









## **Clinical Outcomes in Chronic Conditions:** Findings from a Homeopathy Teaching Clinic using the MYCaW Instrument

Alastair C. Gray<sup>1,2</sup> Christine D. Luketic<sup>1,3</sup> Parker Pracjek<sup>1</sup> Denise Straiges<sup>1</sup>

Homeopathy

Address for correspondence Alastair C. Gray, PhD, MSc, BA Hons, HoHM Research, 6190 Ardleigh Street, Philadelphia, PA 19138, United States (e-mail: alastair.gray@hohmfoundation.org).

#### **Abstract**

Background The Academy of Homeopathy Education is a US-based accredited teaching institution offering homeopathy education services to professional and medically licensed homeopathy students. This study reports on clinical outcomes from the teaching clinic from 2020 to 2021.

**Methods** Data collected using the patient-generated outcome measure, the Measure Yourself Concerns and Wellbeing (MYCaW), were anonymized. Mean MYCaW values for initial and subsequent consultations were analyzed for the degree of change across the intervention period in 38 clients. Each client listed up to two complaints. MYCaW scores between initial and subsequent consultations were analyzed for the degree of change (delta) across the intervention period.

Results A total of 95 body system-related symptoms were analyzed for change in intensity following the homeopathic intervention. Statistically significant improvements in the intensity of main symptoms were observed between initial and subsequent follow-ups. The main symptom scores showed a mean change in intensity (delta MYCaW) of -0.79 points (95% confidence interval (CI), -1.29 to -0.29; p = 0.003) at first follow-up, a mean change of -1.67 points (95% CI, -2.34 to -0.99; p = 0.001) at second follow-up compared with the initial visit, and a mean change of -1.93 points (95% CI, -3.0 to -0.86; p = 0.008) at third follow-up compared with the initial visit. For clients with four or more follow-ups, the mean delta MYCaW was -1.57 points (95% CI, -2.86 to -0.28; p = 0.039).

**Conclusion** Statistically significant improvements as well as some clinically meaningful changes in symptom intensity were found across a diverse group of individuals with a variety of long-term chronic conditions. The improvement was evident across different body systems and different levels of chronicity. There are limitations to the generalizability of the study due to the research design. Further research and investigation are warranted given the promising results of this work.

## **Keywords**

- ► homeopathy
- ► MYCaW
- clinical outcomes
- clinical settings
- ► Academy of Homeopathy Education

received May 16, 2023 accepted after revision November 1, 2023

DOI https://doi.org/ 10.1055/s-0044-1779337. ISSN 1475-4916.

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Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

<sup>&</sup>lt;sup>1</sup> Independent Researcher, HOHM Foundation, Philadelphia, Pennsylvania, United States

<sup>&</sup>lt;sup>2</sup>Department of Research, HOHM Foundation, Philadelphia, Pennsylvania, United States

<sup>&</sup>lt;sup>3</sup>Independent Researcher, Virginia Tech, Blacksburg, Virginia, United

## Introduction

This study reports on clinical outcomes in a series of cases from the teaching clinic of the Academy of Homeopathy Education (AHE) during the academic year 2020 to 2021.

AHE is a US-based accredited teaching institution offering homeopathy education services to professional and medically licensed homeopathy students. Twin pillars of the AHE curriculum are its research focus and immersive clinical training experience. AHE has used the Measure Yourself Concerns and Wellbeing (MYCaW) profile instrument in the teaching clinic since 2020. This instrument was adopted for its simple application and the ability to evaluate client response to an intervention.

The MYCaW instrument is a client-centered question-naire designed for evaluating holistic and personalized approaches to supporting people. MYCaW allows a more rigorous approach to capture the voice of health service users beyond testimonials and anecdotal improvements reported by the clinician. Follow-up questionnaires address the same original concerns. MYCaW is a validated outcome measure that has been applied to various health conditions, 4,6-8 is favored as a robust outcome tool in a wide range of therapies, 9-13 and has been translated into many languages. The goals of the present study are to highlight patient outcome trends using MYCaW in a supervised teaching clinical setting and thus add to practice-based data related to homeopathic treatment.

## **Methods**

This study used data from subjective client feedback collected to monitor changes in client symptoms and wellbeing.

#### **Procedures**

Individuals contacted the teaching clinic to set up appointments with clinicians. New clients completed intake and consent forms. The clients then met with the clinicians for the initial consultation. At the close of the consultation, the clinicians asked the client a series of questions to complete the MYCaW form. For each subsequent appointment, the MYCaW questions were repeated. In the AHE chronic clinic, the typical range of time intervals between consecutive appointments per patient ranges from 4 to 6 weeks, reflecting that some clinical indications require more swift follow-ups than others (note, acute conditions for clients are managed in a different clinical setting). Administrative procedures are in keeping with the published instructions for the MYCaW instrument. 15 The MYCaW data from all clients are anonymized and stored in a secure database. Variables included baseline and subsequent symptoms as well as wellbeing ratings.

## Setting

The data from clients seen in the online teaching clinic between August 2020 and August 2021 were compiled for this analysis.

#### **Participants**

Clients were recommended by other clients, by students at the school, by other homeopaths or health practitioners, from online homeopathy study groups, or were self-referrals. There were no demographic restrictions. Clients could be of any gender, age, or background. There were 37 participants who identified as female (77%). There were 11 participants who identified as male (23%). Race and ethnicity information was not collected. The age of clients ranged from 1 to 80 years, with the largest groups of clients in the age ranges 1 to 10 (11; 22.9%), 31 to 40 (12; 25.0%) and 41 to 50 (9; 18.8%). Clients had their cases taken either by the academy's instructors or by advanced students under supervision. Consent for data collection and analysis was collected at intake.

## **Inclusion and Exclusion criteria**

The study reviewed chronic cases seen in the teaching clinic with at least one completed initial and follow-up MYCaW assessment. To be included in this study, the same symptoms chosen initially had also to be indicated by the client in the follow-ups. Individuals with only one visit were excluded from the analysis: this accounted for 10 cases (21%) that did not have any completed follow-up MYCaW forms, due to either the client's or the student practitioner's lack of follow-up.

#### **Measurement Instrument**

Use of the MYCaW instrument requires that clients use a 7-point Likert scale ranging from a score 0 for "as good as it could be" to 6 for "as bad as it could be," to assess their main and one other symptom. Clients also report on their general feeling of wellbeing to the question: "How would you rate your general feeling of wellbeing now?," using the same score 0 for "as good as it could be" to 6 for "as bad as it could be". To this question about wellbeing, a respondent's report concerns matters that affect their "psycho-emotional wellbeing". Respondents can report practical concerns around "finance, housing, job status, their future welfare, their life purpose, relationships, or carer burden". To

## **Data Collection**

## **Data Analysis**

Bias was minimized by using the established and tested instrument, MYCaW, across an ample study period to account for seasonal effects of certain complaints, using all available retrospectively retrieved information and using self-selecting participants only.

#### Statistical Methods

The dataset consisted of MYCaW questionnaire data, client demographic information, as well as intake and follow-up dates. The raw questionnaire data were de-identified and entered into an Excel spreadsheet (v16.65). Difference scores for symptom intensity (deltas) were analyzed between initial and follow-up visits, as well as first and last MYCaW average values across the intervention period. Clinical results were tabulated by tracking changes in patient-reported initial

MYCaW scores and patient-reported outcomes at the last follow-up appointment for which there is a completed MYCaW form. A change of at least  $\pm$  0.5 in the MYCaW score is considered clinically meaningful. <sup>16</sup> Data are presented as mean change in MYCaW score (delta) and 95% confidence interval (CI). To be interpreted as a clinically meaningful improvement, the mean delta, including its 95% CI, was required to be < – 0.5. Client complaints were also grouped by body system for analysis, and additional sub-group variables were then examined in this study.

Inferential statistical analyses were conducted using paired *t*-tests to examine the difference (delta) scores and thus determine if statistically significant changes were evident. This procedure was used then to evaluate the question as to whether participants experienced clinically meaningful changes between their initial and subsequent visits (see above). R-software (version 4.2.2, 2022–10–31) was used to evaluate the difference scores (a comparison of follow-up scores to initial scores). Where assumptions of statistical Normality of the sample were not met, a Wilcoxon matchedpairs signed rank sum test was used. Sub-group variables were not included in the statistical analyses.

#### **Ethics**

This study involved reporting and analysis of routine clinical data and is based on subjective participant feedback; therefore IRB review was not required. Clients provided consent for care and specific permission for the use of their anonymized information for academic purposes, including publication.

## **Results**

During 2020 to 2021, 48 clients in the AHE teaching clinic completed the initial MYCaW form. In total, 38 cases had one or more completed follow-up MYCaW forms, 30 had two follow-ups, 14 had three follow-ups and 7 had four or more follow-up sessions with their practitioner (**-Table 1**).

The majority of clients seen were female (77.1%) and the highest frequency were aged 31 to 40 years (23.5%). Children under the age of 10 years accounted for 22.9% of clients seen. Each client listed up to two complaints for which they are seeking assistance. As a consequence, a total of 95 body system-related symptoms were analyzed for change in intensity following the intervention. The age groups with the highest average number of follow-up consultations were 41

Table 1 Client sample

Follow ups per client	Number	Percent (%)
0	10	20.8
At least 1	38	79.2
At least 2	30	62.5
At least 3	14	29.2
At least 4	7	14.6

Table 2 Client demographics

Client gender	Count	Percent
-		
Female identified	37	77.1%
Male identified	11	22.9%
Client age	Count	Percent
1–10	11	22.9%
11–20	6	12.5%
21–30	3	6.3%
31–40	12	25.0%
41–50	9	18.8%
51–60	3	6.3%
61–70	2	4.2%
71–80	2	4.2%
Average number of follow-ups per gender	Average	
Female identified	1.97	
Male identified	1.91	
Average number of follow-ups per age group	Average	
1–10	1.5	
11–20	1.0	
21–30	1.7	
31–40	2.1	
41–50	3.4	
51–60	1.7	
61–70	1.0	
71–80	1.5	
Overall average	1.7	

to 50 years (3.4 consultations) and 31 to 40 years (2.1 consultations). Female and male identified clients had a nearly equal average number of follow-up consultations, 1.97 and 1.91 respectively (**-Table 2**).

## **Changes in Main Symptoms**

The following summarizes the findings from the clients' initial visit to each subsequent follow-up related to their main symptom. All responses are included in the calculation of the mean change in scores.

Thirty-eight clients provided scores from their initial visit to the first follow-up. Thirty-seven clients reported a decrease in symptom intensity. These thirty-eight pairs of scores were used for the analysis. The mean change in symptom intensity (delta MYCaW score) was -0.79 points (95% CI, -1.29 to -0.29). Using a t-test, the difference scores were calculated to evaluate the change between the initial visit and the first follow-up. The change was statistically significant  $t(n=38, \text{ degrees of freedom (df)} = 37, \alpha = 0.05) = -3.19 \ (p=0.003; \ 
ightharpoonup Table 3)$ . Though the mean delta MYCaW was < -0.5, the 95% CI overlapped the value -0.5

**Table 3** Statistical analysis comparing initial visit scores with follow-ups

Comparison	n	Mean delta MYCaW score	Lower 95% conf. limit	Upper 95% conf. limit	t value	Degrees of freedom	p-Value (t test)	Note re Wilcoxon	W (rank sum)	<i>p</i> -Value (Wilcoxon)
FU1 vs. Initial	38	-0.79	-1.29	-0.29	-3.19	37	0.003	1	-	_
FU2 vs. Initial	30	-1.67	-2.34	-0.99	-5.05	29	0.000	-	_	_
FU3 vs. Initial	14	-1.93	-3.00	-0.86	-3.88	13	0.002	t-Test assumptions not met	10.5	0.008
FU4 vs. Initial	7	<b>–1.57</b>	-2.86	-0.28	-2.98	6	0.025	t-Test assumptions not met	0	0.039

Abbreviations: conf. limit, confidence limit; FU, follow-up; MYCaW, Measure Yourself Concerns and Wellbeing. Upper 95% conf. limit < -0.50 highlighted in bold/italics.

and so the improvement at the first follow-up cannot be interpreted as a clinically meaningful one.

Thirty clients recorded scores from the initial to second follow-up. Of those, 29 experienced a decrease in symptom intensity. The mean delta MYCaW was -1.67 points (95% CI, -2.34 to -0.99) from the initial visit to the second follow-up. Using a t-test, the difference scores were calculated to evaluate the change between the initial visit and the second follow-up. The change was statistically significant,  $t(n=30, \text{ df}=29, \alpha=0.05)=-5.05$  (p<0.001;  $\succ$  **Table 3**). The mean delta MYCaW was <-0.5 and also the 95% CI did not overlap the value -0.5, and so the improvement at second follow-up can be interpreted as a clinically meaningful one.

The number of clients with three follow-ups was 14, all of whom experienced a decrease in symptom intensity. The mean delta MYCaW was -1.93 points (95% CI, -3.0 to -0.86) from the first visit to the third follow-up. The data did not fully meet the assumptions of statistical Normality: a non-parametric Wilcoxon signed-rank test had the findings W = 10.5, p = 0.008 ( $\blacktriangleright$  Table 3). The mean delta MYCaW was < -0.5 and also the 95% CI did not overlap the value -0.5, and so the improvement at the third follow-up can be interpreted as a clinically meaningful one.

Among the 7 people with four or more follow-ups, the mean delta MYCaW was -1.57 points (95% CI, -2.86 to -0.28) on the main symptom compared with the initial visit. Since the data did not fully meet the assumptions of statistical Normality, a non-parametric Wilcoxon signed-rank test had the findings W=0, p=0.039 ( $\succ$ Table 3). Though the mean delta MYCaW was < -0.5, the 95% CI overlapped the value -0.5 and so the improvement cannot be interpreted as a clinically meaningful one.

The change in (delta) MYCaW scores on the main symptom reflect statistically significant and clinically meaningful reduction in intensity between initial and subsequent follow-up intervals collectively (mean delta MYCaW, -2.45 (95% CI, -6.43 to 1.53).

## **Body System Categorization**

Symptoms were categorized for analysis by body system. Mental health complaints were the largest group of system complaints (28 cases). Neurological system concerns represented 13 cases. Endocrine systems followed, with 10 cases. Mental health complaints showed improvement (mean delta MYCaW at least -0.5) between the initial and first, and second and third visits, but diminished by the fourth or later visit. Given the values for 95% CI, a clinically meaningful change was not discernable however. A similar picture emerged from cases with neurological or endocrine system complaints. Thus, these clients in our sample typically saw progress and improvement in their symptom intensity, though none of these was interpretable as clinically meaningful. The data supporting this conclusion are reflected in **Table 4**.

There were differences seen in the change of symptom intensity scores across body systems. Individual system complaints that saw clinically meaningful reductions in intensity at their second and/or third follow-up were digestive system, genitourinary system, respiratory system, and skin. With fewer than 10 cases per system category, however, the inferences available from these findings are limited.

Mental health complaints, the area with the most cases, were further analyzed using sub-categories. Of the five symptom sub-categories, the two with the most cases were anxiety (nine cases, 11.84%) and attention conditions (five cases, 6.58%). Of these, attention conditions did not show a statistically significant average change (delta, -0.3), though anxiety complaints did so, with an average change in symptom intensity of -1.4.

#### Changes in Wellbeing

Clients also reported on their general feeling of wellbeing. Among all cases, average wellbeing scores showed improvement with each subsequent visit, though at smaller increments than those seen among symptom scores. While female clients reported wellbeing changes in earlier follow-ups than male clients, improvements were seen only among male clients in both the third and fourth follow-ups (delta, –1.33; **Table 5**). In wellbeing scores, 55.26% (21) of clients reported any improvement by last follow-up, 13.16% (5) reported no change by last follow-up, and 31.58% (12) reported any decrease in wellbeing by the last follow-up.

Table 4 Type of symptom by body system

4										7	
UCL-FU4		1.83			-2.00		6.76			-0.17	
LCL-FU4		-3.83			-2.00		-6.10			-5.83	
Mean change in rating FU 4 vs. initial (total n=7)		-1.00	-2.00	0.00	-2.00		0.33	0.00	-4.00	-3.00	0.00
UCL-FU3		-0.09	-2.00	-0.09	-1.00	6.24	2.74	0.64	6.62	0.74	-1.00
LCL-FU3		-2.91	-2.00	-2.91	-1.00	-8.91	-4.74	-3.98	-8.12	-7.74	-5.00
Mean change in rating FU 3 vs. initial (total n = 14)		-1.50	-2.00	-1.50	-1.00	-1.33	-1.00	-1.67	-0.75	-3.50	-3.00
UCL-FU2		1.00	1.25	0.41	-0.51	-0.08	3.31	0.49	6.63	-0.75	2.98
LCL-FU2		-3.00	-4.75	-4.81	-2.82	-5.08	-4.87	60.9-	-6.40	-6.75	-6.48
Mean change in rating FU 2 vs. initial (total $n = 30$ )	1.00	-1.00	-1.75	-2.20	-1.67	-2.50	-0.78	-2.80	0.11	-3.75	-1.75
UCL-FU1		0.82	0.50	1.83	2.33	1.08	2.55	2.84	5.26	3.14	2.95
LCL-FU1		-1.49	-1.70	-3.83	-5.33	-4.08	-3.91	-4.17	-5.26	-5.54	-3.75
Mean change in rating FU 1 vs. initial (total n = 38)	0	-0.33	-0.6	-1	-1.5	-1.5	-0.68	-0.67	0	-1.2	-0.4
Percentage of cases (%)	2.10	3.10	8.30	10.40	7.00	4.20	29.20	7.30	13.50	6.30	7.30
Number of cases reporting this type of system disability at initial appointment	2	3	8	10	7	4	28	7	13	9	7
Type of symptoms (system disability)	Cardiovascular system	Dental and oral conditions	Digestive system	Endocrine system	Genitourinary system	Immune disorders	Mental disorders	Musculoskeletal system	Neurological conditions	Respiratory system	Skin

Note: Each client could list up to two symptoms, and all but one of the 48 clients did so; hence, the total number of reported symptoms at initial appointment = 95 (one client mentioned 1 symptom only). LCL is the lower confidence limit for the 95% confidence interval. UCL is the upper confidence limit for the 95% confidence interval. UCL is the upper confidence limit for the 95% confidence limit for the 95% confidence limit for the 95% confidence interval. UCL is the upper confidence limit for the 95% confidence limit for the 95

**Table 5** Average changes in wellbeing scores in follow-ups compared with initial scores

Wellbeing scores by gender $(n=38)$	Average DELTA rating FU 1 vs. Initial	Average DELTA rating FU 2 vs. initial	Average DELTA rating FU 3 vs. initial	Average DELTA rating FU 4 vs. initial
Female ( <i>n</i> = 31)	-0.35	-0.57	-0.36	-0.25
Male $(n=7)$	0.57	-0.43	-1.33	-1.33
Combined average	0.11	-0.5	-0.85	-0.79

#### Discussion

Our study examining the capture of symptom and wellbeing ratings from clients in a homeopathy teaching clinic yielded several important areas for consideration: adherence; demographics and presenting complaints; statistically and clinically significant improvements warranting further investigation; and sustained improvement.

#### **Adherence**

A noteworthy observation was that there was a loss of 21% of information due to a lack of client adherence. Forty-eight clients were seen in the clinic between August 2020 and August 2021. Ten clients (21%) did not attend any follow-up appointments, leaving data from thirty-eight clients for analysis. These cases were not included in analysis because no clear data were available about changes in symptoms or wellbeing following the initial consultation and remedy recommendation. Approaches to studying and improving what has previously been described as client compliance in therapies for chronic conditions have evolved over the recent decades. The more contemporary concept of "adherence" captures the dynamic and complex factors that influence the uptake and continued use of health care interventions.<sup>17</sup> We have identified a gap in the literature related to client adherence in clinical outpatient homeopathy care. While more is written about adherence to conventional therapies<sup>18</sup> and on the effects of complementary therapies on patient adherence to medications, <sup>19</sup> our analyses have revealed a need to understand more about this area.

# Demographics and the Categorization of Presenting Complaints

We are seeing male identified clients and attaining positive results; this demographic detail is noteworthy. In line with other contemporary complementary medicine studies, about one-quarter of our clients are male identified.<sup>20,21</sup> Male identified clients in our clinic have nearly the same number of follow-ups on average as female identified clients (1.91 and 1.97, respectively). It is common within complementary therapies as a whole that female identified is predictive of the use of traditional, complementary, and integrative health care (TCIH). Moreover, male identified clients in our clinic showed earlier and greater positive changes in wellbeing than female identified clients. This finding suggests the need for further research on the ways that male identified individuals engage with and use TCIH

and highlights an opportunity for targeted outreach by clinics and individual practitioners to this underserved demographic.

One of the challenges faced in the analysis of these data was in relation to body systems categorization. Body system categorization allowed for further insights into the prevalence of complaint and intervention response in more detail. It was discovered in the categorization process, however, that the complexity and nuance of symptom and case details did not always neatly align with predetermined body system categories. Client complaints do not always neatly translate into these categories, given the prevalence of co-morbidities, iatrogenic factors, biopsychosocial causes, and medically unexplained symptoms.<sup>22,23</sup> There are, however, potential benefits for clinicians and for researchers of clinical practice in their use. Some examples from this study include a case involving chronic pain and inflammation with a history of vaccine intolerance in childhood and many invasive medical procedures, classified here as "immune system". Another case involving long-standing gas, bloating and constipation, but with etiology tied to birth and childhood trauma and a family medical history of high anxiety, was classified as "digestive system". These examples of inelasticity of categorization highlight the need for improved understanding of the nuances in symptom profiles.

## Statistically and Clinically Significant Improvements Warranting Further Investigation

The analyses of client symptom data provided some interesting findings. There were improvements in symptom intensity over the course of client visits. Additionally, some changes in symptom intensity were statistically significant as well as clinically important, particularly by the second appointment. Given the small sample size, the generalizability of the findings to a wider population is limited. Additional observational research using MYCaW results, including studies using different designs, is necessary for further research development in homeopathy.

#### **Sustained Improvement**

The greatest reductions in main symptom intensity were reported in the second follow-ups by clients. In our study, fewer changes were noted in subsequent follow-ups. The overall degree of improvement for clients who had three or more follow-ups was not greater than those with only two follow-ups. The degree and durability of positive change seen within 2 to 4 months following the intervention may speak to

the effect of an accurate, individualized homeopathic prescription that created a meaningful and lasting impact early in the treatment. This is in some contrast to findings in other studies in the fields of acupuncture and other integrative therapies that showed a more linear and continuous improvement of symptoms over time. <sup>24,25</sup> Given the finding of reported improved health among clients in this study, further exploration in the form of a broader analysis is warranted.

## Limitations

There are limitations in our study related to the MYCaW instrument itself, and in its application. The first point relates to the sensitivity of the instrument and its use in homeopathy. The client is asked to rate the intensity of two symptom areas and the overall state of wellbeing as they are experienced at that time of completing the initial and follow-up MYCaW forms. In our clinical setting, this limited time frame does not always seem to adequately capture the arc of symptom change for clients following a therapeutic intervention and allows for environmental and other factors to skew their rating. Furthermore, it is not uncommon for homeopathy clients to book a follow-up appointment when they have begun to feel a decline in their improvement, prompting the clinician to recommend a further dose of the indicated remedy or a change in remedy.

A second limitation of this study is due to the application of the MYCaW tool by student clinicians in this setting. A lack of compliance in submitting completed follow-up MYCaW forms throughout a case managed by students emerged as an operational issue and contributed to the lower-thanexpected number of follow-up MYCaW forms completed for the study. The lack of compliance and use of measurement tools is widely acknowledged in the research literature.<sup>26,27</sup> It also indicates the need for a cultural shift in this teaching clinic related to case management and clinical audit skills and highlights technology adoption challenges related to student adherence to expectations in completing and filing client MYCaW forms. Because the setting of this study is a teaching clinic, senior students eventually move clinic clients into their personal practices, giving rise to further variables around MYCaW data collection. However, despite these limitations, the findings of this study demonstrate that a modest clinical facility has a valuable place in the lives of clients.

Additionally, the study's one-group design requires that certain caveats are applied in the data interpretation. Due to a lack of a control or comparison group, there are limitations on the conclusions that can be drawn on the impact of the intervention: the findings reported here note stand-out statistical and clinically important outcomes but they do not answer questions of efficacy or clinical effectiveness. While this is a natural limitation of observational studies, the findings are still relevant and make an important contribution to the body of clinical outcomes research. In any event, a causal relationship between an exposure and an outcome cannot be proven by one study alone.

## **Conclusion**

A review of one academic year of clinical data from the AHE homeopathy teaching clinic indicates that statistically significant and clinically meaningful improvements in symptom intensity were found across a diverse population of people with a wide variety of long-term chronic conditions. The improvement was evident across different affected body systems and different levels of chronicity. As a consequence of the study design and sample size, there can only be limited generalizability, with no far-reaching conclusions about the broad efficacy of homeopathy. However, these findings provide evidence suggesting that individualized homeopathic care in a teaching clinic setting provides an opportunity for effective treatment strategy for complex chronic health problems and that further research and investigation is indicated. The MYCaW instrument proved feasible to administer and provided detailed quantitative and qualitative outcome data.

#### Highlights

- A series of 38 continuous cases were analyzed from the AHE teaching clinic during 2020 to 2021 using MYCaW.
- Among the 30 clients who had a second follow-up, there was an average decrease of 1.67 points on symptom 1 compared with the initial visit.
- Seven system areas showed improvements in the second follow-up with an overall average of 2.35.
- Decreases in the main symptom scores were observed for all body systems, with the exception of dental and oral which showed no change.
- Positive changes in wellness scores (1.33) were seen among male identified clients at the third follow-up.
- This study found improvements in symptom intensity and wellbeing across a diverse population of people with a wide variety of long-term chronic conditions.

#### **Data Availability**

The raw and the processed data required to reproduce the above findings are available from the HOHM Foundation Office of Research: research@hohmfoundation.org.

## Funding

None.

#### Acknowledgements

The authors would like to thank the students, faculty, and educational leadership who generously provided their time to participate in the study.

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