

THE SF-36 QUESTIONNAIRE: A TOOL TO ASSESS HEALTH-RELATED QUALITY OF LIFE

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ABSTRACT

Objective

The objective of this paper is threefold: (a) to circumscribe the concepts *quality of life* and *health-related quality of life*; (b) to explore the eight domains of the SF-36 questionnaire as a tool to holistically assess health-related quality of life and to intervene in improving quality of life; (c) to indicate the ethics of utilising the SF-36 questionnaire.

Material and method

The unobtrusive historical method (cf. Babbie 2002) was used in order to gather theoretical information with regard to: (a) the meaning of the concepts *quality of life* and *health-related quality of life*; (b) the contents of the SF-36 questionnaire and examples of intervening methods; and (c) the ethics of conducting research by means of the SF-36 questionnaire.

Results

By circumscribing the concepts *quality of life* and *health-related quality of life* (Tweedell 2002) exploring the eight quality of life indicators of the SF-36 questionnaire as a tool to measure health-related quality of life and to intervene in improving quality of life (Ware and Sherbourne 1992); as well as indicating the ethics of utilising the SF-36 questionnaire, the following could be deduced: (a) that quality of life and health-related quality of life could be assessed by means of the SF-36 questionnaire; (b) that, based on the SF-36 results, interventions could be implemented to improve quality of life; (c) that, in utilising the said questionnaire, it is imperative to act ethically correct.

Conclusion

The value of measuring individuals' experiences of their health-related quality of life by making use of the SF-36 questionnaire, is comprehensive. Firstly, specific problems, per health-related quality of life indicator, can be identified and, secondly, based on these findings, interventions can then be done in order to improve individuals' quality of life. Thirdly, the results of the SF-36 questionnaire allows one to appreciate why people behave as they do based on their perceived experiences of their health-related quality of life, fourthly, it is a tool to influence people in improving their quality of life and, fifthly, it can act as an assessment of whether or not interventions were successful.

Key words

Quality of life, health-related quality of life, SF-36 questionnaire, ethics.

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INTRODUCTION

Health-related quality of life is of major consequence across the whole spectrum of the human health continuum. Several studies have indicated that the assessment of quality of life does not only shed light on the life experiences of people with acute illnesses, but that it could also be invaluable in planning interventions that may improve people's quality of life. In addition, the question of which factors influence quality of life (which consequently affects all dimensions of an individual's life), are well documented in numerous scientific studies which were initiated in a number of different countries (i.e. Aalto et al. 1997, Antonovsky 1979, Baker and Intagliata 1982, Diener and Fujita 1995, Diener and Suh 1997, Evans et al. 1993, Frisch 1994, Hampton 1999, Irvine 1993, Jenkinson et al. 1996, Lane 1994, Møller 1992, Møller 1996, Møller 1998, Møller et al. 1987, Möller and Petr 2002, Möller et al. 2003, Nordenfelt 1993, Petr 1999, Petr 2000, Petr 2001, Petr et al. 2001, Ware 1994, Ware et al. 1999).

Although many studies have made a contribution to the understanding of health-related quality of life, most of these studies that focus on the relationship between *quality of life* and *health*, concentrate primarily (and in many cases exclusively) on *objective* indicators, such as sickness, income levels and social status (Møller 1992, Møller et al. 1987). In contrast, indicators relating to *subjective quality of life* or subjective well-being (how satisfied a person is with his/her life as a whole) still remain, to a great extent, in abeyance. In order to make provision for indicators relating to *subjective quality of life*, Ware and Sherbourne (1992:473) developed a 36-item short-form (SF-36) questionnaire "...for use in clinical practice and research, health policy evaluations, and general population surveys." The Oxford Healthy Life Survey (1991/1992), which was conducted by the Health Services Research Unit at the University of Oxford in England, provided the normative data for the SF-36 questionnaire.

By utilising and applying the quantitative research methods of the SF-36 questionnaire, it is possible to assess the dimensions of quality of life scientifically. Based on the results of the assessment of an individual's experience of health-related quality of life, specific interventions, such as the administering of medicine or psychological counselling, can be done in order to improve the physical, psychological and social well-being of a person. The SF-36 questionnaire also makes it possible to compare the perceptions of, on the one hand, people suffering from ill-health with, and on the other hand, people enjoying good health. Except for a few studies, such as the work of Möller and Smit (2004), there remains, however, a significant lacuna in the literature regarding comparative data on the health-related quality of life of people living with chronic diseases and that of a population of healthy individuals. Further studies utilising the SF-36 questionnaire as measuring instrument, may address this theoretical gap.

OBJECTIVE

The objective of this paper is threefold:

- To circumscribe the concepts *quality of life* and *health-related quality of life*.
- To explore the eight domains of the SF-36 questionnaire as (a) a measuring tool to holistically assess health-related quality of life and (b) as a tool to guide intervention programmes in improving health-related quality of life.
- To indicate the ethical considerations of conducting research by making use of the SF-36 questionnaire.

RESEARCH METHOD

The unobtrusive historical research method was used in order to gather theoretical information on health-related quality of life in general and the SF-36 questionnaire in particular, by scrutinising relevant scientific books and journals as well as sources sited on the Internet. The theoretical information gathered focused specifically on the following: (a) the meaning of the concepts *quality of life* and *health-related quality of life*; (b) the contents of the SF-36 questionnaire and examples of intervention programmes to improve quality of life which are based on information provided by the

SF-36 questionnaire; and (c) the ethical considerations which need to be borne in mind when conducting research by means of the SF-36 questionnaire. By using this nonreactive historical method it was possible to gather information and to develop a better understanding of the concept *health-related quality of life* and the abovementioned aspects related to the SF-36 questionnaire, without affecting the documented information (Theodorson and Theodorson 1970: 450, Babbie 2002:499-450).

RESULTS

In a society fraught with individuals who are constantly aware of the lurking threat of a multitude of illnesses, continuously more emphasis are being placed on striving towards a holistic sense of health and well-being. Due to the onslaught of AIDS, the adult mortality rate in South Africa has increased from 228 per 1,000 in 1990 to an estimated 520 per 1,000 in 2002 (Department of Health 1998:166, Medical Research Council 2001:21). This has brought about a visible decline in the life expectancy of the South African population, from 63 years in 1990 to between 53.2 and 56.5 years in 2000 (National Population Unit 2000:62). In the light of the high mortality and morbidity rate in this country, as is the case in many other (developing) countries, the concept *quality of life* and the way in which one can achieve a better holistic well-being, have become key issues.

The meaning of the concept *quality of life*

The concept *quality of life* refers to “the degree to which a person enjoys... in the areas of being (who one is: physical being, psychological being, spiritual being), belonging (connections with one’s environments: physical belonging, social belonging, community belonging) and becoming (achieving personal goals, hopes, and aspirations: practical becoming, leisure becoming, growth becoming) the important possibilities of his or her life” (Centre for Health Promotion, 2004). One of the central components in the areas of ‘being’, ‘belonging’ and ‘becoming’, is the person’s perception of his/her own health. It is therefore important to shed more light on the concept *health-related quality of life*.

The meaning of the concept *health-related quality of life*

When deliberating an individual's perception of his/her state of health, it is important to take, as point of departure, the definitions of *being ill* and *being healthy*, which can be seen as the dichotomous poles of the human health continuum. *Illness* refers to an individual's awareness of the presence of disease in his/her body and, besides biological and physical factors, may be related to social factors such as the experience of alienation, i.e. a weak integration with other people (Andersen and Taylor 2002:565). In accordance with the widely adopted view of the World Health Organisation (WHO) *health* can be considered as 'a state of complete physical, mental, and social well-being, not merely the absence of disease and infirmity (Kendall 2002:404, Tweedell 2002:2). In congruence with the World Health Organisation's definition of *health*, health-related quality of life refers to the overall conditions of the quality of life of ill or healthy individuals in accordance with the following eight domains: (a) limitations in physical activities because of health problems, (b) limitations in social activities because of physical or emotional problems, (c) limitations in role activities because of physical health problems, (d) bodily pain, (e) general mental health, (f) limitations in role activities because of emotional problems, (g) vitality, and (h) general health perceptions of an individual or a group measured in terms of feelings of satisfaction or dissatisfaction (Ware and Sherbourne 1992:473-483). The measurement of health-related quality of life is thus a *subjective* assessment of one's own well-being - a perception of the degree of contentment with and capability to perform and control different facets of one's life (Molassiotis et al. 2001:319).

The SF-36 questionnaire: a tool to holistically assess health-related quality of life and to adopt intervening methods to improve health-related quality of life

Previously, researchers and medical practitioners have relied on disease-specific evaluations to assess a patient's health-related quality of life prior and after medical intervention. It is only during the past two decades that a more generic approach to measuring a person's health status has been developed (Shapiro and Richmond 1996:196). The focus has thus, according to Sherman (2001:8), shifted beyond a mere general perception of health and quality of life, to that of the assessment of more specific dimensions of health-related quality of life. Of those generic measuring self-reported

instruments which concentrate on a dimensional approach to quality of life, and which have been tested with regard to an array of diseases, the 36-item short-form health questionnaire (SF-36) is considered one of the best (Joshi et al. 2001:136, Shapiro and Richmond 1996:196).

The SF-36 questionnaire, which has been documented in over 2000 publications, proved to be very useful for measuring health-related quality of life (HRQOL). This holds true for the assessment of HRQOL of individuals suffering from different ailments from both general and specific populations, in various situations and under different circumstances (cf. Mapes et al. 2003, Patti et al. 2003, Strassnig et al. 2003, Ware 2001:1). In their appraisal of health-related quality of life instruments, Joshi et al. (2001:136) found that the SF-36 questionnaire "... fared better than all its counterparts. The instrument has minimal respondent burden and ... appears to be most optimal for HRQOL measurement..."

The SF-36 questionnaire, which concentrates on the respondents' experiences, feelings, beliefs, perceptions and convictions concerning their health-related quality of life during the past four weeks, consists of closed-ended structured questions. These questions relate specifically to eight quality of life indicators and two summary measures that revolve around both physical and mental health. The closed-ended questions of the SF-36 questionnaire compel respondents to select their responses from a set of possible answers compiled by Ware and Sherbourne (1992) (Stark and Roberts 2002:138). These questions comply with the methodological guideline for closed-ended questions (Babbie 2002:275, Birky 2002:17), in so far as:

- No loaded questions are asked. Because the questions are formulated clearly, it is therefore not necessary for respondents to decipher what exactly is meant with a specific question.
- No difficult theoretical concepts are used.
- No negative items are used - seeing that negation in a questionnaire increases the possibility of misinterpretation.

- No double-barrelled questions are asked; instead, each item represents only a single question.
- Questions that respondents would not be able to answer due to a lack of appropriate information, were avoided.
- All the questions asked are relevant to the context of measuring health-related quality of life.
- The items are short and are formulated in such a way that any possible biased response, is avoided.

The SF-36 questionnaire also allows one to reach three key goals of both the natural and social sciences (Henslin 2003:6-7, 23). Firstly, to make generalisations, that is, to go beyond the individual case and make statements that apply to a broader group or situation regarding individuals' quality of life and health-related quality of life. Secondly, the questionnaire enables the researcher/practitioner to predict or specify possible outcomes with regard to an individuals' health-related quality of life. Lastly, the SF-36 questionnaire provides possible solutions to improve health-related quality of life in each of the eight dimensions, by suggesting possible intervening methods or programmes.

Apart from achieving the above-mentioned scientific goals, the SF-36 questionnaire also has a high level of validity. The *content validity* of the SF-36 questionnaire is, for example, confirmed by systematic comparisons that indicate that this questionnaire includes eight of the most frequently represented health concepts in the assessment of health-related quality of life. Individuals' health-related quality of life is measured in terms of their feelings of satisfaction or dissatisfaction with regard to the eight different dimensions (Ware and Sherbourne 1992:473-483, Ware 2001:1-3). However, other quality of life indicators are: the mortality rate (incidence of death in a population measured in terms of the number of people per 100 000 in a population that die over a period of time); the morbidity rate (incidence of disease in a population measured in

terms of the number of people per 100 000 in a population that become sick over a period of time); the infant mortality rate (number of deaths in the first year of life per 1000 live births); life expectancy (the average number of years a person can expect to live).

A short overview of each of the eight health-related quality of life dimensions assessed by the SF-36 questionnaire, will suffice:

- **Physical functioning:** The scores on the physical functioning domain scale indicate the extent to which the respondents' perceptions of their quality of life are influenced by their physical condition. In the first place, physical functioning refers to the extent to which the respondents are able to perform *vigorous activities* such as running, lifting heavy objects, participating in strenuous sports, climbing several flights of stairs and walking more than a kilometre. In the second place, it entails the performance of *moderate activities* such as bending, kneeling or stooping, bathing and dressing themselves.
- **Physical roles limitation:** This dimension refers to the extent to which respondents' performance of their roles in daily activities is impeded by their physical state of health. For example, their ability to perform vigorous activities such as lifting heavy objects or to perform moderate activities such as moving a table or pushing a vacuum cleaner.
- **Emotional roles limitation:** This dimension assesses the extent to which the emotional condition of the respondent, e.g. feeling depressed or anxious, limits his/her daily functioning and ability to perform roles, such as in cutting down on the amount of time spent on work or other activities and accomplishing less than he/she would like to.
- **Social functioning** refers to social activities and interaction with significant others such as family members, friends, neighbours and other social relations.

- **Bodily pain:** The scores on this dimension indicate to what extent the respondents' experience of bodily pain hinders their performance of daily activities, including work-related duties in the public domain and tasks within the home environment.
- The **mental health** dimension of the respondent is measured in terms of the extent to which he/she is *inter alia* feeling full of pep, is happy, is feeling calm and peaceful, is very nervous, or is feeling worn out and tired.
- The **vitality** dimension relates to the respondent's experience of feeling energetic and full of pep, or worn out and tired.
- The perception of an individual's **general health** is measured in terms of concepts such as excellent, very good, good, fair or poor, getting ill easier than other people, and just as healthy as anyone he/she knows.

Regarding the *construct validity* of the SF-36 questionnaire, Ware (2001:1-2) points out that a factor analysis of data from the medical outcomes study (MOS) on the general population of the United States of America, which used the SF-36 questionnaire, confirmed that physical and mental health factors, as measured by the eight dimensions of the questionnaire, account for as much as between 80% and 85% of the variance in the respondents' perceptions of their health-related quality of life. Studies of the general populations in both Sweden and the United Kingdom resulted in similar findings. From the above studies it is evident that three scales, namely the physical functioning, physical roles limitation and bodily pain dimension scales, correlate most highly with the physical component of health-related quality of life. Moreover, the mental health component of subjective quality of life correlates most highly with the general mental health, emotional roles limitation and social functioning scales. In addition, the vitality, general health perception and social functioning scales have significant correlations with both the physical and mental health components (Ware 2001:1-2).

Construct validity of the SF-36 questionnaire was also confirmed by factor analyses of data from studies conducted in South Africa among police on active duty (Möller and

Petr 2002) and people suffering from HIV/AIDS (Möller et al. 2003). The first of the two studies, which was conducted in June of 2001, focused on the health-related quality of life of members of the police force on active duty in Potchefstroom in the North West Province of South Africa (sample size = 70). The second study concentrated on the health-related quality of life of people suffering from AIDS residing in Potchefstroom, North West Province, and was conducted in November 2002 (sample size = 43). The following findings, which were based on a factor pattern analysis of the perceived health-related quality of life of the respondents in the two samples, came to the fore:

- Among members of the police on active duty, Factor 1 correlates most highly with the bodily pain (0.80498), mental health (0.79442), vitality (0.72143), and social functioning (0.44538) scales. Factor 2 correlates most highly with the emotional roles limitation (0.53938), general health (0.57477), and physical roles limitation (0.57086) scales. The physical functioning scale (-0.09407) does not fit into either of the two clusters. The variance explained by Factor 1 is 3.0379992 and by Factor 2 is 1.4588260. The final communality value for the eight scales is 4.496825.
- Among people living with AIDS, Factor 1 correlates most highly with the physical functioning (0.86134), emotional roles limitation (0.83928), mental health (0.78995), and physical roles limitation (0.51071) scales. Factor 2 correlates most highly with the general health (0.84887), vitality (0.66407), social functioning (0.64697), and bodily pain (0.57002) scales. The variance explained by Factor 1 is 3.3308601 and by Factor 2, 2.3613138. The final communality value for the eight scales is 5.692174.

Based on the fact that the two samples are independent of each other, with unequal variances and that the same SF-36 measuring instrument was used in both studies, made it possible to use *t*-tests to compare the two groups' scores on the eight scales (domains) of the SF-36.

The implementation of intervening programmes or methods to improve quality of life, has many methodological challenges (Rack 2003:137). These challenges include questions such as: What are the nature and the extent to which these intervention programmes impact on individuals' health-related quality of life? For whom do these

programmes work? The SF-36 questionnaire, with its holistic approach, provides data that does not only empower the patient, but also the researcher, medical practitioner, social worker, and the government to adopt intervening methods and/or programmes in the attempt to improve the health-related quality of life of individuals. Such a holistic approach is advantageous in at least three ways:

- The SF-36 questionnaire assesses the entire health-related situation of individuals, by focussing on the way in which they define and experience their quality of life (Sato and Smith 1996:93, 97-98). Facilitating an improvement in a person's quality of life, by changing attitudes, perceptions and values through learning, are therefore imperative. A number of role-players might make a vital contribution in facilitating this kind of change. These role-players include the medical profession, religious groups, community leaders, women, the media, non-governmental organisations, institutions of higher learning, the private sector and municipalities.
- A holistic approach also encourages people to improve their quality of life by becoming involved in joint decision-making and co-ordinated implementation strategies (such as medical intervention and networking). In this context, it is important to mobilise and increase the participation of stakeholders, such as *inter alia* the medical profession, religious groups, community-based organisation, women, and non-governmental organisations, to establish i.e. care groups (cf. Sato and Smith 1996:93, 97-98).
- Furthermore, a holistic approach promotes the empowerment of the individual in so far as emphasising the individual's ability to take control over his/her own quality of life, through taking action and by accepting responsibility for such actions. In order to encourage individuals to take control of their own quality of life and environment, it is necessary to (a) advocate the establishment of support groups that focus on empowerment and (b) create funding mechanisms that would assist and encourage individuals to take responsibility for improving their own quality of life (Sato and Smith 1996:93, 99).

In addition to the above-mentioned advantages of utilising a measuring instrument with a holistic approach to health and quality of life, such as the SF-36 questionnaire, a further

three valuable contributions can also be identified based on the ideas of Macionis (2003:9):

- The first of these contributions is related to the attempt to assess the truth. We all are prone to take a multitude of things for granted, yet our views of life and our environment is usually based on our subjective perceptions, rather than the objective truth. The holistic approach of the SF-36 questionnaire encourages us to ask whether a health-related assumption is indeed true, and to question those erroneous and inaccurate, though still widely held, assumptions we are confronted with regarding health and quality of life.
- The SF-36 questionnaire also helps the individual to assess both the opportunities and the constraints in his/her life, which may influence ones quality of being. The more we understand the game of life, the better players we shall become – empowering us to pursue our goals more effectively and thus improving our quality of life.
- Based on the knowledge gained from the holistic approach of the SF-36 questionnaire, individuals can become more active participants in society. The better our comprehension of individuals’ perceptions and experience of their quality of life, the greater the likelihood for us to develop a sense of compassion and social responsibility towards our fellow-citizens.

Ethics

When the ethical considerations of conducting research by making use of the SF-36 questionnaire, are scrutinised, the following issues come to the fore (Babbie 2002:74, Berg 1998:31-53, Homan 1991:1-8, Stark and Roberts 2002:157-158): Prior to the assessment of an individual’s health-related quality of life, he/she must be informed about and assured of a number of things. This information and assurance can either verbally be given by the fieldworker or by means of a covering letter that accompanies the SF-36 questionnaire. The information includes the following:

- It must be clearly stated that, by completing the questionnaire, the respondent will be participating in research.

- The purpose of the research must be explained.
- An outline of the procedures of the research must be given.
- The respondent must be assured that the completion of the questionnaire is voluntary.
- It must be stated that the privacy of the respondents is preserved through anonymity and that no-one would be able to relate a given response to a given respondent.
- The respondent must be assured that the use of the data will be strictly confidential.
- Lastly, it must be stated that the results will be reported accurately and that all shortcomings in the research, such as errors and limitations, will be disclosed.

CONCLUSION

From a socio-medical point of view, addressing issues of health and illness in a population cannot be isolated from the perceptions and experiences of the individuals in that population with regard to their own health and well-being. Therefore, the value of assessing individuals' experiences of their health-related quality of life, by utilising the SF-36 questionnaire, lies in the fact that it is possible to identify specific health-related problems affecting different dimensions of a person's life. Based on this information, interventions could then be done, per quality of life indicator, in order to improve individuals' quality of life. In addition, the results of the SF-36 questionnaire allow one to appreciate why people behave as they do, based on their perceived experiences of their health-related quality of life. This measuring instrument can also, on the one hand, be used as a tool to influence people in improving their quality of life and, on the other hand, act as an assessment of whether or not interventions were successful.

To conclude, it is important to ask the following question: Why is it important to improve the quality of life of people by implementing intervening programmes, based on data from measuring instruments such as the SF-36 questionnaire? The following three different theoretical perspectives are all in accord that the implementation of intervening programmes are imperative from both a medical and a social point of view (Henslin 2003:564-567, Ritzer & Goodman 2004):

- From a functionalist perspective, having individuals suffering from ill-health is dysfunctional to society. It is dysfunctional in so far as creating a disturbance or a hindrance in the social milieu – especially when a person cannot perform his/her

role obligation as expected from him/her. This culminates into a reduced value of human capital, which is linked to the individual's incapacity to perform physical activities (such as walking), or the individual's experience of bodily pain, or tiredness. Some individuals may also (a) be unable to maintain good mental health and emotional well-being, which manifest in feeling depressed, very nervous, unhappy or anxious, and (b) find it difficult to maintain social activities and interaction with significant others such as family members and friends.

- Most theorists with a conflict theoretical point of departure, are of mind that social inequalities are likely to result in disproportionately greater illness in society among the poor - rendering them helpless and barring them from enjoying good quality of life and optimum health. Health issues in society can therefore not be addressed without the attempt to eradicate social inequality.
- From a symbolic interactionist perspective it is clear that one's self-perception is a central part of your definition of reality. In order to understand a person's behaviour, it is imperative to assess that person's perceptions and experiences of his/her life (which will include the experience of health-related quality of life). According to interactionists, intervention programmes may be highly effective, in light of the perspective that individuals can redefine and reinterpret their experiences of their social milieu and change the way they view themselves.

However, in order for all intervention programmes to be effective and the role of civil society, voluntary and non-governmental associations to be successful in enhancing an individual's physical, psychological and social well-being, they need to reflect changes in values, norms (e.g. only one sex partner), social structures (e.g. the implementation of the current South African national AIDS strategy for the prevention of AIDS), as well as facilities (e.g. changes in the provision of voluntary counselling, anti-AIDS medicine).

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