VithoulkasCompass
HOMEOPATHY SOFTWARE

Excellence in homeopathic practice, using science, large-scale evidence and state-of-the-art technology.

Contributing towards a new framework for the advancement of homeopathic practice.

VithoulkasCompass
HOMEOPATHY SOFTWARE

Research Bulletin No.2 - June 2015

CONTENTS

A new age
of evidence-based
homeopathy

Dear fellow homeopaths,

We are very pleased to present the Second Research Bulletin of the Vithoulkas Compass development team for the year 2015. It is a document presenting the multifaceted development work which was achieved in the last year, during a very important phase for VC. This work has been built on the foundations and the vision we set more than 5 years ago: to develop a scientifically sound, evidence-based software system for homeopaths which would have the potential to raise their success rate to a level significantly higher than previously possible. This system would have to be based on consistent scientific principles and methods and be thoroughly proven using large scale clinical data. The goal has been largely achieved. VC is being used in more than 60 countries around the world and its community is constantly growing. The feedback and the repeated subscriptions from users clearly demonstrate the positive effect which VC has had on their practice. Now, with version 2.0 and the coming 2.1, VC becomes even more usable and powerful in guiding the homeopath by introducing innovative concepts and functions.

However, VC is not just about practice. Its unique internet-based operation makes it an ideal platform for community-based data collection and validation. For the first time in homeopathic history truly large sets of tens of thousands, and eventually hundreds of thousands, of cases can be used for research on the repertory and the criteria for prescribing and confirming remedies. Building on the knowledge and experience of George Vithoulkas, who is famous all around the word for his successes in prescribing classically and succeeding in the most complex of cases, the VC development team has been actively studying in increasingly greater detail the parameters and criteria for prescribing successfully. The initial results of last year were followed by more compelling statistics and outcomes which appear for the first time in homeopathic history. The evidence-based framework within which homeopathy deserved to develop is now clearly appearing. With the steady increase of our case database, which now includes more than 200,000 consultations, all statistical outcomes will steadily increase in clarity and robustness.

In this bulletin you will be informed of the areas and directions of our research along with some specific examples. You will also be introduced to innovative new functions to handle homeopathic knowledge and to assist you in repertorisation, the Dynamic Repertory Metadata and Dynamic Templates functions. They represent the result of information theory analysis of every aspect of a homeopath's needs for reliable support while working. In these advanced research endeavours the VC team has initiated collaboration with two distinguished departments of Greek universities, the University of the Aegean and the National and Kapodistrian University of Athens.

Another new aspect of VC is community involvement in the gathering and validation of homeopathic information. From version 2.0, the user can seamlessly input data and observations for every aspect of homeopathic content while working, for private use or to contribute to the VC databases. In this way, and by using VC's extensive proofing infrastructure, new data and parameters could be incorporated in the system at a faster pace and with the confidence that they will improve the outcomes for other users.

In closing we would like to thank our users and all other parties interested in our enthusiastic and continuously evolving work. The very encouraging message that we would like to convey to them, and the homeopathic community as a whole, is that in fact already a large amount of statistical evidence from our work is pointing to the reality that classical homeopathy is a consistent, reliable, repeatable and teachable therapeutic method, which when practiced correctly can promote genuine health and balance. Moving steadily towards the direction of creating a new framework for the advancement of contemporary homeopathic practice, Prof. George Vithoulkas, the IACH with its E-learning program, and Vithoulkas Compass will remain active pillars in research, education and practice.

We hope that you will find our Research Bulletin useful and we would like to reiterate our call for cooperation to organisations and individuals who would be interested in participating in this exciting endeavour.

Kyriakos Xagoraris (Managing Director of CHOES ltd)

1. Assisting homeopaths to improve therapeutic treatment

Our vision to create an online homeopathy platform which incorporates precious confirmed homeopathic knowledge, promotes research, encourages frequent collaboration and assists in improving medical treatment, has been guiding our efforts for more than five years. VithoulkasCompass is focused on effective practice and brings together Classical Homeopathy with advanced Information Technology Systems and Analysis tools.

CHOES Limited, working towards this vision, has been strongly investing in a proficient in-house research and development team, cooperating with an extensive network together with Prof. Vithoulkas. This network includes numerous practitioners, the International Academy of Classical Homeopathy, the National and Kapodistrian University of Athens and the University of the Aegean. All associates have already contributed significantly and continue to provide expertise in order to evolve therapeutic decision support tools. In this endeavour, the application of novel methods and the contributions of scientists with a wide range of backgrounds have produced innovative results which in many cases can be considered real game-changers for the propagation of reliable homeopathic practice.

1. Assisting homeopaths to improve therapeutic treatment

a. Short history and Roadmap

Several tools, including sophisticated algorithms, have been developed progressively in order to assist practitioners, while more advanced modules are planned for the future. In brief the main tools are the following:

- Multivariable scoring function decision support system
- System calibration using large scale real data
- Algorithm development to suggest symptoms for differential analysis (DES)
- Differential analysis with hierarchy of symptoms for each remedy
- Advanced specific comparative analysis between suggested remedies
- Repertory development and verification software platform
- Multi-variable repertory search engine
- Repertorisation quality verification algorithm and heuristics.
- Pathologies and patient-specific templates
- Notable remedies (in the results) algorithm
- Acute pathologies decision support system
- Acute Repertory tree development
- Acute differential analysis module
- Evidence-based repertory confirmation and additions.
- Collaboration tools
- Educational tools
- Comparative Repertory Metadata
- User generated content facilities
- Advanced reference functions (translation, dictionaries, indexing)
- Dynamic templates (coming up)

b. Practical Methodology

Much more valuable than the summation of the separate modules is that the online platform assists practitioners to follow a systematic yet flexible methodology. The methodology is robust, because therapeutic protocols have been combined with management practices in order to effectively utilize computer algorithms, reduce informational noise, reduce risks, and finally maximize therapeutic potential.

Students and young professionals will be more confident when they follow user-friendly available tools, while experienced practitioners can focus on other specific functions. Critical steps for remedy scoring, differential analysis and confidence checks are supported by advanced algorithms, which utilize case-specific online computations together with precomputed information based on an analysis of the practice of homeopathic experts.

The methodology is not strict, but flexible with numerous options. The following flowchart (Figure 1) shows a standard workflow in order to utilize the different modules of VC depending on case difficulty.

VithoulkasCompass
HOMEOPATHY SOFTWARE

1. Assisting homeopaths to improve therapeutic treatment

VC USER FLOWCHART - STEPS TOWARDS THE CORRECT REMEDY

#	Step	Actor	Flow	VC module
1	MAIN COMPLAINT	Patient consultation	Main complaint description → Doctor translates rubric and searches in VC ← Additional questions → Pathology → Complaint from chronic pathology or acute	VC List of chronic or acute pathologies
2	MAIN SYMPTOMS*	Patient consultation	Main symptoms → Doctor translates rubric and searches in VC ← Additional clarifications → Notes → Symptoms → VC rubrics	VC Case data: Symptoms, notes — **Repertory, templates**
3	DOCTOR REQUESTS SOLUTION*	Doctor	Request solution, Solve → ← Results, table of proposed remedies	VC Solution Proposed remedies
4	DOCTOR REQUESTS DIFFERENTIAL ANALYSIS	Doctor	Differential Analysis → ← Results, table of proposed remedies	VC Differential Analysis
5	UPDATE CASE	Patient consultation	New data → Doctor translates rubric and searches in VC ← Additional clarifications → Notes → Update case → VC rubrics	VC Case data: Symptoms, notes — **Repertory, templates**
6	DOCTOR REQUESTS NEW SOLUTION	Doctor	Request new solution, Solve → ← Quality, check results ← New results. Table of proposed remedies	VC Repertory Repertorisation Quality checks Solution
7	DOCTOR REQUESTS SPECIFIC REMEDY ANALYSIS (keyword, chapter, remedy)	Doctor	Specific remedy analysis Select: Keyword, chapter, remedy → ← Results from specific, table of symptoms, remedies	VC Differential Analysis
8	UPDATE CASE FROM SPECIFIC RESULTS	Patient consultation	New clarified data → Doctor translates rubric and searches in VC ← Additional clarifications for specific results → Notes → Update case, change/ add symptoms → VC rubrics	VC Case data: Symptoms, notes **Repertory**
9	DOCTOR REQUESTS NEW SOLUTION	Doctor	Request new solution, Solve → ← Quality, check results ← New results. Table of proposed remedies	VC Solve Repertorisation Quality checks Solution, proposed remedies
10	PRESCRIPTION	Doctor	Write prescription →	VC Prescription
11	FOLLOW UP	Doctor	Initiate follow-up → VC Patient case data: Symptoms, notes Follow-up → Prescription, Feedback →	VC Proceed to new analysis

* After the first patient data input or after the first solution, the doctor will be able to request the help of the dynamic templates.

Figure 1.
A standard workflow showing the different modules of VC depending on case difficulty.

## c. Differential analysis tool example

The tool that supports the differentiation between the candidate remedies and the selection of the most suitable one is based on two pillars. The first one is the extensive work of homeopathy team experts who have been working on each remedy in order to develop a hierarchical order of the most characteristic symptoms and also identify the symptoms which distinguish each remedy from others. The second pillar are the algorithms that work on each case and incorporate several rules in order to find symptoms that the patient is probable to have and also differentiate the remedies. In this way they assist the doctor to clear the picture and find the most suitable remedy.

It is interesting to study the published work of M. Yakir, S. Kreitler, A. Brzezinski, G. Vithoulkas, M. Oberbaum and Z. Bentwich in "Effects of homeopathic treatment in women with premenstrual syndrome: a pilot study" published in Br. Homeopath J. 2001 Jul;90(3):148-53. In this clinical trial the doctors followed a questionnaire with 32 questions in order to select the most appropriate remedy from Lachesis, Natrum Mur., Nux Vomica, Pulsatila, Sepia in order to treat PMS.

Table 1. Main guiding symptoms, for the five medicines used. Symptoms were formulated as open-ended or multiple choice questions medicine.

QUESTIONS	MEDICINE	QUESTIONS	MEDICINE
1. Relief from PMS symptoms when bleeding begins	LACHESIS	16. Suffer from constipation?	NUX VOMICA
2. Cannot tolerate tight clothes and collars?		17. During constipation, there is urge, but no result!	
3. Sensation of constriction at the throat?		18. Generally tense and irritable?	
4. Hot flushes?		19. Difficulty in falling asleep? Activity of thoughts	
5. As lying down, breathing become labored?		20. Very sensitive to cold, noise, smells, oversensitive	
6. Sleep position? Not on left		21. Consume a lot of coffee	
7. Most of complaints on left side		22. Periods stop at night?	PULSATILA
8. Dark clots in the menstrual blood?		23. Flow intermittent (comes and goes)?	
9. Tend to get jealous?		24. Tend to feel worse in closed rooms?	
10. Favourite taste: salty	NATRUM MUR.	25. Weep easily? Averse to being alone	
11. Suffer from headaches?		26. Mood change rapidly?	
12. If so, the headaches start in the morning		27. During the night, feet become hot?	
13. Headaches are caused or made worse by the sun		28. Much vaginal discharge, greenish color	SEPIA
14. Tend to be sad, and averse to consolation		29. Sexual drive low or diminished?	
15. Reserved, closed, prefer to be alone		30. Pressure or heaviness in lower abdomen?	
		31. The menses usually commence in the morning.	
		32. Feel detached, indifferent? (can be irritable) Towards family especially.	

The results show that the differentiation process was significantly successful and the outcome of the study was that homeopathic treatment was found to be effective in alleviating the symptoms of PMS in comparison to placebo.
In the following case example we examine how useful can the tool of the specific comparative analysis be in order to distinguish between the five above remedies for women with premenstrual syndrome (Figures: 2,3a-3f).

Figure 2.
PMS case. Case symptoms, the proposed remedies from the solution, and the available metadata.

1. Assisting homeopaths to improve therapeutic treatment
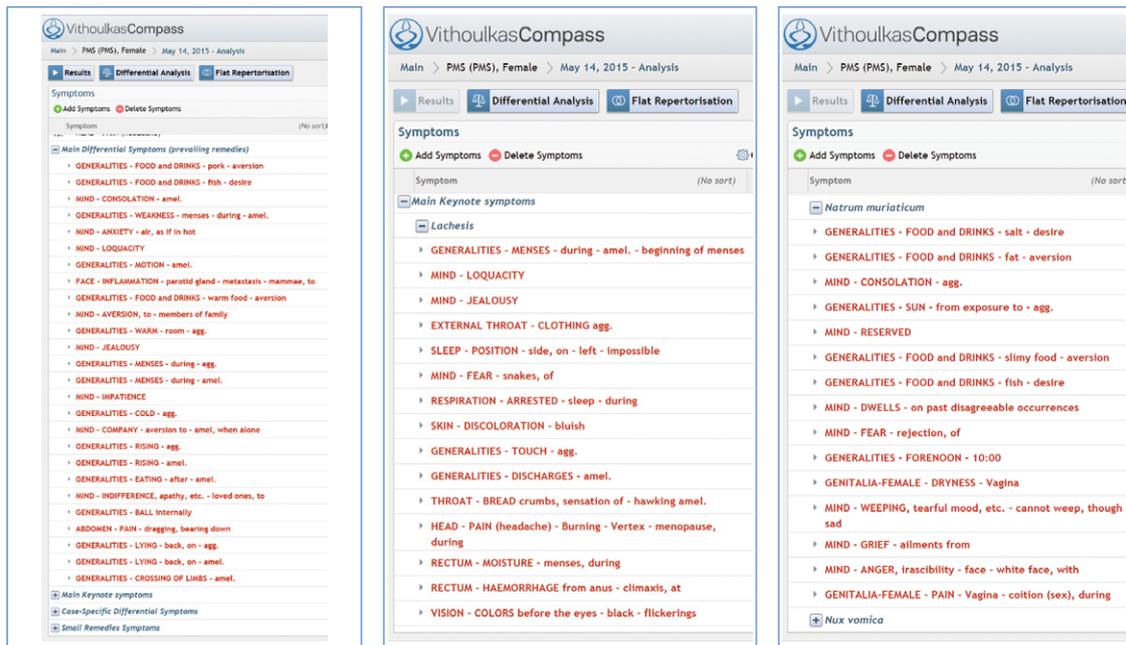
PMS case: **Figures 3a:** The resulting symptoms from the Differential Analysis, ranked in terms of importance, **3b:** the keynotes symptoms for Lachesis and **3c:** Natrum muriaticum, (continued on next figure).
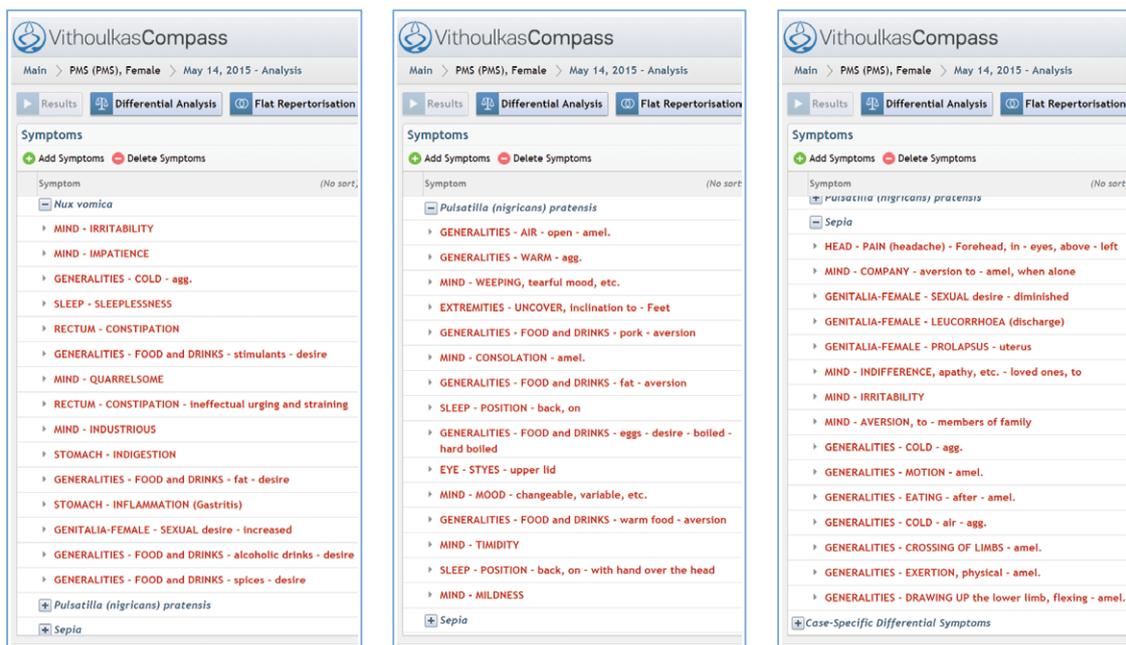

Figures 3d: Keynotes symptom for Nux vomica, **3e:** Pulsatilla and **3f:** Sepia.

The questions generated by VC are a very close approximation of the questions used in the study, which had been carefully chosen by an expert team. This clearly shows the potential of the differential analysis online tool, where in very short time the user can get highly valuable information, while otherwise it would be necessary to go over several books to derive these questions for each case. Working on the potential of such an approach the VC team proceeded to study and develop a tool for the generation of consultation questions' templates based on the pathology or combination of pathologies or main symptoms of each patient (see Dynamic Templates section in this publication).

d. Vithoulkas Compass continuous improvement through user contribution

VC's online platform provides the inherent potential for the development of community based information exchange and development. From the very beginning we were very pleased to receive comments from our users who provided suggestions for improvements for the program and the repertory. These suggestions are always carefully examined and applied in the next regular program update. In this way practitioners have actively participated in many aspects of the evolution of VC. The significance of user contributions has led to the development of new functions for friction-less user generated content. This tool enables the user to enter personal notes for remedies, repertory rubrics and repertory metadata, which can effortlessly be sent to the VC team for further study. This system is backed by data management software to catalogue and process all the contributions and reward the participating users. Since its testing phase, this system has increased the input of our extended development network of homeopaths, who provide information as they work, without any significant hassle. We hope that this system will also assist in rapidly populating the unique VC repertory metadata database, which, for the first time in homeopathic software, includes information which traditionally, and in practical terms, stood between the repertory and the materia medica, and was usually characterised as largely unclassifiable (See Repertory Metadata chapter below).

e. VC USERS are getting better results

We are happy to receive testimonials stating that working with VC provides a systematic approach assisting users in all phases of patient treatment from case taking to prescribing and the follow-up, and that users are gaining experience alongside Vithoulkas Compass. In the following graph we present a weighted average of how well the case was treated according to the follow-up remedy effect feedback input. The action of the remedy can be classified in the following coarse categories: Large improvement/action, Moderate improvement/action, Small improvement/action, No effect and Inconclusive. In the following graph1 we add cases with Large and Moderate improvement, omit cases with Small improvement and subtract cases without improvement for each month since mid-2013. Then we divide by the total number of cases and use as reference the beginning of June 2013.

1. Normalized effectiveness of prescription
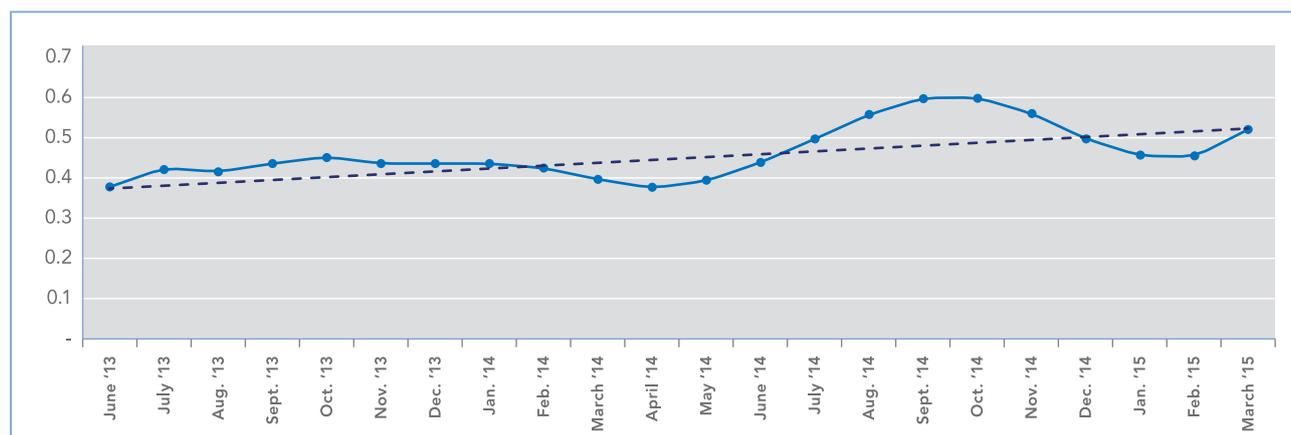
Graph1: The weighted average of how well cases were treated according to the follow-up remedy effect feedback, from June 2013 to March 2015.

From the above graph it is evident that there is a steady improvement as VC is continuously upgraded and users are getting more experienced with the various tools. The fall of the line from March to June 2014 and from November 2014 to January 2015 can reasonably be attributed to many new student users who enrolled during that period from the IACH courses and from Europe.

2. Evidence based homeopathy through statistical analysis

Statistical analysis of numerous cases provides significant evidence for homeopathic practice. Many symptom-remedy relations have been studied and we have derived the corresponding likelihood ratios and confidence intervals. Further on, we have studied common symptoms alone and in combinations, that were effectively cured after a prescription and on the other hand, symptoms that were not cured. In this way it is possible to distinguish symptoms, whose presence was related with a positive outcome after a prescription. In the latter case we also examine the repertory in order to make adjustments or select more appropriate remedies. In this way we progress confirming the repertory. Pathologies like depression, migraines, constipation and others have been analysed. Additionally we have examined many quality checks for case taking and underlining, which affect suggested remedies results with respect to treatment effectiveness.

2. Evidence based homeopathy through statistical analysis

As the data set of VC increases and our analysis approach becomes deeper, the study of the repertory and the relations between symptoms, pathologies, remedies and results lead us to important conclusions.

Some indicative fields of our analyses include:

• Symptom-remedy relations and likelihood ratios.

• Combination of symptom-remedy relations and likelihood ratios.

• Analysis of common pathologies - Presence/ absence of specific symptoms.

• Analysis of the presence of specific remedy symptoms in successful prescriptions.

• Quality checks for case symptoms underlining distribution and suggested remedies results.

• Mapping rubric use in different repertory areas.

• The relative effectiveness of prescriptions derived from symptoms provided by the users compared to symptoms proposed by VC in the Differential Analysis and Specific Remedy Analysis tools (Differential Expert System-DES). The effect of positive answering bias and the bias to add more symptoms in a case by inexperienced homeopaths are demonstrated.

• The Information Theory approach to the Homeo-pathic consultation process - noise, biases - practical implications of conflicting data.

a. Statistical analysis of cases with depression treated with classical homeopathy

Depression is a disease with high prevalence worldwide and a great number of patients seek homeopathic treatment for this problem. Lifetime prevalence varies widely, from 3% in Japan to 17% in the US. According to epidemiological data, in most countries the number of people who would suffer from depression during their lives falls within an 8–12% range. The purpose of this study is to analyse depression cases which have been treated from homeopathic practitioners worldwide and examine statistical results for remedy effectiveness according to several different parameters. Vithoulkas Compass (VC) online homeopathic software was used as the platform to collect homeopathic cases from homeopaths-users.

i. METHODS

In our study, 156 depression cases were evaluated from a population of 5,406 cases with different pathologies. These 5,046 cases meet certain criteria:
(a) the prescription is known
(b) are fully documented regarding the follow-up so that the effect of the remedy is known
(c) both gender and age are provided.

We also excluded cases that were written and sent for educational purposes. From this total of 5,406 cases with different pathologies, we selected 156 depression cases, based on the patient's main complaint. The field Main Complaint is filled in different languages according to patient's location. The analysis of the cases includes the following parameters:

1. Gender

2. Age

3. Geographical Distribution

4. Prescribed Remedies

5. Reported Treatment Effect

The treatment effect was derived from the evaluation by the homeopath in the following categories "Large improvement", "Moderate improvement"," Small improvement" and "No effect" during the follow-up.

ii. RESULTS

From the total of the 5,046 cases collected globally, 4% of female patients and 1.6% of male patients had depression as their main complaint. Most of the cases came from Europe, where 2,325 were women and 1,157 men.

2. Evidence based homeopathy through statistical analysis

1. Distribution of cases in different regions
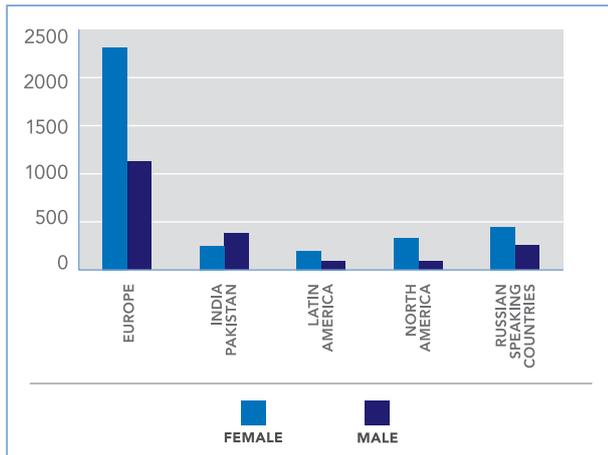
2. Percent of depression cases in different regions
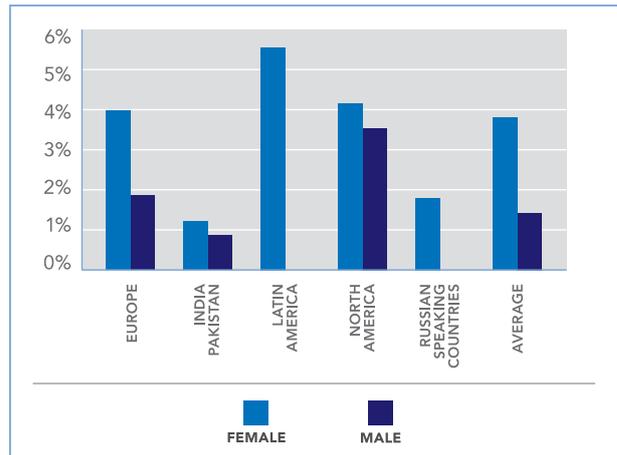
3. Depression cases in different regions vs. total cases
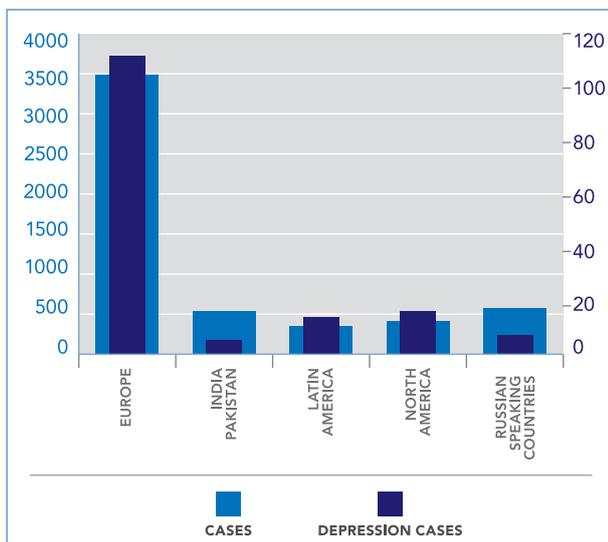
Out of the 156 cases with depression that were studied, 26 patients were male and 130 female. Worldwide the female patients' highest percentage (5.4%) with depression came from Latin America; in male patients respectively the highest percentage (3.6%) came from North America. In Russian speaking countries and India-Pakistan-Bangladesh regions appear in both genders to have the lowest percentage of only (1.1%).

4. Common mind symptoms

|		
MIND	–	SADNESS, mental depression
MIND	–	CONFIDENCE - want of self-confidence (low)
MIND	–	RESERVED
MIND	–	GRIEF - ailments from
MIND	–	IRRITABILITY
MIND	–	OFFENDED, easily
MIND	–	ANXIETY - health, about
MIND	–	WEEPING, tearful mood, etc.
MIND	–	SIGHING
MIND	–	MOOD - changeable, variable, etc.

5a. AGE DISTRIBUTION of cases
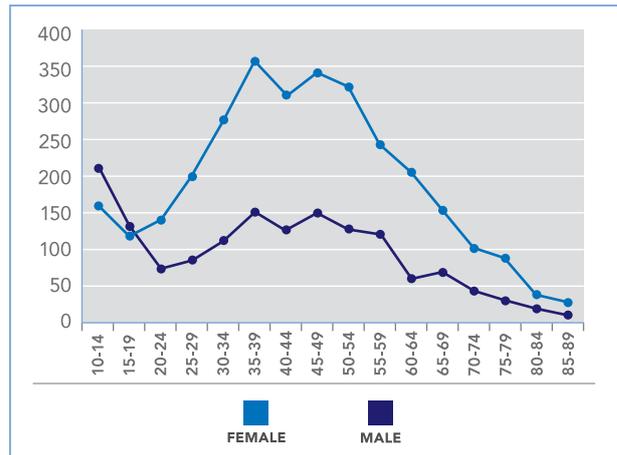
5b. AGE DISTRIBUTION
   of depression cases
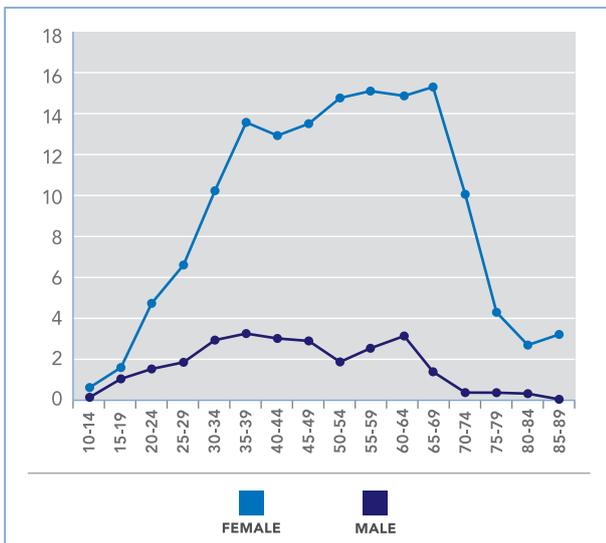
5c. Percentage of depression cases
   per age group relative to cases of similar age
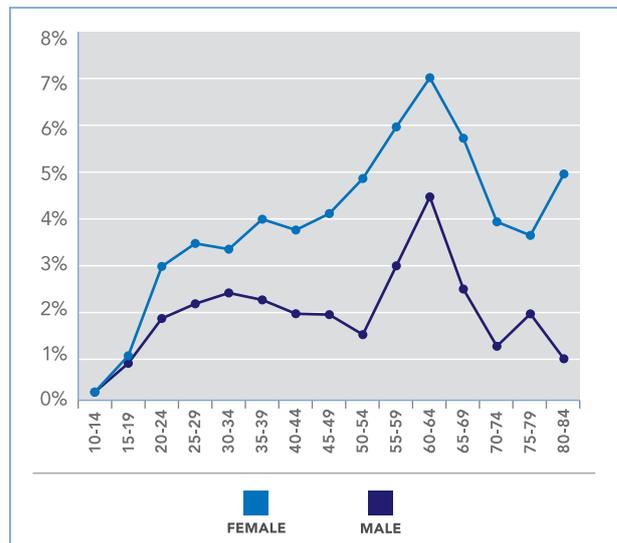
The age distribution showed peaks for female patients in ages of approximately 35, 50, 60 and above 80. For male patients, the peak ranges in ages between 45 and 60. However, when we compare at each age-group the patients with depression versus all patients in the same age-group the results are much clearer. In the following graph the percentage of depression cases per age-group relative to cases of similar age, shows (a) a small peak for women in the age of 35, a major peak at the age of 60 and a significant peak at the age of above 80+ and (b) for men a small peak around 35 and a major peak around 60.

2. Evidence based homeopathy through statistical analysis

6. Commonly prescribed remedies
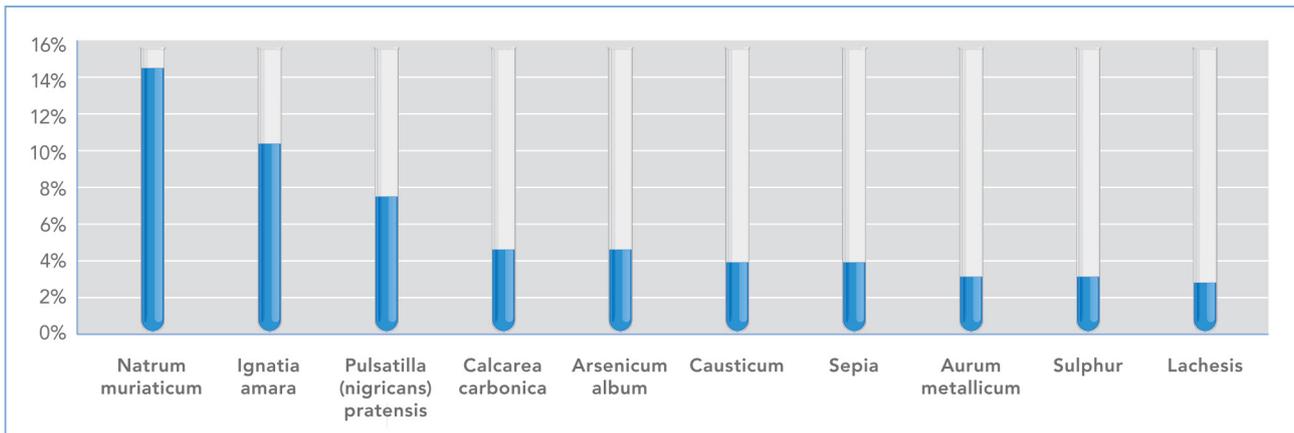
The most commonly prescribed remedies were Natrum muriaticum (14%), Ignatia amara (10%) and Pulsatilla (8%). However better results were reported with less commonly prescribed remedies like Sepia and Staphysagria.

iii. CONCLUSIONS

Regarding response to homeopathic treatment women reported to respond better, since 32% showed large improvement compared to only 13% in men. 30% of both men and women had moderate improvement.

7a. Remedy effect
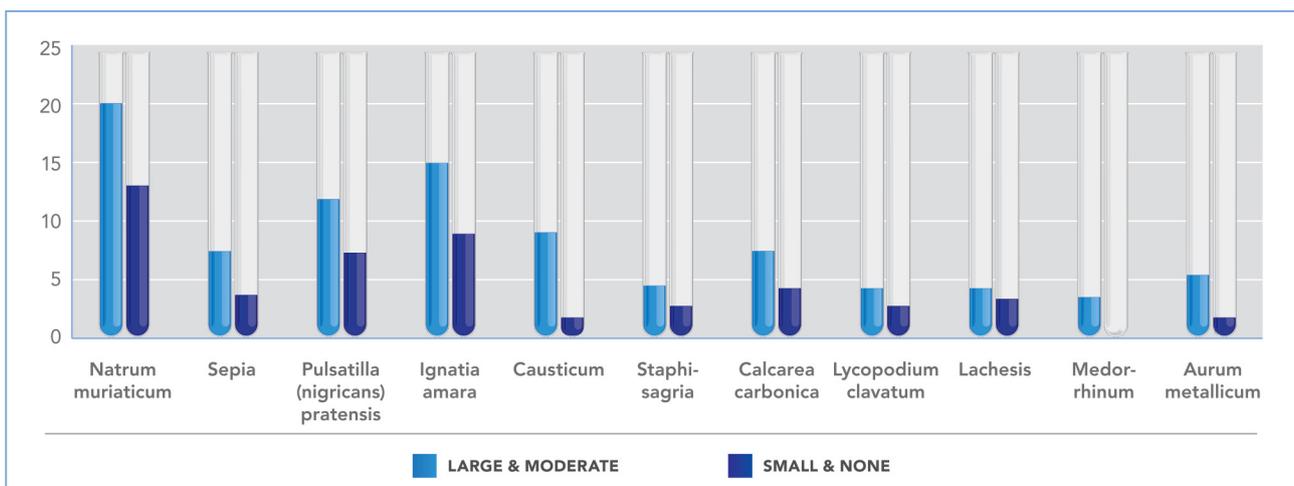
7b. Remedy effect
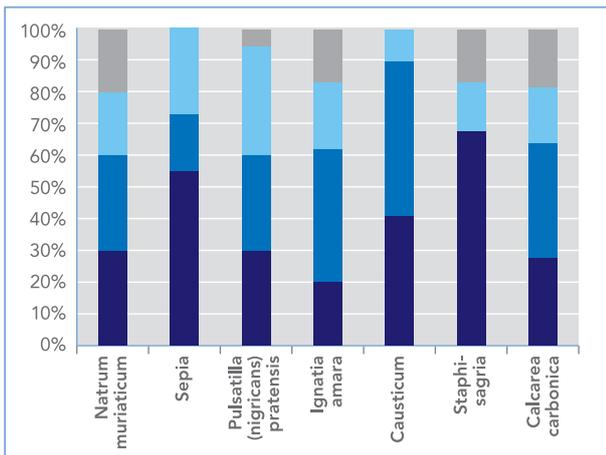
Statistical analysis of depression cases worldwide showed that Causticum, Sepia and Staphisagria are the remedies with the best improvement rates in depression's cases. Further on significant variations in the people who seek homeopathic treatment exist in different regions. Finally, internet based platforms for homeopathic practitioners can offer further possibilities for the collection of valuable scientific evidence-based conclusions concerning treatment with classical homeopathy.

NONE   MODERATE IMPROVEMENT

SMALL IMPROVEMENT   LARGE IMPROVEMENT

b. Remedy - Symptoms relationship and likelihood ratios

Many symptom - remedy relations have been studied and the corresponding likelihood ratios and confidence intervals were calculated. Further on, we have studied common symptoms alone and in combinations that were present in successful prescriptions and symptoms present in unsuccessful prescriptions. This analysis can be helpful for the evaluation and improvement of the repertory data. The final goal is to confirm information that already exists in the repertory and make improvements and corrections of the remedy degrees. In this way we have started to progress confirming the repertory. The size of the reliable data set determines the quality of the results, so the VC statistics team has carefully studied the criteria for valid statistical outcomes. In the not too distant future VC will surely provide some very interesting information to the homeopathic community.

Symptom combinations in a homeopathic case is a key issue in order to justify and analyse homeopathic practice rules according to Bayes probability theory. There is a major drawback and difficulty in Bayes probability theory when combining probabilities of events and similarly test results with likelihood ratios, because it is in general unknown how interrelated or independent are the probabilities of the tests. A first step in this field can be seen in the following **Table 1** (next page) where the Likelihood Ratio (LR) has been computed for combined symptoms appearing in the same consultation in cases of thirteen common remedies.

2. Evidence based homeopathy through statistical analysis

Table 1.
Likelihood Ratio for combined symptoms appearing in the same consultation case for thirteen common remedies.

Remedy - Symptoms Combination	Sensitivity	LR	LR min	LR max
Argentum nitricum				
*GENERALITIES - FOOD and DRINKS - sweets - desire **in combination with:***				
GENERALITIES - FOOD and DRINKS - salt - desire	7.1%	1.7	0.8	3.7
GENERALITIES - WARM - agg.	15.5%	4.1	2.4	6.7
MIND - ANXIETY - health, about **in combination with:**				
MIND - FEAR - high places, of	10.7%	5.8	3.1	10.8
Arsenicum album				
GENERALITIES - COLD - agg. ***in combination with:***				
MIND - FASTIDIOUS	19.4%	11.9	8.2	17.4
STOMACH - THIRST - small quantities, for (in sips) - often	14.7%	27.2	16.9	43.8
MIND - FASTIDIOUS ***in combination with:***				
STOMACH - THIRST - small quantities, for (in sips) - often	15.5%	34.5	21.4	55.7
Calcarea carbonica				
GENERALITIES - FOOD and DRINKS - sweets - desire ***in combination with:***				
GENERALITIES - FOOD and DRINKS - eggs - desire	16.0%	4.8	3.5	6.4
MIND - FEAR - high places, of	11.3%	2.8	1.9	3.9
MIND - FEAR - high places, of ***in combination with:***				
EXTREMITIES - COLDNESS - Foot	8.2%	5.7	3.7	8.7
Causticum				
MIND - SYMPATHETIC ***in combination with:***				
MIND - INJUSTICE, cannot support	30.1%	13.9	9.6	20.1
Ignatia amara				
MIND - CONSOLATION - agg. ***in combination with:***				
MIND - SIGHING	17.8%	29.9	18.8	47.5
MIND - SIGHING ***in combination with:***				
MIND - GRIEF - silent	12.1%	25.0	14.2	44.0
MIND - MOOD - changeable, variable, etc.	15.9%	22.6	14.0	36.6
Lycopodium clavatum				
GENERALITIES - FOOD and DRINKS - sweets - desire ***in combination with:***				
SLEEP - UNREFRESHING	6.3%	3.0	1.5	5.9
Natrum muriaticum				
GENERALITIES - FOOD and DRINKS - fat - aversion ***in combination with:***				
MIND - CONSOLATION - agg.	10.6%	6.6	4.4	10.0
MIND - RESERVED	12.0%	6.3	4.3	9.2
GENERALITIES - FOOD and DRINKS - salt - desire ***in combination with:***				
GENERALITIES - FOOD and DRINKS - fat - aversion	14.3%	5.0	3.6	7.1
MIND - CONSOLATION - agg.	11.1%	8.4	5.6	12.5
Nux vomica				
MIND- IRRITABILITY ***in combination with:***				
MIND - IMPATIENCE	9.0%	5.6	2.7	11.6

Phosphorus	Sensitivity	LR	LR min	LR max
GENERALITIES - FOOD and DRINKS - sweets - desire *in combination with:*				
MIND - SYMPATHETIC	11.4%	2.9	1.9	4.4
MIND - SYMPATHETIC *in combination with:*				
MIND - ANXIETY - health, about	8.7%	3.4	2.1	5.4
Pulsatilla (nigricans) pratensis				
GENERALITIES - FOOD and DRINKS - fat - aversion *in combination with:*				
MIND - CONSOLATION - amel.	19.1%	10.1	7.7	13.4
MIND - CONSOLATION - amel. *in combination with:*				
EXTREMITIES - UNCOVER, inclination to - Feet	8.8%	7.8	5.1	11.9
GENERALITIES - AIR - open - amel.	11.1%	8.6	5.9	12.6
MIND - WEEPING, tearful mood, etc.	14.1%	9.5	6.8	13.2
Sepia				
GENERALITIES - COLD - agg. *in combination with:*				
GENITALIA-FEMALE - SEXUAL desire - diminished	8.9%	8.1	4.6	14.2

The corresponding relationship of the above remedies with each symptom separately is given in the following **Table 2.** More than 500 likelihood ratios between symptom remedies have been adequately computed for the most commonly prescribed remedies. The calculation of Likelihood Ratio (LR) has been further improved as seen in the following tables where in many cases the 95% confidence intervals of the mean value are relatively small.

Table 2.

The corresponding relationship of the remedies with each symptom separately, from **Table 1.** As can be seen the Likelihood Ratio is further improved.

Remedy - Symptoms Combination	Sensitivity	LR	LR min	LR max
Argentum nitricum				
GENERALITIES - FOOD and DRINKS - salt - desire	15.5%	1.2	0.7	1.9
GENERALITIES - FOOD and DRINKS - sweets - desire	42.9%	1.8	1.4	2.4
GENERALITIES - WARM - agg.	23.8%	2.2	1.5	3.2
MIND - ANXIETY - health, about	28.6%	2.8	2.0	3.9
MIND - FEAR - high places, of	31.0%	3.5	2.5	4.8
Arsenicum album				
GENERALITIES - COLD - agg.	32.6%	2.8	2.2	3.6
MIND - FASTIDIOUS	34.1%	6.9	5.4	8.9
STOMACH - THIRST - small quantities, for (in sips) - often	22.5%	16.2	11.4	23.1

2. Evidence based homeopathy through statistical analysis

Table 2. *(continued)*

Calcarea carbonica	*Sensitivity*	*LR*	*LR min*	*LR max*
EXTREMITIES - COLDNESS - Foot	14.8%	3.1	2.3	4.2
GENERALITIES - FOOD and DRINKS - eggs - desire	32.3%	4.8	3.9	5.7
GENERALITIES - FOOD and DRINKS - sweets - desire	34.6%	1.5	1.3	1.8
MIND - FEAR - high places, of	23.0%	2.6	2.1	3.3
Causticum				
MIND - INJUSTICE, cannot support	60.3%	14.6	11.9	17.9
MIND - SYMPATHETIC	37.0%	3.6	2.6	4.9
Ignatia amara				
MIND - CONSOLATION - agg.	26.2%	6.0	4.3	8.3
MIND - GRIEF - silent	21.5%	14.3	9.7	21.1
MIND - MOOD - changeable, variable, etc.	21.5%	5.5	3.8	7.9
MIND - SIGHING	47.7%	11.4	9.2	14.2
Lycopodium clavatum				
GENERALITIES - FOOD and DRINKS - sweets - desire	34.6%	1.5	1.2	1.9
SLEEP - UNREFRESHING	13.4%	2.6	1.6	4.0
Natrum muriaticum				
GENERALITIES - FOOD and DRINKS - fat - aversion	31.3%	2.6	2.1	3.1
GENERALITIES - FOOD and DRINKS - salt - desire	36.9%	2.9	2.4	3.4
MIND - CONSOLATION - agg.	22.1%	5.2	4.0	6.8
MIND - RESERVED	22.6%	4.5	3.5	5.8
Nux vomica				
MIND - IMPATIENCE	21.8%	6.0	3.9	9.2
MIND - IRRITABILITY	19.2%	2.4	1.5	3.8
Phosphorus				
GENERALITIES - FOOD and DRINKS - sweets - desire	21.2%	0.9	0.7	1.2
MIND - ANXIETY - health, about	17.9%	1.8	1.3	2.4
MIND - SYMPATHETIC	40.2%	4.0	3.3	4.8
Pulsatilla (nigricans) pratensis				
EXTREMITIES - UNCOVER, inclination to - Feet	17.2%	3.3	2.5	4.3
GENERALITIES - AIR - open - amel.	21.8%	4.9	3.8	6.2
GENERALITIES - FOOD and DRINKS - fat - aversion	38.2%	3.2	2.7	3.7
MIND - CONSOLATION - amel.	39.7%	7.7	6.5	9.1
MIND - WEEPING, tearful mood, etc.	22.5%	4.2	3.3	5.3
Sepia				
GENERALITIES - COLD - agg.	17.8%	1.5	1.0	2.2
GENITALIA-FEMALE - SEXUAL desire - diminished	36.3%	9.5	7.5	12.1

Further on we have identified relationships of remedies with combinations of three symptoms that appeared in selected cases. In this case the percentage of cases where the follow-up showed either large improvement or moderate improvement is presented (**Table 3**).

Table 3.

The combination of a remedy with three symptoms and the percentage of cases where the follow-up showed large or moderate improvement.

Remedy Symptoms Combination	*Large - moderate improvement*
Magnesia carbonica	
GENERALITIES - AIR - open - amel. ***in combination with:***	
GENERALITIES - FOOD and DRINKS - vegetables - desire	
and MIND - VIOLENCE - aversion to	83%
Phosphorus	
GENERALITIES - FOOD and DRINKS - ice-cream - desire ***in combination with:***	
MIND - SENSITIVE, oversensitive - external impressions, to all	
and MIND - FEAR - happen, something (bad), will	100%
GENERALITIES - FOOD and DRINKS - sweets - desire ***in combination with:***	
GENERALITIES - FOOD and DRINKS - cold - drinks, water - desire	
and GENERALITIES - FOOD and DRINKS - ice-cream - desire	83%
MIND - SYMPATHETIC	
and GENERALITIES - FOOD and DRINKS - ice-cream - desire	75%
MIND - FEAR - dark ***in combination with:***	
GENERALITIES - FOOD and DRINKS - ice-cream - desire	
and MIND - SENSITIVE, oversensitive - children	83%
MIND - SYMPATHETIC ***in combination with:***	
GENERALITIES - FOOD and DRINKS - chocolate - desire	
and GENERALITIES - FOOD and DRINKS - ice-cream - desire	71%
GENERALITIES - FOOD and DRINKS - cold - drinks, water - desire	
and MIND - SENSITIVE, oversensitive - external impressions, to all	83%
GENERALITIES - FOOD and DRINKS - ice-cream - desire	
and GENERALITIES - FOOD and DRINKS - fish - desire	83%
GENERALITIES - FOOD and DRINKS - ice-cream – desire	
and MIND - SENSITIVE, oversensitive - external impressions, to all	86%
Pulsatilla (nigricans) pratensis	
GENERALITIES - FOOD and DRINKS - sweets - desire ***in combination with:***	
MIND - CONSOLATION - amel.	
and EXTREMITIES - UNCOVER, inclination to - Feet	83%
GENERALITIES - WARM - agg. ***in combination with:***	
MIND - CONSOLATION - amel.	
and EXTREMITIES - UNCOVER, inclination to - Feet	89%

2. Evidence based homeopathy through statistical analysis

i. LIKELIHOOD RATIO *(LR)* IN HOMEOPATHY

The Likelihood ratio is an indication of the patient's improvement related to the pertinent combination [symptom(s)-remedy]. When *LR* is greater than 1, there is an increased likelihood of the event happening, i.e. the patient with the specified symptom(s) will have an improvement when treated with the specified remedy. The table on the right shows the interpretation of the different value ranges.

LR	Interpretation
> 10	Large and often conclusive increase in the likelihood of the event
5 - 10	Moderate increase in the likelihood of event
2 - 5	Small increase in the likelihood of event
1 - 2	Minimal increase in the likelihood of event
1	No change in the likelihood of event

Likelihood Ratio

LR = sensitivity / (1-specificity), is the percentage (prevalence) of a symptom in the treated population that improved by a certain remedy divided by the percentage of the same symptom in the remainder of the whole treated population.

$$sensitivity = \frac{TP}{TP+FN}, \quad specificity = \frac{TN}{FP+TN}$$

$$LR_{min} = e^{\ln(LR) - z_{\frac{a}{2}} \times SE_{LR}},$$

$$LR_{max} = e^{\ln(LR) + z_{\frac{a}{2}} \times SE_{LR}},$$

The smaller the absolute difference the better: $|LR_{max} - LR_{min}|$

$$where \; SE_{LR} = \sqrt{\frac{1}{TP} - \frac{1}{TP+FN} + \frac{1}{FP} - \frac{1}{FP+TN}}$$

$$z_{\frac{a}{2}}: \; confidence \; coefficient = 1.96 \; for \; \alpha = 95\%, \; confidence \; level$$

The possible outcomes of a homeopathy case are shown when applying diagnostic test statistics, as described by Lex Rutten and Jose Enrique Eizayaga:

	Remedy worked Improvement	Remainder of cases	
Symptom present	*True positive (TP)* (symptom present and remedy worked)	*False positive (FP)* (symptom present and remedy didn't work)	*Positive predictive value* *= TP / (TP + FP)*
Symptom not present	*False negative (FN)* (symptom not present and remedy worked)	*True negative (TN)* (symptom not present and remedy didn't work)	*Negative predictive value* *= TN / (FN + TN)*
	Sensitivity *= TP / (TP + FN)*	*Specificity* *= TN / (FP + TN)*	

- Number of *Total Cases = (TP+FN+FP+TN),*
- *TP, FN, FP, TN* are the corresponding number of cases for each respective result.
- Sensitivity is the percentage that a symptom will be present when the remedy resulted in a large improvement of the homeopathy case (true positive rate).
- Specificity is the percentage that a symptom will not be present when the remedy resulted in no improvement of the homeopathy case (true negative rate).

3. Highlights of new significant developments

a. Dynamic Repertory Metadata: going deeper and finer than the repertory

Since the beginning of the VC project it was observed that there exists a significant amount of remedy information, which is generally absent from the repertory. An important and valid reason for this omission is the specificity of a particular remedy characteristic, the 'fineness' of the particular symptom. Another reason is the relative nature of the symptom, when within the same rubric there is a distinctive difference between two remedies. Finally, a third reason is the intricate nature of some particularities of remedies, which, if added to the repertory, would make it huge and impractical. For all the above reasons a typical statement of many homeopathic teachers to their students is 'you will not find this in the repertory' or even 'this is why the repertory is not so important after all'.

The other pillar of homeopathic information, the Materia Medica, should, and does, normally include such specific data. The more recognised Materia Medica books contain a wealth of fine differential and other, information about remedies, which can be invaluable to practitioners. The problem is that, as MM books have a large amount of 'overlap', but also each one contains particular useful information, any attempt to include all this fine data in one document would be a huge project and result in an impractically large work. There have been attempts to produce 'comparative repertories' to catalogue the differences of remedies within specific rubrics, but many of them are not accurate and, still, they are one more large book to memorize.

The latest version of VC incorporates a breakthrough solution to this information handling problem. All information falling in the described categories, while previously uncategorisable, is now present within VC connected with rubrics and remedies in the form of a database. Whenever the user requires a fine distinction between the strongest candidate remedies and there is an entry in the Metadata database, the user can instantly display it and use it to decide about the case.

The Dynamic Repertory Metadata is in effect a new platform in VC and most probably a unique approach in homeopathic software. During its development the team and testing homeopaths were delighted to 'recall' this fine data, and the less experienced stated categorically that the metadata produced a quantum jump in their knowledge of many remedies. The Dynamic Metadata database currently includes information mainly from Prof. VIthoulkas's books and the Materia Medica Viva, but already a large additional volume of statements by other classic authors is close to be added. Users can already propose metadata additions effortlessly from within VC. Very soon a user will be able to add personal metadata and tag it with rubrics and remedies, like system metadata. In this way every user can create a personal environment of homeopathic knowledge and useful information. Such user additions in VC can be contributed to the system as part of the user generated content initiative to improve VC.

3. Highlights of new significant developments

b. Dynamic Consultation Templates

An important source of erratic results in homeopathy comes from the incomplete knowledge of the Repertory. It is typical for less experienced homeopaths to not be comfortable with the selection of rubrics, especially in specific chapters of the repertory that are not truly familiar with, probably due to limited experience with these 'themes' in the context of a homeopathic consultation.

On the other hand during the development of the VC core, but also from working with experienced homeopaths and Prof. Vithoulkas, it was evident that the correct and consistent usage and application of the repertory information will bring very successful prescriptions. Moreover, it creates a foundation of repertory experience in the homeopath's mind on which other knowledge can meaningfully connect and grow with more practice.

The VC tool which effectively guides the user in proceeding with the consultation and supports him or her with important and meaningful repertory data in every step is the Dynamic Consultation Templates (DCT) function.

These consultation templates are called dynamic, because they are created for every individual consultation. The pathology(ies) and main symptoms for the case are initially selected by the practitioner from a comprehensive list. The system then creates a consultation template for this case by employing proper classic homeopathic principles. The template includes the core themes, which should be checked in virtually every consultation, and also includes additional themes specific to the case. When the template is utilised, for every theme area in which the homeopath asks the patient, the system in return suggests the most important, distinctive and effective rubrics for this theme. In many cases our evaluation team acknowledged the value of having this information at hand so effortlessly. When required, very simply, the user can display all repertory rubrics related to this theme. Also, for each pathology the system displays the main common symptoms as rubrics which have been selected by expert homeopaths. This work was realised by detailed and extensive studying of each pathology by homeopaths-MDs.

The DCT tool will also provide templates for special patients, like babies, children and pregnant women, which can present a challenge to the less experienced practitioners. Along with most other VC modules, it represents an important platform for future development. (Note: The current consultation templates feature, and the capability to create personal templates for usage in the case notes, will remain active.)

4. Research and collaboration platform

VithoulkasCompass online web application can help improve cooperation between doctors, as well as communication between doctors and patients. The aim is to develop modern web collaboration capabilities in a practical and effective way between different user groups, like communication between experts, between teachers and students and among students. Also new tools and procedures will assist and help organise forum discussions and bulletins, presentation and discussion of special cases with scientific interest and short articles. In addition, tools that support the educational process either in an open and free manner or in a more systematic way for schools are in development.

Tele-medicine and collaboration between distant doctors is possible by exchanging case data, among users and combining it with tele-conferencing. In this way the online platform can become a tele-conferencing board between doctors where, homeopaths can exchange views and opinions regarding difficult cases. This is an important service that the current structure of the online platform can implement with the cooperation of a homeopathic clinic and/or hospital. The use of VC for distance homeopathic consulting can support the spread of homeopathy in areas that before was not possible. More experienced doctors can cooperate more easily with their colleagues and furthermore assist them in organizing common studies and research. Tele-communication between the patient and the doctor is an option for the future, in order to assist the doctors in registering the patient's new data in a flexible and friendly manner.

The online VC system can provide a platform for exchanging and studying homeopathic cases. Several homeopathic journals have been posting cases that have been treated successfully. Homeopathic practitioners are willing to share their cases within the community and study additional cases. The VC team is open and willing to implement any tools that are needed in order to promote collaborative research studies. Additionally it is important to evaluate proposals for further enhancement of online collaboration in order to reach more confident conclusions and documenting cases from various pathologies that have been treated with homeopathy. The main benefits can be summarized in the following:

- Clinical verification of the efficacy of homeopathic remedies.
- Construction of a "Materia Medica Clinica viva" constantly updated and enriched with contemporary medical terms.
- Enrichment and verification of repertory symptoms through the proposals of new repertory degrees.
- Comparison between the "clinical" symptomatology and the "experimental" symptomatology (proving). This will do away with the need for a distinction between classical and clinical homeopathy.
- Members can provide useful information and additional findings for improving homeopathic treatment.
- The evaluation and integration of patients' follow-up will eventually help also in improving the repertory validity. In this manner the idea of a confirmed repertory as envisioned by Prof. Vithoulkas can be materialized. The system will continuously evolve based upon evidence of cured cases. It will effectively be an applied research and development platform.

Notes

To receive more information and apply
for a free trial, please visit our website.

www.vithoulkascompass.com

Online with an expert system
In line for a revolution in classical homeopathy

VithoulkasCompass
HOMEOPATHY SOFTWARE

4 Agias Varvaras street
152 31 Chalandri, Athens, Greece
e-mail: info@vithoulkascompass.com