Attitudes To and Uptake of Repertory Software in Homeopathy Clinical Practice—Results of an International Survey

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Homeopathy

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Abstract

Background Despite the substantial size of the maturing complementary medicine (CM) industry, the technologies used by practitioners have received little research attention. In the clinical delivery of homeopathy services, repertory software can be employed to cross-reference client symptoms with numerous databases, making the process of seeking a clinical intervention quicker and more accurate. The purpose of the study is to learn about the quantitative patterns of usage, uptake and attitudes to repertory software amongst professional homeopaths.

Methods An online cross-sectional survey of 15 questions was completed by practicing professional homeopaths between August 2016 and May 2017, using non-probability snowball sampling. Questions gathered demographic information, reflections and attitudes on the use of electronic repertories in clinical homeopathy practice.

Results In total, 59% of respondents reported using software regularly in practice and 71% found that it adds clear value in their work. Sixty-eight percent of respondents learned about repertory software during homeopathy training, and 47% were introduced to software when they began clinical practice. Lack of sufficient training is a very important barrier to the use of repertory software, indicating that more robust and accessible software training is needed for practitioners. Many respondents agreed with a statement that repertory software represents good value for money and yet 46% agreed that it is cost prohibitive for most practitioners, signaling a challenge for software companies. Few respondents reported regularly using more than three of the most common repertory features.

Conclusion This preliminary study presents some potentially significant uptake, usage and attitude markers that stand to shed light on the practice of homeopathy and the place of emerging technologies such as repertory software. Ultimately, more research is needed to help identify and address the challenges, risks and tensions around integration of practice-enhancing technologies in CM educational and clinical settings to best serve the diverse and changing needs of practitioners.

Keywords

- complementary medicine
- clinical practice technologies
- repertory software
- homeopathy
- clinical decision support system

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Background

Complementary Medicine Practice, Education and Technology

Complementary medicine (CM)—health care not traditionally associated with the conventional medical profession or medical curriculum[1]—houses a diverse field of mind–body practices (e.g., yoga, meditation), natural products (e.g., vitamins, herbal medicines), systems of medicines (e.g., naturopathy, homeopathy) and treatments (e.g., aromatherapy, reflexology).[2] The CM sector is maturing, as evidenced by rising professionalization, improved educational standards and standards of practice.[3,4,5] It appears also that the CM professions are becoming more reliant on the use of supportive technologies in the delivery of CM health care. However, despite the substantial size of the industry, with the uptake of CM increasing worldwide[6] (as evidenced, for example, in Australia by practitioner visits[7,8,9] and over-the-counter sales),[10] the technologies used by CM practitioners have received little research attention.[4] In addition, given the size of the CM industry and CM providers occupying a significant role in the global health care settings,[11,12,13] the education of CM practitioners has also received little empirical attention.[4,14] A recent critical integrative review of CM education[4] highlighted two key issues of significance for CM educational institutions, regulators and researchers, and pointed to several identifiable gaps in this area of educational research. First, there is very sporadic coverage of research in CM education. Second, the robust and mature research regarding educational technology and e-learning that is taking place in education more broadly, and medical and allied health education research in particular, is notably absent within CM education. Further, it is becoming clearer that research into CM-specific educational settings is warranted, after emerging evidence of uncommon perceptions, features and nuanced traits of academics (resistance to change, learning and practice-enhancing technologies) and students (mostly female, digitally divided and sub-divided, older and non-traditional) in these CM settings in comparison to the broader educational research conducted in conventional tertiary settings.[5,15,16,17,18]

Homeopathy

One of the members of the professions under the umbrella of CM is homeopathy.[19] The emphasis on research in homeopathy tends to focus on the basic science—examining the potential mechanism of action—asking "How does it work?", and on clinical science, asking "Which medicines work for which conditions?". In this regard, only a small proportion of the clinical research has focused on individualized homeopathy. While some research has been conducted on actual practice and clinical decision making,[20] little empirical evidence exists in relation to homeopathy practice, with only two peer reviewed papers in this critical area addressing education.[4] Currently, we know rather little about how homeopaths make clinical decisions. Further research into these aspects of the provision of homeopathy services is important as it seems clinical decision making in homeopathy is driven and dominated by traditional knowledge and inductive reasoning (proving information and knowledge of materia medica—a reference work listing remedies and their therapeutic actions)[21] rather than knowledge derived from evidence-based approaches and scientific research.[20,22–25] Understanding trends in practice and education ultimately enables educational institutions and practitioners to provide better care to the public.

Repertory

A clinical decision support system known as "the repertory" is employed to cross-reference a client's symptoms with collated lists of remedies and their therapeutic actions. This makes the process of selecting a therapeutic intervention quicker and more accurate during the delivery of clinical homeopathy. The repertory in homeopathy is "an index/library of symptoms derived from the materia medica and clinical/toxicological data".[21] There are numerous print repertories still widely used today, dating from 1805,[26] and in a published form since 1834.[27] Since the early 1840s, repertories have evolved to support the practitioner of homeopathy and since the early 1990s these tools have been available to practitioners in electronic format.

Computer Repertories

Computer repertories are intended to make the work of the practitioner easier and to provide better quality of care to the patient. Repertory software used among homeopaths worldwide include, but are not limited to, Complete Dynamics, HomeoQuest, RadarOpus, Synergy, HomPath, Vithoulkas Compass, and Vision. Common features among repertory software include:

- Search and analysis functions through indices of disease symptoms that list homeopathic medicines associated with specific symptoms.
- A statistical ranking of remedies that correspond to specific symptoms of the client.
- Libraries and databases containing primary provings data, materia medica, literature from clinical trials and clinical practice, as well as toxicological data.
- Patient and case management tools.

These repertory software options vary in complexity of features, breadth of library, analysis functions and cost.

Objective of the Study

The use of repertory software appears to be a growing and important area of clinical practice. The objective of the study reported here is to learn about patterns of usage, uptake and attitudes to repertory software amongst professional homeopaths from a wide variety of countries.[a]

Methods and Materials

Method Employed

This topic is explored through a survey of professional practitioners in the use of repertory software and included

the following domains: *the uptake and prevalence of use of repertory software among homeopathy practitioners; the patterns of use of repertory software among homeopathy practitioners;* and, *the attitudes and perceptions of practitioners to repertory software*.

Study Design and Sample

A cross-sectional survey of 17 questions was developed and used Likert-scale, multiple choice and open-ended question types. Questions were designed with the intention to reduce bias. Participation was voluntary and participants were assured of confidentiality and de-identification of survey results. The online survey was disseminated using non-probability snowball sampling and data were gathered from a sample of 165 homeopaths from numerous countries (►**Table 1**). This sampling technique was selected for its ability to reach subjects with traits that are rarely found and who can provide referrals to recruit other subjects. In this way, some of the drawbacks of "inclusion bias" could be minimized, while personal and professional connections in this small and often isolated body of professionals were able to contribute to the sample size.

Sample Size Justification

The study aimed for statistical power and aspired to include the highest possible number of responses, making use of a snowball sampling method. There is a growing body of literature on the topic of survey participation, focusing most importantly on ways to incentivize response rates[28] and, more recently, on how to harness social media platforms to maximize response rates and make use of user profiles.[29] In addition, many survey researchers have begun to question the widely held assumption that low response rates provide biased results.[30,31,32]

Setting and Survey Administration

The online cross-sectional survey of 17 questions was developed in August 2016 and shared through May 2017 via social media to homeopaths working worldwide and accessing Facebook via a link to the anonymous online survey.[29] The survey was made available to participants in six closed (members only) Facebook groups with a focus on Homeopathy professionals. It was made clear to potential participants that completion of the survey was voluntary. Written consent from each participant was obtained prior to survey completion. Participants were notified that all survey results would be de-identified, coded and analyzed.

Instrument

The survey instrument was designed to explore four specific domains relative to homeopathy repertory software: demographics; uptake and prevalence of use; patterns of use; and attitudes and perceptions of practitioners. To explore these domains, the survey included questions using dropdown, Likert-scale, matrix, multiple choice, sliding scale, and open-ended formats; all survey questions are included in the ►**Supplementary Fig. S1** (available online only). The survey platform (Survey Gizmo) was easily accessed through a web link.

Table 1 Demographics of participants

Age *(n = 117)*	Percent	Count
20–29	5%	6
30–39	14%	16
40–49	21%	24
50–59	31%	36
60–69	26%	30
70+	4%	5
Gender *(n = 117)*		
Male	26.5%	31
Female	73.5%	86
Response statistics		
Complete	70.9%	117
Partial	29.1%	48
Disqualified	0	0
Total	165	
Countries represented *(n = 117)*		
United States	26.5%	31
New Zealand	13.7%	16
United Kingdom	13.7%	16
Australia	12%	14
Canada	6%	7
Ireland	5.1%	6
India	4.3%	5
Netherlands	3.4%	4
Cook Islands	1.7%	2
Ukraine	1.7%	2
Denmark	0.9%	1
France	0.9%	1
Germany	0.9%	1
Hungary	0.9%	1
Israel	0.9%	1
Italy	0.9%	1
Macedonia	0.9%	1
Chile	0.9%	1
Colombia	0.9%	1
Norway	0.9%	1
South Africa	0.9%	1
Switzerland	0.9%	1
United Arab Emirates	0.9%	1
Belgium	0.9%	1

Demographics and Practice Characteristics

Survey items identified the respondent's age, gender, state/territory where clinical services are provided, and years in practice. Practice characteristics were also gathered

for additional context: e.g., *How many years have you used homeopathy as part of your clinical practice?*

The Uptake and Prevalence of Use of Repertory Software among Homeopathy Practitioners

Survey items asked participants to report their use of repertory software technologies in clinical practice: e.g., *Which of the following components of repertory software do you use?*

The Patterns of Use of Repertory Software among Homeopathy Practitioners

Survey respondents were invited to report on which software and features were used with what frequency in clinical practice: e.g., *Which of the following statements best describes your everyday use of repertory software?*

The Attitudes and Perceptions of Practitioners to Repertory Software

Survey respondents were asked to rate their perceptions of contemporary homeopathy technology and the impact of this technology on their work: e.g., *Which of the following statements describes your personal experience with repertory software?*

Validity and Bias

Bias was minimized by employing aspects of established or pilot-tested instruments. As this was the first time that survey questions have been developed on this specific topic, no pre-existing instrument was found. However, some survey questions were included from pre-existing validated survey instruments,[33] digital competence,[34] and digital confidence measures,[35,36] as well as general digital literacy assessments.[37,38] To ensure the final survey questions were relevant, combined and deemed appropriate to answer the research questions, the survey was reviewed by the authors and assessed for face validity. This bias minimization process involved testing the instrument and receiving expert feedback from two individuals representative of the target population. Feedback was then integrated (beyond the study sample) prior to recruitment of participants.

Data Collection

Data collection was administered online via SurveyGizmo. Following completion of the data collection period, both complete and incomplete data were transferred to spreadsheets for analyses.

Ethics Approval

Ethics approval for the project was obtained from the Endeavor College of Natural Health's Human Research Ethics Committee — entitled "*The Use of Professional Repertory Software in Homeopathic Medicine Practice*" — with approval number 2014032.

Statistical Analysis

In this study descriptive statistical analysis was employed, including frequencies and percentages for categorical variables and cross tabulation.

Results

There were a total of 165 survey respondents. Of these, 48 were partially completed surveys, but they were not omitted from the analysis as all respondents completed at least 64% of the survey questions. No pattern was discerned in the evaluation of non-fully answered questions. The number of respondents for each question is noted in the tables below.

Demographics

The demographic data showed that 83.6% of the respondents were currently in clinical practice, ranging in age from 20 to 74, with an average age of 51, and with 26.5% male and 73.5% female. Respondents represented 24 countries, with the greatest representation from the United States (26.5%), United Kingdom (13.7%), New Zealand (13.7%) and Australia (12%).

Practice Characteristics

Practitioners reported using homeopathy in clinical practice across categories spanning from less than 5 years (34.6%) to more than 20 years (22%). As with many CM modalities, homeopathy practitioners vary in their approach to clinical practice. A majority (51.6%) of the respondents practice homeopathy exclusively. Of these, only four (6%) are medically licensed homeopaths. Whilst a good number of respondents (40.6%) report using multiple methods for determining a remedy recommendation or therapeutic intervention, nearly as many (37.5%) use mainly classical Hahnemannian methods in practice (the original guidelines provided by Hahnemann—the founder of homeopathy). Similarly, there is a wide range for the time spent in consultation with new clients and in case analysis and prescription and for the number of consults per week. The average duration of initial consultation with a new client is 101 minutes, ranging from 20 to 180 minutes. And the average time spent identifying a new remedy for a patient is 106 minutes, ranging from 3 to 960 minutes. The average number of consultations per week among respondents is 14, ranging from 1 to 200. This wide range accounts for a variety of approaches to practice and also for an array of clinical settings. Some respondents probably work in clinics with a high client number, while others may work part-time in private practice. Many respondents (53.4%) report using a combination of paper and electronic clinical records. The average percentage of practitioners using online/phone consults is 26.5%, ranging from 0 to 100% (►**Table 2**).

The Uptake and Prevalence of Use of Repertory Software among Homeopathy Practitioners

In a series of questions where multiple responses were possible, the majority (68%) of respondents were initially introduced to repertory software during homeopathy training. After that, the greatest number of practitioners (47%) learned about repertory software when they began practicing. The least likely points of first encounter were through a professional publication or journal (11%) and through attendance at a workshop or conference (30%). There was a near

Table 2 Practice characteristics

Are you currently in practice? (*n* = *128*)	**Percent**	**Count**
Yes	83.6%	107
No	16.4%	21
How many clients do you see per week? (*n* = *137*)		
0–5	37.9%	52
6–10	16.1%	22
11–15	11.7%	16
16–20	11.7%	16
21–25	2.2%	3
26–30	10.9%	15
31–40	6.6%	9
40+	2.9%	4
How many years have you used homeopathy as part of your clinical practice? (*n* = 127)		
Less than 5 years	34.6%	44
5 to 9 years	14.2%	18
10 to 14 years	15.0%	19
15 to 19 years	14.2%	18
20 years or more	22.0%	28
Which of the following statements best describes your approach to practice? (*n* = *197*) (*multiple responses were possible*)		
I am a homeopath who uses no other modalities	51.6%	66
I am a medical homeopath	10.2%	13
I am a naturopath who prescribes homeopathic remedies	7.0%	9
I am another type of health professional who prescribes homeopathic remedies	7.0%	9
I am mainly a traditional Hahnemannian prescriber	37.5%	48
I use many different methods for my prescriptions	40.6%	52
What is the average duration (in minutes) of an initial consultation with a new client? (*n* = *121*)	Percent	Count
1–60	23%	28
61–90	50%	61
91–120	26%	31
180	.8%	1
How much time (in minutes) do you spend identifying a remedy for a new patient? (*n* = *116*)		
0–15	16.3%	19
16–30	22%	26
31–45	3%	3
46–60	18%	21
61–90	10.3%	12
91–180	19%	22
181–360	4.3%	5
360–960	7%	8
Record storage. In what medium do you store your clinical records? (*n* = 118)		
Paper only	26.3%	31
Electronic only	20.3%	24
A mixture of electronic and paper	53.4%	63
Identify what percentage of your clinical practice includes online and/or phone consultations? (*n* = 114)		
Count	Response	
33	<10%	
25	10–19%	
20	20–29%	
9	30–39%	
3	40–49%	
5	50–59%	
4	60–69%	
4	70–79%	
5	80–89%	
6	90–100%	

even split between those who learned about software as part of curriculum (49%) and those who did not (35%). A majority of respondents (59.2%) reported having used homeopathy throughout their clinical practice; 33.3% use homeopathy currently but did not do so in the past. A small proportion (5.8%) reported never having used repertory software in clinical practice, and even fewer (1.7%) reported having used it in the past, but no longer.

The Patterns of Use of Repertory Software among Homeopathy Practitioners

A majority of respondents reported using repertory software with "all patients", thus indicating its high regular use (41.7%). Nearly as many respondents use software with "some patients" (35%), and fewer use it with "all new patients for analysis and only some of their returning patients" (18.3%).

The repertory component of respondents' software was reported as the most often used by practitioners either in every case (50%) or frequently (43.6%). The next most commonly used component was the function for assisting with the differentiation between the remedies, used "frequently" (36.4%), in "every case" (22.4%), or "occasionally" (18.7%).

Table 3 Use of repertory software

Which repertory software do you currently use? *(n = 106)*	Count
RadarOpus	52
Synergy/MacRep	20
Complete Dynamics	17
ISIS Vision	4
Synthesis app	2
OpenRep SYNOPSIS—professional	1
Mino 2000	1
Homeoquest	1
Minotty	1
More than one software used	
Complete Dynamics and MacRepertory	1
Complete Dynamics (+ EH2.2 for Materia Medica)	1
RadarOpus and Complete Dynamics	1
Complete Dynamics and HomeoQuest	1
RadarOpus and ISIS	2
MacRepertory/ReferenceWorks and Hompath Firefly	1
Radar Opus and Hompath	1
RadarOpus, Boenninghausen Pocketbook, Complete Dynamics (free version)	1
RadarOpus and MacRepertory and Reference Works	1
RadarOpus and Complete Dynamics	1
Hompath and Homeoquest	1

Which of the following components of repertory software do you use?	For every case (n)	Frequently (n)	Occasionally (n)	Rarely (n)	Never (n)
Repertory component	55	48	5	1	1
Remedy differentiation function	24	39	20	9	15
Case management function	14	11	17	18	47

Managing patients' details, such as case notes, analysis and prescriptions, was the component of software use with the greatest spread of responses, spanning from 43.9% of respondents never using it to 13.1% using it in every case (►**Table 3**).

Attitudes and Perceptions of Practitioners to Repertory Software

A majority of practitioners (57%) reported that repertory software represents good value; however, certain practitioners were neutral on this matter (26%) and some disagreed (18%). When asked about the cost of repertory software for practitioners, the majority (46%) agreed that it is cost prohibitive though a large number were neutral (33%) and some disagreed (21%). Several questions focused on added value with the use of software in clinical practice. The greatest number (88%) of respondents agreed that repertory software adds value to the modern practice of homeopathy, with some being neutral or disagreeing (12%). To the question that repertory software is sophisticated enough to be truly useful in practice, the majority (72%) of respondents agreed, with some being neutral or disagreeing (28%). Time effectiveness is another area of potential added value reported by participants. A majority of respondents (71%) agreed that the time spent with respect to the case analysis is reduced by the use of repertory software, with some neutral or disagreeing (29%), and a smaller majority (42%) agreed that practitioners who use repertory software have more time available to spend with clients, with some being neutral (35%) or disagreeing (21%). The majority of practitioners (57%) agreed that repertory software enables practitioners to effectively treat patients with more complex conditions, with some being neutral (29%) or disagreeing (14%). A majority of respondents (54%) were neutral as to whether practitioners who use software get better clinical results, with some in disagreement (29%) and some in agreement (17%). Relatedly, there was a notable disagreement (55%) to the question that repertory software is actually not necessary for a practitioner to provide effective homeopathic treatment, with 31% in agreement and some neutral (23%).

Respondents also reported on the drawbacks or potential drawbacks of repertory software in clinical practice. A majority of respondents (75%) agreed that the lack of appropriate training in repertory software functionality is a significant barrier to its use, with some being neutral or disagreeing (25%). The majority (69%) disagreed with the statement that software interferes with a practitioner's ability to exercise intuition in their clinical decision-making, with some neutral or agreeing (31%), and only a slight majority disagreed with the statement that software could interfere with the development of a meaningful therapeutic relationship (43%), with some agreeing (32%) and some neutral (25%) (►**Table 4**).

Discussion

The objective of the study was to learn about the patterns of usage, uptake and attitudes to repertory software amongst professional homeopaths. Our study reveals both high levels of repertory software uptake and regular use of that repertory software. This top-line finding provides insights into questions of accessibility of the software, cost, ease of user experience and satisfaction. In addition, our study highlights four key findings related to the study objectives that emerged from the number and the intensity of responses during the analysis: (1) clear value is added from the use of software; (2) few advanced components in the software are actually used; (3) more training is needed; and (4) the cost of the software is prohibitive.

Clear Value

All respondents who have used repertory software at any time in their practice report that strong value is added to their clinical work. Practitioners found the software to be sufficiently sophisticated to meet practice demands; it served as an aid in effectively treating complex cases and a significant time-saver in case analysis. There is existing literature on the uptake and usage of clinical decision support systems (CDSS) in conventional medicine, revealing that, on average, practitioners do not often find clear value added in their clinical outcomes following CDSS implementation.[39,40] In similar research in other disciplines where findings close to ours have been made, one discussion point has been around the issue of potential over-reliance on technology for decisions in clinical prescribing.[41] In our study, however, the survey results seem to indicate a striving for balance by practitioners who can attest to the strong value added from its use, while acknowledging that repertory software is not actually necessary for a practitioner to provide effective homeopathic treatment. This seeming contradiction is likely related to practitioners' skills at conducting remedy differentiation manually, a solid knowledge of materia medica, and a sufficient personal reference library, though more research on this point is warranted.

Few Advanced Components in the Software Are Actually Used

Another barrier to successful uptake and use of repertory software is similarly reflected in the literature, where the complexity of a system is found to directly affect its adoption.[39,40] Some researchers point to the impact of a "digital propensity" for the uptake of more advanced digital tools, impacting its use among older practitioners.[41,42] Our survey indicates that a very few advanced components available in these software applications are being used by practitioners. Some of the most popular software provides myriad analysis and research functions, but these are not regularly used by those surveyed. This may be caused by several factors, ranging from disinterest to lack of understanding of the features. While numerous factors may play a role in this pattern of usage, the latter seems quite plausible, given the high number of respondents citing the lack of sufficient training as a very significant barrier to the use of repertory software. Although the majority of respondents had their first encounter with the software during their professional training, the minority reported training in software being included in the curriculum. Our findings suggest a clear need for more robust and accessible software training for practitioners. Software companies face the challenge of teaching the users how to use the functions properly. Additionally, it is possible that practitioners can/should influence the design features of discipline-specific technologies.

More Training Needed

In homeopathy education and clinical settings, currently there seems to be a confusing and complex relationship with technologies. On the one hand, it is clear that repertory software increases accuracy, saves time, and offers flexibility for clinicians, yet it seems that the use of software is taught haphazardly and without structure or strategy. Anecdotal observation suggests that currently many academics tend to prefer that students use books and manual repertorization initially, mirroring practices their instructors used in their own training before such technologies were developed. Whilst there are benefits to the serendipitous richness of proximal entries in print repertories and understanding manual analysis, a lack of strategy for training in existing and emerging technologies sets up new practitioners to be under-resourced upon entering professional clinical practice. Training was cited extensively as a significant barrier for uptake and use of CDSS,[43,44] as well as lack of awareness of the systems' existence.[45] Professional practitioner training programs face the challenge of how best to integrate training in the use of software and other technologies into didactic and clinical training to best support emerging professionals in the field of homeopathy.

Prohibitive Cost

Another key finding is the belief that the cost of software is prohibitive for the majority of practitioners. The number of neutral answers to questions related to cost (33%) indicates considerable ambivalence and/or acknowledgement that there is a wide range of what software can cost as well as what income practitioners may earn. Unsurprisingly, cost is extensively cited as a barrier for CDSS uptake,[46] though there is little in the literature on the issue of cost as a factor among independent practitioners in private practice. The

Table 4 Attitudes to and experience of repertory software

Which of the following best describes your use of repertory software *(n = 120)*				**Percent**	**Count**
I have never used repertory software in my clinic				5.8%	7
I have previously used repertory software in my clinic but do not use it any longer				1.7%	2
I currently use repertory software in my clinic but have not always used it				33.3%	40
I have used repertory software in my clinic throughout all of my years in practice				59.2%	71
To what extent do you agree with the following statements? *(n = 117)*	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
	Count, %	Count, %	Count, %	Count, %	Count, %
I learned about repertory software during my homeopathic training	48, 41%	31, 27%	13, 11%	8, 7%	16, 14%
I was taught about repertory software as a part of my curriculum	13, 11%	27, 24%	18, 16%	26, 23%	30, 26%
I learned about repertory software when I began practice	29, 26%	23, 21%	18, 16%	25, 22%	17, 15%
I was discouraged from using repertory software by my teachers during my homeopathic training	7, 6%	16, 14%	29, 26%	28, 26%	33, 29%
I first encountered repertory software during a professional workshop or conference	14, 12%	21, 18%	19, 16%	31, 26%	32, 27%
My first exposure to repertory software was through a professional publication or journal	5, 4%	7, 6%	24, 21%	39, 35%	38, 34%
For each of the following statements give one answer that best describes your perceptions and attitudes toward repertory software (*n* = 122)	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
	Count, %	Count, %	Count, %	Count, %	Count, %
Repertory software is good value for money	37, 31%	31, 26%	31, 26%	14, 12%	7, 6%
Repertory software adds value to modern homeopathic practice	70, 57%	35, 30%	11, 9%	3, 2%	1, 1%
There is no need for contemporary homeopaths to use repertory software	3, 3%	5, 4%	21, 18%	42, 35%	48, 40%
When used during consultation, repertory software interferes with the development of a meaningful therapeutic relationship	16, 13%	22, 18%	31, 26%	32, 27%	19, 16%
The use of repertory software interferes with a practitioner's ability to exercise intuition in their clinical decision-making	6, 5%	9, 8%	22, 18%	53, 44%	30, 25%
Repertory software is not sophisticated enough to be truly useful in practice	4, 3%	11, 9%	18, 15%	58, 48%	29, 24%
Practitioners who use repertory software get better clinical results	13, 11%	21, 18%	64, 54%	16, 14%	4, 3%
Repertory software is not necessary for a practitioner to provide effective homeopathic treatment	19, 16%	46, 39%	27, 23%	15, 13%	12, 10%
Practitioners who use repertory software have more time available to spend with clients	15, 13%	35, 29%	44, 37%	19, 16%	6, 5%
Repertory software enables practitioners to effectively treat patients with more complex conditions	17, 14%	51, 43%	34, 29%	13, 11%	4, 3%
The cost for repertory software is prohibitive for most practitioners	19, 16%	35, 30%	39, 33%	21, 18%	3, 3%
The time spent considering case analysis is reduced by the use of repertory software	39, 33%	45, 38%	19, 16%	14, 12%	2, 2%
Lack of appropriate training in repertory software functionality is a significant barrier to its use	25, 21%	64, 54%	17, 14%	12, 10%	1, 1%
The use of repertory software is well received by homeopathic patients	17, 14%	52, 43%	47, 39%	4, 3%	0, 0%

implication of this finding is that the software companies may need to consider product costs and costing models, alongside marketing and training efforts, to help practitioners better recognize potential return on investment.

Limitations

The limitations of this study must be acknowledged. Participants self-selected and, as such, possibly contributed to selection bias. Whilst snowball sampling methods do not meet the gold standard of randomized sampling, self-selection biases are present across many research sampling methods.[29] In this study, this form of sampling was deemed suitable to reach the very specific, though dispersed, target population of practicing professional homeopaths. The sample is not necessarily representative of a large number of practitioners in any given country. Further, respondents may have self-selected based on strong feelings toward the subject matter. Additionally, due to the method of dissemination of the questions, a non-response or refusal rate is impossible to calculate.

Another important limitation is that the survey was online and distributed via Facebook. Whilst this method generated access to the target population, it was limited to subjects active on social media. Participants therefore already had some familiarity with online environments and digital tools. Our findings might have been quite different for practitioners who have less familiarity with such tools. Importantly, the small sample size limits the generalizability of findings. In addition, a limitation of the study is that component analysis and reliability analysis, as checks on internal consistency, were not performed. However, despite these limitations, the results from this preliminary research provide valuable insights into homeopaths' use of software technologies and indicate the need for further research, including the use of digital technologies for telemedicine during global health crises such as the current pandemic. Related research might focus on whether practitioners can/should influence the design of discipline-specific technologies as well as innovations in the integration of technologies in homeopathic practitioner training to help identify and ultimately address the challenges, risks and tensions around integration of technologies in CM educational and clinical settings.

Conclusion

This study on the use of homeopathy repertory software presents novel but measured preliminary insights into the prevalence, uptake and perception of a key tool used by homeopaths in clinical practice globally. More research is required to investigate the training and clinical practice of homeopaths relating to emerging technologies.

Highlights

- There is very little published empirical research exploring homeopaths and their relationship with technology.
- This study reports on a cross-sectional survey with 15 questions completed by practicing professional homeopaths using non-probability snowball sampling.
- A majority of surveyed practitioners perceived the cost of software to be prohibitive.
- Training is extensively cited as a significant barrier for uptake.
- Very few advanced components available in these software applications are being used by practitioners.
- All respondents who have used repertory software at any time in their practice report significant value added in their clinical work.
- The study reveals high levels of repertory software uptake and its regular use.

Supplementary Material

►**Supplementary Fig. S1**. Use of repertory software.

Conflict of Interest
None declared.

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