

Review

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The Women's Health Questionnaire (WHQ): Frequently Asked Questions (FAQ)

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Abstract

The Women's Health Questionnaire (WHQ) is a measure of mid-aged women's emotional and physical health. Since its publication in 1992 the WHQ has been widely used in multinational clinical trials, in epidemiological studies as well as in the evaluation of non-medical treatments. In particular the WHQ has been included as a quality of life measure in trials of hormonal preparations for peri and post menopausal women and in studies using a variety of preventative interventions for mid-aged and older women. The questionnaire was developed in English and standardised on a sample of women aged 45–65 years. It is reliable, has good concurrent validity and is sensitive to detecting change, and is available in 27 languages. The range of subscales included in the WHQ enable a detailed assessment of dimensions of emotional and physical health, such as depression, anxiety, sleep problems, somatic symptoms, with optional subscales for menstrual problems and sexual difficulties.

The WHQ is the first measure to be included in the MAPI Research Institute's database, the International Health-related Quality of Life Outcomes Database (IQOD). Drawing upon data from international studies this project aims to produce reference values for cross-culturally valid, reliable and responsive quality of life instruments. In addition to this work, a revised shorter version of the WHQ is currently being developed.

Why assess Health-Related Quality of Life with the Women's Health Questionnaire (WHQ)?

The use of health related quality of life (QOL) measures has increased exponentially during the past 20 years. There is clearly a need for valid and reliable instruments that can be used in epidemiological and multinational studies. The WHQ [1] is one of the most frequently utilised measures in the assessment of QOL in mid-aged populations of women. The WHQ was originally designed to assess symptom perceptions during the menopause

transition and for older postmenopausal women, in response to the lack of available instruments standardised for this age group. It is within this age range (45–65 years) that hormonally mediated changes, such as vasomotor symptoms and vaginal dryness, menstrual changes and age-related bodily changes, such as changes in sleep patterns sexual behaviour and physical health, are prevalent. These changes can confound results derived from traditional scales. By sampling a range of symptoms, the development of the WHQ enabled examination of the

relationships between these symptom clusters. It can be used solely or as part of a quality of life assessment and in the evaluation of interventions and preventative strategies for mid-aged and older women.

What is the WHQ?

The WHQ is a 36-item questionnaire assessing nine domains of physical and emotional health rated on four point scales [1,2]. Partly because the WHQ was developed to evaluate changes experienced by women during the menopause transition it has been considered a 'disease specific' instrument. However, the questionnaire measures a range of domains of symptom experience, some of which are relevant to the menopause, such as vasomotor symptoms, and others which are associated with psychosocial factors, general health and or ageing, such as sleep and sexual problems and cognitive difficulties. Applications of the WHQ have been varied and range from the evaluation of hormone treatments for menopause related problems, to epidemiological studies with populations of healthy women. The WHQ is population specific in that it is applied to women only. Consequently the WHQ can also be considered to be a 'generic' QOL measure for these mid-aged populations.

What areas of health does the WHQ measure?

The following domains are covered by the questionnaire:

- Depressed mood (6 items)
- Somatic symptoms (7 items)
- Anxiety/fears (4 items)
- Vasomotor symptoms (2 items)
- Sleep problems (3 items)
- Sexual behaviour (3 items)
- Menstrual symptoms (4 items)
- Memory/concentration (3 items)
- Attractiveness (3 items)

How was the WHQ developed?

The WHQ was developed in the 1980s by Myra Hunter at London University [1,2]. Women aged 45 to 65 years were recruited from a large sample of women who took part in an ovarian screening programme in south London. Those who had undergone surgical menopause or who were taking hormone replacement therapy (HRT) were excluded. Eight hundred and fifty returned completed questionnaires (78% response rate). The mean age was 52.32

years, 82% were married and 66% employed outside the home. The proportions in different socioeconomic categories were similar to the general population statistics for women living in South East England, based on figures taken from the UK Office of Population Censuses and Surveys. The WHQ was subsequently used in a study of 106 women drawn from the age sex registers of five general practices in South London. The means were very similar to the norms [3,4].

Item reflecting mood states, physical sensations, vaginal dryness, sexual interest and satisfaction, vasomotor and menstrual symptoms were included, as well as sleep problems and other generally reported physical symptoms, such as tiredness, headaches and dizziness. The mood items were drawn from the Leeds' Scales for depression and anxiety [5], because they were developed to assess mood in general population samples, but normative data for older women were not available at the time. Following pilot work 36 items were selected. These were rated on four point scales to reflect frequency – Yes, definitely; Yes, sometimes; No, not much; No, not at all. A time frame of the past few days was chosen to elicit current symptom and mood states. Items were phrased both positively and negatively.

Factor analysis (principal components with varimax rotation) was used to explore the relationships between symptoms and to enable the development of meaningful summary scores. Nine factors accounted for 55.7% of the variance; these are listed as follows with the number of items in parentheses:

Depressed mood (6), somatic symptoms (7), anxiety/fears (4), vasomotor symptoms (2), sleep problems (3), sexual behaviour (3), menstrual symptoms (4) and memory/concentration (3). The 'attractiveness' scale (2) accounted for a small proportion of the variance and is now generally omitted.

How was the WHQ validated?

Test-retest reliability was conducted on a sample of 48 women who completed the WHQ on two occasions. All correlations were above .75, ranging from .96 to .78, suggesting that the WHQ is reliable across a two-week time interval.

Concurrent validity of the mood items was assessed by comparison with the General Health Questionnaire (GHQ) [6]. The 30-item version was used as this was devised leaving out items that are frequently responded to by people with physical illnesses [7]. The GHQ correlated .86 with depressed mood (WHQ). Using a cut-off point of above .43 (depressed mood scale), 87.5% of the cases were correctly classified into those considered at risk ver-

sus those not considered at risk of clinical depression (GHQ>5). Using the depressed mood cut-off point, 13.6% of the standardisation sample would be classified as cases. These figures are consistent with British community surveys of psychological morbidity, for example 14.9% of women in Camberwell, which is the location of the teaching hospital involved in the standardisation of the WHQ [8].

Furthermore, a comparison of the WHQ and SF36 subscales was carried out using a 50 year old sample of menopausal women. As expected the Depressed mood subscale significantly correlated with the Mental Health SF36 scale (-.70) and with the Vitality scale (-.65).

In collaboration with MAPI Research Institute a study of the psychometric properties of the WHQ is being conducted using a large data base, which include the following language translations: Belgian Dutch, Belgian French, Dutch, English UK, English USA, French, German, Italian, Polish, Portuguese and Spanish. WHQ data has been examined to provide information about the psychometric properties of the translated versions of the scales. Provisional multi-trait analysis suggests that the internal reliability of the subscales is reasonable. Cronbach alpha levels were as follows: depressed mood (.7), anxiety (.77), somatic symptoms (.76), vasomotor symptoms (.84), sleep problems (.73); for menstrual problems and sexual problems the coefficients were lower, being .64 and .59 respectively. Further analyses will include an examination of the relationships between items of the WHQ for the different samples, in order to develop a revised version of the WHQ. This is a development which forms part of the IQOD project (see section below)

In which populations has the WHQ been used?

The WHQ has been applied in studies of healthy mid-aged women [9], in peri and post menopausal women seeking help and being treated for menopausal problems, for example with vasomotor symptoms, sexual problems or emotional problems or who might be seeking preventative treatment for osteoporosis [10–13], and in samples of women who experience menopausal symptoms following treatment for breast cancer.

What translations are available?

The WHQ has been translated into the following languages (by MAPI Research Institute (27, rue de la Villette, 69003 Lyon, France who can be contacted to obtain translated questionnaires)): Afrikaans, Bulgarian, Croatian, Czech, Danish, Dutch, Dutch for Belgium, English for Australia, English for Canada, English for the USA, Finnish [14], French, French for Belgium, German, Hungarian, Italian [15,16], Norwegian, Polish, Portuguese, Portuguese for Brazil, Romanian, Spanish, Spanish for Argen-

tina, Spanish for Chile, Spanish for Mexico, Spanish for USA, Swedish [17].

What are the applications of the WHQ?

The WHQ is widely used to assess health related QOL in samples of healthy women and in those seeking help for specific physical or emotional problems. It has been used in a series of cross-sectional and prospective studies of mid-aged women by the author and co-workers [4,9,18]. However, the main application has been the evaluation of the efficacy of medical and non-medical interventions for specific symptoms and upon health related quality of life. The WHQ has been and is currently being used in a number of national and multinational clinical trials of hormonal preparations for menopausal and postmenopausal women [11–13,19–28]. For example, in the U.K. the WHQ has been included in the WISDOM trial as part of a detailed evaluation of quality of life changes following hormonal treatment [19]. The scale is also being used to evaluate the effects of hormone replacement therapy in a large randomised controlled trial of breast cancer patients in the U.K., as well as in a study of the impact of Tamoxifen.

Similarly, the WHQ has been used to evaluate quality of life outcomes following non-medical interventions. For example, a health education intervention in primary care was implemented with the aims of providing information with relevance to the menopause to 45 year old women. The WHQ was used to assess change post intervention and five years later when the sample were aged 50 years [4,9]. In an Australian study, Slaven and Lee [29,30] found that women who exercised obtained lower depressed mood and anxiety (WHQ) scores than non-exercisers, regardless of menopausal status. Exercising women also obtained lower scores on the somatic symptoms and memory and concentration subscales. In a prospective phase of this study the acute effects of aerobic exercise were examined; significant enhancements in mood and reductions in reported somatic and vasomotor symptom subscales were evident immediately following an aerobic exercise class.

A cognitive-behavioural treatment (CBT) for menopausal hot flushes has been developed and was evaluated using the WHQ [31]. Other options offered to the women were no treatment or HRT, in a patient preference design. Both active treatments significantly reduced hot flush frequency, but for the CBT group depressed mood (WHQ) and anxiety (WHQ) also significantly reduced – thus the WHQ discriminated between treatment effects. Preliminary work suggests that this treatment might also be useful for women who experience troublesome menopausal symptoms following treatment for breast cancer and for whom hormonal treatments are contraindicated.

The need for the evaluation of complementary therapies is now being recognised and the WHQ has been applied in studies of the efficacy of ginseng [32], reflexology [33] and acupuncture (in progress) for menopausal symptoms.

How is the WHQ administered and how long does it take?

The WHQ is usually self-administered and has been found to be easy to complete. It can be used in postal surveys and has also been used in telephone assessments. The time period for completion is typically 5 minutes.

How is the WHQ scored?

Scoring of the WHQ is straight forward. The four point scales (yes definitely, yes sometimes, not not much, no not at all) are reduced to binary options (0/1) and the subscale items are summated and divided by the number of items in each subscale. Norms are available for the 45–65 age range (n = 682), the 45–54 age range (n = 474) and the 55–65 age range (n = 179), as well as for a younger sample, aged 23–38 (n = 55) [1]. The menstrual and sexual domains should be scored separately as they may not be applicable to all participants, for example postmenopausal women or those who are not currently sexually active. Scoring instructions are in preparation: please contact Mapi Research Institute for further information.

Is the WHQ responsive to change, and what is a meaningful change for WHQ subscale scores?

The WHQ has been used to evaluate HRT trials, psychological interventions and preventative initiatives for mid-aged and older women. For example, Wiklund and colleagues [11] demonstrated that the WHQ was sensitive to detecting change in response to HRT across all subscales, in a one year prospective study of 110 women, and in a randomised placebo controlled trial [12]. Similarly, in a randomised comparison of transdermal oestrogen and a symptomatic treatment (veralipride) all subscales, except the menstruation subscale, significantly discriminated between treatments [13]. For a comparison of measures including the WHQ, see Wiklund [34]. A meaningful clinically significant change on subscales of the WHQ would typically be a difference of approximately 0.10 to 0.20. As well as detecting benefits of treatments, some items of the WHQ, such as breast tenderness and nausea, are those reported as side effects of some treatment regimes.

Is there an item Banking on the WHQ?

The WHQ is the first QOL measure to be included in the International Health-related Quality of Life Outcomes Database (IQOD) (see <http://www.iqod.org>), which has been initiated by MAPI Research Institute [see: <http://www.qolid.org/>]. This project aims to develop reference values, item banking and psychometric validation of linguistically validated QOL instruments, using pooled data

form international studies. The database contains baseline QOL, sociodemographic and clinical data from international clinical or epidemiological studies. This is an exciting development, which will aid the interpretation and comparisons of data across populations and across disease and symptom states.

What is the availability and cost of using the WHQ?

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Conditions of use: free access with author's written permission for academic/non profit research with fees for commercial/pharmaceutical companies. The distribution of the WHQ and user agreements are administered by MAPI (website: <http://www.mapi-research-inst.org>). Groups who have independently translated the WHQ may charge for their versions.

Who may I contact to obtain a copy of the WHQ or more information about the WHQ?

For information on, or permission to use the questionnaire in all languages, please contact:

Mapi Research Institute

27, rue de la Villette

69003 Lyon France

Phone: +33 (0)4 72 13 66 67

Fax: +33 (0)4 72 13 66 82

E-mail: instdoc@mapi.fr

Website: <http://www.mapi-research-inst.org>

For any request, please consult Mapi Research Institute website, "[Distribution of Health Outcomes Instruments](#)" section.

Conclusions

The Women's Health Questionnaire is a reliable and valid measure of women's perceptions of emotional and physical health. It is being widely used in evaluations of medical and non-medical treatment regimes and preventative interventions for peri- and postmenopausal women in Europe, Australia and North and South America, and is sensitive in detecting treatment effects and side effects. Current and future developments include the WHQ database, which is part of the IQOD project, and the publication of a revised version of the WHQ.

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