



ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΑΤΤΙΚΗΣ  
ΣΧΟΛΗ ΕΠΙΣΤΗΜΩΝ ΥΓΕΙΑΣ ΚΑΙ ΠΡΟΝΟΙΑΣ  
ΤΜΗΜΑ ΜΑΙΕΥΤΙΚΗΣ  
ΠΡΟΗΓΜΕΝΗ ΚΑΙ ΤΕΚΜΗΡΙΩΜΕΝΗ ΜΑΙΕΥΤΙΚΗ ΦΡΟΝΤΙΔΑ  
ΚΟΙΝΟΤΙΚΗ ΜΑΙΕΥΤΙΚΗ ΦΡΟΝΤΙΔΑ

## **Μεταπτυχιακή Εργασία**

### **The MES**

## **Translation and Validation for an Austrian Sample**

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**Επιβλέπουσα: Βικτωρία Βιβιλάκη**

**Αθήνα, Νοέμβριος 2023**



**UNIVERSITY OF WEST ATTICA**  
**SCHOOL OF HEALTH AND CARING SCIENCES**  
**MIDWIFERY DEPARTMENT**  
**ADVANCED AND EVIDENCE BASED MIDWIFERY CARE**  
**PRIMARY MIDWIFERY CARE**

## **Diploma Thesis**

### **The MES**

# **Translation and Validation for an Austrian Sample**

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**Athens, November 2023**



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## The MES Translation and Validation for an Austrian Sample

Μέλη Εξεταστικής Επιτροπής συμπεριλαμβανομένου και του Εισηγητή

Η μεταπτυχιακή διπλωματική εργασία εξετάστηκε επιτυχώς από την κάτωθι Εξεταστική Επιτροπή:

A/a	ΟΝΟΜΑ ΕΠΩΝΥΜΟ	ΒΑΘΜΙΑΔΑ/ΙΔΙΟΤΗΤΑ	ΨΗΦΙΑΚΗ ΥΠΟΓΡΑΦΗ
1	ΒΙΒΙΛΑΚΙ ΒΙΚΤΩΡΙΑ	Επίκουρη καθηγήτρια	
2	ΣΑΡΑΝΤΑΚΗ ΑΝΤΙΓΟΝΗ	Επίκουρη καθηγήτρια	
3	ΔΙΑΜΑΝΤΗ ΑΘΗΝΑ	Επίκουρη καθηγήτρια	

## ΔΗΛΩΣΗ ΣΥΓΓΡΑΦΕΑ ΜΕΤΑΠΤΥΧΙΑΚΗΣ ΕΡΓΑΣΙΑΣ

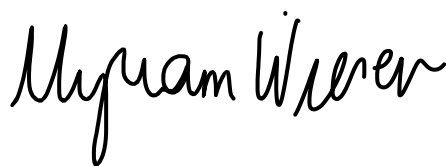
Η κάτωθι υπογεγραμμένη Μύριαμ Νατάσα Βίζερ του Δημητρίου Παπαϊωάννου, με αριθμό μητρώου 19004 φοιτήτρια του Προγράμματος Μεταπτυχιακών Σπουδών Προηγμένη και τεκμηριωμένη μαιευτική φροντίδα του Τμήματος Μαιευτικής της Σχολής επιστήμων υγείας και προνοίας του Πανεπιστημίου Δυτικής Αττικής, δηλώνω ότι:

«Είμαι συγγραφέας αυτής της μεταπτυχιακής εργασίας και ότι κάθε βοήθεια την οποία είχα για την προετοιμασία της, είναι πλήρως αναγνωρισμένη και αναφέρεται στην εργασία. Επίσης, οι όποιες πηγές από τις οποίες έκανα χρήση δεδομένων, ιδεών ή λέξεων, είτε ακριβώς είτε παραφρασμένες, αναφέρονται στο σύνολό τους, με πλήρη αναφορά στους συγγραφείς, τον εκδοτικό οίκο ή το περιοδικό, συμπεριλαμβανομένων και των πηγών που ενδεχομένως χρησιμοποιήθηκαν από το διαδίκτυο. Επίσης, βεβαιώνω ότι αυτή η εργασία έχει συγγραφεί από μένα αποκλειστικά και αποτελεί προϊόν πνευματικής ιδιοκτησίας τόσο δικής μου, όσο και του Ιδρύματος.

Παράβαση της ανωτέρω ακαδημαϊκής μου ευθύνης αποτελεί ουσιώδη λόγο για την ανάκληση του πτυχίου μου».

*\*Επιθυμώ την απαγόρευση πρόσβασης στο πλήρες κείμενο της εργασίας μου μέχρι ..... και έπειτα από αίτηση μου στη Βιβλιοθήκη και έγκριση του επιβλέποντα καθηγητή.*

Η Δηλούσα



**\* Ονοματεπώνυμο /Ιδιότητα**

**Ψηφιακή Υπογραφή Επιβλέποντα**  
(Υπογραφή)

***\* Εάν κάποιος επιθυμεί απαγόρευση πρόσβασης στην εργασία για χρονικό διάστημα 6-12 μηνών (embargo), θα πρέπει να υπογράψει ψηφιακά ο/η επιβλέπων/ουσα καθηγητής/τρια, για να γνωστοποιεί ότι είναι ενημερωμένος/η και συναινεί. Οι λόγοι χρονικού αποκλεισμού πρόσβασης περιγράφονται αναλυτικά στις πολιτικές του Ι.Α. (σελ. 6):***

[https://www.uniwa.gr/wp-content/uploads/2021/01/%CE%A0%CE%BF%CE%BB%CE%B9%CF%84%CE%B9%CE%BA%CE%B5%CC%81%CF%82\\_%CE%99%CE%B4%CF%81%CF%85%CE%BC%CE%B1%CF%84%CE%B9%CE%BA%CE%BF%CF%85%CC%81\\_%CE%91%CF%80%CE%BF%CE%B8%CE%B5%CF%84%CE%B7%CF%81%CE%B9%CC%81%CE%BF%CF%85\\_final.pdf](https://www.uniwa.gr/wp-content/uploads/2021/01/%CE%A0%CE%BF%CE%BB%CE%B9%CF%84%CE%B9%CE%BA%CE%B5%CC%81%CF%82_%CE%99%CE%B4%CF%81%CF%85%CE%BC%CE%B1%CF%84%CE%B9%CE%BA%CE%BF%CF%85%CC%81_%CE%91%CF%80%CE%BF%CE%B8%CE%B5%CF%84%CE%B7%CF%81%CE%B9%CC%81%CE%BF%CF%85_final.pdf)

## **Abstract**

### **Introduction**

Empathy plays an important role in midwifery care, not only for the women but also for midwives. The Midwifery Empathy Scale (MES) was developed to assess the empathy levels of midwives and midwifery students. The purpose of this study was the translation and validation of the MES for an Austrian sample.

### **Methods**

277 midwives working in Austria completed the questionnaire of the MES. The psychometric measurements that were performed included explanatory factor analysis using a Varimax rotation and Principal Components Method. Moreover the internal consistency of the MES was assessed with reliability coefficients. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and a Bartlett's test of Sphericity were carried out.

### **Results**

Principal components analysis showed seven orthogonal factors. KMO measure of sample adequacy = 0.724 and Bartlett's test of sphericity = 1058.904,  $df = 231$ ,  $P < 0.001$ . The MES showed an acceptable overall internal consistency: Cronbach's alpha was found 0.721 and Guttman split half was 0.611. The findings of our study confirm the multidimensionality of MES, demonstrating a seven factor structure which contained subscales reflecting empathy and emotional connection. The mean scores of Austrian midwives was 44,80 with results ranging from 24 to 81.

### **Conclusion**

This study shows that the German version of the Midwifery Empathy Scale is a reliable instrument for evaluating the empathy levels of midwives and midwifery students in Austria. The German MES could be used in the selection and education of future midwives as well as in connection with empathy trainings of midwives.

### **Keywords**

Midwifery, Silent Empathy, Perinatal Care, Compassionate Care, Being with the Woman

## Background

Numerous studies have shown the importance of empathy in health care. Higher levels of empathy have been linked with better patients' clinical outcomes <sup>1,2</sup>, higher levels of patient satisfaction <sup>3</sup> and more accurate diagnoses <sup>4</sup>. Moreover there is evidence that high levels of empathy protect against burnout development of healthcare professionals <sup>5-7</sup>.

When trying to define empathy it becomes evident that there are several definitions. According to Pike <sup>8</sup> that is because 'the concept of empathy is elusive and mysterious' (p235). Rogers <sup>9</sup> states that 'the state of empathy, or being empathetic, is to perceive the internal frame of reference of another with accuracy, and with the emotional components and meaning which pertain thereto, as if one were the other person, but without ever losing the "as if" condition' (p210).

Hojat et al. define empathy in the context of medical education and patient care as a mainly cognitive and not affective or emotional characteristic. Moreover in order to be empathetic the health care professional needs to understand instead of feel the patients' experiences, concerns and perspectives and needs to be able to communicate this understanding. Furthermore there is the intention to help <sup>10</sup>.

Additionally Hojat et al. <sup>11</sup> suggest that 'physician empathy is a multidimensional concept involving at least three components. The most important component is perspective taking, an outcome consistent with that reported for the general population. Other components of empathy are compassionate care and standing in the patient's shoes, which are both specific to the patient-physician relationship' (p1567).

### Midwifery and Empathy

The International Confederation of Midwives <sup>12</sup> states in the 'Essential Competencies for Midwifery Practice' that a midwife should 'demonstrate effective interpersonal communication with women and families, health care teams, and community groups' and needs to 'listen to others in an unbiased and empathetic manner'<sup>10</sup>.

Studies have shown the importance of empathetic midwifery care. Women being supported by midwives who are sensitive to their needs have increased levels of satisfaction of their birth experiences <sup>13</sup> and the hospital childbirth services <sup>14</sup>.

Nevertheless, studies with health professionals have shown decreasing empathy levels during the years of education and residency <sup>10,15-18</sup>. However, interventions for midwives which increase empathy can influence and improve the birth perception of mothers and their satisfaction with midwives <sup>19</sup>. Because of this Moloney and Gair find it important to teach and embed empathy in the curricula for midwifery students <sup>20</sup>.

Although empathy is characterized as being difficult to measure <sup>21</sup> Hojat et al. <sup>22</sup> developed the Jefferson Scale of Empathy. The scale and its different versions were developed by Hojat et al. in 2001 <sup>22</sup> to 'evaluate the effectiveness of educational interventions aimed at promoting empathy' and can be used by physicians and other health care professionals. There are numerous studies which have used the Jefferson Scale of Empathy to assess empathy levels in different health care professionals <sup>23-26</sup>.

As Hogan et al. <sup>27</sup> stated, the Jefferson Scale of Empathy is not ideal for midwifery, as for instance the word 'patient' should be replaced by woman or client. Recently Vivilaki et al. <sup>28</sup> developed the Midwifery Empathy Scale, an instrument specifically for midwives and midwifery students. Until this point it is available in English and Greek.

The general aim of this study was to translate and validate this instrument into German. More specifically the study's objectives were to:

1. Test a German version of the MES and assess its reliability and validity in identifying empathy levels in a sample of Austrian midwives.
2. Examine the factor structure of the German MES.

## **METHODS**

### **First phase**

Translation of the original MES and Pre-testing

In this study, the World Health Organization's (WHO's) guidelines of translation and adaptation of instruments was followed<sup>29</sup>. The permission for using and translation of the MES was asked for in written form and was granted by the authors. One translator with knowledge of the English-speaking culture but with mother tongue German was given the task of forward translation. This translator was a health professional and familiar with the used terminology<sup>29</sup>. Additionally one translator unaware of the topic translated the questionnaire into his mother tongue (German). After the translation process the two translators worked on and solved discrepancies between the two translations<sup>30</sup>. After forward translation the questionnaire was independently back-translated. This was done by one translator with mother tongue English unaware of the topic of the questionnaire<sup>29</sup>. The back-translation was given to the developers of the MES and permission for working with the German version was granted.

After the translation of the MES from English to German there was be a pre-testing of the instrument. Five respondents (midwives and midwifery students) were included for the pre-testing. As part of the cultural adaption process, a systematic debriefing was done with the respondents afterwards, during which they were asked about the questions of the questionnaire. The respondents were asked if they had problems understanding the questions or single words. Furthermore they were asked to explain why they answered in a certain way and how they answered. These answers were compared to the actual responses for consistency. Comments and suggestions made by the focus group were included into the final version<sup>29</sup>.

Collection of Data

After pre-testing the final version was sent by the Austrian Midwives Association to midwives living and working in Austria. Before sending out the questionnaire it was reviewed by the Science Department of the Austrian Board of Midwives and approval for an online survey of Austrian midwives was granted by the committee of the Austrian Midwives' Association.

Along with the questionnaire there was a cover letter explaining the purpose of the study, providing the researchers' affiliation and contact information, and clearly stating that answers would be confidential and anonymity would be guaranteed in the final data reports.

### **Participants**

Participants of the study was a sample of Austrian midwives. Inclusion criteria were working and living in Austria, fluency in German and written informed consent. In total 277 midwives agreed to participate.

### **Instrument**

Vivilaki et al.<sup>28</sup> developed the Midwifery Empathy Scale in 2016, a 22-item psychometric scale specifically for midwives and midwifery students. With the help of 22 items empathetic responses are measured. Every item scores on a 6-point Likert scale of 1 = Totally Agree, 2 = Agree, 3 = Not Sure But Probably Agree, 4 = Not Sure But Probably Disagree, 5 = Disagree, 6 = Totally Disagree. A total score is calculated, with highest score 132 (highest empathy) and lowest 22 (lowest empathy). Items measuring negative statements are reverse scored. The MES is a reliable and valid instrument for evaluating the empathy levels of midwives and midwifery students. The English version of the MES can be found at the end (see Appendix 1).

### **Second phase**

Data analysis and validation

Statistical analysis was performed with the help of IBM SPSS statistics version 23. Firstly descriptive analysis was calculated for the MES items including means, standard deviation, frequencies and percentages. Internal consistency was measured by calculating Cronbach's

alpha<sup>31</sup> and Guttman split-half coefficients. Factor analysis was conducted with the help of the Principal Components Method.

#### *Reliability*

Cronbach's alpha was carried out to assess the internal consistency of the instrument. The coefficient of Cronbach's alpha should be  $> 0.7$  to fulfill the recommended level for new instruments<sup>32</sup>. Moreover, internal consistency of the German MES was tested using Guttman split-half coefficients.

#### *Factor Structure*

Explanatory factor analysis using a Varimax rotation and Principal Components Method was used to explore the underlying dimensions of the MES scale. The following criteria were used to determine the dimensional structure of the MES: a) eigenvalue  $> 1$ <sup>33</sup> b) variables should load  $> 0.40$  on a factor<sup>34</sup> c) the interpretation of the factor structure should be meaningful d) the screeplot was accurate when means of communalities were above  $0.40$ <sup>35</sup>. Computations were based on covariance matrix, as all variables were receiving values from the same measurement scale<sup>36</sup>. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and a Bartlett's test of Sphericity were carried out to find out if the collected data is adequate for factor analysis<sup>37</sup>. As factor analysis found seven subscales, subsequent Cronbach's alpha were separately carried out for each subscale, highlighting how the items group together.

#### *Face and content validity*

The meaning and acceptability of the items by the midwives were investigated by a research midwife during the administration of the scale.

## **Results**

### **Sample characteristics**

In December 2020 the final version of the translated questionnaire was sent to the Austrian Midwives Association which agreed to forward the questionnaire to the midwives working in public and private hospitals and/or as independent midwives in Austria. From December 2020 to March 2021 277 filled out questionnaires were sent back by the midwives. The final sample of 277 was suitable for exploratory factor analysis<sup>38</sup>. The scores of the midwives ranged from 24 to 81 (maximum score possible 132, minimum score possible 22). The mean MES score was 44,80. Figure 1 shows the scores of the midwives.



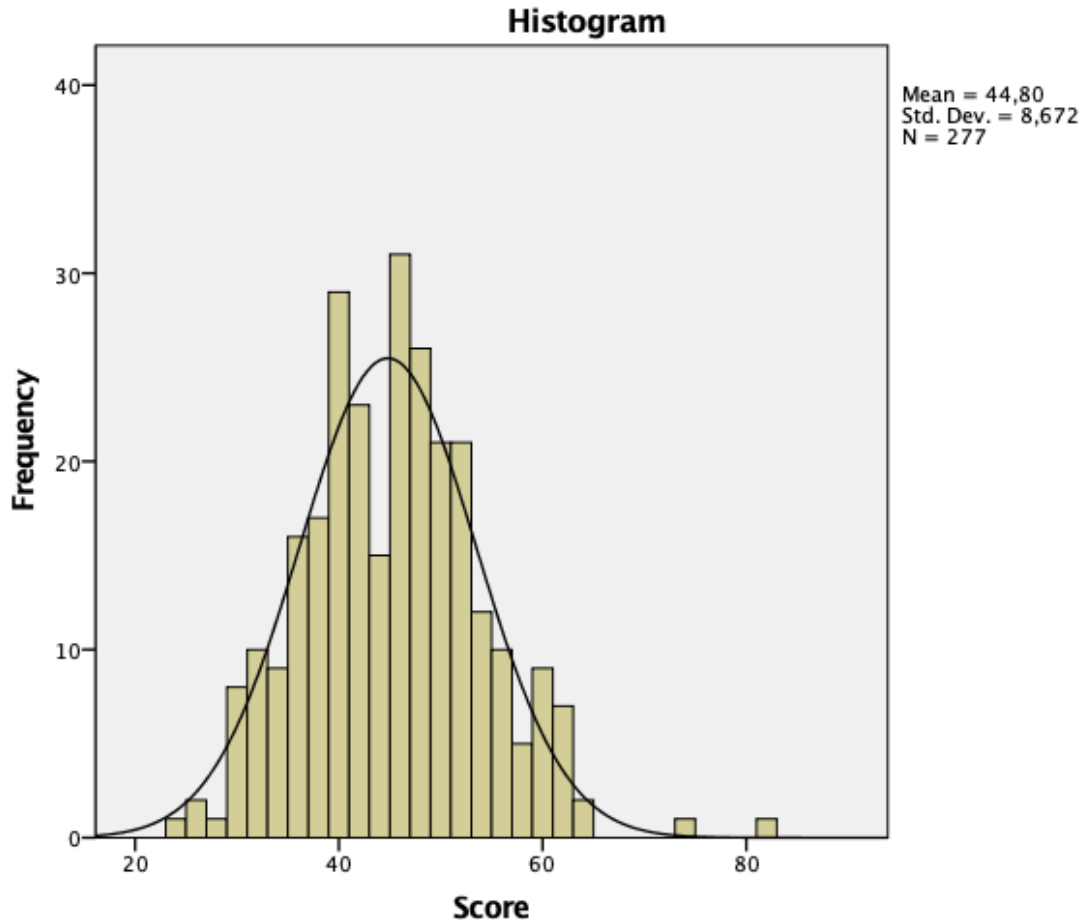


Figure 1. Scores of Midwives at the MES

## Psychometric characteristics of MES

### Reliability

The internal consistency characteristics of the German MES showed acceptable reliability. Cronbach's alpha was 0,721 for the total scale (items 1-22), standardized alpha was 0,757 and Guttman split half was 0.611.

### Factor Structure

#### Principal Components analysis

KMO measure of sampling adequacy was equal to 0.724 which implies a good sample size<sup>39</sup>. Bartlett's test of Sphericity<sup>40</sup> was 1058.904  $df = 231$  and is highly significant at  $P < 0.001$ , which indicates that the variables are correlated and therefore appropriate for PCA<sup>41</sup> (table 1). Figure 2 shows the Screeplot, table 2 presents the descriptive statistics for the MES questions, table 3 shows the frequencies for the MES items, table 4 shows the Exploratory factors and Explained Variance after rotation for the German MES and table 5 presents the Communalities for the German MES.

The PCA of the 22 items of the MES presented a seven-component solution. The eigenvalues were  $>1$  for seven components, which explained 55.903 % of the data (table 4).

The first factor (Silent Empathy) includes the following questions: 2, 3, 4, 6, the eigenvalue is 3.742 and it explains 10.045 % of the variance. The second factor (Midwife's Touch) includes the questions : 12, 13, 14, the eigenvalue is 2.120 and it explains 9.201 % of the variance. The third factor (Being with Woman) includes the questions : 1, 10, 20, the eigenvalue is 1.645 and it explains 8.361 % of the variance. The fourth factor (Emotional Connection) includes the questions : 7, 16, 17, 19, the eigenvalue is 1.503 and it explains 8.085 % of the variance. The

fifth factor (Sensitivity) includes the questions : 5, 8, 15, the eigenvalue is 1.172 and it explains 6.914 % of the variance. The sixth factor (Perspective Taking) includes the questions : 9, 18, 22, the eigenvalue is 1.073 and it explains 6.880 % of the variance. The seventh factor (Activism) includes the questions : 11, 21, the eigenvalue is 1.044 and it explains 6.417 % of the variance.

Table 1. KMO and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0,724
Bartlett's Test of Sphericity	Approx. Chi-Square	1058,904
	df	231
	Sig.	0,001

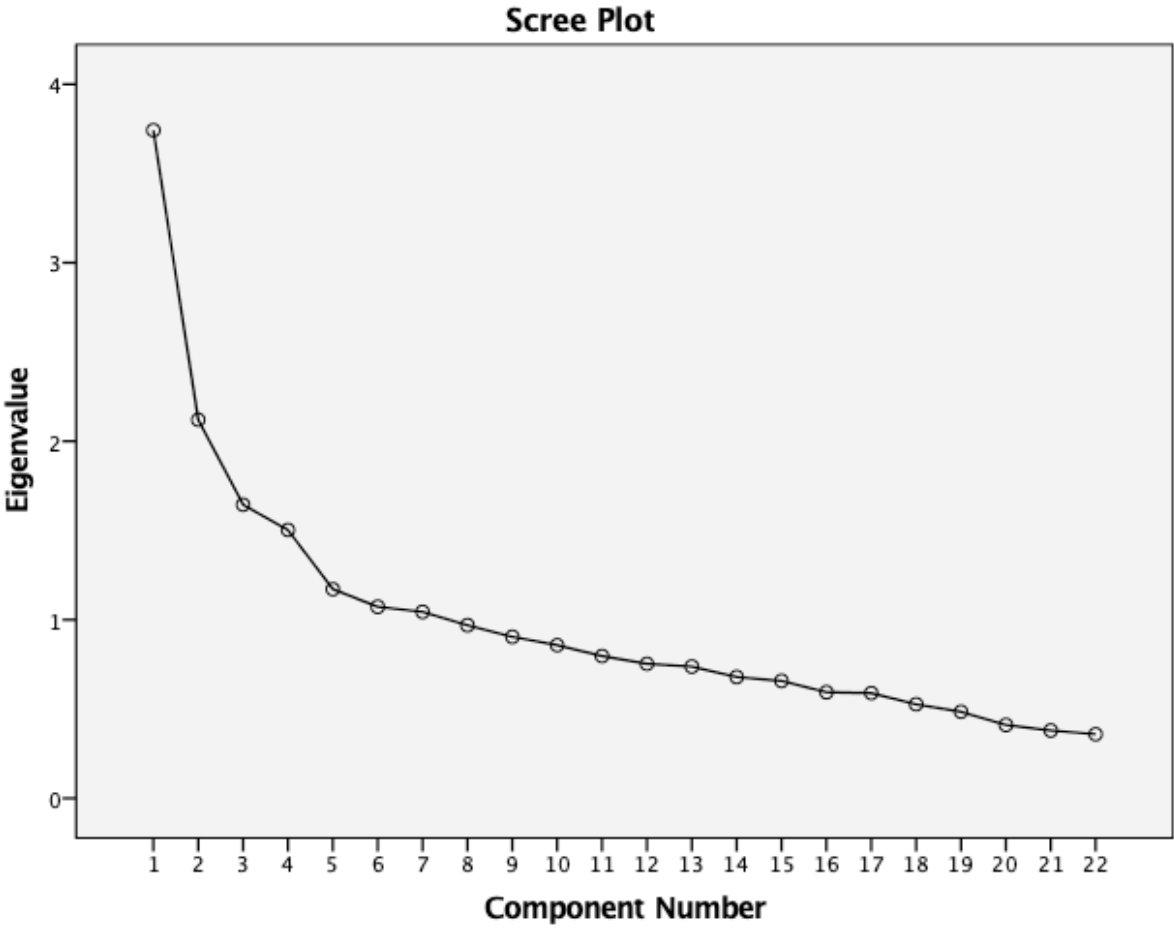


Figure 2. Screeplot

**Table 2.** Descriptive Statistics of the MES items

<b>Question</b>	<b>Mean</b>	<b>Std. Deviation</b>
1. I believe that empathy plays an important role in midwifery care.	1,10	0,309
2. I can perceive the hidden feelings and thoughts of the women that are in my care.	1,99	0,689
3. Women feel better when they sense that they are understood.	1,12	0,320
4. I recognize the body language of a woman.	1,90	0,687
5. Body language is not as important as verbal communication for the understanding of the woman's feelings.	4,91	1,107
6. I recognize when a woman is silent because of embarrassment.	2,21	0,875
7. I don't get emotionally affected when I see women cry.	4,56	1,427
8. It is difficult for a midwife to see things from women's perspective.	4,91	1,167
9. I try to stand in the woman's shoes, so I can better understand her.	1,72	0,872
10. I show that I am willing to listen to the woman by always sitting near her.	2,39	1,151
11. I would spend time to take care of women after my work hours.	3,48	1,476
12. Midwife's touch encourages the woman.	2,12	0,888
13. I avoid to touch the woman I am caring for, in order to keep a distance.	5,42	0,783
14. I think it is important to touch a woman when I am caring for her.	2,27	1,169
15. Very sensitive women irritate me.	5,27	1,004
16. There were times that I witnessed a woman cry and I got emotional.	2,07	1,249
17. Many times I left work and I kept thinking of a woman I was caring for.	1,87	1,117
18. I don't think part of my job to occupy myself with the problems of the woman I care.	4,73	1,235
19. I feel satisfaction when women feel better with my care.	1,21	0,456
20. If I realize that a woman is afraid, I spend time trying to reassure her.	1,27	0,478
21. I could go against hospital rules in order to help a woman.	3,39	1,563
22. I usually stay emotionally detached from the women that are in my care.	4,52	1,279

Table 3. Frequencies

		Frequency	Percent	Cumulative Percent
<b>MES1: I believe that empathy plays an important role in midwifery care.</b>	totally agree	251	90,6	90,6
	agree	25	9,0	99,6
	not sure but probably agree	1	0,4	100,0
<b>MES2: I can perceive the hidden feelings and thoughts of the women that are in my care.</b>	totally agree	66	23,8	23,8
	agree	149	53,8	77,6
	not sure but probably agree	61	22,0	99,6
	not sure but probably disagree	1	0,4	100,0
<b>MES3: Women feel better when they sense that they are understood.</b>	totally agree	245	88,4	88,4
	agree	32	11,6	100,0
<b>MES4: I recognize the body language of a woman.</b>	totally agree	79	28,5	28,5
	agree	147	53,1	81,6
	not sure but probably agree	50	18,1	99,6
	not sure but probably disagree	1	0,4	100,0
<b>MES5: Body language is not as important as verbal communication for the understanding of the woman's feelings.</b>	totally agree	5	1,8	1,8
	agree	12	4,3	6,1
	not sure but probably agree	9	3,2	9,4
	not sure but probably disagree	33	11,9	21,3
	disagree	135	48,7	70,0
	totally disagree	83	30,0	100,0
<b>MES6: I recognize when a woman is silent because of embarrassment.</b>	totally agree	63	22,7	22,7
	agree	113	40,8	63,5
	not sure but probably agree	83	30,0	93,5
	not sure but probably disagree	17	6,1	99,6
	disagree	1	0,4	100,0
<b>MES7: I don't get emotionally affected when I see women cry.</b>	totally agree	11	4,0	4,0
	agree	20	7,2	11,2
	not sure but probably agree	35	12,6	23,8
	not sure but probably disagree	34	12,3	36,1
	disagree	91	32,9	69,0
	totally disagree	86	31,0	100,0
<b>MES8: It is difficult for a midwife to see things from womens' perspective.</b>	totally agree	6	2,2	2,2
	agree	7	2,5	4,7
	not sure but probably agree	24	8,7	13,4
	not sure but probably disagree	28	10,1	23,5
	disagree	117	42,2	65,7
	totally disagree	95	34,3	100,0
<b>MES9: I try to stand in the woman's shoes, so I can better understand her.</b>	totally agree	131	47,3	47,3
	agree	110	39,7	87,0
	not sure but probably agree	25	9,0	96,0
	not sure but probably disagree	6	2,2	98,2
	disagree	4	1,4	99,6

	totally disagree	1	0,4	100,0
<b>MES10: I show that I am willing to listen to the woman by always sitting near her.</b>	totally agree	66	23,8	23,8
	agree	101	36,5	60,3
	not sure but probably agree	64	23,1	83,4
	not sure but probably disagree	33	11,9	95,3
	disagree	9	3,2	98,6
	totally disagree	4	1,4	100,0
	<b>MES11: I would spend time to take care of women after my work hours.</b>	totally agree	31	11,2
agree		46	16,6	27,8
not sure but probably agree		65	23,5	51,3
not sure but probably disagree		50	18,1	69,3
disagree		64	23,1	92,4
totally disagree		21	7,6	100,0
<b>MES12: Midwife's touch encourages the woman.</b>		totally agree	71	25,6
	agree	120	43,3	69,0
	not sure but probably agree	71	25,6	94,6
	not sure but probably disagree	11	4,0	98,6
	disagree	4	1,4	100,0
<b>MES13: I avoid to touch the woman I am caring for, in order to keep a distance.</b>	agree	2	0,7	0,7
	not sure but probably agree	8	2,9	3,6
	not sure but probably disagree	15	5,4	9,0
	disagree	100	36,1	45,1
	totally disagree	152	54,9	100,0
<b>MES14: I think it is important to touch a woman when I am caring for her.</b>	totally agree	74	26,7	26,7
	agree	109	39,4	66,1
	not sure but probably agree	62	22,4	88,4
	not sure but probably disagree	15	5,4	93,9
	disagree	10	3,6	97,5
	totally disagree	7	2,5	100,0
<b>MES15: Very sensitive women irritate me.</b>	totally agree	2	0,7	0,7
	agree	4	1,4	2,2
	not sure but probably agree	17	6,1	8,3
	not sure but probably disagree	17	6,1	14,4
	disagree	92	33,2	47,7
	totally disagree	145	52,3	100,0
<b>MES16: There were times that I witnessed a woman cry and I got emotional.</b>	totally agree	111	40,1	40,1
	agree	97	35,0	75,1
	not sure but probably agree	35	12,6	87,7
	not sure but probably disagree	11	4,0	91,7
	disagree	18	6,5	98,2
	totally disagree	5	1,8	100,0
<b>MES17: Many times I left work and I kept</b>	totally agree	135	48,7	48,7
	agree	85	30,7	79,4
	not sure but probably agree	30	10,8	90,3

<b>thinking of a woman I was caring for.</b>	not sure but probably disagree	16	5,8	96,0
	disagree	8	2,9	98,9
	totally disagree	3	1,1	100,0
<b>MES18: I don't think part of my job to occupy myself with the problems of the woman I care.</b>	totally agree	6	2,2	2,2
	agree	10	3,6	5,8
	not sure but probably agree	31	11,2	17,0
	not sure but probably disagree	46	16,6	33,6
	disagree	98	35,4	69,0
	totally disagree	86	31,0	100,0
<b>MES19: I feel satisfaction when women feel better with my care.</b>	totally agree	225	81,2	81,2
	agree	48	17,3	98,6
	not sure but probably agree	3	1,1	99,6
	not sure but probably disagree	1	0,4	100,0
<b>MES20: If I realize that a woman is afraid, I spend time trying to reassure her.</b>	totally agree	205	74,0	74,0
	agree	68	24,5	98,6
	not sure but probably agree	4	1,4	100,0
<b>MES21: I could go against hospital rules in order to help a woman.</b>	totally agree	36	13,0	13,0
	agree	54	19,5	32,5
	not sure but probably agree	63	22,7	55,2
	not sure but probably disagree	44	15,9	71,1
	disagree	49	17,7	88,8
	totally disagree	31	11,2	100,0
<b>MES22: I usually stay emotionally detached from the women that are in my care.</b>	totally agree	9	3,2	3,2
	agree	12	4,3	7,6
	not sure but probably agree	33	11,9	19,5
	not sure but probably disagree	64	23,1	42,6
	disagree	91	32,9	75,5
	totally disagree	68	24,5	100,0

**Table 4.** Exploratory factors and Explained Variance after rotation for MES

Factors		Rescaled Loadings	Eigen values	Rotation Sums of Squared Loadings			
				% of Variance	Cumulative Variance	Cronbach's alpha	Standardised alpha
Factor 1 <b>(Silent Empathy)</b>	Q2	0.666	3.742	10.045	10.045	0.620	0.623
	Q3	0.492					
	Q4	0.669					
	Q6	0.720					
Factor 2 <b>(Midwife's Touch)</b>	Q12	0.804	2.120	9.201	19.246	0.699	0.708
	Q13	0.668					
	Q14	0.820					
Factor 3 <b>(Being with Woman)</b>	Q1	0.669	1.645	8.361	27,607	0.367	0.493
	Q10	0.537					
	Q20	0.649					
Factor 4 <b>(Emotional Connection)</b>	Q7	0.691	1.503	8.085	35,692	0.532	0.550
	Q16	0.649					
	Q17	0.594					
	Q19	0.450					
Factor 5 <b>(Sensitivity)</b>	Q5	0.536	1.172	6.914	42.606	0.416	0.417
	Q8	0.617					
	Q15	0.693					
Factor 6 <b>(Perspective Taking)</b>	Q9	0.443	1.073	6.880	49.486	0.453	0.451
	Q18	0.688					
	Q22	0.561					
Factor 7 <b>(Activism)</b>	Q11	0.603	1.044	6.417	55.903	0.473	0.474
	Q21	0.833					



Table 5. Communalities

	Initial	Extraction
MES1	1,000	,513
MES2	1,000	,499
MES3	1,000	,423
MES4	1,000	,516
MES6	1,000	,574
MES9	1,000	,416
MES10	1,000	,516
MES11	1,000	,551
MES12	1,000	,715
MES14	1,000	,736
MES16	1,000	,624
MES17	1,000	,514
MES19	1,000	,513
MES20	1,000	,600
MES21	1,000	,734
MES5_r	1,000	,475
MES7_r	1,000	,503
MES8_r	1,000	,532
MES13_r	1,000	,567
MES15_r	1,000	,661
MES18_r	1,000	,575
MES22_r	1,000	,543

Extraction Method: Principal Component Analysis.

## Validity

### Face and content validity

The German version of the MES was well accepted by the midwives. It was easily and quickly (approximately 10 minutes) completed. The questions seemed to be relevant, reasonable, unambiguous and clear. For that reason face validity was considered to be very good. The German version of the MES includes in a balanced way the full range of the characteristics of empathy that is intended to measure.

### Construct Validity

As mentioned above the items of the MES were formed into seven different subscales after using Principal Components Analysis. Cronbach's alpha was calculated for each of the subscales.

1.	Silent Empathy (2, 3, 4, 6):	0.620
2.	Midwife's Touch (12, 13, 14):	0.699
3.	Being with Woman (1, 10, 20):	0.367
4.	Emotional Connection (7, 16, 17, 19):	0.532
5.	Sensitivity (5, 8, 15):	0.416
6.	Perspective Taking (9, 18, 22):	0.453
7.	Activism (11, 21):	0.473

## Discussion

### Main findings

The purpose of this study was the translation and validation of the MES for a German speaking sample. The MES was developed by Vivilaki et al.<sup>28</sup> in order to have a psychometric tool that measures empathy levels in midwives and midwifery students. The scores of the Austrian midwives ranged from 24 to 81 (maximum score possible 132, minimum score possible 22). The mean MES score was 44,80. The Kaiser-Meyer-Olkin measure of sampling adequacy (0.724) and a Bartlett's test of sphericity ( $p < 0.001$ ) confirmed that the collected data was adequate for factor analysis. Factor analysis was performed using Principal Components Method and Varimax rotation. The eigenvalues were  $>1$  for seven factors, explaining 55.903% of the variance. Cronbach's alpha was carried out for each of the seven subscales identified by factor analysis. Cronbach's alpha was 0.620 for the first subscale, 0.699 for the second, 0.367 for the third, 0.532 for the fourth, 0.416 for the fifth, 0.453 for the sixth and 0.473 for the seventh. According to this study the major formative factors of the empathy levels in Austrian midwives are: 1) Silent Empathy 2) Midwife's Touch 3) Being with Woman 4) Emotional Connection 5) Sensitivity 6) Perspective Taking 7) Activism.

Bradfield et al.<sup>42</sup> state that the idea of being 'with woman' (factor 3) is a central construct of the profession of midwives. Their findings show that "midwives who were not displaying the characteristics and manifestations of the phenomenon were described as not 'doing' midwifery, or not 'being' midwives but merely persons providing care" (p10). According to Bradfield et al.<sup>43</sup> the concept of being 'with woman' is a part of different standards and publications of midwifery associations internationally.

Factor analysis showed the multidimensionality of the MES for an Austrian sample, showing a seven factor structure. Cronbach standardized alpha for the German MES was found higher than the one reported by Vivilaki et al.<sup>28</sup> (0,546). In comparison to the results of the Greek MES<sup>28</sup> (Factor 1 "Compassionate Care" explaining 24.632% of the variance) factor 1 for the Austrian sample was "Silent Empathy".

Overall there are common cultural characteristics such as general midwifery values and principles that the European midwives share. However, the local cultural differences and the divergent educational programs in the European member states<sup>44</sup> result in different perceptions and this is highlighted in factor analysis. As a result this is an important challenge -in terms of empathy- that midwives could face if they are trained in one country and have to culturally adapt their midwifery practice in another.

Several studies have shown a decline of empathy during medical school and residency<sup>4,10,15-18,45,46</sup>. These studies were conducted with medical, pharmacy, dental, veterinary and nursing students. According to Hojat et al.<sup>10</sup> the decline of empathy has many different reasons 'including lack of role models, a high volume of materials to learn, time pressure, and patient and environmental factors' (p1188). Studies studying the decline or increase of empathy in midwifery students are rare and should be addressed more in the future. As far as the author knows, there are only two published studies evaluating midwifery students and their empathy levels over time<sup>47,48</sup>. According to McKenna et al. the mean empathy scores of the assessed 52 undergraduate midwifery students were lower than empathy scores from studies with other health professionals. However, contrary to the studies stated above, the empathy scores of the students were lowest in the first year and increased consistently with every year of the Bachelor Program<sup>47</sup>. The second study conducted with midwifery students showed a not statistically significant trend of declining empathy scores<sup>48</sup>. It would be interesting to investigate the

reasons for the increase of empathy levels in the study of McKenna et al. as it could help other universities with the arranging of curriculum content.

Studies on empathy training for midwifery students have shown that interventions can increase empathy levels in students. These increases can be seen immediately after the intervention and additionally after some time at the follow-up test <sup>27,49,50</sup>.

The validated MES could be a reliable instrument for evaluating the empathy levels of midwives and midwifery students in Austria. One possible field of application could be the annual entrance examination for the undergraduate midwifery courses, as the importance of high empathy levels in future midwives is evident. Moreover, the MES could be used before and after interventions that increase empathy levels, in particular empathy trainings for students and midwives.

### **Limitations**

This study was not without limitations. Due to the pandemic the questionnaire was sent out by an online survey tool without having in depths interviews which may have resulted in investigating empathy better. Despite the above limitation this study investigates the empathy levels of Austrian midwives. Another limitation was that the authors did not use a questionnaire assessing the patient's perception of the midwife's empathy such as the German version of the Consultation and Relational Empathy (CARE) <sup>51,52</sup> for evaluating the empathy levels of midwives participating in this study. Furthermore the authors could have investigated if results of the questionnaire are consistent over time by checking the test-retest reliability of the scale over a short time. Regardless of the small targeted population and sample size, participants were representative of the Austrian midwives. Rapid socioeconomical changes over the last years, have led to a relatively homogenous cultural background of Austrian midwives with the midwives of the other German speaking countries. In spite of the above concerns, the size of our sample is considered excellent for explanatory factor analysis. Our findings confirm the multidimensionality of the MES, demonstrating a seven-factor structure, while the sub-scales of the German MES showed good values for Cronbach's alpha. Significant differences in item factor loadings characteristics may be explained by the varied cultural backgrounds of our study population. It is evident to the authors that further investigations on the strengths and weaknesses of the questionnaire are needed, nevertheless we believe that the questionnaire can even now be useful for midwives and midwifery students in Austria. The implication for midwifery practice are better patients' clinical outcomes, higher levels of patient satisfaction, more accurate diagnoses and a prevention strategy against burnout development of healthcare professionals.

### **Conclusion**

The aim of this study was the translation and validation of the MES for an Austrian sample. 277 midwives working in Austria completed the questionnaire which showed satisfactory reliability. Explanatory factor analysis with the help of Principal Components Analysis determined seven subscales of the MES. We can therefore argue that it is a reliable and valid tool for identifying empathy levels and it can be used by midwife educators and midwife managers to improve assessment and education of midwives and midwifery students.

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