
Sleep Quality as a Mediator Between Psychological Distress and Physical Quality of Life in Heart Patients

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Abstract

"Cardiovascular disease (CVD) accounts for 1 out of 3 deaths in Singapore, representing 29.5% of all deaths in 2013 (Ministry of Health Singapore, 2013a). Among CVD, coronary heart disease (CHD) is the most common diagnosis. In addition to the physical impairments, CHD patients are also likely to experience elevated psychiatric symptoms as compared to healthy individuals (National Institute of Mental Health, 2011), especially depression and anxiety (Todaro, Shen, Raffa, Tilkemeier & Niaura, 2007). Depression is characterized by anhedonia, sadness, feelings of worthlessness and guilt, difficulty in concentration, fatigue

and sleep difficulties (Spitzer et al., 1994). These symptoms can contribute to significant impairments in the health-related quality of life (QoL) and psychosocial functioning in affected individuals (Mendlowicz & Stein, 2000).

Study participants were 60 CHD patients from the community-based cardiac rehabilitation program at the Singapore Heart Foundation, who completed measures assessing their levels of depression (CESD; Radloff, 1977), health-related QoL (MacNew; Hofer et al, 2004), and sleep quality (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). Hierarchical multiple regression models were conducted to examine how depression and sleep quality were related and how they might impact the physical component of health-related QoL.

In the analysis, depression scores were entered in the first block, followed by sleep quality. A Sobel's test was used to test the strength sleep quality as a mediator between depression and physical QoL. The result demonstrated that higher depression was significantly associated with lower physical QoL and that this association was mediated by sleep quality. Higher depression was significantly associated with lower physical QoL ($\beta = -.341$, $p = .008$). As sleep quality was added into the model, while it significantly predicted physical QoL ($\beta = -.377$, $p = .003$), the coefficient between depression and physical QoL dropped from $-.341$ to $-.247$ ($p = .052$). A Sobel's test indicated a marginally significant mediation effect ($z = -1.73$, $p = .082$, two-tail). The findings suggest the potential importance of sleep quality in alleviating the detrimental impact of depressive symptoms on physical-related QoL."

Keywords: Sleep Quality, Physical Activity, Depression, Coronary Heart Disease
