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# Menopause Rating Scale: Validation and Applicability in Nepalese Women

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## ABSTRACT

**Background:** Menopausal Rating Scale is one of the globally used tools to assess quality of life in menopause and peri-menopause. The aim of this study is to validate the standard menopausal rating scale in Nepalese menopausal women and to test menopausal symptoms during clinical consultation at hospital.

**Methods:** Cross sectional validation study at Paropakar Maternity and Women's Hospital, Thapathali, Kathmandu. Five-step language translation of menopausal rating scale from English to Nepali, questionnaire clarity assessment with gynecologists and Likert scale questionnaire based interview to the clients. Reliability and validity tests applied. Each component of rating scale analyzed.

**Results:** Nepali version of menopausal rating scale developed. Acceptable level (Cronbach's Alpha = 0.77) of tools reliability obtained. Barlett's test of sphericity was highly significant and Pearson correlation between variables was significant. Average age of menarche was 15 years, and mean and modal value of menopause was 48 and 50 years respectively. First menopausal symptom was vasomotor flush in 62%, one-fourth didn't experience flush, half experienced mild to moderate flush and rest one-fourth had severe to very severe form; 50% had significant sleep, bladder and sexual dysfunction. Three-fourth had vaginal dryness and musculoskeletal problem. One-half had some degree of mental dysfunction.

**Conclusions:** Nepali version of menopausal rating scale developed. Baseline menopausal parameters obtained.

**Keywords:** Applicability; menopause; rating scale; validation.

## INTRODUCTION

Menopause is characterized by the vasomotor, urogenital, psychological and physical symptoms that appear gradually due to depletion and fluctuation in ovarian estrogen hormone.<sup>1-9</sup>

National demographic data<sup>10</sup> shows 24.3% of women above 40 years of age and menopausal women at Paropakar Maternity and Women's Hospital (PMWH) are around 5% (unpublished data from out-patient record) but adequate work hasn't been carried out yet.

Menopausal Rating Scale (MRS) is internationally validated one of the quality of life (QoL) instruments in different languages, commenced since early 1990s in German language.<sup>11-16</sup> Many symptoms in this scale have association in between them.<sup>17</sup>

The objectives of the study are: to create a Nepali

version of MRS, assess climacteric symptoms and evaluate its use in clinical practice. This is required for the applicability for the socio-cultural adaptation.<sup>12</sup> It helps us to compare severity of symptoms over time and to measure the treatment effect later on.<sup>18</sup>

## METHODS

This is a cross sectional validation study performed at Paropakar Maternity and Women's Hospital (PMWH), Thapathali, Kathmandu. Postmenopausal aged women up to 65 years attending Gynaecology OPD were interviewed and examined. The criteria to exclude were: women with history of cancer in remission or under treatment currently; history of alcohol or drug abuse and any mental disability or undergoing treatment for psychiatric disorders; patient with surgical menopause; and women with premature ovarian failure or known genital malformations. Considering 5% of post-menopausal women coming to Gynaecology OPD daily at PMWH and

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taking  $\alpha$ -error of 5% with estimated allowable error of 10% the required minimum sample would be 19 by using Sample Size Calculator application. Any multiple of this size would be the sample size for this study and thus 57 cases were analyzed for the purpose of this study during 3 months from May to July 2018.

Data collected by questionnaire based interview to the clients administered by enumerators; questionnaire clarity with gynecologists; and five-step language translation. Clinical examination findings were recorded

according to designated proforma.

The MRS scale is a valuable tool for assessing health related quality of life of women in the menopausal transition and it is used worldwide. It is standardized scale meeting psychometric norms. English version of MRS is used to validate in Nepali version (Chart-1). There are 11 questions and each symptom has five ordinal scale of rating menopausal symptoms by its severity. Severity is described into five levels as none (0), mild (1), moderate (2), severe (3) and very severe (4).<sup>14</sup>

Symptoms:		none	mild	moderate	severe	very severe
		Score = 0	1	2	3	4
1.	Hot flushes, sweating (episodes of sweating).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Irritability (feeling nervous, inner tension, feeling aggressive).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Anxiety (inner restlessness, feeling panicky).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Sexual problems (change in sexual desire, in sexual activity and satisfaction).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Joint and muscular discomfort (pain in the joints, rheumatoid complaints).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chart 1. English version of Menopausal Rating Scale.

Five steps of the translation process adopted were:<sup>12</sup> Forward translation of English version to Nepali version by at least two independent translators who are native Nepali speakers educationally trained in English medium; Correction of the wording of translation in Nepali; Backward translation by third translator who is native Nepali speaker, deals with Nepali speakers and educationally trained in English medium; Consensus meeting among the translators; and Cognitive debriefing (pretest with a few subjects the test has been designed for).

Test of research tool reliability (internal consistency) of the Nepali version of Menopause Rating Scale using Cronbach's alpha. Test of instrument's validity performed by means of confirmation factor analysis and Pearson's correlation coefficient. Assessment of the applicability performed by feedback from respondents, respondent's

comprehension and questionnaire evaluation by healthcare professionals.<sup>11</sup>

This study is internationally validated questionnaire based interview without intervention and additional financial burden to the participants. Informed consent form was administered prior to the interview. There is no financial sponsorship yet. Research and ethical approval was taken from hospital IRC.

## RESULTS

Nepali version of Menopausal Rating Scale was developed as "RAJANOBRIITA LAKSHAN MAAPAK" (Chart-2).

The average age of menopause amongst 57 cases was 48±5.2 years (range: 35-58, mean: 47.8 and median: 48) whereas the average age of menarche was 15±1.8 years (range: 12-19, mean: 15.4 and median: 15) (Figure-1).

	गम्भिरता	छैन	थोरै	मध्यम	बढी	धेरै बढी
		०	१	२	३	४
	गम्भिरताको स्तर					
१	घरि-घरि शरीर तातो हुने वा पसिना आउने	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
२	मुटुमा अठ्ठरो महशुस हुने (मुटुको घाल थाहा पाउने, मुटुको ढुक्ढुकी बढ्ने वा बीच-बीचमा छुट्ने, छाति कस्सिए जस्तो हुने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
३	निन्द्राको समस्या (निन्द्रा पर्न गाह्रो हुने, बिच-बिचमा निन्द्रा खुल्ने, निन्द्रा छिटो खुल्ने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
४	उदासीनता (दुखी वा खिन्न हुने, रुन मन लाग्ने, उत्साह नहुने, मुड परिवर्तन भइराख्ने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
५	झकिने, रीस उठ्ने, नर्भस हुने, आक्रमक अनुभव हुने	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
६	तनाव हुने (मनमा छटपटी हुने, आतिएको अनुभव हुने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
७	शारीरिक तथा मानसिक थकान (काम पूरा गर्न गाह्रो पर्ने, सम्झना शक्तिमा गडबडी हुने, एकाग्रता नहुने, कुराहरु बिर्सिने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
८	यौन समस्या (यौन रुची, यौन कार्य र सन्तुष्टीमा परिवर्तन आउने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
९	पिसाब संबन्धि समस्या (पिसाब फेर्न गाह्रो हुने, छिटो-छिटो पिसाब फेर्न मन लाग्ने, पिसाब चुहिने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
१०	योनि मार्गको सुख्खापन (योनि मार्गमा सुख्खापन वा पोलेको अनुभव हुने, यौन संबन्ध राख्न गाह्रो हुने)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
११	जोर्नी तथा मासु को दुखाइ वा अठ्ठरो महशुस हुने, बाथ जस्तो समस्या हुने	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chart 2. Nepali version of Menopausal Rating Scale (रजोनिवृत्त लक्षण मापक)

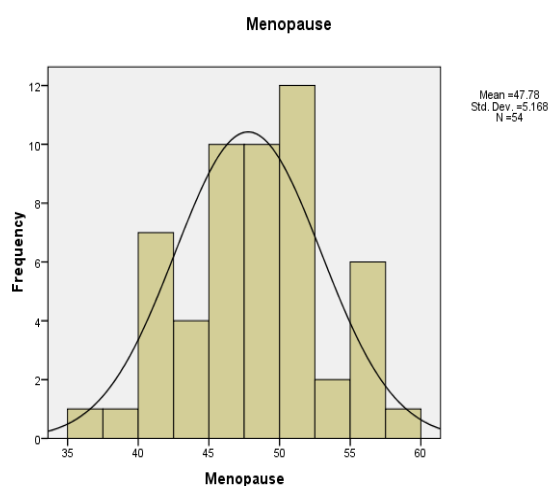


Figure 1. Distribution of menopausal age in years.

Amongst 11 menopausal symptom categories either vasomotor flush or vaginal dryness and musculoskeletal problem were expressed by three-fourth of patients; and half of them had either mental dysfunction to

some degree or sleep, bladder and sexual dysfunction. [Figure-2]

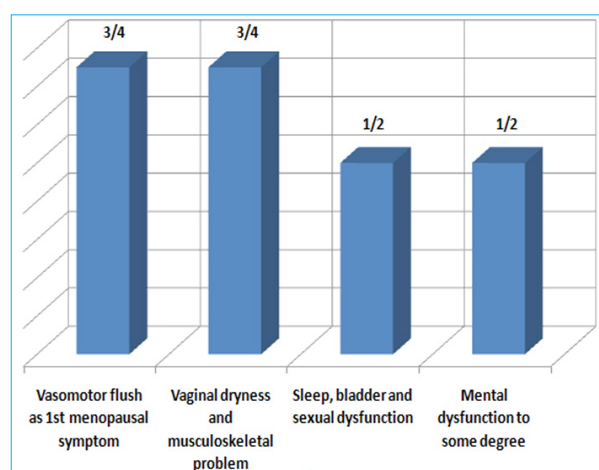


Figure 2. Common menopausal symptoms. Out of first menopausal symptom, 60% had vasomotor flush and 36% didn't experience anything except cessation of menstruation (Figure 3).

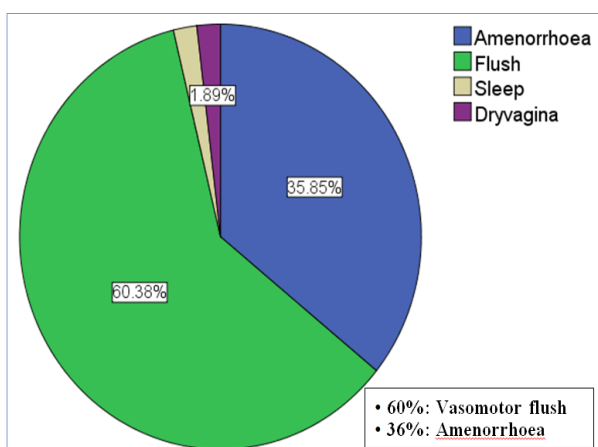


Figure 3. First menopausal symptoms.

By severity of flush, half of them had mild to moderate degree and one-fourth had severe to very severe form (Figure 4).

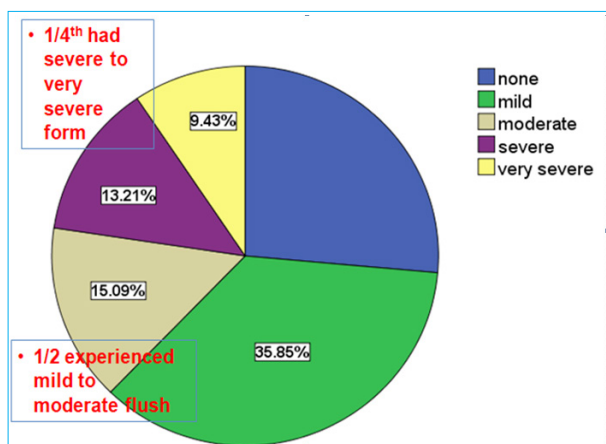


Figure 4. Severity of Vasomotor flush.

By frequency the common symptoms in decreasing order were muscle and joint discomfort, physical and mental exhaustion, vaginal dryness, bladder symptoms in more than 80%; sleep problems, depressive mood and heart problems in 75-80%; followed by hot flushes, sexual problems, irritability and anxiety in 70-75%. All

11 components were present in 71-86% of cases without much difference in subscales. Urogenital symptoms appeared in severe degree in 15% of cases (Table 1).

Table 1. Frequency of menopausal symptoms by severity.

Symptoms Scale	Subscale	All forms (in %)	Severe form (in %)
Hot flushes	Somatic	74.5	12
Heart discomfort	Somatic	77	9
Sleep problems	Somatic	79	15
Depressive mood	Psychological	79	6
Irritability	Psychological	74	5
Anxiety	Psychological	71	9
Physical and mental exhaustion	Psychological	86	12
Sexual problems	Urogenital	74	10
Bladder problems	Urogenital	83	16
Dryness of vagina	Urogenital	85	19
Joint and muscular discomfort	Somatic	86	15
	Urogenital	80.6	15
Subscales	Somatic	79	13
	Psychological	77.5	8

Variable reliability test was done to see its internal consistency and it was at acceptable level of Cronbach alpha 0.77. Pearson correlation between variables was found to be statistically significant at 0.05 or 0.01 (Table 2).

Table 2 .Pearson correlation between variables (significant at 0.05 or 0.01).

SN	1	2	3	4	5	6	7	8	9	10	11
Variables	Flush	Heart	Sleep	Depress	Irritable	Anxiety	Exhaust	Sexual	Bladder	Dryvagina	JointMuscle
1 Flush		.01						.05	.05		.01
2 Heart	.01					.05	.05	.01	.01		
3 Sleep				.05							

4	Depress	.05	.01	.01			
5	Irritable		.01	.01	.05		
6	Anxiety	.05	.01	.01	.01		.01
7	Exhaust	.05		.05	.01	.01	.05
8	Sexual	.01			.01	.01	.05
9	Bladder	.01			.05	.01	.01
10	Dryvagina			.01	.05	.05	.05
11	Joint Muscle	.01	.01				

The strength of relationship among variables was also highly significant by Bartlett's test of Sphericity (Chi-square=161.742, df=55,  $\alpha=0.000$ ). Evaluation of MRS questionnaire by healthcare professionals was fairly expressed as simple, comprehensible and administrable in clinical setting. Those were gynecologist, obstetrics and gynecology residents, pathology and lab medicine specialist, and psychiatrist.

## DISCUSSION

The reliability test of Nepali version of MRS developed from this study carries statistically acceptable level of internal consistency as measured by Cronbach alpha of 0.77 in comparison to the preferable level in Czech Version with 0.87.<sup>11</sup> It was found within the range of acceptable quality of 0.6 to 0.9 as determined in a methodological review.<sup>19</sup>

Theoretical construct validity (Face and content validity) was assured from the professionals.<sup>20-22</sup> Criterion validity and concurrent validity was tested between each variable to another in a matrix by Pearson correlation that was found to be statistically significant at either 0.05 or 0.01.<sup>11</sup> Third variable 'Sleep' was significantly correlated only with forth variable 'Depression' in this study. Researchers had found difficulty to clearly correlate this variable in their studies as well.

The strength of the relationship tested by Bartlett's Test of Sphericity among variables was highly significant by  $p<0.000$  with chi-squared value of 162 and it is comparable to the Czech Version. It was supported by sample adequacy by 0.671. Scale evaluation by health care professionals was better than in the Czech version.

Vasomotor flush was the main complaint in 60% cases as the first symptom; and the frequency of symptoms were comparable to the multinational study done by Blumel et al where the muscle and joint discomfort, physical and mental exhaustion were highly prevalent but by subscale urogenital symptoms appeared more in severe form in

current study.<sup>23</sup> The most common symptoms found namely joint and muscle discomfort and exhaustion were the same as in an Indian study.<sup>24</sup>

Average age of menopause was  $48 \pm 5.2$  yrs (Range = 35-58) which was comparable to a study done in India<sup>24</sup> where the mean age of menopause was  $48.9 \pm 3.2$  yrs (range = 45-52); 48.5 and 49.38 yrs in two Pakistani studies.<sup>8,25</sup>

## CONCLUSIONS

Nepali version of menopausal rating scale developed. Adequate level of tools reliability and validity obtained; so this scale points towards usefulness of the tool to measure the menopausal quality of life assessment.

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