

Enrollment and attendance to Cardiac Rehabilitation after Percutaneous Coronary Intervention in Sarawak: A Prospective Study

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Abstract: Background: Cardiac rehabilitation is vital for cardiac patients, especially after the percutaneous coronary intervention as it is proven to reduce recurrent cardiac event and death. The ongoing CR participations of the patients in Sarawak after percutaneous coronary intervention have not been explored.

Purpose: To examine the enrollment and attendance to cardiac rehabilitation among patients who have underwent percutaneous coronary intervention in Sarawak.

Methods: A prospective study was conducted. Data on baseline characteristics, diagnosis, smoking status, and referrals received for CR were collected for selected subjects prior to hospital discharge. Their attendances to CR programme were followed up at two months after hospital discharge. Independent sample T-test was used to analyse the continuous data and Chi square test was conducted for categorical data to identify the differences in characteristics between patients who was enrolled for CR and those who was not.

Results: Three hundred and eighty patients were recruited in this study. Among these patients, 141 patients (37.11%) were referred to CR. Only 58 patients (15.3%) completed all the eight sessions of the CR programme, 276 patients (72.6%) did not turn up and 46 patients (12.1%) dropped out before completing all the sessions. Patients who were enrolled in CR were more likely to be men ($p=0.001$), Malay ($p=0.000$), having travel time of less than 1 hour from home to hospital ($p=0.000$), and able to drive ($p=0.009$).

Conclusions/ Implications for Practice: The enrollment and attendance rate of CR in Sarawak is low. Men, Malay, staying near to the hospital, and being a driver were more likely to be referred to CR. Further study on this is needed as CR is proven to benefit the patients.

Keywords: Cardiac rehabilitation, enrollment, attendance, Percutaneous Coronary Intervention, Sarawak

I. BACKGROUND

Cardiac rehabilitation (CR) is a class I indication for patients after Coronary Revascularization procedures (Ministry of Health Malaysia, 2011, 2014). Participation in CR was significantly associated with 42% to 58% reduction in mortality (Beauchamp et al., 2013; Dunlay, Pack, Thomas, Killian, & Roger, 2014; Goel, Lennon, Tilbury, Squires, & Thomas, 2011) and reduction in hospital readmissions (Dunlay et al., 2014; Martin et al., 2012), which in turn could help in lowering the cost of the health care (Dendale, Hansen, Berger, & Lamotte, 2008). In addition, study has also shown that patients who attended only a proportion of CR sessions offered had more than 50% risk of death and myocardial infarction than patients who attended the CR sessions fully (Hammill, Curtis, Schulman, & Whellan, 2010). Despite these benefits, many studies

reported a relatively low attendance rate between 12% to 38% (Ali et al., 2012; Hutchinson, Meyer, & Marshall, 2015; van Engen-Verheul et al., 2013; Poh et al., 2015), and a high discontinuation rate up to 50% in the CR programmes (Ali et al., 2012; De Vos et al., 2013; Mikkelsen, Korsgaard Thomsen, & Tchijevitch, 2014; Soleimani et al., 2009; Turk-Adawi, Oldridge, Tarima, Stason, & Shepard, 2013).

Sarawak is one of the states in Malaysia. In Sarawak, Sarawak Heart Centre is the only government hospital which provides CR. There were very limited studies found in relation to the enrollment and attendance to CR programme in Sarawak. Percutaneous Coronary Intervention (PCI) is one of the most commonly performed procedures to treat coronary heart disease and 4762 PCIs were performed between 2007 and 2014 in Sarawak Heart Centre (Wan Ahmad & Liew, 2016). The ongoing CR participations of these CHD patients after the initial treatment have not been explored. Research in this area is imperative as these patients are at a substantial risk of recurrent cardiac event and death (Marmor, Geltman, Schechtman, Sobel, & Roberts, 1982; Thune et al., 2011). This study aimed to examine the enrollment, attendance, and barriers to CR among patients post percutaneous coronary intervention in Sarawak.

II. METHODS

Design, sample, and data collection

A prospective study was conducted in Sarawak. Data were collected on CR programme at Sarawak Heart Centre. In Sarawak Heart Centre, the CR programme consists of inpatient and outpatient CR. Inpatient CR, is also called Phase One CR, mostly involved correction of cardiac misconceptions, risk factor assessment, mobilization and invitation for outpatient CR before hospital discharge. In outpatient CR, Phase Two is delivered four weeks after hospital discharge in group sessions. It involved twice a week attendance for four weeks with a total of eight sessions. Phase Two includes exercise, education, risk-factor monitoring and treatment, stress management, and relaxation training. This study focused on the enrollment and attendance of patients in Phase Two.

