

Electronic Six-Minute Walk Test (E-6MWT): Less Manpower, Higher Efficiency, and Better Data Management

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Abstract : Six-minute walk test (6MWT) is a sub-maximal exercise test to assess aerobic capacity and exercise tolerance of patients with chronic respiratory disease and heart failure. This has been proven to be a reliable and valid tool and commonly used in clinical situations. Traditional 6MWT is labour-intensive and time-consuming especially for patients who require assistance in ambulation and oxygen use. When performing the test with these patients, one staff will assist the patient in walking (with or without aids) while another staff will need to manually record patient's oxygen saturation, heart rate and walking distance at every minute and/or carry oxygen cylinder at the same time. Physiotherapist will then have to document the test results in bed notes in details. With the use of electronic 6MWT (E-6MWT), patients wear a wireless oximeter that transfers data to a tablet PC via Bluetooth. Real-time recording of oxygen saturation, heart rate, and distance are displayed. No manual work on recording is needed. The tablet will generate a comprehensive report which can be directly attached to the patient's bed notes for documentation. Data can also be saved for later patient follow up. This study was carried out in North District Hospital. Patients who followed commands and required 6MWT assessment were included. Patients were assigned to study or control groups. In the study group, patients adopted the E-6MWT while those in control group adopted the traditional 6MWT. Manpower and time consumed were recorded. Physiotherapists also completed a questionnaire about the use of E-6MWT. Total 12 subjects (Study=6; Control=6) were recruited during 11-12/2017. An average number of staff required and time consumed in traditional 6MWT were 1.67 and 949.33 seconds respectively; while in E-6MWT, the figures were 1.00 and 630.00 seconds respectively. Compared to traditional 6MWT, E-6MWT required 67.00% less manpower and 50.10% less in time spent. Physiotherapists (n=7) found E-6MWT is convenient to use (mean=5.14; satisfied to very satisfied), requires less manpower and time to complete the test (mean=4.71; rather satisfied to satisfied), has better data management (mean=5.86; satisfied to very satisfied) and is recommended to be used clinically (mean=5.29; satisfied to very satisfied). It is proven that E-6MWT requires less manpower input with higher efficiency and better data management. It is welcomed by the clinical frontline staff.

Keywords : electronic, physiotherapy, six-minute walk test, 6MWT

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