

**UNIVERSITI TEKNOLOGI MARA**

**FACTORS ASSOCIATED WITH USABILITY OF  
THE EMPOWER-SUSTAIN GLOBAL  
CARDIOVASCULAR RISKS SELF-MANAGEMENT  
BOOKLET© AMONG INDIVIDUALS WITH  
METABOLIC SYNDROME IN PRIMARY CARE**

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## ABSTRACT

**Introduction:** Self-management support has been recognized as one of the most essential elements of the Chronic Care Model (CCM). Inspired by the CCM, the EMPOWER-SUSTAIN Global Cardiovascular Risks Self-Management Booklet© was developed to aid and sustain self-management among patients with Metabolic Syndrome (MetS) in primary care to prevent cardiovascular complications. However, the usability of this booklet among these patients was not known. Therefore, this study aimed to evaluate the usability of this self-management booklet and to identify the factors associated with its usability among patients with MetS in primary care.

**Methods:** This was a cross-sectional study conducted among patients with MetS attending two university primary care clinics in Selangor, Malaysia. The usability score was measured using a previously translated and validated EMPOWER-SUSTAIN Usability Questionnaire (E-SUQ) with a score value of >68 indicating good usability. Multiple logistic regressions determined the factors associated with its usability.

**Results:** A total of 391 patients participated in this study. More than half (61.4%) had a good usability score of > 68, with a mean ( $\pm$ SD) usability score of 72.8 ( $\pm$ 16.1). Participants with high education levels [secondary education (AOR 2.46, 95% CI 1.04, 5.83) and tertiary education (AOR 2.50, 95% CI 1.04, 5.96)], those who used the booklet at home weekly (AOR 2.94, 95% CI 1.63, 5.33) or daily (AOR 2.73, 95% CI 1.09, 6.85), and had social support to use the booklet (AOR 1.64, 95% CI 1.02, 2.64), were significantly associated with good usability of the booklet.

**Conclusions:** The usability of the EMPOWER-SUSTAIN Global Cardiovascular Risks Self-Management Booklet© was good among patients with MetS in these primary care clinics, which supports its widespread use as a patient empowerment tool. The findings of this study also suggest that it is vital to encourage daily or weekly use of this booklet at home, with the support of family members. The focus should also be given to those with lower education to improve the usability of this booklet in this group of patients.

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# CHAPTER 1

## INTRODUCTION

Cardiovascular diseases (CVD), namely ischemic heart disease and stroke, are the world's leading causes of death, accounting for a combined 15 million fatalities in 2019.<sup>1</sup> The clustering of CVD risk factors in an individual gives rise to Metabolic Syndrome (MetS), which is characterized by the presence of central obesity, elevated blood pressure (BP), elevated plasma glucose, and dyslipidemia.<sup>2</sup> Individuals with MetS are twice as likely as the general population to experience cardiovascular events.<sup>2</sup> MetS is estimated to affect 20–25% of the global adult population.<sup>3,4</sup> In Malaysia, the prevalence of MetS among adults aged  $\geq 30$  years old was found to be 43.4%.<sup>5</sup> Its rising prevalence is thought to be the driving force of the CVD epidemic in Malaysia,<sup>6</sup> where ischemic heart disease and stroke remained the principal causes of death over the last three decades.<sup>7</sup>

The management of MetS is complex and requires self-management support as advocated by the Chronic Care Model (CCM).<sup>8</sup> This model identifies six interrelated components of a healthcare system, including community resources, health system organization, self-management support, delivery system design, decision support, and clinical information system with the primary objective to enhance outcomes for chronic conditions, such as MetS.<sup>8,9</sup> Among these components, self-management support has been recognized as one of the most essential elements of the CCM as it has been proven to improve outcomes for a variety of chronic conditions.<sup>10-14</sup>

With this in mind, the EMPOWER-PAR study conducted by Ramli et al. in 2016 developed a self-management support tool named the EMPOWER-PAR Global Cardiovascular Risks Self-Management Booklet©<sup>14</sup> and has recently been updated to become the EMPOWER-SUSTAIN Global Cardiovascular Risks Self-Management Booklet©.<sup>15</sup> This booklet was designed as an empowerment tool for patients to understand their conditions, risk factors, potential complications, control targets and how to self-manage their cardiovascular risks with the aim of preventing CVD complications. This booklet is currently being distributed to patients with MetS in our primary care clinics. However, the level of usability of this booklet and the factors