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Commentary

The Role of the SF-36 in Cardiac (CR) and Pulmonary (PR) Rehabilitation

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DESCRIPTION

The Short Form (SF-36) Health survey is a generic health related Quality of Life (QoL) measurement tool. Based on a much longer survey developed in the 1980s by Ware, J.E. it has 36 items in 8 dimensions [1]. Over the years, the SF-36 has been used widely an d proven useful in many studies of general and specific populations, comparing the relative burden of disease, and in differentiating the health benefits produced by a wide range of different treatments [1].

Since its inception the SF-36 has been widely used, been well validated and has been found to be a reliable instrument. Since 1980 it has been translated into a number of different languages and has been adapted for use in a number of different cultures. It has been found to be a psychometrically sound measurement tool with well-established internal consistency and with good test retest reliability as a survey instrument [2].

A comparative effectiveness review by this author found that the SF-36 was the most commonly used QoL Patient Outcome Measure (POM) for CR and PR [3]. These programs are usually of 6 weeks duration or more and require pre and post program measurement of QoL to determine the longitudinal change in health status over time for each patient undergoing treatment [4]. This change in health status over time is termed responsiveness and is part of the discriminative powers of the QoL tool [5].

A quality assessment of the literature for CR and PR by this author included all 83 studies as the patient numbers for the existing RCTs were quite low whilst there were a number of community-based observation trials with large numbers, e.g. Ries (2005) with 1218 patients and Hevey with 1485 patients [3]. There were also gaps in the RCT literature including that all the RCTs were efficacy studies and not all the outcomes of importance were captured in the RCTs, such as the responsiveness of the POMs used in the studies [3]. Of the 83 articles assessed for the literature review it was found that only 47% of papers checked POMs for responsiveness in previous studies [6].

A further meta-analysis of the same literature by this author found that the responsiveness of the SF-36 in the area of CR and PR is not of a standard and consistency required of a research tool measuring pre to post program change in health status. The SF-36 PCS domain is the most responsive of the composite SF-36 domains, however the PCS shows less ability to discriminate in the higher SF-36 scores [6]. In the individual domains Role Physical, Role Emotional and Physical function are closely grouped as being the least responsive with meta-regression and scatter plots for these domains showing that there was no significant difference between pre and post scores for the SF-36 [6].

A qualitative research study by this author found from interviews conducted with patients in the CR and PR setting that there was a response shift in terms of what had changed for them between pre and post rehabilitation settings. Patient's values changed during the rehabilitation program, from what they perceived they wanted from the program at its start to the actuality of what the program did for them [7]. This type of response shift is termed reconceptualization, that is; QoL has a broad meaning and can be interpreted differently by different people and can be interpreted differently by the same person at two points in time [7]. This phenomenon is not accounted for in questionaires such as the SF-36, as it is a survey instrument and so QoL questionaires such as the SF-36 do not measure the change in health status pre to post CR and PR successfully.

There are a number of other issues that need to be addressed for a QoL instrument to be fully responsive in the setting of CR and PR. Firstly there is the problem of inferring change from a simple pre-test to post-test approach such as is currently performed in most research papers measuring QoL in CR and PR rehabilitation. Individual change tends to be a continuous process and nonlinear [8].

Most psychological processes such as the estimation of QoL are nonergodic, so that the structure of intra-individual and inter-individual variation is different and unrelated. That is, it should not be expected that a single individual sampled 100 times and 100 individuals sampled once will yield similar results [9]. However, both intra- and inter-individual variability often contain meaningful information that can have substantial impact on measured outcomes [9]. To deal with this problem multiple points

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of observation are needed instead of assessment at the beginning and end of treatment, which would throw away a great deal of data [5].

Overall the SF-36 is a successful POM as a survey instrument; however it falls short in some of the areas required to measure change in health status over time which is important in measuring pre to post program for CR and PR.

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