Brown and colleagues (2009) developed a new tool, the Cyclist Motivation Instrument (CMI) to understand these motivations, with the intention that the knowledge gained can help to develop training programmes to promote cycling in formal and informal environments.

The CMI is an instrument that incorporates social, cultural, economic and ecological factors associated with the motivation of cyclists who take cycling as serious leisure activity. It is a self-administered questionnaire of 39 items – social (11 items), embodiment (11 items), self-presentation (8 items), exploring environments (5 items) and physical health outcomes (5 items). As at the time of writing of this paper, there has been no translation done in the Malay language, nor has the Malay version of the CMI been