ORIGINAL PAPER

MENOPAUSE RATING SCALE – VALIDATION CZECH VERSION SPECIFIC INSTRUMENT FOR ASSESSING HEALTH-RELATED QUALITY OF LIFE IN POSTMENOPAUSAL WOMEN

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Abstract

Aim: The aim of the present study was to create a Czech version of the Menopause Rating Scale questionnaire, to validate its psychometric properties and to assess its applicability in the Czech clinical practice. Menopause Rating Scale enables to assess the quality of life in postmenopausal women from women’s perspective and is applied worldwide in gynaecological clinical practice. Methods: A Czech version of the Menopause Rating Scale was created by repeated and backward translation. It was validated on a sample of 204 women after natural menopause (49 – 63 years). We judged the reliability of the Czech version of Menopause Rating Scale using Cronbach’s alpha. We assessed the instrument's validity by means of confirmation factor analysis and Pearson’s correlation coefficient. To assess the applicability, we used feedback from respondents, verbal protocols and questionnaire evaluation by healthcare professionals. Results: Internal consistency of the questionnaire is confirmed by Cronbach’s alpha of 0.87. Although the internal structure of the Menopause Rating Scale is not totally clear, for practical application, in the Czech version we maintained the structure of three areas corresponding with the original version. Criterion validity has been confirmed. Correlations between Menopause Rating Scale and generic SF-36 are high – both instruments are measured by the same components. Menopause Rating Scale is – both from postmenopausal women's and from healthcare professionals' perspective - assessed as a practical method, applicable within routine clinical examination of postmenopausal women. Conclusion: We created a Czech standardized version of the Menopause Rating Scale, practicable for informative assessment of the quality of life in postmenopausal women. The questionnaire also provides the opportunity to evaluate the spectre of menopausal symptoms, their intensity and the potential effect of treatment. It is a brief screening-type questionnaire, composing of 11 items and evaluating the quality of life in three areas.

Key words: diagnostics, health-related quality of life, HRQL, menopause, Menopause Rating Scale, evaluation methods.

Introduction

Modern healthcare focuses not only on the treatment of illnesses but also monitors the impact of such treatment on client’s life and changes in client’s life. An integral component of the contemporary healthcare is also the evaluation of health-related quality of life (HRQL).

In professional literature, we can find many researchers studying both symptoms related to hormonal changes after menopause, and symptoms that had occurred even earlier or symptoms related to aging and other psychological and social factors. The complexity of this period in women’s life and complicacy of evaluation of the running changes is confirmed by some methodological difficulties while studying menopause-related period and measurement of quality of life in women in this life stage (for details see Dennerstein, Helmes, 2000).

The following three types of method can be applied when assessing health-related quality of life: generic methods (for assessing the quality of life in healthy and ill persons, or for comparing patients suffering from various illnesses), specific methods (in patients with one specific type of illness or a complex of symptoms), or mixed methods. For a concrete group of clients with a specific illness or illness symptoms,
we usually have various questionnaires globally available for assessing the HRQL; these questionnaires may differ in their basic characteristics. The same applies to women in the menopause-related period with present oestrogen deficiency symptoms.

A useful overview of existing specific methods for HRQL evaluation in menopausal women is presented by Zöllner et al. (2005). The criteria in view of selected questionnaires were the application of questionnaire in clinical practice, its psychometric properties and completeness of measurement. Based on an analysis of specific questionnaires for measurement of HRQL in women in menopause-related period, Zöllner et al. indicated the following eight questionnaires as conforming. Green Climacteric Scale (GCS) (Green, 1998), Menopause Quality of Life Scale (MQOL) (Jacobs et al., 2000), Menopause Rating Scale (MRS) (Heinemann, 2004), Menopause-Specific QoL Questionnaire (MENQOL) (Hilditch, 1996), Menopause Symptoms List (MSL) (Perz, 1997), Qualifemme (Le Floch, 1994), Utian Quality of Life Scale (UQOL) (Utian, 2002) a Women’s Health Questionnaire (WHQ) (Hunter, 2000).

The Progolid database (2002) specifies five questionnaires for HRQL evaluation in postmenopausal women: Menopause Rating Scale (MRS) (Heinemann, 2004), Menopause Representations Questionnaire (MRQ) (Ayers et al., 2011), Menopause-Specific Quality of Life Questionnaire (MENQOL) (Hilditch, Lewis, 1996), Utian Quality of Life Scale (UQOL) (Utian, 2002) a Women’s Health Questionnaire (WHQ) (Hunter, 2000).

For a broader study within our research, we selected two questionnaires out of the above-stated ones, applied abroad for clinical and research purposes – Menopause Rating Scale and Utian Quality of Life Scale.

In the present study, we only concentrate on one of them. We are going to present to professional public the Czech version of questionnaire that is better applicable in the Czech clinical practice for the assessment of HRQL in postmenopausal women – Menopause Rating Scale. It is a simple screening instrument corresponding to the requirements imposed on the methods assessing the quality of life in a specific group of clients. At the same time, the MRS questionnaire is applied in clinical practice for evaluating the intensity of menopausal symptoms, for evaluating changes in time and possible effect of treatment by hormone replacement therapy (HRT).

**Menopause Rating Scale (MRS)**

The original version of the Menopause Rating Scale questionnaire was created in the early 1990’s in Germany and its first version was dedicated to doctors who were treating climacteric women. After certain criticism, the MRS questionnaire was updated so that clients themselves could fill it in. The objective of validation of the new MRS version was then to create a reliable, easy-to-apply instrument for assessing the quality of life in elderly women (Heinemann et al., 2004).

MRS questionnaire authors wanted to compare the severity of aging syndromes and their effect on the quality of life in various groups of women under various living conditions, to compare changes in severity of symptoms in the course of time and, last but not least, to assess changes in symptoms before and after treatment.

The MRS questionnaire was standardized in Germany and its psychometric characteristics were calculated. Based on a factor analysis, authors came to the conclusion that it makes sense to distinguish three areas (Heinemann et al., 2004). The MRS questionnaire includes 11 symptoms divided into three areas – somato-vegetative (4 items), psychological (4 items) and urogenital (3 items). A woman completing the questionnaire specifies for every symptom what severity of difficulties she perceives by herself in the given period (Heinemann et al., 2004). She can choose out of five grades of intensity: 0 to 4 (intensity of difficulties: none, minor, medium, major, unbearable).

Authors conceived the MRS questionnaire as a method evaluating the presence and intensity of symptoms in “recent time” – i.e. in recent period of time preceding the completion of the questionnaire. When creating further language mutations, the effort for maintaining an imprecise period of time, for which women evaluate the presence and intensity of the various symptoms, has been maintained so far. As the MRS authors indicate, the concretization of the time period of concern could be subject to further researches (Heinemann, 2006).

The questionnaire evaluation approach is simple. The higher the rating, the higher is the intensity of difficulties and their severity (Heinemann et al., 2004). The respondent indicates one of five possible choices for the relevant symptom based on how she perceives and experiences such particular symptom. The evaluation of each of the three areas consists in the summary of scores for all items representing the relevant area. The total evaluation of difficulties is determined by the summary of scores of all the three areas.
The MRS questionnaire started to be applied all around the world. The first translation was carried out from German into English (Heinemann, Pothoff, Schneider, 2003). Authors recommend the English version to be used as the basis for creating further language versions, in order to maintain uniformity of translations. Therefore, we also used the English version for creating our Czech language version. At present there are totally another 27 language versions (Berlin Center for Epidemiology and Health Research, 2008), but a Czech language version has been missing so far.

**Aims**

We set three objectives of the study: (1) to create a Czech version of the Menopause Rating Scale questionnaire; (2) to verify the psychometric properties of the Czech version of the Menopause Rating Scale; and (3) to assess the applicability of the Czech version of MRS questionnaire in Czech clinical practice.

**Sample**

The sample of respondents included 204 women after their natural menopause, showing symptoms of oestrogen deficiency. These women had experienced amenorrhea for at least 12 months, which is what results from the definition of menopause (Utian, 1999). Respondents were clients of gynaecology departments in Pardubice Region, where they had been examined due to present oestrogen deficiency symptoms. The respondents’ population included women after their natural menopause at the age ranging from 49 to 63 years, with an average age of 54.65 years (SD = 3.48). Out of the total population, 86 respondents had not been treated and 118 respondents had been treated by hormone replacement therapy.

The applied questionnaires were completed using verbal protocol method by respondents with specification equivalent to the basic population of respondents. These women were between 55 and 60 years of age with an average age of 57.75 years.

We asked gynaecologists and midwives from medical facilities where the research took place (n = 23) to evaluate the MRS questionnaire from the perspective of clinical practice. These were 12 physicians-gynaecologists (5 women and 7 men). Also 11 obstetricians evaluated the MRS questionnaire, representing healthcare professions other than doctors. All respondents were healthcare professionals who work with women experiencing period affected by menopause on an everyday basis. They have experience with recording anamnesis and with communication barriers in such a sensitive area as the oestrogen deficiency symptoms.

**Methods**

**Study design.** Prior to actually completing the form, respondents filled in their introductory information – age and potential duration of HRT treatment.

Respondents completed the HRQL evaluation forms in the period prior to the beginning of HRT treatment and then after the beginning of treatment: after one month, after three months and after one year from the beginning of treatment. The entire approach took place within a focused examination at three selected departments of primary gynaecological care and at the Climacteric Medicine Department in Pardubice Region.

The above-mentioned time intervals (prior to treatment, 1, 3, 12 months after beginning of treatment) are applied in climacteric medicine when repetitively using specific HRQL questionnaires for evaluating the effect of treatment and at the same time for overall evaluation of changes in time.

For evaluating the applicability of questionnaires for HRQL validation, we used a feedback questionnaire filled in by clients. We were wondering if the questionnaire was comprehensible for the clients and if they were comfortable both with its form and content. In our study, we also utilized the so-called verbal protocol method. We asked four respondents to say aloud how they deliberated on the various items while filling in the form, what possible answers came up to their minds and how they rationalized their final choice. We recorded their thinking aloud, took transcription and subsequently analyzed it. This is how we were able to improve some formulations in the questionnaire to make them more understandable and more unambiguous for respondents.

We also asked gynaecologists and midwives to evaluate the applicability of the questionnaire in general clinical practice when taking anamnesis of clients at gynaecology departments. We also asked them about the applicability of the questionnaire for clinical studies.

The psychometric properties of the Czech versions of HRQL evaluation questionnaires were validated based on a statistical analysis of the acquired data and based on the assessment of the results of other auxiliary methods applied in the study. To validate the reliability of the Czech version of MRS questionnaire, we applied an estimate of internal consistency by Cronbach's alpha. To verify validity, we used confirmatory factor analysis, with the application of Mplus statistic software (Muthén,
Muthén, 1998 - 2011). To verify construct validity, we used Pearson’s correlation coefficient and assessed the correlations between the MRS questionnaire and the generic instrument SF-36 (Garrat, 1993).

**Results**

**Linguistic validation of MRS questionnaire**

We used the English version of the instrument as a basis for translation of the MRS questionnaire. Two independent translators executed the translation and then we inspected the various items and their content correctness in translations. By comparing the various items in the two translation versions, one final Czech version of the MRS questionnaire was created. Subsequently, we inspected the proficiency of description of the specific oestrogen deficiency symptoms. Subsequently a reverse translation was carried out by another translator, who translated the Czech version into English. Then we compared the resulting English version with the standardized English version of the MRS questionnaire. These two versions of the instrument were both content-wise and formally corresponding.

After graphic design modification we presented both instruments to a sample of respondents (n = 7). We asked women to complete the Czech version of MRS and to raise possible comments to the content and formal design of the Czech pilot version of MRS questionnaire. Respondents raised only marginal objections that did not lead to any change in the wording of the various MRS questionnaire items.

**Reliability of Czech MRS version**

As far as the formal design of the Czech version of MRS questionnaire is concerned, graphic modifications were carried out. We differentiated the various items by colour highlighting to facilitate orientation in text. As for content modifications, we concretized the time period for which women evaluates the perceived symptoms - "in the latest month". The MRS questionnaire includes 11 items divided into three areas. The resulting total score of the Czech version MRS results from the sum total of evaluations of intensity of the various difficulties from 0 to 44 points. The higher the score in the various areas and the total score, the more severe the specific symptoms of oestrogen deficiency and the more affected can be the quality of life of the given woman.

From the perspective of internal consistency, we focused on Cronbach’s alpha, which is 0.87 for the Czech version. For the created MRS language versions, Heinemann et al. (2004) specified Cronbach’s alpha value between 0.6 and 0.9.

**Validity and inner structure of MRS**

Table 1 shows a descriptive statistics of 11 items of Czech version of the MRS scale. In all items, the average value is closer to the bottom reply scale limit, which provides room for positive skewing. However, this does not exceed acceptable limits in any item. All items are also more or less leptocurtic, again within acceptable limits for confirmatory factor analysis.

We can state that all 11 items of the MRS are justifiable and have their position in the Czech version of MRS. However, it was necessary to identify their distribution and pertinence to the various areas of the instrument.

While evaluating the results, we validated several models to identify latent structure of the given questionnaire. We verified the original three-factor model, two-factor model with items from somato-vegetative and psychological area, saturating one factor, and single-factor model (Table 2).

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>min</th>
<th>max</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS01</td>
<td>222</td>
<td>0</td>
<td>4</td>
<td>1.22</td>
<td>0.91</td>
<td>0.43</td>
<td>-0.23</td>
</tr>
<tr>
<td>MRS02</td>
<td>220</td>
<td>0</td>
<td>3</td>
<td>0.84</td>
<td>0.88</td>
<td>0.64</td>
<td>-0.65</td>
</tr>
<tr>
<td>MRS03</td>
<td>222</td>
<td>0</td>
<td>4</td>
<td>1.69</td>
<td>1.18</td>
<td>0.09</td>
<td>-1.07</td>
</tr>
<tr>
<td>MRS04</td>
<td>222</td>
<td>0</td>
<td>3</td>
<td>1.17</td>
<td>1.01</td>
<td>0.25</td>
<td>-1.15</td>
</tr>
<tr>
<td>MRS05</td>
<td>220</td>
<td>0</td>
<td>4</td>
<td>1.18</td>
<td>0.94</td>
<td>0.50</td>
<td>-0.29</td>
</tr>
<tr>
<td>MRS06</td>
<td>222</td>
<td>0</td>
<td>3</td>
<td>0.95</td>
<td>0.94</td>
<td>0.49</td>
<td>-0.94</td>
</tr>
<tr>
<td>MRS07</td>
<td>222</td>
<td>0</td>
<td>4</td>
<td>1.20</td>
<td>0.91</td>
<td>0.50</td>
<td>-0.13</td>
</tr>
<tr>
<td>MRS08</td>
<td>222</td>
<td>0</td>
<td>4</td>
<td>1.14</td>
<td>1.02</td>
<td>0.46</td>
<td>-0.53</td>
</tr>
<tr>
<td>MRS09</td>
<td>221</td>
<td>0</td>
<td>3</td>
<td>0.83</td>
<td>0.87</td>
<td>0.80</td>
<td>-0.12</td>
</tr>
<tr>
<td>MRS10</td>
<td>222</td>
<td>0</td>
<td>4</td>
<td>0.87</td>
<td>1.07</td>
<td>0.87</td>
<td>-0.46</td>
</tr>
<tr>
<td>MRS11</td>
<td>222</td>
<td>0</td>
<td>4</td>
<td>1.59</td>
<td>1.03</td>
<td>0.13</td>
<td>-0.83</td>
</tr>
</tbody>
</table>
Table 2 Standardized factor loadings and correlations between factors in the original three-factor model with correlated factors

<table>
<thead>
<tr>
<th>Parameter estimate</th>
<th>Standard error</th>
<th>Parameter estimate</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS01 0.63</td>
<td>0.052</td>
<td>MRS04 0.87</td>
<td>0.022</td>
</tr>
<tr>
<td>MRS02 0.61</td>
<td>0.053</td>
<td>MRS05 0.80</td>
<td>0.030</td>
</tr>
<tr>
<td>MRS03 0.78</td>
<td>0.044</td>
<td>MRS06 0.78</td>
<td>0.031</td>
</tr>
<tr>
<td>MRS11 0.49</td>
<td>0.058</td>
<td>MRS07 0.69</td>
<td>0.040</td>
</tr>
<tr>
<td>MRS08 0.62</td>
<td>0.058</td>
<td>MRS07 0.69</td>
<td>0.040</td>
</tr>
<tr>
<td>MRS09 0.54</td>
<td>0.061</td>
<td>MRS06 0.78</td>
<td>0.031</td>
</tr>
<tr>
<td>MRS10 0.62</td>
<td>0.056</td>
<td>MRS05 0.80</td>
<td>0.030</td>
</tr>
</tbody>
</table>

No one of the models explains the relations between items in a satisfactory manner. All indicators of concordance of models with data are outside the recommended values. The reason is mainly the fact that most residues of items have non-zero correlations with residues of other items. However, it appears that the most plausible model is the two-factor model.

But it is safest to interpret the questionnaire as a single-factor questionnaire because clarifications of its factor structure did not provide a satisfactory model (Table 3).

It appears that women in our population, affected (beside other symptoms) by oestrogen deficiency symptoms, do not strictly differentiate somatic and vegetative symptoms from psychological symptoms.

Table 3 Concordance of models with data – MRS questionnaire

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$p$</th>
<th>RMSEA</th>
<th>$p$ (RMSEA &lt; 0.05)</th>
<th>CFI</th>
<th>BIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>three-factor</td>
<td>136</td>
<td>41</td>
<td>$&lt;0.001$</td>
<td>0.102</td>
<td>$&lt;0.001$</td>
<td>0.91</td>
<td>6059</td>
</tr>
<tr>
<td>two-factor</td>
<td>148</td>
<td>43</td>
<td>$&lt;0.001$</td>
<td>0.105</td>
<td>$&lt;0.001$</td>
<td>0.90</td>
<td>6060</td>
</tr>
<tr>
<td>single-factor</td>
<td>164</td>
<td>44</td>
<td>$&lt;0.001$</td>
<td>0.111</td>
<td>$&lt;0.001$</td>
<td>0.88</td>
<td>6071</td>
</tr>
</tbody>
</table>

$\chi^2$ – ML square, df – degrese of freedom of model, $p$ – probableness, RMSEA - Root Mean Square Error of Approximation, CFI – Comparative Fit Index (Bentler, 1990), BIC - Schwarz-Bayesian information criterion

Criterion validity and concurrent validity

We appraised the correlations of the various areas within the MRS questionnaire and mutual correlations with generic instrument SF-36 using Pearson’s correlation coefficient.

For the population of women (n = 204) in consideration, correlations with age are relatively low for the MRS instrument. However, correlations between the various areas are high, especially between psychological and somatic area (Table 4). Empirical validity of MRS is supported by high correlations with SF-36 (around 0.5 to 0.6). Lower correlations occur in urogenital area of MRS for instance. This is mainly determined by a highly specific character of these items. Since SF-6 consists of various – generic areas of quality of life, it cannot be completely compared with specific instruments. However, we can state that MRS and SF-36 measure, to a significant extent, the same parameters.

We also examined correlations between the Czech MRS version and the Czech version of Utian Quality of Life Scale (UQLQ) (Utian, 2002). Correlations of the various areas of UQLQ with the various MRS areas vary from -0.338 to -0.648 and thus are medium to high.

Assessment of applicability of Czech MRS version

In our study, we used other supporting methods and, based on the obtained results, we assessed the applicability of the MRS questionnaire in Czech clinical practice, both from women’s perspective and from the perspective of healthcare professionals. To
identify applicability of the MRS questionnaire, we used: (1) feedback questionnaire from respondents; (2) verbal think aloud protocols of respondents; (3) evaluation statements of healthcare professionals supported by their clinical practice.

**Respondents' feedback questionnaire**

For respondents' subjective assessment of the applied methods, we used our self-designed non-standardized feedback questionnaire. We were mainly interested in the comprehensibility of the various items, questionnaire concept and the "user friendliness" from respondents' point of view. We also asked about the aptness of the various items and specifically about the negative aspects of the methods applied in the study. In the conclusion of the feedback questionnaire we asked which of the two questionnaires (MRS and UQQL) they would prefer in the course of a gynaecological menopausal examination.

A vast majority of the respondents (81.8 %) indicated the answering method as satisfactory and only 6.9 % of the respondents expressed themselves negatively to the answering method. The rest took a neutral "hard to decide" position. It is obvious that for MRS questionnaires, women are clear about its form, it is sufficiently comprehensible for them.

83.3 % of the respondents described the MRS as a questionnaire that comprehends women’s real situation. Only 3.4 % of the respondents evaluated the aptness of formulations in the MRS questionnaire negatively. Based on these results, the MRS appears to be an instrument that (from the respondents’ perspective) can assess woman’s real situation in period affected by menopause.

As for comprehensibility of items, 84.3 % of the respondents evaluated the MRS questionnaire positively and only 2.5 % negatively. For an instrument intended for use in common clinical practice, comprehensibility is one of the most important aspects. After the translation of MRS questionnaire into Czech language, we additionally determined the comprehensibility of presented information in the population of 7 respondents, as a pilot study. These respondents had no difficulties with completing the MRS questionnaire and its comprehensibility (Table 5).

72.6 % of the respondents described the MRS questionnaire as a useful instrument for clinical practice.

<table>
<thead>
<tr>
<th>Table 4 Correlations of MRS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>MRS-P</td>
</tr>
<tr>
<td>MRS-S</td>
</tr>
<tr>
<td>MRS-U</td>
</tr>
<tr>
<td>MRS-T</td>
</tr>
</tbody>
</table>

r – Pearson's Correlation Coefficient, MRS-P – psychological area; MRS-S – somato-vegetative area; MRS-U – urogenital area; MRS-T – total score MRS

<table>
<thead>
<tr>
<th>Table 5 Results of Feedback Questionnaire from respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response possibilities</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Rather yes</td>
</tr>
<tr>
<td>Hard to decide</td>
</tr>
<tr>
<td>Rather no</td>
</tr>
<tr>
<td>Σ</td>
</tr>
</tbody>
</table>

Σ - sum total, n – absolute number of respondents, f (%) – relative number of respondents, expressed percentually
Verbal protocols

This method called Think aloud protocol can help clarify some problems connected with the use of questionnaires for evaluating the quality of life. As mentioned before, in our study we used this method for determining how menopausal women deliberate while completing this questionnaire. Based on the evaluation of acquired data, we identified some problems connected with the use of questionnaire. We could modify the questionnaire before administering it to a large population of women experiencing a period connected with menopause. Women proposed the use of “from time to time” as one of possible responses. We think that if we permitted the possibility “from time to time”, the character of the entire questionnaire would change and the results would be incomparable with other countries. Also, women had objections regarding excessively intimate character of some items and were reluctant to answer to them. We think though that based on the nature and structure of the oestrogen deficiency symptoms woman’s intimate matters cannot be avoided.

Evaluation of MRS questionnaire by healthcare professionals

Last but not least, we were inquiring on the opinions of gynaecologists (n = 12) and midwives (n = 11) about the clinical use of MRS questionnaire in Czech clinical practice. We were wondering about healthcare professionals' opinions mainly because HRQL evaluation instruments are suitable for use in postmenopausal women as part of clinical examination. Therefore it is valuable to know the opinion of those who would apply such instruments in the course of their work.

A vast majority of the inquired healthcare professionals (n = 19) described the MRS questionnaire as practical and applicable in clinical practice. The respondents were mainly led to this opinion by the benefit of using the MRS questionnaire for well-arranged and quick determining of concrete oestrogen deficiency symptoms, and by the possibility to assess not only changes in quality of life but also the intensity of present symptoms and their changes over time. Only four respondents think that such instrument for HRQL assessment is not necessary for their work (Table 6).

<table>
<thead>
<tr>
<th>Instruments for HRQL assessment</th>
<th>Respondent</th>
<th>n&lt;sub&gt;z&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS questionnaire</td>
<td>physician</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>obstetrician</td>
<td>10</td>
</tr>
<tr>
<td>no instrument for HRQL assessment</td>
<td>physician</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>obstetrician</td>
<td>1</td>
</tr>
<tr>
<td>Σ</td>
<td></td>
<td>23</td>
</tr>
</tbody>
</table>

Σ – sum total, n<sub>z</sub> – absolute number of respondents – healthcare professionals

Discussion

As previously mentioned in the Results section, we have generated and surveyed the psychometric properties of the Czech version of the Menopause Rating Scale questionnaire. MRS serves to provide approximate information on quality of life and changes thereof in menopausal women in the course of clinical examination. It is an 11-item instrument where items (like in the original version) are grouped in three areas: somato-vegetative, psychological and urogenital area.

We changed one important instruction regarding filling in the questionnaire – we concretized the period for which women evaluate their difficulties to “in the latest month”. Authors of the original questionnaire (Heinemann et al., 2004) used the uncertain formulation “in recent time”. They mention by themselves that specification of a time period requires further exploration. We think that the evaluation of a concretely specified period of time will help woman get a clear overview of her own situation and her current condition. Concretized time periods are applied also in other instruments for HRQL evaluation e.g. in the most frequently used generic questionnaire SF-36 (latest 4 weeks) but also in the specific questionnaire Menopause-Specific Quality of Life Questionnaire – latest month or latest week depending on the concrete items of questionnaire (Garrat, 1993; Hilditch, Lewis, 1996).
Reliability
The relatively high Cronbach’s alpha of 0.87 indicates internal consistency of the Czech version of the MRS questionnaire. For the original version, MRS questionnaire authors indicate Cronbach alpha value of 0.86 (Heinemann et al., 2004). Factor analysis showed not quite a clear structure of the MRS questionnaire.

Validity
Unlike in the original version, only two factors were identified in the Czech version of the MRS questionnaire. However, we consider maintaining three areas to be more practicable for clinical decision-making and thus also beneficial. A specific questionnaire like MRS is time-efficient, practical and practicable for clinical practice with informative evaluation of the quality of life in concrete women. Its additional important function is the evaluation of symptoms, their intensity and changes over time in the context of the applied treatment. Therefore, we think that it is necessary to differentiate symptoms that naturally require another diagnostic and treatment approach. The MRS questionnaire has been globally used in clinical practice in 27 language versions, which is why it is advisable to maintain the original three-factor model also in the Czech version, to enable intercultural comparison.

Foreign researches also revealed difficulties with the MRS questionnaire’s structure, but only on the level of some items, not the entire area. These included for instance item No. 3 (sleep disorders) which was attributed to somato-vegetative and psychological area in Latin America, Mexico, Spain, and item No. 11 focused on muscle and joint pain, which was attributed to two areas at the same time in the USA: somato-vegetative and urogenital (Heinemann et al., 2004). The Czech version of the MRS questionnaire shows relatively high correlations between the various areas. Also in other studies, these relatively high correlations occur, although not as significantly. Even the authors of the original version carefully state: the various areas of the MRS questionnaire are not independent, correlations between the various areas vary between 0.4 and 0.7 on four continents – Europe, North America, South America and Asia (Heinemann et al., 2004).

Correlations of SF-36 with areas of the Czech version of MRS are relatively high. We can state that MRS and SF-36 measure, to a significant extent, the same parameters. The original version of MRS was compared by Schneider et al. (2000) with Kuppermann index (Kuppermann, 1953) and questionnaire SF-36. The research implied that MRS highly correlates with the results of SF-36, especially in areas concerning menopausal women. Based on these results, authors of the instrument observed that it is an instrument that can be utilized in a very satisfactory manner for women experiencing period related to menopause.

Assessment of applicability of Czech version of MRS questionnaire
One of the fundamental objectives of our study was to create a Czech version of such an instrument for HRQL evaluation, which would be fully applicable for an informative identification of the quality of life. The use of MRS questionnaire in Czech clinical practice is supported also by its applicability for quick identification of oestrogen deficiency symptoms and their intensity in a concrete woman, evaluation of changes over time and potential treatment. Both clients and healthcare professionals tend to support its routine use. Methods of evaluating the quality of life can generally help increase the clients’ compliance and it is thus very beneficial to have at hand methods that are comprehensible for laymen and user friendly. After all, compliance is one of the fundamental prerequisites for successful diagnosis and treatment (Křivohlavý, 2002).

Respondents’ feedback questionnaire. By using this method, we focused generally on comprehensibility and aptness of the MRS questionnaire for postmenopausal women. It was evaluated positively by more than 80 % of respondents. This observation is important for healthcare professionals because they need clear and real information on changes in the composition of woman’s symptoms and their impacts on the quality of life in short time. Comprehensibility of the questionnaire is usually affected by the complexity of the various items but also by the translation of the questionnaire and its application in other cultural conditions. While elaborating the original version of MRS questionnaire, its authors also explored its comprehensibility and did not identify any problems (Heinemann et al., 2004).

More than 70 % of our respondents described the MRS questionnaire as acceptable for taking anamnesis data in clinical practice. Respondents find the MRS questionnaire to be a practical, comprehensible, apt and acceptable method for HRQL assessment. Also Heinemann et al. (2004) and Zöllner et al. (2005) arrived at the conclusion that the questionnaire is practical and user friendly. The practicable and simple nature of MRS questionnaire is also confirmed by its frequent use in worldwide researches and clinical studies (example: Anderson et al., 2011; El Shafie et al., 2011; and others).
Verbal protocols. This method has helped us exteriorize those thoughts of respondents that usually remain hidden while filling in the questionnaire.

Some respondents reported that they could not always answer to all items and that they would find it helpful to have the answer “from time to time” as an option. We think that since the MRS is a method that should mainly serve to obtain basic information on woman's problems, this option does not need to be added. A discussion with physician should follow the application of MRS questionnaire and its evaluation. Such discussion could clarify details and possible contextures of the various symptoms perceived by the client.

For a number of respondents, giving some intimate symptoms of oestrogen deficiency symptoms is a phenomenon that involves all the communication with medical staff. Certainly, a sensitive and professional approach and the application of a manner of communication and methods increasing women's confidence and compliance can help eliminate communication barriers in regards to intimacy. We think that the MRS questionnaire is a simple method of identifying these difficulties in women’s intimate life.

Healthcare professionals’ opinion to MRS questionnaire. We were encouraged to contact medical staff also by the fact that this aspect of application of MRS questionnaire had not been monitored in research studies published so far. In the methodology of creation of the MRS questionnaire, Heinemann et al. (2004) mention its assessment only by researchers. It should be suggested that even when elaborating other specific questionnaires for HRQL evaluation, applied in clinical practice, it is not common to seek opinions of practical staff from the relevant area of application. However, experts’ (practitioners’) opinion may be important while evaluating the methods that are to become part of a usual examination of women in clinical practice. They are more likely to actually use an instrument they accept, allowing them a richer and more realistic image of their patients’ difficulties. We also find important positive evaluation of the questionnaire by the majority of obstetricians. The evaluation of quality of life and woman's actual condition in gynaecological practice clearly forms one of the competences of midwives as defined by Ordinance No. 55/2011 Coll., issued by the Ministry of Healthcare of the Czech Republic.

In the course of the study we have also encountered the opinion expressed by some medical personnel that such methods of evaluating clients’ quality of life are not necessary in clinical practice. We disagree with that opinion though: global experience shows that right the use of such simple methods that can serve not only to evaluate woman’s HRQL is desirable in clinical practice. These instruments help woman talk about her problems and consult them with healthcare professionals. This minimizes situations when a woman does not share some issues (frequently problems of intimate character) with healthcare professionals; such issues may deepen and worsen such woman’s situation.

Conclusion

Methods that improve healthcare and communication between client and attending personnel undoubtedly include uniform, high-quality and specific instruments for evaluation of HRQL. For postmenopausal women, the most practicable appear to be those questionnaires that contemporarily serve to assess the effect of potential treatment of menopausal symptoms and to assess their severity. Unfortunately, no such questionnaire has been used so far in Czech clinical practice.

We have managed to create a Czech standardized version of a specific MRS questionnaire for evaluating HRQL in women in period affected by menopause and to validate its psychometric properties. The questionnaire is applicable and acceptable both from women’s (patients’) and from healthcare professionals’ perspective. At present, we are working on integrating the MRS questionnaire into everyday clinical practice of climacteric medicine. We are also validating a new electronic version of the questionnaire, which would facilitate clients’ and healthcare personnel’s work. Authors of this article have the Czech version of MRS questionnaire available.

Menopause Rating Scale is a questionnaire that is widely applied in global clinical practice and at the same time for clinical purposes; there are 27 standardized foreign-language versions.

If we consider the broader context of the given problem area, the need for using suitable screening instruments for evaluating HRQL becomes more evident. In 2011, there were around 670,000 women in the average menopausal age (i.e. 49 to 51 years) in the Czech Republic. Therefore, the detection and subsequent solution of oestrogen deficiency symptoms and their impacts on the quality of life in concrete women cannot be considered a problem of a minor group in our population (UZIS, 2011). With regards to the intimate and specific character of some oestrogen deficiency symptoms, we are convinced that the Menopause Rating Scale questionnaire is a valuable instrument that will help improve the quality
of communication and mainly detect menopause-related problems.

**Ethical aspects and conflict of interest**

From the perspective of possible conflict of interests, we did not find any circumstances that would threaten the fundamental publication principles. The present publication was elaborated within a broader study and all authors collaborated on the creation of this publication. The study was supported by the PRVOUK 37/09 programme.

A prerequisite for participation in the broader study, which also included the elaboration of a Czech standardized version of the Menopause Rating Scale questionnaire, was client’s informed consent to participation in the study. At the same time, respondents received an introduction letter with basic information on the study and its purpose.

Before the beginning of the study, authors of the original version of Menopause Rating Scale were contacted and asked for consent to the use of the English version of the questionnaire, its potential publication in scientific publications and to the creation of a Czech version of MRS. We obtained this consent in writing with the precondition that the questionnaire authors would be informed about the results of our study.

**References**


