

11-11-2018

## Patient Experiences and Satisfaction with Homeopathic Treatment in Pune, India

Asmita R. Mhaskar

University of South Florida, asmimhaskar@gmail.com

Follow this and additional works at: <https://scholarcommons.usf.edu/etd>



Part of the [Alternative and Complementary Medicine Commons](#), and the [Public Health Commons](#)

---

### Scholar Commons Citation

Mhaskar, Asmita R., "Patient Experiences and Satisfaction with Homeopathic Treatment in Pune, India" (2018). *Graduate Theses and Dissertations*.  
<https://scholarcommons.usf.edu/etd/8699>

This Dissertation is brought to you for free and open access by the Graduate School at Scholar Commons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact [scholarcommons@usf.edu](mailto:scholarcommons@usf.edu).

Patient Experiences and Satisfaction with Homeopathic Treatment in Pune, India

by

Asmita R. Mhaskar

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
with a concentration in Global communicable diseases  
Department of Global Health  
College of Public Health  
University of South Florida

Co-major professor: Jaime Corvin, Ph.D.  
Co-major professor: Yashwant Pathak, Ph.D., MPharm  
Lakshminarayan Rajaram, Ph.D.  
Aurora Sanchez-Anguiano, M.D., Ph.D.  
Ann C. DeBaldo, Ph.D.

Date of Approval:  
November 11, 2018

Complementary, Alternative, Health, Survey, Observational

Copyright © 2018, Asmita R. Mhaskar

## **Dedication**

Dedicated to my Aai-Baba. I feel eternally blessed to have you as my parents.

Dedicated to Rahul. It is your steadfast support and love that made this possible.

Dedicated to Rama and Ronit. You make my heart sparkle with love and joy.

## Acknowledgements

### Family

A big Thank You to Rahul, Rama and Ronit for demonstrating utmost patience throughout this journey. To my awesome husband Rahul, I cannot thank you enough for your constant support and unwavering faith in me that I can do this. You encouraged me in pursuing research of my interest and relentlessly motivated me to keep working on my dissertation. I love you dearly. To my amazing kids Rama and Ronit, you mean the world to me. Rama, I absolutely treasure the many notes and pictures you made to wish me luck with my PhD work and to say 'I Love you'. Ronit, your hugs and words of kindness made my days lighter. I love you both very much.

Thank you to my parents for being the best parents I could have ever asked for and for relentlessly since my childhood instilling in me the importance of good education and inspiring me to follow my dreams.

I am very grateful to my parents-in-law for their support and encouragement during this journey. Thank you Shriram for the many conversations that assisted in bringing clarity of thought and helped me relax. Thank you Jaya Tai for words of encouragement that have meant a lot to me. Tejaswini, Pradnya and Rajesh thank you for being there for me in times of need. Thank you Shashank mama for always enquiring about my research and showing support. Thank you to my entire family and extended family. I am grateful for blessings from my Grandparents.

## **Friends**

Thank you to all my dear friends and their families for your love and support in one way or another during my dissertation journey: Sangeetha, Snehal, Chitra, Asmi, Yogini, Neelima, Gauri, Lavanya, Megha, Aarti, Kranti, Veena, Sonal, Nitin, Urvashi, Priya, Chaitali, Mrinal, Shalmali, Trupti, DSHMC girls group, and the Suman Nagar family to name a few among the many who encouraged me.

Thank you to Dr. Anne Helene Skinstad and Dr. Anne Wallis for your support and mentorship in my years as a Master's student.

## **Homeopathic Doctors and Patient Participants in the Study**

My sincere gratitude to all the Homeopathic doctors from Pune who participated in this study. Your support was necessary and immensely valuable for this research journey. Thank you. I am immensely grateful to all patients who participated in this study. A heartfelt thank you to my study coordinator Ashwini M. for your consistent and reliable assistance in Pune.

## **USF and COPH**

Thank you Dean Peterson, Dr. Unnasch for an academic environment that encourages research. Thank you Dr. Kwa for your mentorship earlier on. Thank you Dr. Azizan for your valuable guidance and support early on in my PhD. Thank you Dr. Izurieta, Dr. Hoare, Dr. Van Olphen for the Graduate Teaching Assistant opportunities and thank you to my peer TAs for collaborative teamwork. Thank you Jessica Grossman for all your assistance always. I would like to sincerely thank everyone at COPH Academic Affairs for their assistance.

## PhD Committee

I would like to express my utmost gratitude to my committee for their constant guidance. My co-major advisor Dr. Yashwant Pathak provided me with steadfast academic mentorship since the early stages of my PhD. I am forever grateful to him for supporting me to follow my research interest and providing continued guidance and directions throughout. To my co-major advisor Dr. Jaime Corvin I would like to express sincere gratitude for consistently communicating with me and providing valuable advice throughout. Thank you so much for patiently reviewing numerous drafts of my dissertation chapters and for providing constructive systematic feedback. Your comments assisted me immensely. I am very grateful to Dr. Lakshminarayan Rajaram for guiding me time and again with his statistical expertise. Dr. Rajaram's advice on various aspects of study design, conduct, and analysis were very helpful to me. I am thankful to Dr. Aurora Sanchez-Anguiano for her overall guidance throughout my research journey and am grateful for her expert advice. I am immensely thankful to have the guidance and support of Dr. Ann DeBaldo who gave me valuable feedback based on her tremendous experience in the field of holistic Medicine. Overall I want to say a big thank you to my entire committee for always accompanying their feedback on my research with words of encouragement and support that are very crucial in graduate life.

Thank you dear God for making this journey possible and the best that it could have been.

Thank you to all who supported me in this journey and may have inadvertently missed acknowledging.

## Table of Contents

|  |    |
|--|----|
| List of Tables.....  | iv |
| List of Figures.....   | v  |
| Abstract.....  | vi |
| Introduction.....  | 1  |
| Literature Review.....   | 4  |
| Global use of Complementary and Alternative Medicine (CAM).....                      | 4  |
| Origin and History of Homeopathy.....  | 9  |
| Homeopathy in Europe and America.....  | 10 |
| Homeopathy in India.....   | 13 |
| Education in Homeopathy.....   | 14 |
| Practice of Homeopathy.....  | 15 |
| Philosophy of Homeopathy.....  | 16 |
| Law of Cure.....   | 16 |
| Potentization.....   | 17 |
| Individualization.....   | 18 |
| Role of a Homeopathic Physician.....   | 18 |
| Practice of Homeopathy versus Conventional Medicine.....                             | 19 |
| Pertinent Findings from the Literature.....  | 20 |
| Side effects or adverse effects with Homeopathic medicines.....                      | 20 |
| Affordability and cost-effectiveness of Homeopathic treatment.....                   | 22 |
| Efficacy and effectiveness of Homeopathic medicines.....                             | 24 |
| Education level of patients using Homeopathic medicines.....                         | 27 |
| Use of Homeopathy across gender.....   | 28 |
| Homeopathy in emergency care.....  | 29 |
| Rationale for the Current Study.....   | 29 |
| Methods.....   | 34 |
| Objectives.....  | 34 |
| Hypothesis.....  | 36 |
| Study Design.....  | 36 |
| Phase 1: Designing and Validating the Survey.....                                    | 37 |
| A. Review of the literature.....   | 37 |
| B (1) Contacting Homeopathic physicians.....   | 37 |
| B (2) Inclusion and exclusion criteria for recruiting Homeopathic<br>Physicians..... | 38 |

|  |    |
|--|----|
| B (3) Draft Survey .....   | 39 |
| C (1) Identifying and selecting survey domains .....                       | 39 |
| C (2) Focus groups for survey design .....                                 | 40 |
| C (3) Survey in English .....  | 41 |
| C (4) Survey in Marathi.....   | 42 |
| Phase 2: Cross Sectional Study of Patients Seeking Care with Homeopathic   |    |
| Physicians .....   | 43 |
| A (1) Inclusion and exclusion criteria .....                               | 43 |
| A (2) Participant (patient) recruitment.....                               | 44 |
| A (3) Study coordinator.....   | 45 |
| A (4) Maintaining confidentiality.....                                     | 45 |
| A (5) Process of survey distribution and collection .....                  | 47 |
| Sample Size .....  | 49 |
| Data Analyses .....  | 50 |
| Descriptive analyses.....  | 50 |
| Logistic regression analysis.....  | 51 |
| Test for multicollinearity .....   | 51 |
| Goodness of fit and c statistic for multivariable logistic regression      |    |
| models.....  | 52 |
| Results .....  | 53 |
| Survey Development .....   | 53 |
| Physicians and Patients .....  | 54 |
| Descriptive Analyses .....   | 54 |
| Participant demographics .....   | 54 |
| Experiences with Homeopathic medicines .....                               | 56 |
| Perceptions about Homeopathic medicines .....                              | 57 |
| Experiences with Homeopathic physicians .....                              | 58 |
| Experiences with appointments and waiting room .....                       | 60 |
| Experiences with the clinic staff.....                                     | 60 |
| Overall satisfaction and patient recommendation.....                       | 61 |
| Patient suggested changes .....  | 62 |
| Associations .....   | 62 |
| Association between participants' gender and participant experiences with  |    |
| Homeopathic medicines and Homeopathic physicians.....                      | 62 |
| Association between participants' gender and participants' perceptions     |    |
| about Homeopathic medicines.....   | 64 |
| Association between participants' education and participant experiences    |    |
| with Homeopathic medicines and Homeopathic physicians .....                | 64 |
| Association between participants' education and participant perceptions    |    |
| about Homeopathic medicines.....   | 65 |
| Inferential Analyses .....   | 66 |
| Binary logistic regression: Univariate analyses for participants' overall  |    |
| satisfaction with Homeopathic medicines .....                              | 66 |
| Binary logistic regression: Multivariable analyses model for participants' |    |
| overall satisfaction with Homeopathic medicines.....                       | 70 |



|  |     |
|--|-----|
| Binary logistic regression: Univariate analyses for overall satisfaction with Homeopathic clinics .....          | 74  |
| Binary logistic regression: Multivariable analyses model for overall satisfaction with Homeopathic clinics ..... | 77  |
| Exploratory Analyses.....  | 80  |
| Discussion.....  | 82  |
| Study Limitations and Lessons Learnt .....   | 101 |
| Directions and Implications for the Future.....  | 104 |
| Conclusions .....  | 108 |
| Implications for Public Health.....  | 110 |
| References .....   | 121 |
| Appendices .....   | 145 |
| Appendix A: IRB for Phase 1.....   | 146 |
| Appendix B: IRB for Phase 2.....   | 147 |
| Appendix C: Study flyer.....   | 149 |
| Appendix D: Survey.....  | 150 |

## List of Tables

|         |  |    |
|---------|--|----|
| Table 1 | Participant demographics .....   | 54 |
| Table 2 | Participants' Experiences with Homeopathic medicines .....                                       | 56 |
| Table 3 | Participants' Perceptions about Homeopathic medicines .....                                      | 57 |
| Table 4 | Participants' Experiences with their Homeopathic physicians .....                                | 58 |
| Table 5 | Participants' Experiences in the waiting room and with appointments .....                        | 60 |
| Table 6 | Participants' Experiences with clinic staff .....  | 60 |
| Table 7 | Participants' Overall Satisfaction and Recommendations .....                                     | 61 |
| Table 8 | Logistic Regression Analyses for Outcome of Patient Satisfaction with Homeopathic Medicines..... | 70 |
| Table 9 | Logistic Regression Analyses for Outcome of Patient Satisfaction with Homeopathic Clinics .....  | 77 |

## List of Figures

- Figure 1 ROC for multivariable analyses model for satisfaction with Homeopathic medicines ..... 73
- Figure 2 ROC for multivariable model for satisfaction with Homeopathic clinics ..... 80

## **Abstract**

**Introduction:** Global populations are increasingly pursuing Complementary and Alternative Medicines (CAM) as safe, holistic options to attain health and wellness. Homeopathy is one such system of medicine whose demand is growing across the world, with maximum users in India. Yet, patient satisfaction and experiences with Homeopathy have not been addressed comprehensively in India.

**Methods:** A two-phase, mixed-methods study was designed to assess patient satisfaction and patient experiences with Homeopathic medicines and clinics in Pune, India. Phase I included the design and validation of a survey on Homeopathy specific experiences in English and Marathi for collecting data. Phase II employed a cross-sectional study. Convenience sampling was used to recruit eligible patients at participating clinics of licensed Homeopathic physicians in Pune. Descriptive analysis and logistic regression were conducted respectively to examine patient experiences and to investigate their impact on satisfaction with Homeopathic medicines and clinics.

**Results:** In total, 1231 patients from 25 Homeopathic clinics participated in this study. Sixty one percent of participants were female. The majority (95.7%) reported feeling better after using Homeopathic medicines. An overwhelming number of participants were highly satisfied with Homeopathic medicines (95.9%), clinics (97.5%), and physicians (98.2%). Most participants reported that their Homeopathic physician was

knowledgeable and capable of taking care of their illness. Participants who reported never having experienced any side effects after consuming Homeopathic medicines were 3.43 (95% CI 1.33-8.86) times more likely to be satisfied with Homeopathic medicines compared to those who reported experiencing side effects. Participants who reported that they preferred to use Homeopathic medicines for any acute illness instead of conventional medicine were 3.26 (95% CI 1.40-7.59) times more likely to be satisfied with Homeopathic medicines compared to those who reported they did not prefer to use Homeopathic medicines for acute illnesses.

Conclusions: This was the largest study assessing specific patient experiences and patient satisfaction with Homeopathy and the first ever in the state of Maharashtra, India. The study designed and validated a unique survey instrument for Homeopathy relevant experiences. The high levels of satisfaction reflect high acceptance for Homeopathy. Majority participants reporting never having experienced side effects suggests potential of Homeopathic medicines to be used as a therapeutic system to reduce costs otherwise incurred by Public Health systems in treatment of side effects. Participant preferences to use Homeopathy in acute (e.g. infections) and chronic conditions provide support to the role of Homeopathy in public health systems as a safe, effective, affordable treatment alternative. Results encourage development of models for best practices and collaborations between conventional medicine, Homeopathy and other CAM therapies for providing improved value based care (superior health outcomes at optimal cost).

## Introduction

Global populations are increasingly in search of safe, natural, holistic, and affordable alternatives to current mainstream medical practices. Homeopathy, Ayurveda, Yoga, Siddha, Unani, Chinese traditional medicine, are examples of therapeutic systems that have been utilized traditionally in various parts of the world. With the advent of conventional medicine (known also as modern or western medicine) focus shifted away from these therapeutic systems. They are now used either in complement with or as an alternative to, conventional medicine. A majority of these therapeutic systems are currently recognized under the umbrella of 'Complementary or Alternative Medicines' (CAM).

This study is conducted in one of the CAM systems, Homeopathy. Homeopathy originated in Europe where German physician Dr. Samuel Hahnemann introduced it in the late 18<sup>th</sup> century (Bellavite, Conforti, Piasere, & Ortolani, 2005; Ullman, 2017). The basic premise of Homeopathy is that a substance, which produces particular symptoms in a healthy individual, is capable of curing similar symptoms in a sick individual (Hahnemann, 1921). Selection of a Homeopathic medicine requires detailed understanding of patients' symptoms. The Homeopathic physician treats the patient as a 'whole' rather than treating individual organs. Physician-patient communication plays a significant role in gaining an insight into the intricacies of patients' symptoms. Homeopathic physician records the patient's symptom totality and selects an individualized Homeopathic medicine that matches the patient's symptoms. This

individualized, holistic approach of Homeopathic treatment differs from that of conventional medicine. Conventional medicine requires diagnosis followed by treatment with specific medications or procedures in order to treat separate organs (Hahnemann, 1921; Marian et al., 2008). Major fundamental differences in the principles and practice of conventional medicine and Homeopathic medicine (Marian et al., 2008; Ullman, 2017) necessitate research methodologies to be modified for research in Homeopathy.

Homeopathically relevant research is increasingly important since the use of Homeopathic medicines is steadily growing. Over 200 million people use Homeopathy worldwide (Prasad, 2007). The National Health Statistics (2015) reported that more than 6 million Americans, including adults and children, used Homeopathy in 2015 (Black, Clarke, Barnes, Stussman, & Nahin, 2015; Homeopathy Research Institute, n.d.). In countries from the European Union close to 100 million people use Homeopathy in their everyday lives (Homeopathy Research Institute, n.d.). Globally, the prevalence of use of Homeopathy is not limited to a certain age group or gender (Relton, Cooper, Viksveen, Fibert, & Thomas, 2017). Moreover, Homeopathy is used for various health conditions (Holdcraft, Assefi, & Buchwald, 2003; Jong et al., 2016; Malapane, Solomon, & Pellow, 2014; Mathie, Frye, & Fisher, 2015; Murthy, Sibbritt, & Adams, 2015; Oren-Amit et al., 2017; Palm et al., 2017; Peng, Adams, Hickman, & Sibbritt, 2014; Pilkington, Kirkwood, Rampes, Fisher, & Richardson, 2006; Posadzki, Watson, Alotaibi, & Ernst, 2013b).

A direct method of assessing the need and role of a therapeutic system is by evaluating satisfaction among patients who use it. Patient satisfaction is a measure of acceptance of a system of medicine. To some extent, it is also a reflection of the system's effectiveness. Assessment of patient experiences can provide a foundation for

evaluating the overall quality of treatment as reported by patients (Marian et al., 2008). Patient experiences can be valuable tools in informing policies regarding integration of a therapeutic system into primary health care and defining its role in public health services. Results obtained from a patient satisfaction and patient experiences study can facilitate decision making on access to a therapeutic service.

India has the highest number of people using Homeopathy. Out of an approximate 150 million total users of Homeopathy in India, an estimated 100 million rely solely on this system of medicine (Homeopathy Research Institute, n.d.; Prasad, 2007). The city of Pune in India has many private Homeopathic clinics and pharmacies and a high prevalence of people using Homeopathic medicines. Despite this, there has been no study evaluating satisfaction and experiences of patients using Homeopathy in Pune. Assessing patient satisfaction and experiences with Homeopathic treatment involves evaluating the entire Homeopathic experience.

Accordingly, the purpose of this study was to examine patient satisfaction, experiences, and perceptions with Homeopathic medicines. Additionally, the study examined patient experiences with Homeopathic physicians and Homeopathic clinics. The influence of patient experiences and perceptions on overall satisfaction with Homeopathic medicines and clinics was also assessed.



## Literature Review

### Global use of Complementary and Alternative Medicine (CAM)

“Wellness” is the world’s fastest growing industry, with holistic health gaining popularity across the globe (Global Wellness Institute, 2016). Holistic health is an approach to life that, until the advent of conventional medicine, was followed by most ancient traditions. Holistic health looks at health from the perspective of an individual as a ‘whole’ and not just as the sum total of body parts (Jasemi, Valizadeh, Zamanzadeh, & Keogh, 2017; Schaerer, 2015). Most holistic approaches now fall under the umbrella of CAM.

Increasingly, individuals globally are seeking CAM to address their health needs (Peng, Adams, Sibbritt, & Frawley, 2014; Posadzki, Watson, Alotaibi, & Ernst, 2013a; Rocha et al., 2017; Sarris et al., 2012; Schwarz, Knorr, Geiger, & Flachenecker, 2008). The prevalence of CAM use is widespread across the globe, with the academic literature referencing use in most continents. Research from Africa reports use of CAM therapies for conditions such as Hypertension, sickle cell disease, or chronic health conditions in pediatric population to name a few (Amira & Okubadejo, 2007; Busari & Mufutau, 2017; Oshikoya, Senbanjo, Njokanma, & Soipe, 2008; Shewamene, Dune, & Smith, 2017). Reports from Asia provide overall prevalence of use as well as use in specific conditions such as in diabetes, cancer, or hospitalized pediatric patients (Alrowais & Alyousefi, 2017; Kumar, Bajaj, & Mehrotra, 2006; Kumar, Goel, Pandey, & Sarpal, 2016; Lim, Sadarangani, Chan, & Heng, 2005; Oren-Amit et al., 2017;

Oyunchimeg, Hwang, Ahmed, Choi, & Han, 2017; Seo, Baek, Kim, Kim, & Choi, 2013; Shumer et al., 2014). CAM use and prevalence has similarly been reported from Australia (Gollschewski, Anderson, Skerman, & Lyons-Wall, 2005; Manya, Champion, & Dunning, 2012; R. Reid, Steel, Wardle, Trubody, & Adams, 2016) and Europe (Bussing, Ostermann, Heusser, & Matthiessen, 2011; Bussing, Ostermann, Raak, & Matthiessen, 2010; Eardley et al., 2012; Posadzki, Watson, et al., 2013a, 2013b; Widmer, Donges, Wapf, Busato, & Herren, 2006; Wolf, Masion-Bergemann, Bornhoft, Matthiessen, & Wolf, 2006; Zuzak et al., 2013). Reports from North America include prevalence of use in fibromyalgia and dermatological conditions (Baranowsky et al., 2009; Barnes, Bloom, & Nahin, 2008; Bhuchar, Katta, & Wolf, 2012; Carpenter & Neal, 2005; Homeopathy Research Institute, n.d.). In South America research has been conducted to evaluate attitudes, use, and recommendations of CAM by health care providers for various health conditions or also use of CAM in specific conditions such as cancer (Brambila-Tapia, Rios-Gonzalez, Lopez-Barragan, Saldana-Cruz, & Rodriguez-Vazquez, 2016; Ladas et al., 2015; Ladas et al., 2014; Rocha et al., 2017). Thus, across the globe, CAM includes a diverse range of CAM systems and therapies. Some commonly used CAM therapies in the western world include natural products such as herbs, yoga, Homeopathy, chiropractic or osteopathic manipulation, meditation and deep breathing (National Center for Complementary and Integrative Medicine, n.d.). In other parts of the world such as in Asia, use of traditional medicines such as Chinese medicine, Ayurveda and Yoga are an integral part of the health care either as a complement or an alternative therapy.

The 2012 National Health Interview survey reported that more than 33% of the American adults (approximately 110 million) used some form of CAM in the 12 month period prior to the survey (Clarke, Black, Stussman, Barnes, & Nahin, 2015). More than 150 million people in Europe are reported to use CAM (Kemppainen, Kemppainen, Reippainen, Salmenniemi, & Vuolanto, 2017). Australia is reported to have a “high use” of CAM with a “substantial proportion” of its population using it (S. Reid, 2002). CAM use appeared to be common across age groups and various disease conditions, and was not limited to specific socio-economic backgrounds in the United States (Barnes et al., 2008). This is being noticed globally, where CAM is used for various health conditions (DeFilippis, 2018; Grant, Bin, Kiat, & Chang, 2012; Hartmann et al., 2016; Holdcraft et al., 2003; T. Huang, Shu, Huang, & Cheuk, 2011; Murthy et al., 2015; Peng, Adams, Hickman, et al., 2014; Peng, Liang, Sibbritt, & Adams, 2016; Pilkington, Rampes, & Richardson, 2006; Pittler & Ernst, 2005; Posadzki & Ernst, 2013; Posadzki, Lee, et al., 2013; Posadzki, Watson, et al., 2013b; Quattropani, Ausfeld, Straumann, Heer, & Seibold, 2003; Salamonsen, 2016; Sibbritt & Adams, 2010; Singh, Raidoo, & Harries, 2004; D. Solomon & Adams, 2015; Steel et al., 2012). Additionally, CAM is used across all age ranges from pediatric to the adult population (DeFilippis, 2018; A. Huang, Seshadri, Matthews, & Ostfeld, 2013; Murthy et al., 2015; Ong et al., 2017; Peng et al., 2016; Posadzki, Watson, et al., 2013a, 2013b; D. Solomon & Adams, 2015; Yang, Sibbritt, & Adams, 2017). Also, use of CAM does not appear to be limited to a specific gender (Peng, Adams, Hickman, et al., 2014; Peng et al., 2016; Pilkington, Rampes, et al., 2006; Posadzki & Ernst, 2013; Posadzki, Lee, et al., 2013; Sibbritt & Adams, 2010; Sleath, Callahan, Devellis, & Beard, 2008; D. Solomon & Adams, 2015;

Yang et al., 2017). The studies cited above report use of CAM for treatment of fibromyalgia, arthritis, cardiovascular disease, epilepsy, constipation, depression and anxiety disorders, menopausal complaints, complaints during pregnancy and childbirth to mention a few. However, published literature is scarce on use of CAM in acute conditions in comparison to its use in chronic conditions.

Although various types of CAM are used widely across the globe, more so in some parts than others, literature shows that many patients do not disclose the use of CAM to their conventional care practitioners (Fisher, Sibbritt, Hickman, & Adams, 2016; Grant et al., 2012; Murthy et al., 2015; Peng et al., 2016; Posadzki, Watson, et al., 2013b; Salamonsen, 2016; Singh et al., 2004; Sleath, Callahan, DeVellis, & Sloane, 2005; Sleath et al., 2008; Smith, Clavarino, Long, & Steadman, 2014). This non-disclosure can be detrimental to patient health (Firkins et al., 2018; Loquai et al., 2017; Taylor, Walsham, Taylor, & Wong, 2006). It is therefore crucial for physicians of conventional medicine to be aware of various CAM therapies and participate in candid discussions with their patients to ensure facilitation of evidence based, shared decision making (DeFilippis, 2018; Fisher et al., 2016; Grant et al., 2012; Murthy et al., 2015; Peng et al., 2016; Posadzki, Watson, et al., 2013b; Salamonsen, 2016; Singh et al., 2004; Sleath et al., 2005; Sleath et al., 2008; Smith et al., 2014).

While a universally agreed upon definition of CAM has yet to be reached, a few definitions have been proposed with mostly similar attributes. The National Center for Complementary and Alternative Medicine (NCCAM) of the National Institute of Health in the United States in 2002 defined CAM as “a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of

conventional medicine” (“Complementary and Alternative Medicine in the United States,” 2005). Based on the above definitions and understandings of the term, CAM has been categorized as follows by NCCAM (now NCCIH- National Center for Complementary and Integrative Health):

1. Alternative medical systems,
2. Mind-body interventions,
3. Biologically based treatments,
4. Manipulative and body-based methods, and
5. Energy therapies.

The category of ‘Alternative Medical Systems’ includes systems that differentiate distinctly from conventional medicine in terms of their philosophy, principles of action, and principles of practice. Homeopathy therefore tends to be included under the alternative medical systems (National Center for Complementary and Alternative Medicine, 2000).

Of recently, the term “Integrative Medicine” is being used when there are efforts to integrate conventional therapy and CAM therapies (Mayo Clinic, 2018; Moffitt Cancer Center, 2018; National Center for Complementary and Integrative Medicine, 2017). The Center for Integrative Medicine at the University of Arizona defines Integrative Medicine as “healing-oriented medicine that takes account of the whole person, including all aspects of lifestyle. It emphasizes the therapeutic relationship between practitioner and patient, is informed by evidence, and makes use of all appropriate therapies” (The University of Arizona Center for Integrative Medicine, 2016). World Health Organization (WHO) has a division of ‘Traditional, Complementary, and Integrative Medicine’ where

complementary medicine or alternative medicine is referred to as “a broad set of health care practices that are not part of that country’s own tradition or conventional medicine and are not fully integrated into the dominant health-care system. They are used interchangeably with traditional medicine in some countries” (World Health Organization, 2018).

In India, CAM therapies are an intrinsic part of the health care system. They are included under the Government of India, ‘Ministry of AYUSH’ where AYUSH stands for Ayurveda, Yoga, Unani, Siddha, and Homeopathy. The Ministry of AYUSH focuses on research and education in the therapies under its branch of the government (Ministry of AYUSH, n.d.).

To summarize, CAM systems are mostly health systems that are non-mainstream. They are accessed for health care needs either along with conventional medicine or in place of conventional medicine. Most are inclined towards a holistic approach to health. Specifics of Homeopathy, one of the CAM systems used by many people worldwide will now be discussed.

### **Origin and History of Homeopathy**

Homeopathy was introduced as a system of medicine by German physician, Dr. Samuel Hahnemann, during the late 18<sup>th</sup> century (Milgrom, 2006). Dr. Hahnemann was a well-respected physician of his time prescribing conventional medicine. He was a master of seven languages making him much sought after for translating medical and pharmacological books. It was during one of the readings for translations and many years of experiments thereafter that he discovered what he termed ‘Homeopathy’. Dr.

Hahnemann wrote about his experiments in 1796 in an esteemed medical journal, the *Hufeland's Journal* (Ullman, 2017). He coined the term “Homeopathy” from “homeos” meaning ‘similar’ in Greek and “pathos” meaning ‘suffering’ reflecting the principle of action on which Homeopathy is based (Hahnemann, 1921).

### **Homeopathy in Europe and America.**

Homeopathy was a newfound medical system, with a philosophy and principles of practice very different from the orthodox treatments of the time. It gained acceptance in society as gentle and effective medicine that addressed the person as a whole. Homeopathy continued to spread roots, with Homeopathic physicians traveling from Europe to other parts of the world. It is said to have been first introduced to America around 1825 when a Dutch Homeopath, Hans Gram, immigrated to America. In America, as in Europe, Homeopathy made its mark in the 19<sup>th</sup> century during the epidemics of typhoid fever, cholera, and yellow fever, when a lower mortality rate and better outcomes were seen among patients who received Homeopathic medicines compared to those who received conventional medicines (Bellavite et al., 2005; Ullman, 1991). Homeopathic medicines were not sought for specific diseases only. Instead, they were used in a wide array of ailments. While the orthodox treatment often included crude techniques of bloodletting or use of strong chemical compounds that caused more harm than the disease they were being used to treat, Homeopathic medicines were received as safer medicines. The most common reason thus cited for choosing Homeopathy was as a safe effective system, to avoid side effects that would otherwise

arise from the use of conventional practices of the time. This trend continues to date (Waisse, 2017).

Despite its growing popularity in society, the medical community displayed antagonism towards Homeopathy due to the philosophical, clinical, and economic challenges that it brought (Bellavite et al., 2005). However, while they could disregard practitioners of other systems of medicine, they could not do so with Homeopathic practitioners since they were one among them (Ullman, 2017). Homeopathic physicians of Dr. Hahnemann's time and for many decades after were graduates of conventional medical schools who learned the Homeopathic principles of practice. These conventional physicians made a choice to prescribe Homeopathic medicines after experiencing its effectiveness in family and patients. Homeopathy was challenging the conventional practices. In an effort to address this, the American Medical Societies began to refuse memberships to physicians who prescribed Homeopathy. Medical schools also prohibited physicians who supported Homeopathy. In turn, Homeopaths established their own associations and board for Homeopathic education and practice. By the mid-19<sup>th</sup> century Homeopathic colleges, associations, journals, clinics, and practitioners were on a rise in Europe and America (Bellavite et al., 2005; Ullman, 2017). In the US, 'The Accreditation Commission for Homeopathic Education in North America' (ACHENA) was established in 1982 to standardize and oversee excellence in Homeopathic education (ACHENA, n.d.)

John D. Rockefeller, a strong supporter of Homeopathy, referred to Homeopathy as "a progressive and aggressive step in medicine." While proponents of Homeopathy included many other well-known personalities of an advantaged socio-educational class



of the time (Ullman, 2017), use of Homeopathy was not limited to the elite few. Instead the 'middle and lower strata' of the society sought Homeopathy even despite having sufficient access to conventional hospitals (Ullman, 2017; Waisse, 2017).

Although demand for Homeopathy grew in the 19<sup>th</sup> century, the early 20<sup>th</sup> century saw a gradual fall of Homeopathy in Europe as well as in the United States. The Medical Society and the Homeopathic Society had little in common in regards to their principles of practice and did not see eye to eye on treatment philosophies. The fundamental differences in their basic approach to 'disease' and 'cure' made a dialogue difficult (Morrell, 2003). Pharmacies too were in favor of conventional medicine for economic reasons. A reason for debate with Homeopathy around this time was Millikan's establishment of the Avagadro principle. According to this principle, one mole of any substance contains  $6.02254 \times 10^{23}$  molecular or atomic units. A substance beyond  $10^{24}$  (12c or higher for Homeopathic medicines) may not be containing even a single atom of the original crude substance. The newer cohort of Homeopathic practitioners had come to develop and prescribe higher potencies (Bellavite et al., 2005). The absence of detectable atoms of the original substance in the Homeopathic medicines of higher potencies was reason for further discussion around the system of medicine (Bellavite et al., 2005; Vickers, 2000).

At the same time, research in conventional medicine was making good progress on evidence supported by the advances in basic sciences. Analgesics and anti-inflammatory drugs replaced crude and painful predecessors and antibiotics brought on new era of controlling and treating infections in conventional medicine (Aminov, 2010; Bellavite et al., 2005; Vickers, 2000). People found conventional medicine more

approachable than before. Research in Homeopathy on the other hand lacked initiative, direction, and economic support. The medical community continued to be divided on their opinions about Homeopathy. One group strongly opposing and the other continued to prescribe Homeopathy. The first half of the 20<sup>th</sup> century thus saw a slowing down of Homeopathy in Europe and America, as the practice continued to face opposition, challenges and lacking an economic support to conduct necessary basic science research.

Yet, over the past few decades, research in Homeopathy has picked up. As more people are looking for safe, effective medicines, the scientific world is again paying more attention to Homeopathy. Observational studies, efficacy studies, as well as lab based research is on a rise with growing awareness of and seeming need for Homeopathic medicines.

### **Homeopathy in India.**

When Homeopathy was already a well-known, well-established system of medicine in Europe and America in the early 19<sup>th</sup> century, it was just being introduced to India (Ghosh, 2010). German missionaries were distributing Homeopathic medicines widely in the province of Bengal, India (Prasad, 2007). In 1948, the Indian government passed a resolution for Homeopathy as a system of medicine to be “recognized by the Indian Union and a General Council and a State Faculty of Homeopathic Medicine to be established at once” (Dilli Homoeopathic Anusandhan Parishad, n.d.). The Government of India recognized Homeopathy as one of its national medical systems and founded the Central Council of Homeopathy in 1973 to oversee education and practice of

Homeopathy and the Central Council for Research in Homeopathy (CCRH) in 1978 to encourage and oversee research in Homeopathy (Dilli Homoeopathic Anusandhan Parishad, n.d.). In 1995, governance of Homeopathy was taken under the umbrella of the Department of Indian Systems of Medicine and Homoeopathy (ISM&H) in the department of Ministry of Health and Family Welfare and then under 'AYUSH' (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) in 2003 (Ministry of AYUSH, n.d.). The Government of India 'Ministry of AYUSH' was founded on November 9, 2014. The Ministry of AYUSH now oversees the education, research, and practice of Homeopathy in India (Ministry of AYUSH, n.d.).

A study published in Lancet reported that India has the largest users of Homeopathy in the world with a 100 million people (10% of its population) depending solely on Homeopathic care (Prasad, 2007). Also, Homeopathy is the third most popular form of medicine used in India, after conventional medicine and Ayurveda (Ghosh, 2010). In 2010, there were 178 homeopathic medical colleges in India, of which 35 were government colleges. Further, there are more than 250,000 homeopathic physicians in India whose licensures and registration to practice is regulated by the central government of India and individual state governments.

### **Education in Homeopathy**

Homeopathy has been taught as an independent degree in schools and colleges in some countries for decades; examples of which are India, United States, Canada, Australia, Switzerland, France, Italy, and the United Kingdom. Globally, Homeopathic training is offered through various formats including as a Bachelor's degree, as a

doctorate degree, as a post-graduate specialty, or as certification courses. Some medical colleges that teach conventional medicine have started to offer courses in CAM including Homeopathy (Akinola, 2011; Chitindingu, George, & Gow, 2014; Joos, Eicher, Musselmann, & Kadmon, 2008; Lao & Berman, 2008; Marcus & McCullough, 2009). In the US, CAM has become increasingly integrated in various forms in academic medical institutions, most notably medical programs at the Harvard Medical School, Yale School of Medicine, and the Mayo Clinic by offering CAM courses and CAM services.

In India, Homeopathy can be practiced legally only after completion of a 5.5-year long curriculum (equivalent to an undergraduate MD degree curriculum in the US) that includes one year of internship. Numerous universities in India have also started offering postgraduate degree courses in Homeopathy. The state of Maharashtra in India has the highest number ( $n=37$ ) of Homeopathic colleges, many of which also offer the post-graduate degree (Ghosh, 2010).

### **Practice of Homeopathy**

Laws for the practice of Homeopathy vary globally. In the United States, The National Center for Homeopathy provides the following information for certification (National Center for Homeopathy, 2017):

- “Council for Homeopathic Certification (CHC): This organization certifies classical homeopaths.
- American Board of Homeotherapeutics (ABHt): This organization certifies licensed medical and osteopathic physicians in classical Homeopathy.
- Homeopathic Academy of Naturopathic Physicians (HANP): This organization

certifies naturopaths (NDs)".

However irrespective of whether or not anyone holds a diploma or certificate from any school or program, individual state laws in the US determine whether an individual can practice Homeopathy in that state. For example, some states allow Homeopathy to be practiced as a specialty after first obtaining a license to practice conventional medicine while some other states allow it to be practiced under the license of naturopathic physicians (National Center for Homeopathy, 2017). In Europe, Homeopathy can be practiced in most countries by medical doctors with an additional qualification in Homeopathy via courses offered through Homeopathic colleges or programs in Universities (European Central Council of Homeopaths, 2018). In India a degree in Homeopathy from an accredited institution and a license to practice are required. The ministry of AYUSH overlooks the education and research activities while the license to practice is required from the state (Maharashtra University of Health Sciences, 2017; Ministry of AYUSH, n.d.).

### **Philosophy of Homeopathy**

The practice of Homeopathy is dictated by certain philosophies that were introduced and described by Dr. Hahnemann himself. Some of them are as below.

#### **Law of Cure.**

Hahnemann explains that the main principle of action of Homeopathy is based on findings that 'a substance that is capable of causing particular symptoms in an otherwise healthy individual is capable of curing those symptoms in a sick individual'

(Hahnemann, 1921). This law is seen commonly referred to in the literature as the 'Law of Cure', or Law of Similars 'similia similibus curentur' meaning 'let like be cured by like'. Based on his experiments Hahnemann concluded that these substances could be used as "medicines" to treat similar patterns of disorders in sick individuals. This further led to homeopathic pathogenetic trials (Dantas et al., 2007) symptoms from which were recorded and compiled into a Homeopathic Materia Medica (Boericke, 1927).

### **Potentization.**

Homeopathic medicines are prepared by a process they call potentization. Dr. Hahnemann initially developed this process in an effort to create medicines such that the toxicity of the crude substance they were prepared from was reduced, but their ability to act was retained (Bellavite et al., 2005; Croce, 2000; Hahnemann, 1921; Loudon, 2006). For the preparation of Homeopathic medicines, the crude substance is dissolved in water or alcohol (tincture). It then undergoes serial dilution with vigorous shaking, such that in high potencies of Homeopathic medicines, no molecules of the original substance can be detected (Shang et al., 2005). This process of potentization distinguishes homeopathic medicines from herbal liquids or mineral suspensions.

Homeopathic medicines are dispensed in the form of tiny globules, a powder, or a liquid, which are usually either sweet or bland in taste. Homeopathic medicines are available as over-the-counter preparations in many countries including the US and India. Homeopathy is different in many ways from other systems of medicines by virtue of its philosophy that directs the practice of Homeopathy by matching symptom totality to medicine totality, a process commonly referred to as individualization.

### **Individualization.**

Homeopathy has a holistic approach towards healing. It considers that when an individual is sick it is the 'whole' individual whose health is deranged and is expressed in the form of signs and symptoms. Thus, when a patient presents with an illness, the Homeopathic physician does not isolate the illness from the symptoms or signs that may not appear to be related to the specific illness. Instead, the physician will take into consideration the totality of symptoms to find a medicine that has the matching totality of symptom description in the Homeopathic materia medica.

Thus, the process of medicine selection is highly 'individualized' and not based solely on the 'diagnosis' in conventional medicine terms. Hence, two patients presenting with the same 'diagnosis' can receive different Homeopathic medicines. This process of selection of medicine is referred to as 'individualization'.

### **Role of a Homeopathic Physician**

The selection of individualized Homeopathic medicine involves a skilled process known as "case taking" (Hpathy, 2017). Case taking involves a detailed analysis of all the acute and chronic health complaints the patient suffers from in mind and body (Hpathy, 2017). While understanding the personality of a patient a Homeopathic physician asks specific questions. Therefore, it is very likely for two individuals suffering from arthritis to be prescribed two different Homeopathic medicines based on their personality and signs and symptoms.

'Location, sensation, modality, and concomitants' are the four key factors that a

Homeopathic physician will ask for each symptom a patient presents with. For instance, in a patient presenting with pain in the knee joints the following questions may be asked:

- Location of pain: where is the pain? Is pain more in any of the knees-left or right?
- Sensation of pain: what is the type of pain? Is it throbbing, pricking, constant?
- Modalities of pain: what aggravates or ameliorates the pain? Does application of hot or cold make the pain better or worse?
- Concomitants: what other seemingly unrelated symptoms accompany the pain?

Thus, a very detailed case of the patient is recorded (via the “case-taking” process). Then the symptom totality of the patient is matched with the symptoms described for a Homeopathic medicine in the materia medica (this matching process called as “repertorization”). The medicine thus selected when given to the patient, is expected to bring about an improvement. Repetition of the medicine is at the discretion of the Homeopathic physician based on intensity of signs and symptoms etc. The effectiveness of Homeopathic medicine is highly dependent on selecting the correct medicine by detailed case taking and skilled repertorization.

### **Practice of Homeopathy versus Conventional Medicine**

Fundamental differences exist between the treatment dynamics and methodologies of conventional medicine and Homeopathic medicines. In conventional care, diagnosis is the central theme and specific health conditions are treated with specified procedures and medications (Marian et al., 2008). In Homeopathy, an individual is treated as a ‘whole’ and the treatment involves selection of a medicine that



is highly individualized based on symptom totality (Hahnemann, 1921).

Conventional medicine does not necessitate patient's description of complaints in detail. Treatment decisions are based on addressing the chief complaint and diagnostic tests. The conventional medicine model focuses on disease; and communication is often physician-centered. The nature of the treatment involves less patient involvement in decision-making. This can result in reduced treatment compliance as well as incidences of malpractice claims (Hartog, 2009).

Homeopathic case taking necessitates patient involvement. The patient's cooperation is always invited and is vital for collecting information about specific characteristics and modalities of presented symptoms (Frank, 2002). Responsibility given to the patient for sharing symptom details has been shown to result in a more positive quality of communication (Schmacke, Muller, & Stamer, 2014). The patient-centeredness of a Homeopathic consultation often results in better treatment compliance, health outcomes and reduced risk of malpractice claims (Hartog, 2009).

## **Pertinent Findings from the Literature**

### **Side effects or adverse effects with Homeopathic medicines.**

One of the most common reasons reported for seeking Homeopathic medicines is because they do not cause side effects or adverse effects (Grabia & Ernst, 2003; Jong et al., 2016; Mathie et al., 2015; Stub, Kristoffersen, Alraek, Musial, & Steinsbekk, 2015). Nonetheless, Homeopathic medicines are suggested to cause initial worsening of symptoms, commonly known as "Homeopathic aggravations." There is little information discussing the existence or absence of this phenomenon (Grabia & Ernst,

2003). Literature suggests that although Homeopathic aggravations are sometimes possible they are not harmful (Mathie, Roberts, & Rutten, 2016; Stub et al., 2015). The homeopathic aggravations are usually an indication that the correct medicine was prescribed and soon leads to an improvement in patients overall health and wellbeing (Hahnemann, 1921). On the other hand, side effects and adverse effects from most conventional medicines are known to cause considerable amount of discomfort, pain or frustrations to the patient and many are reported to be quite harmful (Allegaert & Choonara, 2016; Berni et al., 2017; "Common Side Effects of HIV Medicines," 2017; Gediz et al., 2016; Kaur & Singh, 2018; M. H. M. Lee et al., 2017; Nishtala & Salahudeen, 2016; Olowofela & Isah, 2017; Wigal et al., 2017; Zanasi et al., 2016). In that context again, it has been reported that Homeopathic medicines are used as an alternative to conventional medicine to avoid the side effects (Avina & Schneiderman, 1978; Chandrashekara, 2011; Jacobs, Chapman, & Crothers, 1998; Mahmoudian & Sadri, 2014; Reilly, 2001a, 2001b). Additionally, patients use Homeopathic medicines to treat the adverse effects that arise from use of conventional medicines (Kassab, Cummings, Berkovitz, van Haselen, & Fisher, 2009).

Indeed, the most common reason cited by pediatricians for referral to Homeopathy was parents' concern with side effects from conventional medicines (Beer et al., 2016). Findings from a Systematic Review on Homeopathic Oscilloccinum used for influenza like illness did not find evidence of adverse effects after using this homeopathic medicine (Mathie et al., 2015). Findings from another systematic review specifically suggest that using medicines prescribed by a trained Homeopathic physician are not likely to have adverse effects (Dantas & Rampes, 2000).

Based on the available evidence from literature it appears that harmful effects from Homeopathic medicines are a rare occurrence (Dantas & Rampes, 2000; Grabia & Ernst, 2003; Jong et al., 2016; Mathie et al., 2015). In times where non-adherence with medications is a constant hurdle to treatment (Applbaum, 2009), this is an additional advantage to Homeopathic medicines where patients have lesser concern of side effects and treating them thereof. Also, absence of adverse effects raises the possibility of increased patient satisfaction with treatment, continuation of treatment and thereby improvement of health outcomes (GBD 2016 Disease and injury incidence and prevalence collaborators, 2017)

Yet, there is limited patient reported data outside of clinical trials on side effects of Homeopathic medicines. Real life data about experiences with side effects from patients who use Homeopathic medicines are therefore desirable to confirm findings suggested above.

### **Affordability and cost-effectiveness of Homeopathic treatment.**

Homeopathic treatment has been associated with lower costs (Avina & Schneiderman, 1978; Jacobs et al., 1998; Mahmoudian & Sadri, 2014; Quattropiani et al., 2003; Reilly, 2001a; van Haselen, Reiber, Nickel, Jakob, & Fisher, 2004; Van Wassenhoven & Ives, 2004). Cost-affordability can increase access to care where Homeopathy is available and potentially reduce burden from treatment costs of disease. Some findings suggest that Homeopathic medicines are more cost-effective in comparison to antibiotics (Trichard, Chaufferin, & Nicoloyannis, 2005) or to conventional medicine in general (Rossi, Crudeli, Endrizzi, & Garibaldi, 2009) while other findings are

inconclusive (Bornhoft et al., 2006).

Cost-effectiveness and affordability is likely to be very different across nations and cultures and should be viewed and addressed with the local context of affordability. For instance, in India a bottle of Homeopathic pills can cost between Rupees 20 to Rupees 40 (equivalent to approximately 25 to 50 US cents). The same bottle could cost \$6 to \$10 in the US. These prices are likely to be affordable to someone with an average income in both countries. Homeopathic physicians' consultation cost in India can range anywhere between Rupees 200 to Rupees 2000. In the US, these initial consultation costs with a Homeopathic physician can range from \$200 to \$500. These costs from both the countries are probably comparable to consultation costs in conventional care. However, a major difference is that Homeopathic medicine is not assimilated into the healthcare system in the US and usually not covered by health insurance. Non-inclusion of Homeopathic treatment by most insurance policies itself creates a barrier for access to Homeopathic care. Comparative cost-benefit analyses have major public health strategy implications and findings from observational studies can lay the foundations for such analyses.

Indeed, patients are the 'consumers' in most healthcare demand-supply chains including those of Homeopathic medicines (Homeopathy Research Institute, n.d.). Therefore, patients' preferences about cost of Homeopathic consultation with a trained Homeopathic physician and Homeopathic medicines should be documented. Patient derived experiences and feedback about affordability can assist in informing policies for inclusion of Homeopathy in government public health systems.

## **Efficacy and effectiveness of Homeopathic medicines.**

The primary aim of a therapeutic system is to treat or cure disease resulting in good health and wellbeing. If this fundamental premise of effectiveness is not achieved, irrespective of the low costs or desire to avoid side effects (as are examples given in the case for Homeopathy), patients will not choose that system of medicine. It is imperative to consider effectiveness and efficacy of Homeopathy in treating various acute and chronic conditions, as outlined below.

### ***Homeopathy for chronic conditions.***

Studies have found Homeopathy to be effective in the treatment of chronic conditions such as low back pain and musculoskeletal disorders, two of the top five contributors to the global burden of disease (Beer et al., 2012; GBD 2016 Disease and injury incidence and prevalence collaborators, 2017; Gmunder & Kissling, 2002; Gordon, 1996; Morris, Pellow, Solomon, & Tsele-Tebakang, 2016; Stam, Bonnet, & van Haselen, 2001; Weiner & Ernst, 2004). Additionally, literature indicates use of Homeopathic medicines in other chronic ailments including arthritis, fibromyalgia, back and neck pain, eczema, headaches, chronic sinusitis, chronic fatigue syndrome, menstrual complaints and complaints around climacteric to mention a few (Alraek, Lee, Choi, Cao, & Liu, 2011; Bell, Lewis, Brooks, Schwartz, Lewis, Caspi, et al., 2004; Bell, Lewis, Brooks, Schwartz, Lewis, Walsh, et al., 2004; Chaiet & Marcus, 2016; Danno, Colas, Masson, & Bordet, 2013; Eizayaga, Eizayaga, & Eizayaga, 1996; Ghosh, Roe, Shipley, & English, 1983; Hoare, Li Wan Po, & Williams, 2000; Jonas, Linde, & Ramirez, 2000; T. Katz, 1995; Keil et al., 2008; Koley, Saha, & Ghosh, 2015; Long & Ernst, 2001; Nayak et al., 2012; Owen & Green, 2004; Parkman, 2001). In many of

these conditions, patients use Homeopathic medicines as a stand-alone treatment and not necessarily in complement to conventional medicine.

Additionally, use of Homeopathy has been positively cited in cancer literature as a complementary treatment, used alongside radiation and chemo-therapy (Gottschling et al., 2014; Molassiotis et al., 2006; Samuels et al., 2017). Integrating Homeopathy has been documented to significantly improve symptoms such as nausea, depression, anxiety, asthenia, and hot flashes, observed during anti-cancer therapy (Molassiotis et al., 2005; Rossi et al., 2018; Sorrentino et al., 2017). The common reasons cited for use of Homeopathy among other CAM therapies were to reduce the side effects arising from conventional cancer therapy, and to increase the chances of healing and improving physical wellbeing (Gottschling et al., 2014; Molassiotis et al., 2005; Poole, 2014). Importantly also, Homeopathic medicines in addition to the conventional chemotherapy have shown benefit for overall survival (Frenkel, 2015; Gaertner et al., 2014; Gleiss, Frass, & Gaertner, 2016). Researchers have recommended integration of Homeopathy in public health care systems as 'integrative oncology' for society to gain maximum benefit from it (Fulop, Grimone, & Victorson, 2017; Rossi et al., 2018).

### ***Homeopathy for acute conditions.***

While it is commonly known that patients use Homeopathic medicines for chronic conditions, not much is known on its use in acute illnesses. Yet, limited studies and anecdotal evidence indicates that use for acute illnesses is possibly more common than what has been published.

For instance, a cross-sectional study conducted across six countries (Germany, Russia, Bulgaria, Spain, Colombia, and Israel) among conventional pediatric physicians

(n=563) found that 76% of the conventional medicine pediatric physicians had referred their patients to Homeopathy in the past 12 months (Beer et al., 2016). The top most reasons for referral to Homeopathy included those for upper respiratory tract infections and recurrent infections. Another international, multicenter, observational study compared effectiveness of Homeopathic medicines and conventional medicines in primary care for upper respiratory tract infections including allergies, lower respiratory tract infections, or ear complaints. Homeopathy was found to be as effective as conventional medicine in the conditions studied (Riley, Fischer, Singh, Haidvogel, & Heger, 2001). A clinical trial in pediatric population noted reduction in use of antibiotics after use of Homeopathic medicines in patients suffering from recurrent acute upper respiratory tract infections (Jong et al., 2016).

Although numerous case studies and case series have indicated positive outcomes, it would be fair to state that use of Homeopathic medicines for acute illnesses warrants further research in controlled studies. Findings from observational studies that provide patient feedback on use of Homeopathy in acute conditions are necessary for justifying controlled studies.

### ***Systematic Reviews and Meta-analysis on efficacy and effectiveness of Homeopathy.***

Systematic reviews addressing efficacy of Homeopathy indicate that it is difficult to draw reliable conclusions on efficacy of Homeopathic medicines based on the controlled trials available in the current literature. Low quality of conduct and reporting of randomized controlled trials or insufficient data precludes meta-analysis from providing relevant conclusions (Banerjee, Mathie, Costelloe, & Howick, 2017; K. Cooper & Relton,

2010; Ernst, 2012; Ho, Jagdeo, & Waldorf, 2016; Mathie et al., 2014; Mathie et al., 2017). Yet, some systematic reviews indicate positive health outcomes with Homeopathic medicines (Boltman-Binkowski, 2016; Itamura & Hosoya, 2003; Marom et al., 2016; Sales et al., 2018). In summary, design, execution and dissemination of trials with robust methodological quality of conduct and reporting based on the PRISMA guidelines is highly warranted.

### **Education level of patients using Homeopathic medicines.**

Some studies indicate that patients seeking Homeopathic treatment tend to have higher levels of education (Bar-Cohen, DeKeyser, & Wagner, 2000; Crocetti et al., 1998; Goldstein & Glik, 1998; Schafer, Riehle, Wichmann, & Ring, 2002; Weyl Ben Arush et al., 2006). Almost one third participants from a study had at least a university degree or above (Mahmoudian & Sadri, 2014). Many patients are reported to have at least a high school diploma or more than 8 years of schooling (Mahmoudian & Sadri, 2014; Schafer et al., 2002). Additionally, some studies report that patients visiting Homeopathic physicians are more educated than those visiting their conventional counterparts (Bar-Cohen et al., 2000; Crocetti et al., 1998; Goldstein & Glik, 1998; Mahmoudian & Sadri, 2014; Schafer et al., 2002; Weyl Ben Arush et al., 2006). Yet, knowledge about Homeopathic principles and practice philosophy such as individualized medicine is little known to patients visiting Homeopathic physicians (Mahmoudian & Sadri, 2014; Weyl Ben Arush et al., 2006). Instead, more education and information about conventional medicine including its adverse effects seem to drive well-informed patients towards Homeopathy (Cook, Frighetto, Marra, & Jewesson,



2002; Downer et al., 1994; Guthlin, Lange, & Walach, 2004; Jacobs et al., 1998; Ko & Berbrayer, 2000).

Studies suggest that once Homeopathic treatment begins, patients continue the treatment regimen for to various reasons, including the nature of the medicines to prevent illness, perceived positive health outcomes, low costs, and the individualized integrated approach to health and wellbeing (Patriani Justo & De Andrea Gomes, 2008). Findings from an isolated study in India however suggest differently. Patients seeking Homeopathic treatment in this study had most participants with less than 8<sup>th</sup> grade education (Koley et al., 2013). However, an explanation for this could be that the study was conducted at a government hospital in India, where the population visiting is more likely to be from the less advantaged sector of the society with lower education levels.

In summary, the relationship between patients' education level and their preference of opting for Homeopathy is not clear.

### **Use of Homeopathy across gender.**

Literature suggests that females are more likely to seek Homeopathic treatment than males globally (Bar-Cohen et al., 2000; Jacobs et al., 1998; Mahmoudian & Sadri, 2014; Marques-Vidal et al., 2008). Trends may be similar in India, with an isolated study showing more females enrolled in the study. It also appears that females seeking Homeopathic treatment are likely to have a higher education than males (Lohre, Rise, & Steinsbekk, 2012; Marques-Vidal et al., 2008). However, the reasons behind the apparent relationship between gender and use of Homeopathy are not clear.

### **Homeopathy in emergency care.**

In what a patient would consider a health emergency, they can access Homeopathic care by visiting clinics of their Homeopathic physicians or at a Homeopathic hospital. However, in a conventional hospital setting, patients do not have the option of using Homeopathic medicine (Oberbaum, Singer, Friehs, & Frass, 2005). Thus, currently, evidence is very limited and inconclusive on whether patients use Homeopathy for emergency care.

### **Rationale for the Current Study**

To summarize, there is an ongoing debate around Homeopathy and its effectiveness. Nonetheless, use of Homeopathy is increasing. Therefore, investigating factors associated with use, through robust methodological studies, is imperative. Such studies might assist researchers in generating hypotheses regarding effectiveness of Homeopathy, which further can be tested in randomized clinical studies and pragmatic trials.

Moreover, based on the currently available literature, it appears that Homeopathy is more likely to be accessed by females and by people who have a higher education. Previous research has also implied that it is accessed more for chronic illnesses, as well as for avoiding side effects of conventional treatments. Literature also reports some assumptions that patients would feel better due to the nature of interaction with their Homeopathic physician during the “case taking” process implying that Homeopathic medicines may not be required. However, no study has provided data on direct real life experiences and perspectives of patients to understand whether patients agree with

claims and assumptions such as the above.

A comprehensive validated survey instrument to collect such information from patients on experiences, perceptions, and satisfaction levels with Homeopathy was not found in the literature. Accordingly, it was determined to conduct a study to understand the above. This dissertation research aims to fill gaps in research by employing the first survey designed specifically for collecting data on factors described above (please see methods section).

Indeed, there is a need to assess why more people are using Homeopathy. Is the use limited to chronic conditions or is use in acute conditions under-researched? What are the patient characteristics, experiences, and perspectives about the treatment they receive from Homeopathic physicians? Are patients satisfied with their Homeopathic treatment experience? These questions currently lack optimal research. Assessing satisfaction with Homeopathic physicians and clinics is essential in a physician-patient interaction that is patient-centered. A survey instrument needs to incorporate all aspects of physician-patient interaction, to provide data on intricacies of patients' overall experience with care received at a Homeopathic clinic. The results have the potential to assist other systems of medicine that encourage patient centered shared decision-making. Feedback from patients can also guide policy decisions for inclusion of Homeopathy in public health systems globally.

Understanding the role of Homeopathy in today's society requires well-designed studies with data obtained directly from patients using Homeopathy. It ensures patient responsibility in the needs assessment of Homeopathy. It will also assist decision-makers in arriving upon patient driven and patient centric policies around Homeopathy

in the health care system. These studies are all the more important when research to assess efficacy of Homeopathy has been inconclusive. Indeed, authors have stressed the importance of evaluating patient experiences in real life and creation of a database of various factors determining use, preferences and satisfaction with treatments (Van Wassenhoven & Ives, 2004).

Patient satisfaction has been gaining increasing recognition as an important tool to assess quality of health services and health systems. As mentioned earlier, patient satisfaction is a key indicator of the quality, and to some extent, the effectiveness of a system of medicine (Mahmoudian & Sadri, 2014). Assessing the satisfaction of patients using Homeopathic care can be a step in the direction of educating the community and guide public health policies by providing patient experiences and perspectives of the Homeopathic health system (Mahmoudian & Sadri, 2014).

Limited evidence has shown high levels of satisfaction among patients accessing Homeopathic treatment (Anelli, Scheepers, Sermeus, & Van Wassenhoven, 2002; Goldstein & Glik, 1998; Koley et al., 2013; Mahmoudian & Sadri, 2014; Marian et al., 2008; Van Wassenhoven et al., 2014; Van Wassenhoven & Ives, 2004). Inadequate effectiveness of conventional medicine in cases of chronic diseases, or harmful side effects of conventional drugs are some reasons why patients seek homeopathy as discussed earlier (Astin, 1998; Guthlin et al., 2004; Sharples, van Haselen, & Fisher, 2003; Swartzman, Harshman, Burkell, & Lundy, 2002). However, these may not be the only reasons. Quality of the physician-patient relationship has been suggested to play a significant role in patients continuing to seek Homeopathic care (Frank, 2002; Mercer, Reilly, & Watt, 2002). The patient experiences that contribute towards enhancing

interactions between Homeopathic physicians and their patients need further examination.

While Homeopathy has been investigated as a secondary outcome or in subgroup analyses of numerous studies of CAM (Jadhav, Jadhav, Shelke, Sharma, & Nadkar, 2011; Kalder, Knoblauch, Hrgovic, & Munstedt, 2011; Kompoliti, Fan, & Leurgans, 2009; Kronenberg & Fugh-Berman, 2002; Kupferer, Dormire, & Becker, 2009; Laengler et al., 2008; Lakatos et al., 2010; Marchisio et al., 2011), extensive search of the literature revealed only handful of studies specifically examining patient satisfaction with Homeopathy. Some studies have reported patient satisfaction with Homeopathy as a secondary outcome (Anelli et al., 2002; Marian et al., 2008; Van Wassenhoven et al., 2014; Van Wassenhoven & Ives, 2004). Two studies examined it as a primary outcome (Goldstein & Glik, 1998; Koley et al., 2013; Mahmoudian & Sadri, 2014). Two studies reported patient satisfaction with Homeopathic physicians (Anelli et al., 2002; Van Wassenhoven et al., 2014) and one via a retrospective analysis reported satisfaction with Homeopathic clinics (Marian et al., 2008).

One study mentions use of a 'valid survey' but does not provide further details on the survey that was utilized (Mahmoudian & Sadri, 2014). Other studies used surveys that had questions derived from 'Duke Health Profile' and 'SF36' (Anelli et al., 2002; Van Wassenhoven et al., 2014; Van Wassenhoven & Ives, 2004) survey instruments which are not geared towards addressing Homeopathic treatment areas such as individualized medicine selection, initial aggravation with homeopathic medicines etc. The isolated study conducted in India on patient satisfaction utilized a Japanese short form survey by translating it to the native Bengali language (Koley et al., 2013). The

authors for this study have also indicated that the survey may not be comprehensive to make conclusions on associations between patient factors and satisfaction. It may not also be applicable in other cultural or regional backgrounds and that the results lack generalizability to other populations than those under study.

In summary, none of the studies designed, validated, and utilized a survey questionnaire specifically for patient characteristics, experiences, and perceptions on variables that are significant in the Homeopathic treatment context. None of the surveys also collected data on information that is debated in literature such as use of Homeopathy in acute versus chronic conditions. There is no universally accepted standardized questionnaire for evaluating patient satisfaction and impact of patient factors affecting satisfaction with Homeopathy.

Evaluating patient satisfaction locally is necessary in determining the significance of a therapeutic system and for providing justification for its inclusion in the public health system. There is obvious need of studies addressing patient satisfaction with homeopathic treatment (including Homeopathic physicians and clinics). There is also need to investigate the interaction of patient level factors (such as demographics, preference of Homeopathy over conventional medicine in acute versus chronic conditions, cost of treatment etc.) and impact of these factors on satisfaction and patients' experiences with Homeopathy.

## Methods

### Objectives

Given the lack of research assessing patient satisfaction and experiences with Homeopathic medicines and Homeopathic clinics in India (a country with the highest number of users of Homeopathic medicines), this study employed a two phase, mixed methods approach to better understand these trends.

Specifically, this study aimed to design and validate a survey instrument for data collection. The aim was then to conduct a cross-sectional study using this survey to assess overall patient satisfaction and patients experiences with Homeopathic medicines, physicians, and clinics. Patient perceptions about Homeopathic medicines were assessed. The influence of patient demographics, experiences, and perceptions on overall satisfaction was also assessed. The study was conducted in Pune city, Maharashtra state, India.

The primary objectives of the study were:

- To assess patient satisfaction with Homeopathic medicines
- To assess patient satisfaction with Homeopathic clinics
- To assess patient experiences with Homeopathic medicines, Homeopathic physicians, and Homeopathic clinics.
- To assess the influence of patient demographics, experiences and perceptions on satisfaction with Homeopathic medicines and clinics.

Experiences with Homeopathic medicines specifically included assessing patient

reported experience with ease of consumption of Homeopathic medicines, with their effectiveness, experiencing side-effects, with cost affordability of Homeopathic treatment, with use for an emergency care, with initial aggravation of symptoms after taking Homeopathic medicines, with preference to use Homeopathic medicines in acute illnesses, and with preference to use Homeopathic medicines in chronic conditions.

Experiences with Homeopathic physician specifically included assessing the reporting of physician attributes such as whether physician listened to their health complaints carefully, physician explained health related things to them in a way that they understood, physician showed concern for their health and cared, physician gave easy to understand instructions about how to take the medicines, physician seemed knowledgeable about their illness, physician was capable of taking care of their illness, physician gave them enough time during the consultation, and whether talking to their physician makes them better or they do need Homeopathic medicines for complaints to improve.

Experiences with Homeopathic clinics specifically included assessing their reports on ease of getting appointments and experience with wait times, reports on feeling welcome in the clinic, on their questions or concerns about medicines or other concerns being answered respectfully, and on whether they received directions on how to take the medicine in a way they would understand.

Perceptions about Homeopathic medicines specifically included assessing patients' reports on their perceptions of individualized medicine for each patient, perception about initial worsening of illness after using Homeopathic medicine, and perception about effect of foods such as garlic and coffee on their Homeopathic



treatment.

The secondary objectives were:

- To assess whether there is an association between patient demographics specifically gender and education level, and patient experiences and perceptions about Homeopathic medicines

## **Hypothesis**

We hypothesized that patients taking Homeopathic medicines and seeking care at Homeopathic clinics in Pune, India are satisfied with the Homeopathic medicines they receive and with the overall management at the clinics.

## **Study Design**

A two-phase, mixed-methods study was designed. Phase 1 involved designing the survey instrument using focus groups and validating the instrument through patient feedback (Beck, Trombetta, & Share, 1986; Wilkinson, 1998). Phase 2 was a cross-sectional study enrolling patients to assess their satisfaction with homeopathic medicines and homeopathic clinics using the survey from Phase 1. The methods for each phase are elaborated below. All phases of this study were reviewed by the IRB at the University of South Florida [Phase 1: USF IRB Study ID: Pro00026762; Phase 2: USF IRB Study ID: Pro00025473]. (Appendix A and B)

## **Phase 1: Designing and Validating the Survey**

### **A. Review of the literature.**

A comprehensive literature review was conducted to thoroughly review available body of research addressing patient satisfaction with Homoeopathy. The PubMed, CINAHL, PsycINFO, google scholar, and Cochrane (CENTRAL) databases were searched using a combination of MeSH and free text. Relevant articles were reviewed to understand the study design, study inclusion criteria, data collection tools (survey questionnaires etc.) and outcomes. Additionally, snowball search strategy was used starting with key articles obtained via initial database search. The citations of these key articles were also obtained and reviewed for further relevant articles. Based upon the literature, a survey questionnaire was developed for this study to meet its objectives.

### **B (1) Contacting Homeopathic physicians.**

Convenience and snowball sampling were employed to recruit Homeopathic physicians for the study. Contact information of alumni from the oldest accredited Homeopathic College in Pune, was gathered by the principal investigator (PI) for the study (AM) during a visit to the college in June 2015. The PI contacted all alumni for whom contact information was available from the college in June 2015 either via telephone calls or by meeting with them in person to provide preliminary information about the study. Consulting homeopathic physicians at the Homeopathic hospital co-located on the Homeopathic College campus, were also contacted by the PI either in person or by telephone. In addition, Homeopathic physicians provided contact information of colleagues who had graduated from other Homeopathic colleges to be

contacted by the PI for possible recruitment. All Homeopathic physicians who were contacted were also asked to further disseminate information about the study among Homeopathic colleagues.

All Homeopathic physicians who were contacted were invited to attend a project informational session. In total four sessions were held between December 2015 and June 2016. Sessions were approximately one hour in length and were designed to provide the Homeopathic physicians with detailed information regarding the study and aid with recruitment. Homeopathic physicians were informed about objectives of the study, the study design, and expectations for involvement in participating in the focus groups and later in the distribution of the survey to their patients (described later). During information sessions, the PI also explored physician's willingness and interest in participating in the study, explained the inclusion and exclusion criteria for clinic participation, and answered any questions physicians had regarding the study.

## **B (2) Inclusion and exclusion criteria for recruiting Homeopathic physicians.**

To be included in the focus groups or serve as a site for survey distribution, Homeopathic physicians needed: 1) a minimum of the 'Licentiate of the Court of Examiners of Homeopathy' (LCEH) degree or the 'Bachelor of Homeopathic Medicine and Surgery' (BHMS) degree, 2) a valid license to practice Homeopathic medicine in India and 3) currently prescribing solely Homeopathic medicines in their clinics.

Homeopathic physicians who did not have a minimum of LCEH or BHMS degree and a valid license to practice were not eligible to participate. In addition, Homeopathic

physicians who did not practice Homeopathy solely and were prescribing other medicines based on other systems of medicine such as Ayurveda, Unani, or western medicine were not eligible to participate.

### **B (3) Draft Survey.**

Following an extensive search of the literature, it was concluded that no survey was available to address the objectives of this study. Thus, a survey was designed as outlined below. The survey questions specifically incorporated and reflected philosophy of Homeopathy and specific intricacies including but not limited to the process of case taking, patient-doctor interaction, and individualized selection of medicine (Gunther, 1999; Hahnemann, 1921). Ideas for few questions were adopted from the 'Medicare provider experience survey' with some deliberation with the Homeopathic physicians and making relevant changes ("Medicare Provider Experience Survey," n.d.). The draft survey was first developed in English. Feedback on the draft survey was sought from Homeopathic physicians via meetings and focus groups (described under C2) on question domains, language of the questions in terms of ease in understanding and relevance to Homeopathy, number of questions, order of questions etc. (Beck et al., 1986; Wilkinson, 1998).

### **C (1) Identifying and selecting survey domains.**

The domains were selected based on a comprehensive literature search specific to Homeopathy including but not limited to publications, books, and other relevant resources (Hahnemann, 1921; Kent, 2003, 2009; Koley et al., 2016; Shepherd, 2004;

Van Wassenhoven et al., 2014) as well as available materials on patient satisfaction in other health care fields ("Medicare Provider Experience Survey," n.d.). The domains were presented for feedback to a convenience sample of five Homeopathic physicians who met the inclusion criteria and were interested in participation. The PI met with the Homeopathic physicians individually in their clinics. They were informed that their confidentiality would be maintained and their names would not be linked to their feedback or to the study in any identifiable manner. The domains were read out to each of the Homeopathic physicians' in the individual meeting, and they were asked for their comments or suggestions, if any.

### **C (2) Focus groups for survey design.**

A survey was created based on the feedback on domains and literature search for questions under each domain. To obtain insights into domains and questions, two independent focus groups were conducted in July 2016. A total of 21 Homeopathic physicians participated in two focus groups ( $n=12$ ;  $n=9$  respectively). There was no overlap in participants. For the purpose of these focus groups, purposive sampling method was employed (Suen, Huang, & Lee, 2014) to select Homeopathic physicians who met the inclusion criteria. Purposive sampling ensured that participating Homeopathic physicians were diverse in terms of their experience (years into practice) and clinic locations. This assisted in enhancing generalizability of the survey.

Focus groups were conducted by the study PI. During these sessions, participants were asked to maintain confidentiality of what was discussed in the focus group. The participants were in turn ensured that confidentiality related to focus group

deliberations would be maintained. Specifically, comments or suggestions made by participants during the focus group would not be linked to their name or any personal identifiers linking to them. Participants could choose not to give their feedback on any of the questions on the survey and could also withdraw from the focus group at any time.

During the focus group, each participant was given a copy of the survey to review. Each question on the survey was then read aloud by the PI. Homeopathic physicians in the focus groups were asked for comments, questions, concerns, or suggested changes for each question. The PI took hand-written notes of participant feedback on each question. Participants were probed for comments where there was no feedback from anyone for a survey question. Probes were also used to gain an in-depth understanding of participant perspective on any survey question. For example, if a participant suggested change in wording for a specific question, the PI asked what it is that felt incorrect and how or why. Other participants' feedback on the same question were also sought to gauge general inclination to the recommended change.

### **C (3) Survey in English.**

The survey was revised incorporating comments and suggestions from the focus groups. A subsequent focus group was conducted with the revised version with 12 Homeopathic physician participants following the same format as described for the initial two focus groups. The purpose of this focus group was to address any final minor suggestions.

### ***Validation of the English language survey.***

The English language survey was validated by distributing it to 50 patients for feedback. Specifically, five clinics were selected by convenience sampling. Ten surveys were given to each of these five clinics. The physicians at these five clinics randomly distributed these surveys to their patients who volunteered to review them. Physicians, as directed by the PI, specifically requested their patients to review the survey for content of the questions (from Homeopathic perspectives), language of the questions, intent of the questions, and the total number of questions (length of the survey). Physicians then met with each patient one on one and discussed patient feedback. Physicians particularly asked the patient what they understood from each question in the survey. That is, patients were requested to describe the intent of each question as understood by them.

The survey was overall well received by patients in terms of understanding the content and language, length of the survey etc. The intent of all questions in the survey was clear to the patients. Thus, no further changes were made to the survey.

### **C (4) Survey in Marathi.**

The survey in English was then translated to the native language (Marathi) and back translated into English language by the PI. Additionally, to ensure that it was grammatically sound and the language was culturally appropriate, yet maintaining the exact meaning of the question from the English survey, the Marathi survey was proof read by four participating Marathi speaking Homeopathic physicians. The Marathi version of the survey was shared with all Homeopathic physicians from the initial two

focus groups electronically. No changes were deemed necessary and final Marathi survey was ready.

### ***Validation of the Marathi language survey.***

Marathi language survey was also validated by distributing to 50 patients by methods outlined above under 'Validation of English language survey'. As in the case of the English survey, the Marathi survey was well received by patients in terms of understanding the content and language, length of the survey etc. The intent of all questions in the Marathi language survey was also clear to the patients. No further changes were made to the survey.

## **Phase 2: Cross Sectional Study of Patients Seeking Care with Homeopathic Physicians**

### **A (1) Inclusion and exclusion criteria.**

The sampling frame included patients visiting Homeopathic clinics of the eligible Homeopathic physicians in Pune city, in the state of Maharashtra, India. Contacting Homeopathic physicians and their eligibility to participate as a study site is described under section B (1 and 2) of Phase 1.

To be included in the study, patients had to meet the following inclusion criteria: 1) currently seeking care at the clinics (they were already seeking care at the clinic and were not recruited for the sole purpose of this study), 2) 18 years of age or older, 3) be a return patient, only those who were at the clinic for second or further visit during the data collection timeframe were included.



Patients' at the clinic for their first visit to seek care or those less than 18 years of age were not included in the study. Additionally, each patient was eligible to fill out the survey only once. Patients who had already filled out the survey once were not eligible to participate again.

### **A (2) Participant (patient) recruitment.**

All participating Homeopathic physicians were primed on the inclusion criteria for patients. They were also informed about the instructions that would be provided to the patients to complete the survey. English and Marathi language flyers were designed with an aim to advertise the study to patients visiting the clinic and encourage participation from patients comfortable with either of the languages (Appendix C). English and Marathi flyers and surveys were distributed to participating Homeopathic clinics. The flyers were displayed in the waiting area of the clinics and/or in the consultation room, easily noticeable to patients. The staff at the clinics was also well informed about the information on the flyers for inviting patients to participate. Although patients who were at the clinic for their first visit were not eligible to participate, they would already have information about the study and could participate at their next visit.

In addition to the flyers, Homeopathic physicians and their staff were also requested to mention the study to all eligible patients and to offer the survey to interested patients.

### **A (3) Study coordinator.**

Since the PI and rest of the study team were in the United States of America (US), a locally (Pune) residing study coordinator (referred to as “coordinator” for rest of the document) was appointed. The coordinator was responsible for printing the flyers and surveys sent to her by the PI electronically. The coordinator was also responsible for purchase and distribution of materials for the study such as opaque envelopes, pens, and glue sticks. Responsibility included entering clinic IDs on the envelopes before distribution of envelopes, flyers, surveys, and materials to the clinics. Also, collecting the sealed envelopes from clinics, keeping a record on the number of surveys distributed to each clinic in each language and number of sealed envelopes collected using Microsoft (MS) Excel was part of the study coordinators assigned tasks. The coordinator was responsible for mailing the surveys in the sealed envelopes to the PI in the US.

The coordinator received all study related instructions from the PI and reported to the PI. It was explained to the coordinator that it was imperative to not discuss any information about the surveys with anyone. The coordinator was also informed to keep participating Homeopathic physician names and clinic information confidential.

### **A (4) Maintaining confidentiality.**

No identifiable personal information was collected from any participants (Homeopathic physicians or patients) at any time during the study. There was no more than minimal risk to the participants. Participation was voluntary. Also, no monetary or

other compensation was given to participating Homeopathic physicians or participating patients.

***A (4a) Maintaining physician and clinic confidentiality.***

Each clinic was allotted a unique clinic number (clinic identification number: clinic ID) to maintain confidentiality of the Homeopathic physician and the clinic. Only the study team personnel were aware of clinic ID number for corresponding clinic. This was an additional measure to maintain confidentiality.

The coordinator entered clinic ID numbers on the survey and envelopes before distributing them to the corresponding clinics. The envelopes or surveys did not have any identifiers to maintain clinic confidentiality. Hence, having the clinic ID on the envelope facilitated in organizing the sealed packets and assisted the PI in organizing the surveys and data entry.

***A (4b) Maintaining patient confidentiality.***

No identifiable personal information (e.g. name, date of birth, date of visit to the clinic etc.) was collected from patients anytime during this study. Instructions were provided to the patients via flyers as well as on the surveys. Specifically, patients were instructed to enclose the survey in the envelope provided. They were also requested to seal their completed survey to ensure confidentiality and to return the sealed envelope to the receptionist (or to the Homeopathic physician where there were no receptionists). Homeopathic physicians and their receptionists/staff were specifically instructed not to open any sealed envelopes. The coordinator collected sealed envelopes from the clinics

and stored them until they were mailed out to the PI. The coordinator was specifically instructed not to open any sealed envelopes.

The PI opened the sealed envelopes for data entry. Each survey was designated a random 'Patient ID' by the PI. The PI entered this 'patient ID' on a survey right before data entry. Patient ID facilitated data entry and analysis. Having patient IDs with clinic IDs would make providing aggregate data to clinics possible. Information on the clinic IDs and their patient IDs was accessible only to PI and committee members.

Although no personal identifiable information on the Homeopathic physicians, clinics, and patients was in this electronic MS Excel database, following measures were taken as an added safeguard. The data was entered by the PI and saved on the password-protected personal computer of the PI. Specifically, the data from the surveys was entered into an electronic database. Only the PI and the dissertation committee had access to the data. The Homeopathic physician information database with information on Homeopathic physicians, clinics and their corresponding clinic IDs was created separately and was not linked to the above survey database. Only the PI and committee had access to this data.

#### **A (5) Process of survey distribution and collection.**

Survey distribution commenced in October 2016 and continued until March 2017. The study coordinator was asked to distribute 25 surveys each in English and Marathi (50 total) to participating clinics initially. The second round of survey distribution was done on an ad hoc basis. When the clinics had completed distributing and collecting the initial 50 surveys, the Homeopathic physicians contacted the PI who instructed the

coordinator to provide more surveys to the respective clinic. The second round of surveys was distributed per need of the clinic. The Homeopathic physicians gave the surveys to their receptionist or had the surveys with themselves in clinics with no receptionist.

The PI delivered instructions electronically to all participating Homeopathic physicians on survey distribution within their clinics. The Homeopathic physicians in turn instructed their respective receptionists. All patients 18 or over were suggested to read the flyer. The surveys were offered to patients while they were in the waiting area of the clinics. They could fill them out while they waited. Incomplete surveys could be completed after the consultation. The approximate wait time for patients in the waiting area (according to feedback from participating physicians in the study) was 20 to 45 minutes. Hence, we believed that this was sufficient amount of time for the participants to complete a survey, which would not take more than 5-10 minutes.

Additionally, as mentioned previously, the participants who were visiting for the first time, were not eligible to participate but participants during the second or any other subsequent follow up visit were eligible. However, the participants were made aware of the study during their first visit with the help of the flyers and had time to think about their participation before their next visit to the clinic. Accordingly, participants were given an option to obtain information about the study during their visit and participate by filling out the survey during follow up visit.

The eligibility criteria and instructions were clearly listed on both, the flyer and the survey. Patients were specifically instructed on the surveys to not provide any personal information. The receptionist or the Homeopathic physician (with no receptionist) offered

the survey to all patients. Participation was voluntary and the patients could refuse to fill out the survey for any reason or could discontinue filling the survey at any time.

Envelopes, pens, and glue sticks were kept at the receptionist desk and patients were reminded by the receptionist (or by the Homeopathic physician) to enclose the survey in the envelope and return it before they leave the clinic.

The PI had phone meetings with the coordinator every two weeks for updates on survey completions, or to resolve concerns if any. The PI also was in contact with the Homeopathic physicians via intermittent phone calls or electronic text messages to ensure the survey distribution was ongoing and resolve concerns. The coordinator collected sealed surveys from the clinics and stored them securely. Once estimated sample size was achieved the data collection was stopped, the surveys were mailed to the PI using FedEx shipment.

### **Sample Size**

As mentioned previously, there is paucity of literature published in the area of patient satisfaction with Homeopathy in India. Hence, a cautionary and conservative approach was used towards the sample size calculations. The true value of proportion of patients being satisfied with Homeopathic medicines was assumed to be 0.50 with a confidence interval of 0.95% and precision of 0.03. Accordingly, approximately 1068 patients needed to be recruited in this study. The sample size calculations are based on sample size required to estimate a proportion (prevalence of satisfaction with homeopathic medicines) with a specified level of confidence (95%) and precision. The following formula was employed for the sample size calculations;

$$n = (Z^2 \times P (1 - P))/e^2$$

where Z = value from standard normal distribution corresponding to desired confidence level (Z=1.96 for 95% CIs)

P is expected true proportion

e is desired precision (half desired CIs width).

## Data Analyses

### Descriptive analyses.

Descriptive statistical analyses were conducted for responses to the questions and the demographic data. Specifically frequencies and percentages were calculated and are reported as 'yes' (agree) and 'no' (disagree) under results. The five point Likert scale type response data were converted to three level data (agree, disagree and uncertain) and two level (agree versus disagree) for further analyses. That is, for the three level data, the strongly agree and agree categories were merged into 'agree', the strongly disagree and disagree categories were merged into 'disagree', and the uncertain was kept as a separate category.

Further, for the two level data, the 'uncertain' category was moved to the 'disagree' category so that the results did not favor Homeopathy. There were two questions in the survey investigating initial negative effects with Homeopathic medicines. Hence for the two variables related to these two questions 'uncertain' was included under the 'agree' category again so that the results did not favor Homeopathy. These two variables were: experience with initial worsening of illness after taking

Homeopathic medicine, and perception that illness can worsen initially after taking Homeopathic medicines.

The association between participant demographics (gender and education) and their experiences with Homeopathic medicines (for example: homeopathic medicines are easy to consume, homeopathic medicines do not have side effects etc.) were investigated using either chi square test or Fisher's exact test at the 0.05 level of significance.

### **Logistic regression analyses.**

Univariate and multivariable binomial logistic regression analyses were conducted to investigate the impact of patient demographics, experiences, and perceptions on overall patient satisfaction with Homeopathic medicines and Homeopathic clinics. Variables that were significant in the univariate analyses were included in the final multivariable models. Odds ratio and 95% confidence intervals for the variables in the final model with corresponding P value were calculated.

### **Test for multicollinearity.**

Tests for multicollinearity were conducted to assess if there were strong linear dependencies among the explanatory variables that were to be included in the multivariable logistic regression models. Specifically, a linear regression model was fitted to the data (even though the outcome variable was binary), and calculated two measures: tolerance and variance inflation factor (VIF). Any value of 0.5 or higher for



tolerance and any value of 3 or less for VIF was considered indicative of absence of multicollinearity.

### **Goodness of fit and c statistic for multivariable logistic regression models.**

Stepwise selection method was employed for designing the final multivariable model. The Hosmer and Lemeshow Test (HL test) result for goodness of fit, Nagelkerke  $R^2$  statistic and area under the curve statistic equivalent to the c statistic for the final multivariable model were calculated and reported. Specifically, while running the multivariable logistic regression model(s) the predicted probabilities were saved as a variable for each model. The predicted probabilities variable and the dependent variable were used to output the receiver operator curve (ROC) graph. The ROC procedure prints "Area under the Curve" as part of the default output and this area statistic corresponds to the c statistic.

All statistical analyses were conducted using SPSS software version 24.

## Results

### Survey Development

There was no single comprehensive survey found in literature that would assist in addressing the objectives of this study. Hence, a survey was designed using the focus group methodology as explained under methods. Feedback on the initial survey from focus groups included: language change for certain questions in terms of Homeopathic perspective or cultural perspective of Pune, less or more answer choices, length of questions, content of the questions, and additional questions to be included.

English as well as Marathi version of the survey was validated by patients as explained under methods. It is important to note that this was the first ever survey designed and validated (for this study population) to address the specific objectives of this study. Future studies might need to validate this survey in their own settings before use.

The survey questions were under the following domains: demographics, past experience with Homeopathy, experience with Homeopathic medicines presently, perceptions about Homeopathic medicines, experience with this doctor, experience in the waiting room and appointments, experience with the receptionist or staff, overall satisfaction and recommendations to use Homeopathy, and any suggested changes for improvement in consultation or clinic. Please see the survey attached (Appendix D).

## Physicians and Patients

In total, 25 Homeopathic physicians and their associated clinics participated in this study. These 25 Homeopathic clinics across Pune city represented the populations' diverse socio-economic background. In total, 1231 patients chose to participate in the study and completed the surveys. The response rate for the survey was 66.54% (1231/1850). Additional information is listed in Table 1.

## Descriptive Analyses

### Participant demographics.

Table 1

### Participant Demographics

| Variable name   | N=1231*                              | n   | %    |
|---|--------------------------------------|-----|------|
| Gender  | Male                                 | 472 | 39   |
|   | Female                               | 739 | 61   |
| Highest level of education                              | No schooling                         | 4   | 0.3  |
|   | Primary school                       | 45  | 3.7  |
|   | High school (10 <sup>th</sup> grade) | 75  | 6.1  |
|   | College (12 <sup>th</sup> grade)     | 142 | 11.6 |
|   | Bachelor's degree                    | 555 | 45.4 |
|   | Master's or higher degree            | 401 | 32.8 |
| Chief complaint   | Acute                                | 491 | 41.2 |
|   | Chronic                              | 701 | 58.8 |
| Reported using Homeopathic medicines for acute illness  | Never                                | 57  | 4.7  |
|   | Sometimes                            | 391 | 32.3 |
|   | Always                               | 762 | 63   |
| Reported using Homeopathic medicine for chronic illness | Never                                | 62  | 5.3  |
|   | Sometimes                            | 279 | 24.1 |
|   | Always                               | 818 | 70.6 |
| Length of care  | < 6 months                           | 152 | 12.4 |
|   | < 1 year                             | 188 | 15.3 |
|   | < 3 years                            | 304 | 24.8 |
|   | < 5 years                            | 186 | 15.2 |
|   | 5 or more years                      | 396 | 32.3 |

\* There were some missing values

Of the 1231 completed surveys, 54% ( $n=660$ ) were completed in English language and 46% ( $n=571$ ) were in Marathi language. Sixty one percent ( $n=739$ ) of the participants were females, while 39% ( $n=472$ ) were males. The average age of the participants was 42 years (range: 18 to 88 years). While 0.3% reported having had no schooling, 3.7% reported completing primary schooling (equivalent to US 4<sup>th</sup> grade), 6.1% reported at least 10<sup>th</sup> grade and 11.6% reported completing 12<sup>th</sup> grade. Most participants reported having at least a Bachelor's degree (45.4%) and many a Master's degree or beyond (32.8%).

Participants were asked about their chief complaint meaning the primary reason for which they were seeking care at the Homeopathic clinic on the day they were completing the survey. The chief complaint was reported to be acute by 41.2% of participants and as chronic by 58.8% of participants. Sixty three percent reported that they always use Homeopathic medicines for an acute illness, 32.3% reported that they use Homeopathic medicines sometimes for their acute illness, and 4.7% reported that they never use Homeopathic medicines for an acute illness. Most participants (70.6%) reported that they always use Homeopathic medicines for chronic illness, 24.1% reported using them sometimes, and 5.3% reported that they never use Homeopathic medicines for a chronic illness. Few (12.4%) participants reported visiting their Homeopathic physician for 6 months or less, while 32.3% reported visiting their Homeopathic physician for five or more years.

## Experiences with Homeopathic medicines.

Table 2

### Participants' experiences with Homeopathic medicines

|   | Yes n (%)   | No* n (%)  |
|---|-------------|------------|
| Reported having felt better after use of HMs in the past before visits to current HP                    | 812 (71.5)  | 323 (28.5) |
| Reported that Homeopathic medicines are easy to consume   | 1203 (98.5) | 18 (1.5)   |
| Reported feeling better after taking Homeopathic medicines from current HP                              | 1147 (95.7) | 51 (4.3)   |
| Reported never having experienced any side effects after using Homeopathic medicines                    | 1134 (93.2) | 83 (6.8)   |
| Reported that total cost of treatment was affordable  | 1048 (87)   | 157 (13)   |
| Reported seeking Homeopathic medicines for emergency care   | 691 (57.9)  | 502 (42.1) |
| Reported that illness worsened initially after taking Homeopathic medicines                             | 434 (36.6)  | 751 (63.4) |
| Reported preference for using Homeopathic medicines in acute illness instead of conventional medicine   | 952 (78.9)  | 255 (21.1) |
| Reported preference for using Homeopathic medicines in chronic illness instead of conventional medicine | 992 (84)    | 189 (16)   |

\* Numbers include those who reported 'uncertain' except for illness worsened initially where uncertain were included under 'yes' such that bias was not favoring

As listed in Table 2, many participants (71.5%) responded that they had felt better in the past with Homeopathic medicines reflecting use prior to visits to their current Homeopathic physicians. When asked whether they found Homeopathic medicines easy to consume, 98.5% reported that they did. The majority of the participants (95.7%) reported feeling better after taking the Homeopathic medicines that were prescribed to them by their current Homeopathic physician. The majority (93.2%) of participants reported that they had never experienced side effects after using

Homeopathic medicines. Most (87%) reported treatment costs to be affordable. More than half of the participants (57.9%) reported seeking Homeopathic medicines for emergency care. Also, 63.4% of the participants reported not having experienced initial worsening of illness after taking Homeopathic medicines.

To better understand participants' preferences to use Homeopathic medicines in comparison to conventional medicine, participants were asked whether they prefer to use Homeopathic medicines for any acute illness and for any chronic illness instead of using conventional medicines. Many participants (78.9%) reported that they prefer to use Homeopathic medicines for any of their acute illness. Similarly, many (84%) reported that they prefer to use Homeopathic medicines for any chronic illness instead of using conventional medicine.

### Perceptions about Homeopathic medicines.

**Table 3**

#### Participants' perceptions about Homeopathic medicines

|   | Yes <i>n</i> (%) | No <i>n</i> (%) |
|---|------------------|-----------------|
| <b>Reported that they believed patients' could receive different Homeopathic medicines for the same illness</b>               | 809 (69)         | 363 (31)        |
| <b>Reported that they believed effect of Homeopathic medicines could reduce with consumption of foods like garlic, coffee</b> | 394 (33.1)       | 796 (66.9)      |
| <b>Reported that they believed illness could worsen initially after taking Homeopathic medicines</b>                          | 704 (59.4)       | 482 (40.6)      |

As listed in Table 3, 69% of participants reported that they believed individual patients could be prescribed a different medicine for the same illness. More than thirty three percent (33.1%) reported that they believed effect of Homeopathic medicine could reduce due to concurrent consumption of foods such as coffee, garlic etc. Many (59.4%) participants reported that they believed illness could worsen initially after consuming Homeopathic medicine.

### Experiences with Homeopathic physicians.

**Table 4**

#### Participants' experiences with their Homeopathic physicians

|   | <b>Yes n (%)</b> | <b>No n (%)</b> |
|---|------------------|-----------------|
| <b>Reported that their Homeopathic physician listens to their health complaints carefully</b>   | 1207 (98.7)      | 16 (1.3)        |
| <b>Reported that their Homeopathic physician explained health related things in an understandable way</b>   | 1192 (97.7)      | 28 (2.3)        |
| <b>Reported that their Homeopathic physician showed concern and cared about their health</b>  | 1152 (94.8)      | 63 (5.2)        |
| <b>Reported that their Homeopathic physician gave easily understandable instructions on how to take the Homeopathic medicines</b>   | 1203 (98.8)      | 14 (1.2)        |
| <b>Reported that their Homeopathic physician seemed knowledgeable about their illness</b>   | 1187 (97.8)      | 27 (2.2)        |
| <b>Reported that their Homeopathic physician was capable of taking care of their illness</b>  | 1183 (97.9)      | 25 (2.1)        |
| <b>Reported that just talking to their Homeopathic physician was not enough and they need Homeopathic medicines for health complaints to reduce and for them to feel better</b> | 1118 (93)        | 84 (7)          |
| <b>Reported getting sufficient time with their Homeopathic physician</b>  | 1164 (96.8)      | 38 (3.2)        |

As listed in Table 4, participants were asked about their experiences during consultation and interaction with their Homeopathic physician in order to better understand patient-physician communication from the patients' perspective. The majority (98.7%) of participants responded that their Homeopathic physician listened to their health complaints carefully. Similarly, 97.7% participants responded that their Homeopathic physician explained health related things to them in a way that they understood. Most participants (94.8%) reported that their Homeopathic physician cared and showed concern about their health. Homeopathic medicines can be dispensed as globules, powders or in liquid form. Patients typically need specific directions on how to take the medicines. The majority (98.8%) of participants reported getting easy to understand instructions from their Homeopathic physician on how to take the medicines. When participants were asked if they found their Homeopathic physician to be knowledgeable about their illness, 97.8% participants reported that they did. Additionally when asked if they thought their Homeopathic physician was capable of taking care of their illness, 97.9% reported positively. The Majority (93%) of participants reported that just talking to their Homeopathic physician would not make them feel better and that they needed Homeopathic medicines to improve their health. When asked whether they got enough time with their Homeopathic physician during the consultation, 96.8% reported that they did.



## Experiences with appointments and waiting room.

**Table 5**

### Participants' experiences in the waiting room and with appointments

|  | <b>Yes n (%)</b> | <b>No n (%)</b> |
|--|------------------|-----------------|
| <b>Reported it is easy to get an appointment with their Homeopathic physician</b>                    | 1036 (87.9)      | 142 (12.1)      |
| <b>Reported they are able to get an appointment whenever they need one</b>                           | 1011 (86)        | 165 (14)        |
| <b>Reported that their Homeopathic physician sees them within 30 minutes of the appointment time</b> | 1005 (84.7)      | 181 (15.3)      |
| <b>Reported that they did not mind waiting more than 30 minutes</b>                                  | 935 (79.6)       | 240 (20.4)      |

As listed in Table 5, many participants (87.9%) reported that they could get an appointment with ease and 86% reported that they could get an appointment whenever they needed it. Many (84.7%) of participants reported that they were able to consult with their Homeopathic physician within 30 minutes of their given appointment time. Nonetheless, almost 79.6% of participants responded that they did not mind waiting for more than 30 minutes past their scheduled appointment time.

## Experiences with the clinic staff.

**Table 6**

### Participants' experiences with clinic staff

|  | <b>Yes n (%)</b> | <b>No n (%)</b> |
|--|------------------|-----------------|
| <b>Reported feeling welcome in the clinic</b>  | 1141 (97.1)      | 34 (2.9)        |
| <b>Reported that their questions or concerns were answered respectfully</b>                | 1143 (97.5)      | 29 (2.5)        |
| <b>Reported getting easy to understand directions on how to take Homeopathic medicines</b> | 1149 (98.2)      | 21 (1.8)        |

As listed in Table 6, the majority of participants (97.1%) reported that they felt welcome in the clinic. Most (97.5%) reported that any questions they had about medicines or any other relevant concerns were respectfully answered by the clinic staff. Almost all (98.2%) of participants reported that they received easy to follow instructions from the staff on how to take the Homeopathic medicines.

### **Overall satisfaction and patient recommendation.**

**Table 7**

#### **Participants' overall satisfaction and recommendations**

|  | <b>Yes n (%)</b> | <b>No n (%)</b> |
|--|------------------|-----------------|
| <b>Reported that they were overall highly satisfied with Homeopathic medicines</b>       | 1159 (95.9)      | 50 (4.1)        |
| <b>Reported that they were overall highly satisfied with their Homeopathic clinic</b>    | 1175 (97.5)      | 30 (2.5)        |
| <b>Reported that they were overall highly satisfied with their Homeopathic physician</b> | 1189 (98.2)      | 22 (1.8)        |
| <b>Reported that they recommend their Homeopathic physician to friends &amp; family</b>  | 1181 (98.2)      | 22 (1.8)        |
| <b>Reported that they recommend friends and family to use Homeopathic medicines</b>      | 1167 (96.8)      | 39 (3.2)        |

As listed in Table 7, 95.9% of participants were highly satisfied with Homeopathic medicines. Overall, 97.5% of participants were highly satisfied with their Homeopathic clinics. Overall, 98.2% of participants were highly satisfied with their Homeopathic physician.

The majority (98.2%) of participants reported that they recommend their Homeopathic physician to family and friends. Similarly, the majority (96.8%) of

participants reported that they recommend their family and friends to use Homeopathic medicines.

### **Patient suggested changes.**

In addition, the majority of participants reported that they did not find any change necessary in their experience with the consultation. The few who suggested changes requested that their Homeopathic physician have longer clinic hours or more days at a specific clinic location. Some participants requested that their Homeopathic physician provide more information on their illness and names of medicine dispensed.

Also, the majority of participants reported no change necessary in the experience with the Homeopathic clinic. The few suggested changes were about appointment system, and increasing clinic hours and days. One person also requested having some music or tea coffee available in clinic.

### **Associations**

#### **Association between participants' gender and participant experiences with Homeopathic medicines and Homeopathic physicians.**

The association between participants' gender and their chief complaint (acute vs. chronic disease) was not statistically significant ( $p=0.77$ ). The association between participants' gender and participants' reporting that Homeopathic medicines were easy to consume was not statistically significant ( $p=0.69$ ). The association between participants' gender and participants' reporting that they felt better after consuming Homeopathic medicines was not statistically significant ( $p=0.78$ ). The association

between participants' gender and participants' reporting that they experienced side effects after using Homeopathic medicines was not statistically significant ( $p=0.32$ ). The association between participants' gender and participants' reporting that total cost of Homeopathic treatment was affordable was not statistically significant ( $p=0.55$ ). The associations between participant gender and participant reporting that they use Homeopathic medicines in emergency care not statistically significant ( $p=0.18$ ). The association between participants' gender and participants' reporting that their illness initially worsened after consuming Homeopathic medicines was not statistically significant ( $p=0.89$ ). The association between participants' gender and participants' reporting that their doctor listens to their health complaints was not statistically significant ( $p=0.36$ ). The association between participants' gender and participants' reporting that their doctor explained the health related issues to them in a way they understood it was not statistically significant ( $p=0.97$ ). The association between participants' gender and participants' reporting that their doctor gave easy to understand instructions on how to take the medicines was not statistically significant ( $p=0.16$ ). The association between participants' gender and participants' reporting that their doctor was capable of taking care of their illness was statistically significant ( $p=0.02$ ). More females (716/726) agreed that the doctor was capable of taking care of their illness than males (447/462). The association between participants' gender and participants' reporting that they need Homeopathic medicines and just talking to the doctor is not enough was not statistically significant ( $p=0.37$ ). The association between participants' gender and participants' reporting that they get sufficient time with their doctor was not statistically significant ( $p=0.12$ ).

### **Association between participants' gender and participants' perceptions about Homeopathic medicines.**

The association between participants' gender and perception that each patient can get a different Homeopathic medicine for the same illness was not statistically significant ( $p=0.55$ ). The association between participants' gender and perception that effect of Homeopathic medicines could reduce with consumption of food items such as garlic, coffee was not statistically significant ( $p=0.23$ ). The association between participants' gender and perception that illness could worsen initially after using Homeopathic medicines was not statistically significant ( $p=0.36$ ).

### **Association between participants' education and participant experiences with Homeopathic medicines and Homeopathic physicians.**

The association between participants' education and participants' reporting that they found Homeopathic medicines easy to consume was not statistically significant ( $p=0.95$ ). The association between participants' education and participants' reporting that they feel better after using Homeopathic medicines was not statistically significant ( $p=0.68$ ). The association between participants' education and participants' reporting that they never experienced any side effects after using Homeopathic medicines was not statistically significant ( $p=0.50$ ). The association between participants' education and participants' reporting that the total Homeopathic treatment cost was affordable was not statistically significant ( $p=0.40$ ). The association between participants' education and participants' reporting that they seek Homeopathic medicines for emergency care was not statistically significant ( $p=0.61$ ). The association between participants'

education and participants' reporting that their illness initially worsened after consuming Homeopathic medicines was not statistically significant ( $p=0.88$ ). The association between participants' education and participants' reporting that their doctor listens to their health complaints was not statistically significant ( $p=0.74$ ). The association between participants' education and participants' reporting that their doctor explained the health related issues to them in a way they understood it was not statistically significant ( $p=0.98$ ). The association between participants' education and participants' reporting that their doctor gave easy to understand instructions on how to take the medicines was statistically significant ( $p=0.05$ ). More People with up to college education disagreed (6/259) that the doctor gave easy to understand instructions than people with Bachelors degree or more (8/949). The association between participants' education and participants' reporting that their doctor was capable of taking care of their illness was not statistically significant ( $p=0.07$ ). The association between participants' education and participants' reporting that they need Homeopathic medicines to reduce their illness and that just talking to the doctor is not enough was not statistically significant ( $p=0.91$ ). The association between participants' education and participants' reporting that they get sufficient time with their doctor was not statistically significant ( $p=0.46$ ).

### **Association between participants' education and participant perceptions about Homeopathic medicines.**

The association between participants' education and perception that each patient can get a different Homeopathic medicine for the same illness was not statistically

significant ( $p=0.13$ ). The association between participants' education and perception that effect of Homeopathic medicines could reduce with consumption of food items such as garlic, coffee was not statistically significant ( $p=0.54$ ). The association between participants' education and perception that illness could worsen initially after using Homeopathic medicines was not statistically significant ( $p=0.80$ ).

## **Inferential Analyses**

### **Binary logistic regression: Univariate analyses for participants' overall satisfaction with Homeopathic medicines.**

Univariate analysis (binary logistic regression) was conducted to determine impact of predictor variables on overall satisfaction with Homeopathic medicines independently. The findings are summarized below.

Specifically, females were 1.82 (95% CI 1.03-3.24) times more likely to be satisfied with Homeopathic medicines than males.

Participants who always used Homeopathic medicines for their acute complaints were 3.95 (95% CI 1.25-12.44) times more likely to be satisfied with Homeopathic medicines compared to those who rarely used or did not use Homeopathic medicines for their acute complaints.

Similarly, participants who always used Homeopathic medicines for their chronic complaints were 3.99 (95% CI 1.42-11.15) times more likely to be satisfied with the medicines compared to those who did not use Homeopathic medicines for their chronic complaints.

Participants who responded that they had felt better after use of Homeopathic medicines in the past, prior to visits to their Homeopathic physician were 3.65 (95% CI 2.01-6.61) times more likely to be satisfied with Homeopathic medicines compared to those who responded they had not felt better after use of Homeopathic medicines in the past.

Participants who reported feeling better after taking Homeopathic medicines prescribed by their Homeopathic physician were 44.32 (95% CI 22.21-88.43) times more likely to be satisfied with Homeopathic medicines compared to those who reported not feeling better.

Participants who responded that they found Homeopathic medicines easy to consume were 14.85 (95% CI 5.24-42.08) times more likely to be satisfied with Homeopathic medicines compared to those who responded they did not find Homeopathic medicines easy to consume.

Participants who reported not experiencing any side effects after use of Homeopathic medicines were 10.18 (95% CI 5.40-19.22) times more likely to be satisfied with Homeopathic medicines compared to those who reported that they experienced side effects after use of Homeopathic medicines.

Participants who responded that they found cost of treatment to be affordable were 4.08 (95% CI 2.20-7.58) times more likely to be satisfied with Homeopathic medicines compared to those who responded that they found treatment cost to not be affordable. Participants had been informed in the survey question that treatment cost included the cost of Homeopathic consultation and Homeopathic medicines.



Participants who reported seeking Homeopathic medicines for emergency care were 5.43 (95% CI 2.67-11.04) times more likely to be satisfied with Homeopathic medicines compared to those who reported not seeking Homeopathic medicines for emergency care.

Participants who reported that they preferred to use Homeopathic medicines for any acute illness instead of allopathic medicine were 7.65 (95% CI 4.15-14.07) times more likely to be satisfied with Homeopathic medicines compared to those who reported preference to using allopathic medicines instead for acute illnesses.

Participants who reported that they preferred to use Homeopathic medicines for any chronic illness instead of allopathic medicine were 3.75 (95% CI 2.05-6.85) times more likely to be satisfied with Homeopathic medicines compared to those who reported preference to using allopathic medicines instead for chronic illnesses.

Participants who responded that their Homeopathic physician listened to their health complaints carefully were 50.44 (95% CI 16.18-157.21) times more likely to be satisfied with Homeopathic medicines compared to those who responded that their Homeopathic physician did not listen to their health complaints carefully.

Participants who responded that their Homeopathic physician explained health related things to them in a way that they could understand were 15.02 (95% CI 6.31-35.76) times more likely to be satisfied with Homeopathic medicines compared to those who responded that their Homeopathic physician did not explain health related things to them such that they understood.

Participants who reported that their Homeopathic physician showed concern and cared about their health were 13.33 (95% CI 6.88-25.81) times more likely to be

satisfied with Homeopathic medicines compared to those who felt their Homeopathic physician did not show concern and did not care about their health.

Participants who reported getting easily comprehensible instructions on how to take their medicines were 38.33 (95% CI 11.68-125.78) times more likely to be satisfied with Homeopathic medicines compared to those who reported not getting easily comprehensible instructions.

Participants who responded that their Homeopathic physicians seemed knowledgeable about the illness that they suffered from were 76.10 (95% CI 30.60-189.21) times more likely to be satisfied with Homeopathic medicines compared to those who responded otherwise.

Participants who responded that their Homeopathic physician was capable of taking care of their illness were 90.16 (95% CI 34.46-235.86) times more likely to be satisfied with Homeopathic medicines compared to those who responded otherwise.

Participants who responded that just talking to their Homeopathic physician was not enough and that they needed Homeopathic medicines in order for them to feel better health-wise were 5.53 (95% CI 2.80-10.90) times more likely to be satisfied with Homeopathic medicines compared to those who reported that just talking to their Homeopathic physician was enough to make them better.

Participants who reported getting sufficient time with their Homeopathic physician were 17.09 (95% CI 8.03-36.36) times more likely to be satisfied with Homeopathic medicines compared to those who reported not getting enough time with their Homeopathic physician.

**Binary logistic regression: Multivariable analyses model for participants' overall satisfaction with Homeopathic medicines.**

**Table 8**

**Logistic regression analyses for outcome of patient satisfaction with Homeopathic medicines**

| <b>Variable name</b>   | <b>Univariate OR (95% CI)</b> | <b>Univariate analysis P value</b> | <b>Multivariable OR (95% CI)</b> | <b>Multivariable analysis P value</b> |
|--|-------------------------------|------------------------------------|----------------------------------|---------------------------------------|
| Participants reported feeling better in past with HMs                            | 3.65 (2.01-6.61)              | 0.00                               | 2.28 (1.05-4.95)                 | 0.03                                  |
| Participants reported never having experienced any side-effects after taking HMs | 10.18 (5.40-19.22)            | 0.00                               | 3.43 (1.33-8.86)                 | 0.01                                  |
| Participants reported seeking HMs for emergency care                             | 5.43 (2.67-11.04)             | 0.00                               | 4.73 (1.61-13.91)                | 0.00                                  |
| Participants reported preference to take HMs for acute illness                   | 7.65 (4.15-14.07)             | 0.00                               | 3.26 (1.40-7.59)                 | 0.01                                  |
| Participants reported that their HP shows concern and cares                      | 13.33 (6.88-25.81)            | 0.00                               | 5.48 (1.60-18.72)                | 0.01                                  |
| Participants reported HP is knowledgeable about their illness                    | 76.10 (30.60-189.21)          | 0.00                               | 7.93 (1.59-39.51)                | 0.01                                  |
| Participants reported HP is capable of taking care of their illness              | 90.16 (34.46-235.86)          | 0.00                               | 10.15 (1.75-58.73)               | 0.01                                  |

Table 8 lists the variables that had a significant impact on overall satisfaction with Homeopathic medicines in the multivariable model.

The multivariable logistic regression model included variables that had an impact on overall satisfaction with Homeopathic medicines independently in the univariate logistic regression analyses. The independent variables included in the multivariable model were as follows: gender, feeling better in the past with Homeopathic medicines, ease of consuming Homeopathic medicines, never having experienced side-effects from using Homeopathic medicines, cost of treatment, seeking Homeopathic medicines for emergency care, preference to use in acute illness, preference to use in chronic illness, Homeopathic physician listened to their health complaints, explained health related things in a way they understood, cared and showed concern, gave easy to understand instructions, was knowledgeable about their illness, was capable of taking care of their illness, that just talking to their physician would not make them better and that they needed Homeopathic medicines for health to improve, and enough time spent with the Homeopathic physician.

The model was tested for multicollinearity. The tolerance was above 0.5 (ranging between above 0.5 to 0.98 between variables, and  $VIF < 2$ ) suggesting that multicollinearity did not exist between the independent variables included in the model.

The stepwise forward Wald criterion demonstrated that the variables explained below made significant contribution to prediction of overall satisfaction with Homeopathic medicines.

Participants who responded that they had felt better with Homeopathic medicines in the past, prior to visits to their Homeopathic physician were 2.28 (95% CI 1.05-4.95) times more likely to be satisfied with Homeopathic medicines compared to those who

responded that using Homeopathic medicines had not helped them feel better in the past.

Participants who reported never having experienced any side effects after consuming Homeopathic medicines were 3.43 (95% CI 1.33-8.86) times more likely to be satisfied with Homeopathic medicines compared to those who reported experiencing side effects.

Participants who reported seeking Homeopathic medicines for emergency care were 4.73 (95% CI 1.61-13.91) times more likely to be satisfied with Homeopathic medicines compared to those who reported not seeking Homeopathic medicines for emergency care.

Participants who reported that they preferred to use Homeopathic medicines for any acute illness instead of allopathic medicine were 3.26 (95% CI 1.40-7.59) times more likely to be satisfied with Homeopathic medicines compared to those who reported they did not prefer to use Homeopathic medicines instead of allopathic medicines for acute illnesses.

Participants who reported that their Homeopathic physician showed concern and cared about their health were 5.48 (95% CI 1.60-18.72) times more likely to be satisfied with Homeopathic medicines compared to those who reported otherwise.

Participants who reported that their Homeopathic physician seemed knowledgeable about the illness that they suffered from were 7.93 (95% CI 1.59-39.51) times more likely to be satisfied with Homeopathic medicines compared to those who reported that their Homeopathic physicians did not seem knowledgeable about their illness.

Participants who reported that their Homeopathic physician was capable of taking care of their illness were 10.15 (95% CI 1.75-58.73) times more likely to be satisfied with Homeopathic medicines compared to those who reported otherwise.

The goodness-of-fit HL test for this model had a significance of 0.10 indicating a good fit of the model. The Nagelkerke  $R^2$  was 0.40. The area under the curve for this multivariable logistic regression model was 0.89 (95% CIs: 0.85 to 0.93) indicating a good model (Figure 1). Overall, these test statistics indicate a robust multivariable logistic regression model.

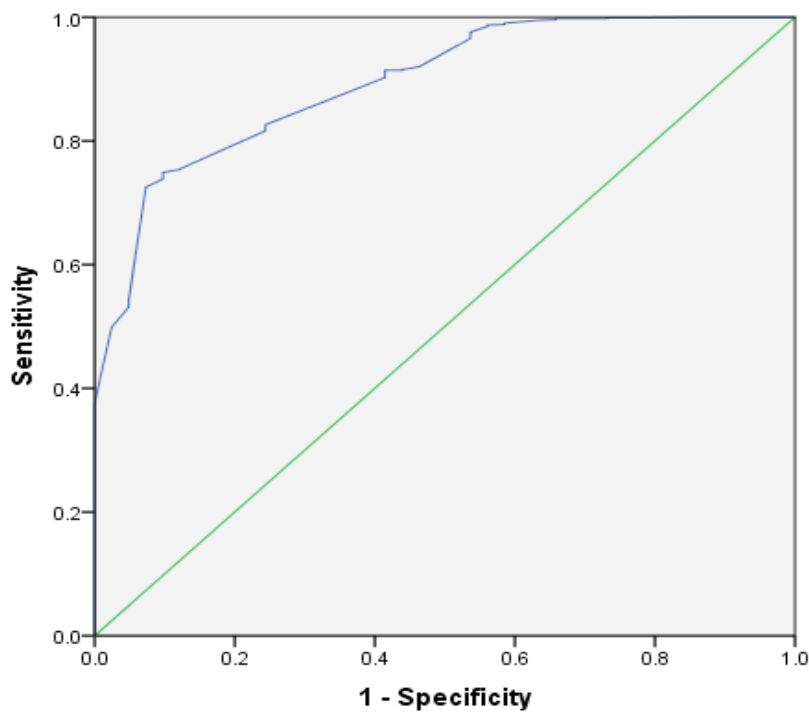


Figure 1: ROC for multivariable analyses model for satisfaction with Homeopathic medicines

## **Binary logistic regression: Univariate analyses for overall satisfaction with Homeopathic clinics.**

Females were 2.089 (95% CI 1.00-4.34) times more likely to be satisfied with Homeopathic clinics than males.

Participants who reported that their Homeopathic physician listened to their health complaints carefully were 124.92 (95% CI 35.63-437.94) times more likely to be satisfied with Homeopathic clinics compared to those who reported their Homeopathic physician not listening to their health complaints carefully.

Participants who reported that their Homeopathic physician explained health related things to them in a way that they could understand were 34.59 (95% CI 13.55-88.30) times more likely to be satisfied with Homeopathic clinics compared to those who reported otherwise.

Participants who responded that their Homeopathic physician showed concern and cared about their health were 17.76 (95% CI 8.16-38.66) times more likely to be satisfied with Homeopathic clinics compared to those who responded that their Homeopathic physician did not show concern about their health.

Participants who reported receiving easily comprehensible instructions about how to take their medicines were 70.97 (95% CI 20.96-240.30) times more likely to be satisfied with Homeopathic clinics compared to those who reported not receiving easily comprehensible instructions.

Participants who responded that their Homeopathic physicians seemed knowledgeable about their illness were 80.50 (95% CI 31.60-205.03) times more likely

to be satisfied with Homeopathic clinics compared to those who responded that their Homeopathic physicians did not seem knowledgeable about their illness.

Participants who reported their Homeopathic physician being capable of taking care of their illness were 50.48 (95% CI 19.44-131.03) times more likely to be satisfied with their Homeopathic clinics compared to those who reported Homeopathic physician not being capable of taking care of their illness.

Participants who responded that just talking to their Homeopathic physician was not enough and that they needed Homeopathic medicines in order for them to feel better health-wise were 3.71 (95% CI 1.46-9.38) times more likely to be satisfied with Homeopathic clinics compared to those who responded that just talking to their Homeopathic physician was enough to make them better.

Participants who reported getting sufficient time with their Homeopathic physician were 39.41 (95% CI 17.07-90.97) times more likely to be satisfied with Homeopathic clinics compared to those who reported not getting sufficient time with their Homeopathic physician.

Participants who reported ease with getting an appointment with their Homeopathic physician were 11.93 (95% CI 5.56-25.57) times more likely to be satisfied with Homeopathic clinics compared to those who reported that they did not.

Participants who reported being able to get an appointment whenever they needed it were 11.30 (95% CI 5.23-24.42) times more likely to be satisfied with Homeopathic clinics compared to those who reported otherwise.



Participants whose Homeopathic physician saw them within 30 minutes of their appointment time were 6.93 (95% CI 3.24-14.84) times more likely to be satisfied with Homeopathic clinics compared to those whose Homeopathic physician did not.

Participants who reported that they did not mind waiting for more than 30 minutes after their scheduled appointment time were 11.24 (95% CI 4.91-25.73) times more likely to be satisfied with Homeopathic clinics compared to those who reported otherwise.

Participants who reported feeling welcome in their Homeopathic clinics were 99.43 (95% CI 40.89-241.79) times more likely to be satisfied with Homeopathic clinics compared to those who reported not feeling welcome.

Participants who reported that their questions or concerns were answered respectfully by the clinic staff were 52.80 (95% CI 21.51-129.55) times more likely to be satisfied with Homeopathic clinics compared to those who reported otherwise.

Participants who reported being given easily comprehensible directions on how to take the medicines were 38.89 (95% CI 14.19-106.55) times more likely to be satisfied with Homeopathic clinics compared to those who reported not getting easily comprehensible directions.

**Binary logistic regression: Multivariable analyses model for overall satisfaction with Homeopathic clinics.**

**Table 9**

**Logistic regression analyses for outcome of patient satisfaction with Homeopathic clinics**

| <b>Variable name</b>  | <b>Univariate OR (95% CI)</b> | <b>Univariate analysis P value</b> | <b>Multivariable OR (95% CI)</b> | <b>Multivariable analysis P value</b> |
|---|-------------------------------|------------------------------------|----------------------------------|---------------------------------------|
| Participants reported that their Homeopathic physician explained health related things in a way they understood | 34.59<br>(13.55-88.30)        | 0.00                               | 9.40 (2.07-42.72)                | 0.00                                  |
| Participants reported their Homeopathic physician was knowledgeable about their illness                         | 80.50<br>(31.60-205.033)      | 0.00                               | 33.25 (8.72-126.76)              | 0.00                                  |
| Participants reported they could get an appointment when they needed one  | 11.30 (5.23-24.42)            | 0.00                               | 3.05 (1.04-8.94)                 | 0.04                                  |
| Participants reported they did not mind waiting for more than 30 minutes after their appointment time           | 11.24 (4.91-25.73)            | 0.00                               | 9.39 (2.96-29.80)                | 0.00                                  |
| Participants reported they felt welcome in their Homeopathic clinics  | 99.43<br>(40.89-241.79)       | 0.00                               | 32.36 (9.96-105.15)              | 0.00                                  |

Table 9 lists the variables that had a significant impact on overall satisfaction with Homeopathic clinics in the multivariable model.

The multivariable analyses included the variables that had an impact on overall satisfaction with Homeopathic clinics independently. The independent variables included in the multivariable model for satisfaction with clinics were: gender, Homeopathic physician listened to their health complaints, explained health related things in a way they understood, cared and showed concern, gave easy to understand instructions, was knowledgeable about their illness, was capable of taking care of their illness, that just talking to their physician would not make them better and that they needed Homeopathic medicines for health to improve, and enough time spent with the Homeopathic physician, ease of getting an appointment, getting an appointment whenever they needed one, not having to wait for more than 30 minutes past the appointment time to see their physician, did not mind waiting more than 30 minutes past the appointment time, feeling welcome at the clinic, staff answered their health related questions or concerns respectfully, staff gave easy to understand instructions on how to take the medicines.

The model was tested for multicollinearity. The tolerance was above 0.5 (ranging between above 0.49 to 0.98, and  $VIF < 2$ ) for most variables suggesting multicollinearity did not exist between included variables. There were only two variables (doctor is knowledgeable about my illness and doctor is capable of taking care of my illness) where tolerance was 0.497 to 0.499.

The stepwise forward Wald criterion demonstrated that the following variables made significant impact on overall satisfaction with Homeopathic clinics. Please see table 9 for more details.

Participants who responded that their Homeopathic physician explained health related things to them in a way that they could understand were 9.40 (95% CI 2.07-42.72) times more likely to be satisfied with Homeopathic clinics compared to those who responded that their Homeopathic physician did not explain health related things to them comprehensibly.

Participants who reported that their Homeopathic physicians seemed knowledgeable about the illness that they suffered from were 33.25 (95% CI 8.72-126.76) times more likely to be satisfied with Homeopathic clinics compared to those who reported otherwise.

Participants who reported that they could get an appointment whenever they needed one were 3.05 (95% CI 1.04-8.94) times more likely to be satisfied with Homeopathic clinics compared to those reported not getting an appointment when they needed one.

Participants who responded that they did not mind waiting for more than 30 minutes after their appointment time before their Homeopathic physician met them were 9.39 (95% CI 2.96-29.80) times more likely to be satisfied with Homeopathic clinics compared to those who reported otherwise.

Participants who reported feeling welcome in their Homeopathic clinics were 32.36 (95% CI 9.96-105.15) times more likely to be satisfied with Homeopathic clinics compared to those who reported not feeling welcome.

The goodness-of-fit HL test for this model had a significance of 0.64 indicating a good fit of the model. The Nagelkerke  $R^2$  was 0.57. The area under the curve for this multivariable logistic regression model was 0.93 (95% CIs: 0.87 to 1.00) representing a good model (Figure 2).

Overall, these statistics indicate a robust multivariable logistic regression model.

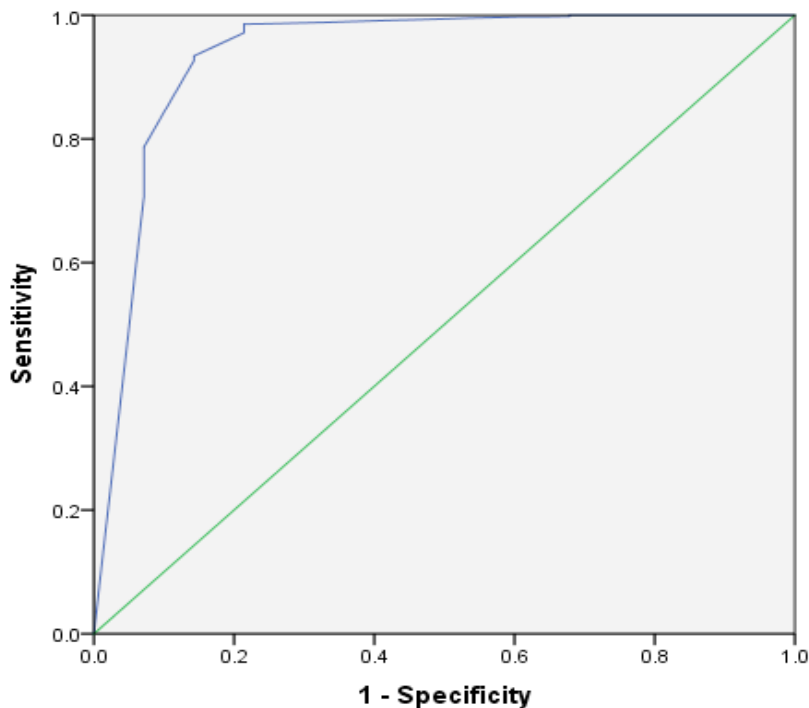


Figure 2: ROC for multivariable model for satisfaction with Homeopathic clinics

### Exploratory analyses

The association between reporting feeling better after using prescribed Homeopathic medicines and reporting that just talking to the Homeopathic physician was not enough and Homeopathic medicines were necessary for health complaints to improve was statistically significant ( $p=0.001$ ).

The association between reporting never to have experienced side effects after taking Homeopathic medicines and reporting preference for use of Homeopathic medicines instead of allopathic medicines for any acute illness was statistically significant ( $p < 0.001$ ).

Similarly, the association between reporting never to have experienced side effects after taking Homeopathic medicines and reporting preference for use of Homeopathic medicines instead of allopathic medicines for any chronic illness was statistically significant ( $p < 0.001$ ).

The association between reporting never experiencing side effects after taking Homeopathic medicines and reporting use of Homeopathic medicines in emergency care was statistically significant ( $p < 0.001$ ).

The association between reporting never experiencing side effects after taking Homeopathic medicines and recommending friends and family members to use Homeopathic medicines was statistically significant ( $p < 0.001$ ).

## Discussion

This is the first study conducted in Pune city to assess patient experiences and satisfaction with Homeopathic treatment. This is also the largest study in India on specific patient reported experiences, perceptions, and satisfaction with Homeopathy. Globally, this is the largest study that has assessed impact of specific patient experiences on satisfaction. Findings contribute to the understanding of reasons for use and increased use of Homeopathy.

One of the key contributions of this study is the survey designed specifically to address patient experiences and perceptions from a Homeopathic perspective and available in two languages. Very few studies have addressed patient satisfaction with Homeopathy (Anelli et al., 2002; Goldstein & Glik, 1998; Koley et al., 2013; Mahmoudian & Sadri, 2014; Marian et al., 2008; Van Wassenhoven et al., 2014; Van Wassenhoven & Ives, 2004). No single survey was found in the literature that would comprehensively address the objectives of this study. Developing a survey unique to patient satisfaction to Homeopathy was therefore necessary to address various parameters specific to Homeopathy that came up during the literature review.

The survey had to be linguistically relevant to the population of Pune. A certain term used in a survey can be interpreted differently, or may not carry relevance in that geographical region. For example asking about preference to use Homeopathic medicines instead of 'western' or 'conventional' medicine would have confused our participants. The term used in the survey therefore was 'allopathy' instead of western or

conventional medicine. Furthermore, Pune has a large 'Marathi' speaking population. To cater to the local population needs, the survey was translated to Marathi. Nonetheless, the English survey was necessary to accommodate the cosmopolitan non-Marathi speaking population.

The design of this survey was guided by findings from the literature and feedback from local Homeopathic physicians. The perspective of local Homeopathic physicians assisted in making the language and content culturally and regionally relevant and applicable. The focus groups aided in designing the survey and ensuring appropriateness. Previous research has reported that enthusiasm of participating physicians plays a significant role in study design such as ours (Anelli et al., 2002). Appropriately, the focus groups created interest in this research, as well as a motivation to participate as a study site.

Importantly, both the English and the Marathi version of the survey were validated by patients. The practice through which this was conducted was as described under methods, by distributing the surveys randomly to 50 patients from five clinics (ten patients from each clinic) for each language respectively. Patients were specifically requested to review the survey for content (from Homeopathic perspectives), language, intent of the questions, and for the length of the survey. The survey was then discussed with the patients asking particularly what they understood from each question in the survey thus requesting to describe the intent of each question per their understanding. Both language surveys were overall well received by patients in terms of understanding the content and language, length of the survey etc. The intent of all questions in the survey was clear to the patients. Thus, the survey was validated for the population of



Pune. It can be utilized in other culturally and linguistically similar regions of Maharashtra. The survey can also be utilized for similar research in other regions within or outside of India with translation to local language and validation as necessary.

Participating physicians were from diverse backgrounds, including various lengths of practice, clinic location (urban/suburban), and the patient population that they served. The representative nature of the clinic and patients is important for generalizability of findings to similar urban and suburban areas.

Physicians participating in the focus groups were asked for their opinion on utilizing an electronic survey. Electronic surveying has become an extremely popular methodology for data collection in public health (Eysenbach & Wyatt, 2002; Keller et al., 2009) and other health sectors (Cope, 2014). However, support for use in research is mixed, with some studies citing increased effectiveness (Cope, 2014) while others cite lower response rates (McPeake, Bateson, & O'Neill, 2014). In Public Health, use of electronic surveys is very common in community based participatory research and in national health surveys (US Department of Health and Human Services ASPE, 2013). Electronic surveys have been reported to be efficient and cost-effective (Cope, 2014). However, given the mixed support in the academic literature, it was not appropriate to assume the viability of such technologies without inputs from the local community, or in the case of the present study, the physicians who are intimately familiar with the target audience and their preferences. In contrast to some of the current literature on electronic survey effectiveness, participating physicians believed that the barriers to electronic survey use would be insurmountable. Reasons quoted were limited or no Internet, patient unfamiliarity with the electronic survey method, and lack of electronic

device to complete the survey on site. Physicians suggested that paper surveys also made it comfortable for the staff to invite patients to participate. Based on physician input and the literature related to electronic survey response rates, this study employed a paper-based survey.

The only other study on patient satisfaction with Homeopathy conducted in India used a Japanese 12-item questionnaire translated to the regional 'Bengali' language (Koley et al., 2013). Koley et al (2013) report that their survey was not specific to Homeopathy. The survey was therefore not appropriate for our study. The survey in the Koley et al study employed a visual analogue scale. The survey for our study utilized the Likert scale. Likert scale was more relevant and applicable for the data we sought to collect. Literature suggests that Likert scale has a greater utility (Harland, Dawkin, & Martin, 2015) and greater ease of administration and interpretation (Guyatt, Townsend, Berman, & Keller, 1987). Additionally, the Likert scale has been successfully used in other health systems to assess patient satisfaction (Hagedoorn et al., 2003; Yancy et al., 2001).

Based on the study design, the survey instrument and study findings obtained via using this survey instrument have external validity. That is, the study findings can be generalizable to the population of Pune or regions in Maharashtra or other states in India that have a similar socio-cultural distribution of patients visiting Homeopathic physicians. This survey has the potential to be utilized by researchers for evaluating satisfaction and experiences with Homeopathy, after translating and validating within other global populations of interest. The potential for selection bias was minimized by offering survey to all eligible patients. Moreover, the study included clinics from various

parts of the city and catered to different populations, allowing inclusion of patients from various strata of the general population. Utilization of the native Marathi language survey instrument, in addition to the English language survey, served in reducing the likelihood of potential selection bias. The survey instrument was designed with rigorous focus groups discussions and included inputs from practicing Homeopathic physicians from the study recruitment area. The survey was made available in English and Marathi. These efforts allowed for the design of a robust survey instrument and assisted enrolling participants in an unbiased manner leading to high internal validity of the study design and also external validity of the findings. Overall, this study provides a reflection of patient experiences and satisfaction of patients who currently visit a trained Homeopathic physician.

Participating physicians were not compensated (monetary or otherwise). However, physicians' motivation to offer the survey to their patients was likely attained due to the study information sessions conducted earlier on, as well as their participation in the focus groups. It is also important to note that such a study has not been conducted in the participating clinics previously. The experience of being a site for this study has thus hopefully created an interest to engage in potential Homeopathic research in the future. Despite patients not receiving any compensation for participation either, once survey distribution began, the target sample size for the study was surpassed.

The survey was used to assess patient satisfaction with Homeopathic medicines. Patients reported overwhelmingly high satisfaction with Homeopathic medicines (95.9%), clinics (97.5%) and physicians (98.2%). The high level of satisfaction reported

is in line with results from other CAM studies. CAM therapies used for prevention of illness, enhancement of general health and treatment of chronic conditions have indicated high patient satisfaction (Nadareishvili, Lunze, Tabagari, Beraia, & Pkhakadze, 2017). Most (83%) patients reported overall visits to be 'excellent' in a chiropractic study (Gemmell & Hayes, 2001) while 70% reported being satisfied with the current level of practice in an acupuncture study (Thomley et al., 2017). Almost 80% of patients reported being satisfied with the health service provided by their Unani and Ayurvedic physicians (Nabi et al., 2015). These high levels of patient satisfaction are indicators of patients' acceptance of CAM therapies.

The majority of participants reported feeling better after using Homeopathic medicines in our study, an indirect reflection of effectiveness. The majority of participants also reported that Homeopathic medicines are easy to consume. This has implications for treatment adherence since ease of consumption would lead to lesser hindrance for taking the medicines. Ease of consumption has greater implications in certain groups, such as the pediatric population. Children show resistance to take conventional medicines. It requires strategizing to make conventional medicines palatable, for example, by adding fruit flavors or camouflaging them with other foods (Bergene, Rø, & Steinsbekk, 2017). Comparative studies on palatability of conventional versus Homeopathic medicine in the pediatric population are called for.

Experiencing side effects from medicines can also majorly influence inclination to take medicines and adherence to treatment. The majority of participants in this study (93.2%) reported never having experienced side effects after using Homeopathic medicines. The results are similar to previous studies where very few patients' attributed

side effects to Homeopathic medicines (Anelli et al., 2002; Van Wassenhoven et al., 2014) (Marian et al., 2008). Homeopathic medicines are also used to avoid side effects of conventional treatment (Jacobs et al., 1998; Mahmoudian & Sadri, 2014; Reilly, 2001a). A study reported that 75% of participants believed Homeopathic medicines do not have side effects (Manchanda et al., 2016). In a knowledge survey, 32.5% participants reported that Homeopathic medicines might cause side effects, while 18% were uncertain (Koley et al., 2016). It is important to note that in these two studies patients were not reporting their personal experiences with Homeopathic medicines. Instead they were reporting perceptions. In contrast, our study patients reported their own experiences with Homeopathic medicines increasing the reliability of our findings.

Herbal and plant medicines, if not taken under the supervision of a licensed naturopath, have been reported to have harmful effects (Lopez-Gil, Nuno-Lambarri, Chavez-Tapia, Uribe, & Barbero-Becerra, 2017; Stout et al., 2003). Due to the presence of crude active ingredients, these products are likely to have toxic effects if not taken in a proper dosage (National Center for Complementary and Integrative Medicine, 2015). The possibility of potentially harmful interactions with other herbs or with conventional medicine taken along with herbal medicines is also of concern (National Center for Complementary and Integrative Medicine, 2015). Some other CAM therapies have reported 'mild to moderate side effects' after treatment (Enblom & Johnsson, 2017; Patwardhan, Pathak, & Acharya, 2017).

Nonetheless the starkest contrast between our findings is with findings from studies of conventional medicine that suggest a wide array of side effects (Cockburn, Pateman, Taing, Pradhan, & Ford, 2017; Dutescu, Panfil, & Schrage, 2015; Elafros, Bui,

& Birbeck, 2014; Gonzalez-Hernandez, Marichal-Cancino, MaassenVanDenBrink, & Villalon, 2018; J. Lin, Chao, Bickell, & Wisnivesky, 2017; Martel et al., 2015; D. Shin et al., 2015; Stomski, Morrison, & Meehan, 2016; Tveito et al., 2016; Wang, Zhang, Cao, Hu, & Sorrentino, 2014). As high as 64% to 88% of patients have reported side effects from conventional medicines (V. Cooper et al., 2015) compared to less than seven percent participants in our study who reported experiencing side effects from Homeopathic medicines. Occurrence of side effects is almost a norm with use of conventional medicines (Carter et al., 2014). In fact, studies compare conventional drugs to assess which one has lesser side effects (Mitchell, McCrea, Inglis, & Porter, 2012; Nezvalova-Henriksen, Spigset, & Nordeng, 2013; Nissen et al., 2016; D. H. Solomon et al., 2017). Moreover, side effects of some of the conventional medicines have been found to be more painful and harmful than the illness itself (Anastassopoulos et al., 2011; Carter et al., 2014; Chiam, Weinberg, Bailey, McNicol, & Bellomo, 2016; Hama & Bennett, 2017; Hunold et al., 2013; J. Lee, Lee, Choi, & Lee, 2014; Mortada, Neuenschwander, & Tekko, 2014; Nagai, Uesawa, Shimamura, & Kagaya, 2017; Remy, Marret, & Bonnet, 2005; Watanabe et al., 2016). Harmful effects have been acknowledged and reported as a public health burden (Major et al., 2016). Public health systems will, therefore, benefit from utilizing alternative therapies such as Homeopathy with lesser side effects compared to conventional medicine. More resources should be allocated for conducting research in Homeopathy to further fortify findings. Since more people are exploring safer therapeutic options, doctor of medicine (MD) curriculums should be inclusive of Homeopathy. Inclusive curricula will assist MDs to be educated

with evidence-based understanding of Homeopathy and better assist patients in making informed treatment choices.

The possibility of 'initial worsening of patient's symptoms' after taking Homeopathic medicines has frequently been referred to in literature on Homeopathy (Hahnemann, 1921; Stub et al., 2015; Stub, Salamonsen, & Alraek, 2012; Vithoulkas, 2017) and a previous study has reported a small percentage (8%) of participants experienced initial aggravation (Van Wassenhoven et al., 2014). We wanted to assess if patients experienced this phenomenon of initial aggravation and whether it influenced their overall satisfaction. However, results suggest that few participants reported initial worsening of symptoms.

As mentioned previously, a vast majority of participants in our study reported total treatment costs to be affordable. In the context of high health care costs with conventional medicine, this is a significant benefit of Homeopathic treatment. More than 90% of the population in developing countries pay for their medicines as an out-of-pocket expenditure making expenses on medicine second only to spending on food (Cameron, Ewen, Ross-Degnan, Ball, & Laing, 2009). The high costs of medicines makes health care less affordable to them. The WHO and Health Action International investigated cost of most commonly used conventional medicines and their affordability in economically diverse low and middle-income nations (Cameron et al., 2009). The report strongly indicates that treatments for acute illnesses and chronic conditions are largely unaffordable in most countries and the problem is not unique to of developing nations. Rising costs of healthcare are a huge burden to economies of first world countries as well, thereby making them a global concern (Kelland, 2011; World Health

Organization, n.d.). There is also concern on the actual production and procurement cost of conventional medicines and their inflated prices as sold to patients (Cameron et al., 2009).

While reports of costs of conventional medicine are conclusive, the cost effectiveness analysis of CAM needs substantial research (Blanchette et al., 2016; Flottorp, Farah, Thurmer, Johansen, & Fretheim, 2008; S. Shin et al., 2017; Thirthalli et al., 2016; Xuan, Huang, Lu, & Tao, 2018). A systematic review points out that the economic evaluations of CAM are usually sidelined but are imperative for enhancing cost savings in healthcare (Herman, Poindexter, Witt, & Eisenberg, 2012). CAM therapies are used alongside conventional medicine in many cases, yet the relative cost effectiveness when therapies are combined or used separately are not studied comprehensively. The assessment of quality of healthcare being offered to the public should include analysis of effectiveness as well as cost affordability. It is indicated that building models to encourage partnering of CAM therapies and conventional medicine to maximize efficacy and affordability is the need of current healthcare (Bodeker & Kronenberg, 2002).

Although Homeopathic medicines are supposedly low cost (Quattropiani et al., 2003; Reilly, 2001a; Rossi, Endrizzi, Panozzo, Bianchi, & Da Fre, 2009; Van Wassenhoven, 2004), Homeopathic physicians' consultation costs can be high in some parts of the world especially where Homeopathy is not covered by insurance. Our study finding of affordable Homeopathic treatment is important since, in India, most people do not carry health insurance and pay for health care out of pocket (Cameron et al., 2009). Future comparative studies should examine whether patients find treatment costs



affordable in other parts of the world, conducting a cost effectiveness analysis for each country. It is important to note that, in our study, there was no association between patient experience with cost affordability and overall satisfaction with medicines. Results from this study should be viewed in the light of other studies where cost affordability can influence patient satisfaction with medicines. A recent study conducted in China in 2018 assessed patient satisfaction with medicines prescribed under 'The National Essential Medicines Policy' (Ren et al., 2018). This is a program formulated by some countries based on WHO recommendations to make good quality medicines easily available to populations ("Medicines Policy," 2018). The National Essential Medicines Policy of China is a affordable medicine system to meet basic needs of their communities. Despite the cost-affordability, participants of the National Essential Medicines Policy study reported only a moderate degree of satisfaction (range 66-82%) with the conventional medicines.

Prevalence of Homeopathy is high among populations where Homeopathic treatment is covered under mandatory health insurance (Relton et al., 2017). This suggests that, when given a choice and equal coverage like the one received for conventional medicine, people have enough trust in the Homeopathic system to utilize it for their health care needs. Additionally, chronic conditions for which Homeopathy has been cited to be used frequently attribute to top ten causes of mortality, leading causes of morbidity as well as cost-burden of disease (Kelland, 2011). High prevalence of use of Homeopathic medicines could be attributable to use in chronic illnesses where conventional medicine appears to be less efficacious such as fibromyalgia, arthritis etc. (Perry, Terry, & Ernst, 2010; Pilkington, Kirkwood, et al., 2006; Shipley et al., 1983;

Smolle, 2003). Studies exploring use of Homeopathic medicines for acute complaints are fewer. Nonetheless, our findings suggest that even given a choice of using conventional medicines, participants preferred using Homeopathic medicines for their acute illnesses (78.9%) comparable to using them for chronic conditions (84%). This indicates that our study participants relied on effectiveness of Homeopathic medicines in their acute as well as chronic illnesses.

More than half (58.8%) of our participants reported seeking care from their Homeopathic physicians for a chronic complaint on the day they filled out the survey. Anecdotal discussions and literature indicate that patients turn to Homeopathy for management of their chronic complaints but not as much for their acute complaints (Pilkington, Kirkwood, Rampes, Fisher, & Richardson, 2005; Posadzki, Watson, et al., 2013b; Relton et al., 2017; Steel et al., 2016; Trichard, Lamure, & Chaufferin, 2003; Van Wassenhoven & Ives, 2004). Nonetheless, 41.2% of our participants were visiting their Homeopathic physicians for management of their acute illnesses. Patients may want to use Homeopathic treatment if made easily available, for their acute illnesses that include infections. Inclusion of Homeopathy as first line of care and research on use of Homeopathy in prevention of infections should be part of Public Health initiatives to be addressed.

Our study also demonstrated that participants' who used or preferred to use Homeopathic medicines for any acute illness instead of using conventional medicine were more likely to be satisfied with Homeopathic medicines than those who did not use it for acute illness. Patient satisfaction is a reflection of patients' evaluation of overall care (Al-Abri & Al-Balushi, 2014). Yet, randomized trials investigating efficacy of

Homeopathy in infectious diseases need to be conducted and supported by providing financial resources and methodological assistance. In a previous study, 62% of patients reported having used Homeopathic medicines for any illness (Manchanda et al., 2016). The study did not report specifics of how many would use it specifically for an acute illness or for a chronic condition independently and instead of conventional medicine. Our study reports patients' use for acute and chronic conditions separately.

Our study findings indicate that 57.9% of study participants use or would use Homeopathy for their emergency care. Study participants who reported using Homeopathic medicines in emergency care were five times more likely to be satisfied with Homeopathic medicines compared to those who were not using Homeopathic medicines for emergency care. Studies focusing on use of Homeopathy in emergency departments and types of conditions that it can be used for are only possible if Homeopathic treatment is available in emergency rooms. A 2018 systematic review on use of non-pharmacologic interventions indicates that they are often effective in pain reduction in emergency rooms yet suggests conducting studies with larger sample sizes to fortify the findings (Sakamoto, Ward, Vissoci, & Eucker, 2018). Researchers (2005) reported a case series demonstrating effectiveness of Homeopathy in the emergency room and in the intensive care units (Oberbaum et al., 2005). It is however likely for results of treatment with Homeopathy in emergency situations to be under-reported. To overcome this issue, the authors recommend education of conventional medicine students to familiarize them with Homeopathy and elucidate cooperation for integrated need based approach (Oberbaum et al., 2005).

Current literature suggests Homeopathic medicines are more popular among people who have higher education (Bar-Cohen et al., 2000; Crocetti et al., 1998; Ducrest et al., 2017; Mahmoudian & Sadri, 2014). In our study, less than one fourth of participants had graduated 12<sup>th</sup> grade. The majority (45.4%) had a Bachelor's degree and more than one third (32.8%) a Master's degree or higher. However, the satisfaction with Homeopathic medicines and Homeopathic clinics did not differ based on the education level. Neither did patients' experiences of feeling better after taking Homeopathic medicines differ based on their education level.

Some studies have suggested that CAM use in general, is not associated with education and that education level does not affect satisfaction with CAM (Bekkelund, Ofte, & Alstadhaug, 2014). Yet others report use of CAM to be more in people with higher degrees (Hsu, Dunn, Bradshaw, & Conboy, 2014). Education via economic capabilities can affect access to CAM therapies. In some very rural and low-educated parts of India, Homeopathy is not well known and conventional treatment is the norm (Prasad, 2007). However if awareness of Homeopathy is increased through health promotion campaigns, Homeopathic practitioners might become willing to practice in rural areas especially where population to provider ratio is not optimal. This might be an effective strategy especially supported by our study where patients were highly satisfied with their Homeopathic physicians.

Patients experience with their physician is a parameter known to affect adherence to treatment (Crocker et al., 2017; D. Katz, Tengekyon, Kahan, & Calderon-Margalit, 2018). From Homeopathic perspective, this can have many dimensions. Participants' were asked about various experiences with their Homeopathic physician. A

vast majority reported their physicians being knowledgeable about the illness they suffered from. This highly influenced their satisfaction with Homeopathic medicines. Also, majority participants reported that their Homeopathic physicians were capable of taking care of their illness. This too had a high influence on their satisfaction with Homeopathic medicines. Physicians from other health systems can probably gain from this patient perspective of a Homeopathic consultation. Meaning, illness and treatment should be discussed in detail with patients. This can largely improve physician-patient communication thereby building trust. Enhanced patient-physician interactions leading to patient empowerment are known to improve treatment compliance and indirectly enhance health outcomes (Nafradi, Nakamoto, & Schulz, 2017; Zschocke, Ortlund, & Reich, 2017). Previous research (2014) indicates that Homeopathic physicians' competence as perceived by patients, improvement in their main complaint, and time made available by the Homeopath significantly impact patient satisfaction (Van Wassenhoven et al., 2014). The findings from the above study conducted among patients from Europe and Brazil, are similar to our study. Adequate time with the doctor has been recognized as an indicator of patient satisfaction and adherence to treatment in other CAM therapies as well as conventional medicine (Gemmell & Hayes, 2001; Gross, Zyzanski, Borawski, Cebul, & Stange, 1998; Kim, Lim, & Kim, 2015; C. Lin et al., 2001; Thomley et al., 2017). Patient dissatisfaction has been linked to less time spent by conventional physicians with patients and associated with increased use of traditional medicine (Kim et al., 2015). A study has also reported lower perceived empathy scores when patients got inadequate time with their physicians (Chung et al., 2016). Most patients in our study report that they got adequate time with their

Homeopathic physicians similar to other study findings which suggest homeopathic physicians tend to spend more time with their patients as compared to their conventional medicine counterparts (Marian et al., 2008; Schmacke et al., 2014; Van Wassenhoven et al., 2014). While this is due, in part, to the nature of homeopathic case taking or selection of medicine, the result can be profound. Specifically, if patients believe their physicians know them as a whole (physical, mental and socioeconomic dimensions of the patient) it builds trust during the treatment process. Ultimately this involvement from the physician is reported to have a positive impact on patients' health outcomes (Mahmoudian & Sadri, 2014; Schmacke et al., 2014; Stewart, 1995). A recent systematic review conducted in 2018 has validated the importance of active patient involvement during healthcare consultation. The systematic review conveys that a relationship built upon physician patient interaction and trust was positively associated with "lower disease activity, better global health, less organ damage accrual, greater treatment satisfaction with fewer side effects from the medication, more positive beliefs about control over the disease, and about current and future health" (Georgopoulou, Prothero, & D'Cruz, 2018). Moreover, enhanced physician patient communication leads to satisfied patients who are less likely to file malpractice suits (Ha & Longnecker, 2010) a major concern in today's times. Rise in malpractice suits has been largely attributed to dissatisfied patients (Moore, Vargas, Nunez, & Macchiavello, 2011). Most malpractice complaints are associated with ineffective physician communication and less with clinical incompetence (Clack, Allen, Cooper, & Head, 2004; Minhas, 2007). Furthermore, satisfied patients are an enormous advantage to physicians leading to enhanced job satisfaction resulting in reduced stress and less burn out (Bredart,

Bouleuc, & Dolbeault, 2005; Maguire & Pitceathly, 2002).

Education of healthcare professionals (doctors, nurses, physician assistants, etc.) should incorporate courses on improving communication skills and empathy. Such courses need to build upon results from systematic reviews such as the above that reflect the “case taking” philosophies and physician patient communications involved in a Homeopathic consultation. Educating on asking open ended questions, careful listening, adequate acknowledgement and feedback to patients, have been suggested as some key areas of communication during medical consultations (Shendurnikar & Thakkar, 2013). All these are integral part of Homeopathic case taking explaining the overwhelming satisfaction of patients with their Homeopathic consultation in our study. Ultimately, the Homeopathic experience appears to conduct itself in line with what research has suggested: that patients want a consultation that is clinically effective, empathetic and involves clear communication (DiMatteo, 1998; Ha & Longnecker, 2010).

Our study findings indicate that participants who report getting an appointment whenever they needed it were more satisfied with their Homeopathic clinics. Wait times to get an appointment can vary widely in different health care systems. Sometimes patients have to wait for weeks if not months, to be seen by a doctor and patients who wait longer report lower satisfaction levels (Inglehart, Lee, Koltuniak, Morton, & Wheaton, 2016; Keely, Traczyk, & Liddy, 2015; Paterson et al., 2010). Assessment of a primary care integrative medicine clinic reported findings where many (62%) patients were able to get an appointment in fewer than five days after they asked to be seen, yet the majority (89%) were overall satisfied with the care they received (Crocker et al.,

2017). In our study, participants who reported not minding to wait more than 30 minutes in the clinic were significantly more likely to be satisfied with Homeopathic clinics compared to those who did not like waiting. Waiting times are known to affect satisfaction in other CAM therapies and in conventional medicine (Gemmell & Hayes, 2001; Shrestha, Mongkolchati, Rattanapan, & Wongsawass, 2012; Thomley et al., 2017). Increased wait times lead to lower patient satisfaction levels with care received. Findings from literature suggest that predicting delays in appointment and wait times is likely to improve satisfaction (Curtis, Liu, Bollerman, & Pianykh, 2017). However, results from our study indicate that having to wait did not affect satisfaction negatively in the participant population. Patients' willingness to wait for longer periods may be is a reflection of their relationship with their physician developed as a result of the nature of Homeopathic consultation or their understanding of the detailed nature of each participants visit.

Research vaguely suggests that the homeopathic physicians' holistic detailed case taking approach in itself can act as therapeutic intervention and Homeopathic medicines are less important factors in patient satisfaction and in effectiveness of Homeopathy (Brien, Lachance, Prescott, McDermott, & Lewith, 2011). While physician patient communication can play a significant role in influencing patient satisfaction (Bredart et al., 2005) overall patient experience positively affects outcomes (Doyle, Lennox, & Bell, 2013). Additionally, physician patient relationships have been linked with patients' perceived empathy that can affect health outcomes (Chung et al., 2016). Yet our findings suggest that participants require more than detailed discussion to report improvement in their health complaints. In particular, most participants (93%) reported



that just talking to the Homeopathic physicians was not enough and that Homeopathic medicines were necessary for improvement of their health complaints. It appears that although quality of interaction with the physician is important to patients in this study, taking Homeopathic medicines is equally important. Patients report that medicines play a significant role in improving their symptoms refuting claims from previous studies. This is comparable to other medical fields where medicinal treatment and physician-patient relation both play a role in attaining optimal health for the patient (Lakdawala, 2015). It is not surprising therefore that most (96.8%) participants in our study reported they recommend Homeopathic medicines to family and friends, higher than reported in a previous study (81%) (Van Wassenhoven et al., 2014).

In summary, evidence from studies (including this study) conducted in various countries suggests that patients are satisfied using Homeopathic medicines (Anelli et al., 2002; Goldstein & Glik, 1998; Koley et al., 2013; Mahmoudian & Sadri, 2014; Van Wassenhoven et al., 2014; Van Wassenhoven & Ives, 2004) and with the interactions with their Homeopathic physicians and clinics (Marian et al., 2008). Use of Homeopathic medicines is also reportedly associated with affordable treatment cost. Side effects attributable to treatment with Homeopathic medicines were rare. High level of satisfaction was associated with improvement of health conditions with use of medicines as well as the positive Homeopathic physician-patient interaction.

## **Study Limitations and Lessons Learnt**

The festival of Diwali and the Christmas holidays overlapped data collection timeframe. These are the times when families have a vacation and patient turnover was less. Additionally, cash payment is the primary mode of paying for Homeopathic medicines and physician's fees in India. In November, the Rs. 500 and Rs. 1000 currency bills were withdrawn from circulation (de-monetization). People were given a stipulated amount of time to deposit these outdated currency bills into the banks. None of the vendors in the market were accepting these currency bills. These changes in the system, also affected number of patients visiting the clinics. The majority of clinics were not equipped to take credit-card payments. Patient turnover at clinics thus also reduced due to de-monetization. The PI had weekly communications with the study coordinator and also communicated with Homeopathic physicians individually on a regular basis to keep data collection on going which had slowed down during that period.

It should be noted that this study did not aim at determining either efficacy or effectiveness of Homeopathic medicines. Thus, although most patients were overall highly satisfied and found medicines to be effective, conclusions on clinical impact cannot be made. Yet, our study results have a significant role in providing direct insights into patient reported experiences with Homeopathic medicines. The findings support or refute various ongoing discussions such as use of Homeopathic medicines in acute and chronic condition, costs, patient-Homeopathic physician interaction etc. These findings

can inform design and conduct of future studies addressing clinical efficacy or effectiveness of Homeopathic medicines.

There was no control group for this survey. Neither was it a longitudinal study/ pre-post survey design. A longitudinal study was not conducted since it would require a longer timeframe for the study, loss to follow up (high attrition), larger sample size to calculate in for loss to follow up etc. Also, a control group from conventional medicine would not be appropriate for the current study since this is the first assessment of direct experiences and satisfaction with Homeopathy in patients from Pune. Indeed, based on results a controlled study can be designed in future.

External validity of results can be further established by conducting a study within the general population of Pune (or other cities of interest to the researcher). This will allow for examining satisfaction and experiences of patients who are not currently visiting a Homeopathic physician but have done so in the past. Comparative analysis of patient satisfaction and experiences with patients who are currently visiting Homeopathic physicians (such as in this study) with those who have previously visited but do not continue to use Homeopathy currently will assist in generalizability of findings and making comparisons between groups. Yet, this study design reflects a high internal validity and the findings can be generalizable to a similar population such as patients visiting clinics of Homeopathic physicians in areas with similar cultural and geographical attributes.

Patients in this study self-selected to participate, meaning they could choose whether they wanted to participate or not. So we do not have the data from patients who chose not to participate in the study. However the potential selection bias was reduced

since all consecutive eligible patients were offered to complete the survey and more participants ( $n=1231$ ) were recruited than the target sample size ( $n=1068$ ).

There were some missing data in this study. However, cross tabulations showed that there was no systematic pattern to the missing data. The chance of bias due to missing data is therefore negligible.

The majority of participants reported that they had felt better after taking Homeopathic medicines, in the past. However, we had not captured whether the past experiences were from use of over-the-counter Homeopathic medicine (self-prescribing). Use of over the counter Homeopathic medicines has been perceived to be effective in relieving symptoms in a previous study (S. Reid, 2002). The most strongly recognized reasons for use were perceived harmlessness and as a “natural” treatment. Thus fewer side effects appear to be a reliable finding even when Homeopathic medicines are used self-prescribed as over the counter medicines. Further research specific to the pros and cons of over the counter Homeopathic medicines is warranted.

## Directions and Implications for the Future

This study suggests that overall patients have high satisfaction with Homeopathic medicines, physicians, and clinics. It also suggests that patients want to use Homeopathy for chronic and acute conditions even if a choice to use conventional medicine is available. Most patients in our study reported never having experienced side effects. This finding draws attention to the 'safe' nature of the medicines referred to in the Homeopathic literature. Ease of consumption is a key feature to be considered in most populations but more so in groups such as children. Cost affordability would lead to equal access opportunity and thereby health equity. Future observational studies should aim at assessing health outcomes after use of Homeopathy for specific acute or chronic conditions. The research design for such studies should align with principles of Homeopathy and maintain methodological quality standards for conduct and reporting of the studies.

A cost benefit analysis is also called for. Most study participants reported Homeopathic treatment to be affordable. Thus, promoting and incorporating Homeopathy as an integral part of the public health system might have many possible implications locally and globally. It will complement the conventional treatments in the management of acute as well as chronic diseases. It will also provide a viable treatment option and freedom of choice to patients. It will reduce costs of management of acute and chronic conditions. It will reduce burden of illness to individuals and communities that arises due to side effects of conventional medicines and treatment of those side

effects. It might also improve overall treatment compliance especially among patients with chronic diseases where it is most desired.

Yet, Homeopathy is not included alongside conventional medicine in economic evaluations during healthcare policy decision making (Herman et al., 2012). Inclusion of cost analysis of Homeopathy is increasingly important in the formulation of global strategies for disease management. Such economic evaluations of Homeopathy and other CAM should be included in the equations for policy formulations for healthcare management. The inclusion of Homeopathy with conventional medicine will make policies both clinically and financially efficient for acute illnesses and chronic conditions. Cost-affordability will also reduce gaps in health care access and increase health equity. Therefore, it is essential for research in Public Health to consider cultural, socio-traditional, political, and economic contexts and collaborations with Homeopathy to maximize contributions it can make to global health (Bodeker & Kronenberg, 2002). Provision of a platform for Homeopathic research in Public Health and access to financial resources comparable to that available to conventional medicines is required for fairness and equal opportunity in conducting research.

In India, although Homeopathy is well accepted as a therapeutic system of medicine, it has historically been a standalone system either in private Homeopathic clinics or Homeopathic hospitals. The government of India has always been supportive of the system and encourages education and research in Homeopathy (Ghosh, 2010; Ministry of AYUSH, n.d.; Prasad, 2007). Most recently, the AYUSH minister of state made a statement in strong favor of Homeopathy and said it is 'clinically effective' (Indo Asian News Service, 2018). India has seen a 50% rise in people visiting Central Council

for Research in Homeopathy clinics in past 5 years (Indo Asian News Service, 2018) . Nonetheless, understanding the significance of basic science research, the Indian government inaugurated its first Homeopathic research lab. This virology lab will focus on fundamental research in Homeopathy for treatment of viral diseases such as dengue, influenza, Chikunguniya, swine flu, and Japanese encephalitis (Kaul, 2017). This has significant implications for Homeopathy from a public health perspective.

While research is ongoing, assimilation of Homeopathy into the primary and secondary health care systems is necessary. That would mean not just providing opportunities for Homeopathic physicians in government hospitals and clinics but also promotion of Homeopathy itself in all pockets of society. This is especially of significance in regions where there is a wide discrepancy in demand and supply of health services including physicians. Promotion of the Homeopathic system of medicine, increasing awareness of its safety and cost-affordability and familiarizing people in rural regions is called for. Integrating Homeopathy within hospitals would be an ideal set up for promotion to reflect existing support from the government. Recently such discussions have begun in India on integrating Homeopathy with conventional system such that patients have a choice of selecting one or the other for their illness (Manchanda et al., 2016).

Globally too, dynamic changes in health systems are occurring. More patients now desire access to CAM treatments. Integration of Homeopathy and other CAM therapies is therefore necessary for educational and clinical health institutions. It is also in the benefit of providers to have knowledge about Homeopathy and other CAM. An integrated approach will open the doors for patients to have a discussion with their

providers and make informed decisions. This can lead to patient empowerment and reduce malpractice concerns. Health discussions need to be in the best interest of patients and not involve personal biases towards any system of medicine. Working together might give better health outcomes by experiencing the best of systems.

Public health research focusing on all aspects of integrating Homeopathy in the health care system will provide equal opportunity to patients and equitable access. Assimilating Homeopathy into health services has the potential to reduce the burden on Public health caused by other medication side effects. Conducting needs assessment of communities will allow for developing different models and algorithms for various acute and chronic conditions. Such models and algorithms if applied to any particular illness should provide the best mix of conventional and or CAM therapies to maximize clinical and cost effectiveness and minimize side effects.

Thus, at a time where holistic health is gaining impetus, Homeopathy has the potential to play a significant role as an affordable and gentle system of medicine. In acute conditions, it can be a great stand-alone addition as well as complement to primary health care and public health systems globally. Use of Homeopathy can conceivably reduce the burden of chronic disease and reduce costs of treating both acute and chronic illnesses. Homeopathic research should continue to apply methodology relevant to Homeopathy. Also, communities should build integrative and collaborative health systems to maximize benefits to individuals and society. This is the time to use the best of all therapies and move towards a betterment of health as a global community.



## Conclusions

A vast majority of participants in this study reported overall high satisfaction with Homeopathic medicines, physicians, and clinics. Most participants reported feeling better after taking Homeopathic medicines. Most also reported never having experienced side effects. Participants reported ease of consumption of Homeopathic medicines. Findings are advantageous in maintaining treatment compliance and the likelihood of improved health outcomes. Cost-affordability of Homeopathic treatment is an added advantage especially in resource-constrained settings. While burden of disease and health care costs are skyrocketing, study findings support that patients utilize and are satisfied with Homeopathic medicines for managing their acute and chronic illness. Homeopathy thus provides potential for affordable care in both types of illnesses. The Homeopathic physician-patient interaction model includes encourages patient engagement in their health care experience and accountability towards their health.

This study from India lays out a strong foundation for future longitudinal research comparing patient satisfaction levels and health outcomes. Additionally, it provides justification for conducting randomized controlled trials with individualized Homeopathic medicines and observational studies addressing effectiveness. The study results encourage economic evaluations of Homeopathy with conventional medicine and other CAM systems. The findings from the study thus support development of models for

integration of Homeopathy in global health care systems as a safe, effective, and cost-affordable system of medicine.

## Implications for Public Health

Our study strongly supports the potential for Homeopathy to play a significant role in health care services and in the Public Health sector. Numerous studies including systematic reviews have reported that increasing number of people globally are using CAM including Homeopathy (Beer et al., 2016; Breuner, 2002; Buhling, Daniels, Studnitz, Eulenburg, & Mueck, 2014; Busari & Mufutau, 2017; Bussing et al., 2011; Carpenter & Neal, 2005; Carr & Nahata, 2006; DeFilippis, 2018; Derry, Derry, McQuay, & Moore, 2006; Dolceamore, Altomare, Zurlo, & Miniero, 2012; Dossett, Davis, Kaptchuk, & Yeh, 2016; Eardley et al., 2012; Franik et al., 2014; Furnham & Smith, 1988; Marques-Vidal et al., 2008; Posadzki & Ernst, 2013; Posadzki, Lee, et al., 2013; Posadzki, Watson, et al., 2013a, 2013b; Quattropiani et al., 2003; Relton et al., 2017). In fact, Homeopathy is one of the top most utilized CAM therapies in some countries (Prasad, 2007; Relton et al., 2017). A recent research (2016) conducted by Harvard's School of Public Health reported Homeopathy to be among top three CAM accessed by Americans for their health care needs as per data from the 2012 National Health Interview Survey (Dossett et al., 2016). The researchers felt the need to conduct this study due to potential benefits and contributions Homeopathy can make to the Public Health sector for example by reducing unnecessary use of antibiotics, by reducing treatment costs, improving health outcomes in chronically ill, as well as its promise in acute infections (Dossett et al., 2016). Our study findings support the above reasoning.

Findings from our study reveal that an overwhelming number of patients (almost all) are highly satisfied with Homeopathic treatment, a reflection of the acceptance of Homeopathy, and potentially a proxy of effectiveness of the medicines. Moreover, when asked directly in the survey, majority of patients reported feeling better after taking Homeopathic medicines implying that they find Homeopathic medicines to be 'effective'. Patients also reported Homeopathic medicines to be safe and effective for any illness, easy to consume, and affordable all of which are potential benefits to individuals and public health systems. Additionally, Homeopathy offers patient centered care, which can be an asset to public health, as it empowers patients and may result in healthy individuals and healthy communities. Considering all of this, integration of Homeopathy into public health systems seems inevitable. In fact, it can provide a value based care reflected in safer effective medicines at optimal costs.

Nonetheless, despite high costs of conventional medicines and its burden on the public health system, it is surprising that current economic evaluations do not take into account the comparative cost effectiveness of Homeopathic treatment. It is therefore difficult to analyze how the cost dynamics will change if CAM systems are included in the calculations.

Evaluations of health services thus need to include not only effectiveness studies but also economic evaluations of all CAM systems and conventional medicines, together. This will be a complex process involving follow through with various steps at different levels (individual patient, community and nation etc.). Economic evaluations would need to take into account standalone systems as well as combinations of health systems to provide ideal cost effectiveness in a specific acute or chronic condition.

Initially, models will have to be created to determine which of the health systems are most clinically effective and economical in any specific health condition. Based on this analysis, it will need to be examined whether any two systems together perform better and improve health outcomes along with reducing costs. For example, integrating Homeopathy with conventional therapy alleviates side effects that are commonly experienced after cancer chemotherapy or radiotherapy (Milton, 1998; Molassiotis et al., 2006; Rossi et al., 2018). Thus clinical effectiveness and costs of using two systems of medicine together versus one can be investigated to arrive upon a model of healthcare systems with optimal value (superior health outcomes at maximum cost efficiency).

Additionally, for society to move in the direction of health equity, providing comparable access to all health systems and enabling people to make informed choices of various health systems is of paramount importance. Yet, in many countries Homeopathy is not recognized by governments and is not part of their national healthcare systems. Homeopathic treatment is not covered under most health care insurance policies, be it government sponsored or private. People pay out of pocket for Homeopathic treatment. If Homeopathy is made readily available in primary health care services (clinics, emergency rooms etc.), secondary health care services (hospitals), national health services (some government's pay for their people's health such as National Health Services in the UK), and if coverage of Homeopathic treatment under health insurance is made mandatory, then can people have access to Homeopathy that is comparable with access to conventional medicine. In addition, the benefits of Homeopathic treatment and findings from studies such as this should be actively disseminated and promoted. Educating the community at all levels is necessary for the

society to reap benefits from the Homeopathic health system. Thus, transparency is necessary (Marian, 2007). Only then can people make fair choices between health systems in terms of their needs, accessibility, and affordability.

Health accessibility and health equity are major pillars of public health. Global populations should be empowered with education about pros and cons of all medicinal systems. Such educational strategies will have long term impacts including assisting patients in making informed choices and share responsibility of their health care decision making with their physicians. The ultimate goal would be for conventional and CAM physicians, educators, community health workers, partners from the community including patients, researchers, economists, and policy makers to all come to a table. They need to collaborate and create strategies towards building the best integrative healthcare models that are clinically efficient and economically sustainable and responsible. Public Health professionals from a wide variety of settings working in different capacities and providing services to very diverse populations have been aware of the assets of CAM systems and the need for their urgent inclusion into various Public Health fields for quite some time (Burke, Ginzburg, Collie, Trachtenberg, & Muhammad, 2005). Although discussions have been ongoing (Giordano, Garcia, Boatwright, & Klein, 2003), enough momentum is yet to be gained. Public Health should therefore prioritize collaborations between health systems such that end results are integrative healthcare models.

The following steps are recommended for integrating Homeopathy into health systems:

- Educating patients about Homeopathy
- Educating student MDs about Homeopathy, its philosophy and benefits

- Educating researchers to conduct methodologically correct research in Homeopathy
- Educating policy makers on the impact of giving patient choices of health systems and patient empowerment
- Informing policy makers of findings from Homeopathic research such as this study to bridge the gap between research and policy
- Informing decision makers of the need to mandate inclusion of Homeopathy in health insurance coverage for equal access to Homeopathy and opportunity for patients to make choices
- Increasing availability of financial resources from government and private sectors to conduct rigorous research in Homeopathy

### **Educating patients about Homeopathy.**

As referred to earlier, previous studies have reflected that patient use of Homeopathy does not necessitate awareness of its philosophy (Mahmoudian & Sadri, 2014; Weyl Ben Arush et al., 2006) or difference thereof with the prescription methodology from conventional medicine with which patients are usually accustomed to. Additionally, continued use is linked to experienced effectiveness and not necessarily to an understanding of Homeopathic philosophies or principles of practice. Educating patients to a system of medicine that is very different from the conventional system is essential as a first step towards openness to the system. Patient education especially in countries or regions where there is limited or no exposure to the Homeopathic system, would mean starting with providing evidence-based information on effectiveness and

efficacy. Providing an understanding of the significance of case taking by a trained skilled Homeopathic physician and the highly individualized nature of medicine selection is necessary. Briefing patients about effectiveness of Homeopathic medicine being highly dependent on the correct selection of medicine for an illness will assist the population in appreciating that self-prescribing for an illness may not always be effective in Homeopathy. To educate patients, flyers are the best mode of direct visual aid in hospitals or other health care facilities. They help in providing easily accessible information. Flyers can include a brief introduction to Homeopathy, followed by evidence synthesis of patient reported experiences as well as effectiveness and efficacy findings. Additionally, in collaboration with Homeopathic community partners, contact information of Homeopathic physicians or researchers can be provided on the flyers for patients who are interested and have questions. Thus, building a patient understanding about Homeopathy is necessary in inclusion of Homeopathy in integrative models for health services.

### **Educating student MDs about Homeopathy, its philosophy and benefits.**

Similarly, medical students need exposure to unbiased information on philosophy and research in Homeopathy. Lectures on Homeopathy should be taught by trained, practicing Homeopathic physicians and researchers in conjunction with conventional medicine MDs. It is necessary to create acceptance and collaboration between systems and this can be attained by providing unbiased, research based information on Homeopathy. Personal opinions or myths cannot have a place in introducing Homeopathy to students of Medicine as this can potentially further the gap between



systems. CAM courses within MD curriculums need to be taught by CAM practitioners who are able to provide insight into individual CAM therapies, their philosophy and principles of practice. This will lay a foundation for newly graduating MDs of conventional medicine to be better prepared for an informed discussion of other therapeutic systems that prospective patients are likely to seek their opinion on.

### **Educating researchers to conduct methodologically correct research in Homeopathy.**

Research strategies should be determined for each CAM system independently based on its philosophy of practice. For Homeopathy, as explained in detail earlier, efficacy and effectiveness research must also take into consideration the philosophy and principles of practice. The principle of individualization should guide research design and conduct. For instance, in a controlled study this would involve one group to receive a Homeopathic medicine that is not pre-determined but instead selected by the individualization and case taking. Thus, selection of medicine would entail thorough Homeopathic case taking by a skilled Homeopathic physician such that individual patient's symptom totality is matched with carefully selected or matched medicine with similar totality of symptoms described under its scope of action. Each patient in the study in the 'Homeopathy' group is likely to get a different medicine while the control group receives either placebo or non-Homeopathic treatment. Allowing for optimal follow-up time based on acute or chronic being studied is also to be considered. Developing research strategies specific to Homeopathy may require collaboration

between trained Homeopathic physicians and researchers that have an understanding of Homeopathic principles.

An increasing number of diseases are multifactorial. They can be addressed by utilizing the best of therapies available in combination or independently based on findings of comparative research between therapies or combinations thereof.

Developing strategies to understand which therapeutic systems will be optimal in of themselves and which ones will act best in collaboration with another therapeutic system for any given illness should be researched.

### **Educating policy makers on the impact of giving patient choices of health systems and patient empowerment.**

It has been demonstrated in countries such as India and Switzerland that when provided with an equal choice and opportunity to use Homeopathy, populations are highly likely to seek it for their healthcare needs. In India Homeopathy is recognized as one of the 'AYUSH' systems thereby giving it direct validation from the government (Ministry of AYUSH, n.d.). In Switzerland, Homeopathy is covered under the basic (mandatory) insurance that makes it accessible to its population with 40% of the population having reported using it (Relton et al., 2017). Educating policy makers about benefits Homeopathy has to offer to Public Health and the overall health services will assist in bringing awareness to the inclusion of Homeopathy in health sectors. Patient empowerment brought about by choosing the health system they want to access for health care has the potential to increase patient responsibility towards health. A freedom of choice to use a therapeutic system is possible only with equal access to the

system in terms of availability of services and being able to avail of those services monetarily. Policies should be based on feedback from research on the ability of Homeopathy to be effective in acute and chronic conditions as well as cost-effectiveness. This study demonstrates that Homeopathy has the potential to reduce burden of disease as well as burden of health care costs. Informing decision makers on findings from Homeopathic research is required to create awareness at the policy level.

**Informing policy makers of findings from Homeopathic research such as this study to bridge the gap between research and policy.**

This is an important step in informing policy makers. Research synthesis of studies conducted with methods relevant to Homeopathy must be provided to policy makers. The advisory board to health policy makers must have representatives of CAM therapies to aid informed decision making during development of health policies such as inclusion of CAM in insurance and offering CAM in public health services, private practices, and hospitals.

For policy makers to institute appropriate policies they need to be aware and up to date with current research findings in the field of Homeopathy and not base policy decisions off of outdated research or myths. Additionally, the research dissemination needs to happen in a way that policy makers have easy and immediate access to research study findings for example as mentioned earlier by having research council with representation from unbiased Homeopathic researchers. Researchers and journals need to work in tandem for this to happen and be vigilant of research methods and dissemination of correct information.

**Informing decision makers of the need to mandate inclusion of Homeopathy in health insurance coverage for equal access to Homeopathy and opportunity for patients to make choices.**

For patients to have equal opportunity and access, Homeopathic services need inclusion (coverage) under health insurance policies, both government and private. Unless that occurs, evaluation of a populations' choice of health system is biased. Out-of-pocket costs for Homeopathy may largely be determining what patients choose. Hence awareness about the possible benefits of using Homeopathy in acute and chronic conditions should go hand in hand with equal access.

**Increasing availability of financial resources from government and private sectors to conduct rigorous research in Homeopathy.**

Financial restraints can prevent research. To begin with, funding for research in Homeopathy can be obtained from private investors that have benefited from use of Homeopathy. Additionally, if a research plan is modeled to include cost benefit of Homeopathy or cost effectiveness analysis between systems, it may provide further incentive for private as well as public sector funding.

Some examples are funding for research in India and from Germany. In India, the government has invested in laboratory based research in Homeopathy by opening virology labs dedicated to research in usefulness of Homeopathy in viral illnesses (Kaul, 2017). Based in Germany, The Karl and Veronica Carstens Foundation (respectively a former President of Germany and his wife, a conventional medical doctor) supports and funds research in Homeopathy globally (Carstens Foundation, 2018).

In Summary, it has been purported that populations are increasingly seeking non-conventional care in a basic need to stay closer to simple therapeutic systems that are more in tune with nature (Bellavite, 2015). In this scenario, an awareness and understanding of Homeopathy is necessary for an informed unbiased dialogue with practitioners when patients are interested in knowing about alternative options to health care. In summary, for integration of Homeopathy, it is necessary to understand that the steps are interlinked as well as build upon each other. For example, for increasing access to Homeopathy, it is necessary to inform decision makers about benefits and potential contribution of Homeopathy in health care of the society at large. This in turn could result in insurance coverage for Homeopathy comparable to some other therapeutic systems such as conventional medicine. Equal opportunity to use Homeopathy leads to increased availability of patients who have experienced Homeopathy and their participation in clinical as well as cost-affordability studies. It also provides an opportunity to conduct comparative analysis of various dimensions of clinical efficiency (effectiveness, side-effects, etc.) and cost efficiency between Homeopathy and other therapeutic systems. Additionally, in order to conduct research that will assist in developing policies, increased resources such as funding are necessary which can be brought about again by increasing awareness about benefits of Homeopathy in the population at large (patients, students, practitioners, and decision makers).

## References

- ACHENA. (n.d., 2018). Accreditation Commission for Homeopathic Education in North America. from <http://www.achena.org>
- Akinola, O. B. (2011). Should complementary and alternative medicine familiarisation modules be taught in African medical schools? *Zhong Xi Yi Jie He Xue Bao*, 9(11), 1165-1169.
- Al-Abri, R., & Al-Balushi, A. (2014). Patient satisfaction survey as a tool towards quality improvement. *Oman Med J*, 29(1), 3-7. doi: 10.5001/omj.2014.02
- Allegaert, K., & Choonara, I. (2016). All medicines have side effects. *Arch Dis Child*, 101(10), 951-952. doi: 10.1136/archdischild-2016-311014
- Alraek, T., Lee, M. S., Choi, T. Y., Cao, H., & Liu, J. (2011). Complementary and alternative medicine for patients with chronic fatigue syndrome: a systematic review. *BMC Complement Altern Med*, 11, 87. doi: 10.1186/1472-6882-11-87
- Alrowais, N. A., & Alyousefi, N. A. (2017). The prevalence extent of Complementary and Alternative Medicine (CAM) use among Saudis. *Saudi Pharm J*, 25(3), 306-318. doi: 10.1016/j.jsps.2016.09.009
- Aminov, R. I. (2010). A brief history of the antibiotic era: lessons learned and challenges for the future. *Front Microbiol*, 1, 134. doi: 10.3389/fmicb.2010.00134
- Amira, O. C., & Okubadejo, N. U. (2007). Frequency of complementary and alternative medicine utilization in hypertensive patients attending an urban tertiary care centre in Nigeria. *BMC Complement Altern Med*, 7, 30. doi: 10.1186/1472-6882-7-30
- Anastassopoulos, K. P., Chow, W., Ackerman, S. J., Tapia, C., Benson, C., & Kim, M. S. (2011). Oxycodone-related side effects: impact on degree of bother, adherence, pain relief, satisfaction, and quality of life. *J Opioid Manag*, 7(3), 203-215.
- Anelli, M., Scheepers, L., Sermeus, G., & Van Wassenhoven, M. (2002). Homeopathy and health related Quality of Life: a survey in six European countries. *Homeopathy*, 91(1), 18-21.
- Applbaum, K. (2009). 'Consumers are patients!' shared decision-making and treatment non-compliance as business opportunity. *Transcult Psychiatry*, 46(1), 107-130. doi: 10.1177/1363461509102290
- Astin, J. A. (1998). Why patients use alternative medicine: results of a national study. *JAMA*, 279(19), 1548-1553.
- Avina, R. L., & Schneiderman, L. J. (1978). Why patients choose homeopathy. *West J Med*, 128(4), 366-369.
- Banerjee, K., Mathie, R. T., Costelloe, C., & Howick, J. (2017). Homeopathy for Allergic Rhinitis: A Systematic Review. *J Altern Complement Med*, 23(6), 426-444. doi: 10.1089/acm.2016.0310
- Bar-Cohen, B., DeKeyser, F., & Wagner, N. (2000). [Reactions of patients to complementary medicine]. *Harefuah*, 139(7-8), 263-266, 327.

- Baranowsky, J., Klose, P., Musial, F., Hauser, W., Dobos, G., & Langhorst, J. (2009). Qualitative systemic review of randomized controlled trials on complementary and alternative medicine treatments in fibromyalgia. *Rheumatol Int*, 30(1), 1-21. doi: 10.1007/s00296-009-0977-5
- Barnes, P.M., Bloom, B., & Nahin, R. . (2008). CDC National Health Statistics Report #12. Complementary and Alternative Medicine Use Among Adults and Children: United States, 2007.
- Beck, L. C., Trombetta, W. L., & Share, S. (1986). Using focus group sessions before decisions are made. *N C Med J*, 47(2), 73-74.
- Beer, A. M., Burlaka, I., Buskin, S., Kamenov, B., Pettenazzo, A., Popova, D., . . . Oberbaum, M. (2016). Usage and Attitudes Towards Natural Remedies and Homeopathy in General Pediatrics: A Cross-Country Overview. *Glob Pediatr Health*, 3, 2333794X15625409. doi: 10.1177/2333794x15625409
- Beer, A. M., Fey, S., Zimmer, M., Teske, W., Schremmer, D., & Wiebelitz, K. R. (2012). [Effectiveness and safety of a homeopathic drug combination in the treatment of chronic low back pain. A double-blind, randomized, placebo-controlled clinical trial]. *MMW Fortschr Med*, 154 Suppl 2, 48-57.
- Bekkelund, S. I., Ofte, H. K., & Alstadhaug, K. B. (2014). Patient satisfaction with conventional, complementary, and alternative treatment for cluster headache in a Norwegian cohort. *Scand J Prim Health Care*, 32(3), 111-116. doi: 10.3109/02813432.2014.944410
- Bell, I. R., Lewis, D. A., 2nd, Brooks, A. J., Schwartz, G. E., Lewis, S. E., Caspi, O., . . . Baldwin, C. M. (2004). Individual differences in response to randomly assigned active individualized homeopathic and placebo treatment in fibromyalgia: implications of a double-blinded optional crossover design. *J Altern Complement Med*, 10(2), 269-283. doi: 10.1089/107555304323062266
- Bell, I. R., Lewis, D. A., 2nd, Brooks, A. J., Schwartz, G. E., Lewis, S. E., Walsh, B. T., & Baldwin, C. M. (2004). Improved clinical status in fibromyalgia patients treated with individualized homeopathic remedies versus placebo. *Rheumatology (Oxford)*, 43(5), 577-582. doi: 10.1093/rheumatology/keh111
- Bellavite, P. (2015). Homeopathy and integrative medicine: keeping an open mind. *J Med Person*, 13(1), 1-6. doi: 10.1007/s12682-014-0198-x
- Bellavite, P., Conforti, A., Piasere, V., & Ortolani, R. (2005). Immunology and homeopathy. 1. Historical background. *Evid Based Complement Alternat Med*, 2(4), 441-452. doi: 10.1093/ecam/neh141
- Bergene, E. H., Rø, T. B., & Steinsbekk, A. (2017). Strategies parents use to give children oral medicine: a qualitative study of online discussion forums. *Scand J Prim Health Care*, 35(2), 221-228. doi: 10.1080/02813432.2017.1333308
- Berni, E., de Voogd, H., Halcox, J. P., Butler, C. C., Bannister, C. A., Jenkins-Jones, S., . . . Currie, C. J. (2017). Risk of cardiovascular events, arrhythmia and all-cause mortality associated with clarithromycin versus alternative antibiotics prescribed for respiratory tract infections: a retrospective cohort study. *BMJ Open*, 7(1), e013398. doi: 10.1136/bmjopen-2016-013398
- Bhuchar, S., Katta, R., & Wolf, J. (2012). Complementary and alternative medicine in dermatology: an overview of selected modalities for the practicing dermatologist. *Am J Clin Dermatol*, 13(5), 311-317. doi: 10.2165/11597560-000000000-00000

- Black, L., Clarke, T., Barnes, P., Stussman, B., & Nahin, R. (2015). Use of complementary health approaches among children aged 4–17 years in the United States: National Health Interview Survey, 2007–2012. National health statistics reports; no 78. Hyattsville, MD: National Center for Health Statistics.
- Blanchette, M. A., Stockkendahl, M. J., Borges Da Silva, R., Boruff, J., Harrison, P., & Bussieres, A. (2016). Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. *PLoS One*, *11*(8), e0160037. doi: 10.1371/journal.pone.0160037
- Bodeker, G., & Kronenberg, F. (2002). A public health agenda for traditional, complementary, and alternative medicine. *Am J Public Health*, *92*(10), 1582-1591.
- Boericke, W. . (1927). *Boericke's Materia Medica with Repertory* (9th ed.).
- Boltman-Binkowski, H. (2016). A systematic review: Are herbal and homeopathic remedies used during pregnancy safe? *Curationis*, *39*(1), 1514. doi: 10.4102/curationis.v39i1.1514
- Bornhoft, G., Wolf, U., von Ammon, K., Righetti, M., Masion-Bergemann, S., Baumgartner, S., . . . Matthiessen, P. F. (2006). Effectiveness, Safety and Cost-Effectiveness of Homeopathy in General Practice - Summarized Health Technology Assessment. *Forschende Komplementarmedizin*, *13*, 19-29.
- Brambila-Tapia, A. J., Rios-Gonzalez, B. E., Lopez-Barragan, L., Saldana-Cruz, A. M., & Rodriguez-Vazquez, K. (2016). Attitudes, Knowledge, Use, and Recommendation of Complementary and Alternative Medicine by Health Professionals in Western Mexico. *Explore (NY)*, *12*(3), 180-187. doi: 10.1016/j.explore.2016.02.002
- Bredart, A., Bouleuc, C., & Dolbeault, S. (2005). Doctor-patient communication and satisfaction with care in oncology. *Curr Opin Oncol*, *17*(4), 351-354.
- Breuner, C. C. (2002). Complementary medicine in pediatrics: a review of acupuncture, homeopathy, massage, and chiropractic therapies. *Curr Probl Pediatr Adolesc Health Care*, *32*(10), 353-384. doi: 10.1067/mps.2002.129334
- Brien, S., Lachance, L., Prescott, P., McDermott, C., & Lewith, G. (2011). Homeopathy has clinical benefits in rheumatoid arthritis patients that are attributable to the consultation process but not the homeopathic remedy: a randomized controlled clinical trial. *Rheumatology (Oxford)*, *50*(6), 1070-1082. doi: 10.1093/rheumatology/keq234
- Buhling, K. J., Daniels, B. V., Studnitz, F. S., Eulenburg, C., & Mueck, A. O. (2014). The use of complementary and alternative medicine by women transitioning through menopause in Germany: results of a survey of women aged 45-60 years. *Complement Ther Med*, *22*(1), 94-98. doi: 10.1016/j.ctim.2013.12.004
- Burke, A., Ginzburg, K., Collie, K., Trachtenberg, D., & Muhammad, M. (2005). Exploring the role of complementary and alternative medicine in public health practice and training. *J Altern Complement Med*, *11*(5), 931-936. doi: 10.1089/acm.2005.11.931
- Busari, A. A., & Mufutau, M. A. (2017). High prevalence of complementary and alternative medicine use among patients with sickle cell disease in a tertiary hospital in Lagos, South West, Nigeria. *BMC Complement Altern Med*, *17*(1), 299. doi: 10.1186/s12906-017-1812-2
- Bussing, A., Ostermann, T., Heusser, P., & Matthiessen, P. F. (2011). Usage of alternative medical systems, acupuncture, homeopathy and anthroposophic medicine, by older German adults. *Zhong Xi Yi Jie He Xue Bao*, *9*(8), 847-856.



- Bussing, A., Ostermann, T., Raak, C., & Matthiessen, P. F. (2010). Adaptive coping strategies and attitudes toward health and healing in German homeopathy and acupuncture users. *Explore (NY)*, 6(4), 237-245. doi: 10.1016/j.explore.2010.04.002
- Cameron, A., Ewen, M., Ross-Degnan, D., Ball, D., & Laing, R. (2009). Medicine prices, availability, and affordability in 36 developing and middle-income countries: a secondary analysis. *Lancet*, 373(9659), 240-249. doi: 10.1016/s0140-6736(08)61762-6
- Carpenter, J. S., & Neal, J. G. (2005). Other complementary and alternative medicine modalities: acupuncture, magnets, reflexology, and homeopathy. *Am J Med*, 118 Suppl 12B, 109-117. doi: 10.1016/j.amjmed.2005.09.058
- Carr, R. R., & Nahata, M. C. (2006). Complementary and alternative medicine for upper-respiratory-tract infection in children. *Am J Health Syst Pharm*, 63(1), 33-39. doi: 10.2146/ajhp040613
- Carstens Foundation. (2018). Karl and Veronica Carstens Foundation Retrieved September 2018, 2018, from <https://translate.google.com/translate?hl=en&sl=de&u=https://http://www.carstens-stiftung.de/&prev=search>
- Carter, G. T., Duong, V., Ho, S., Ngo, K. C., Greer, C. L., & Weeks, D. L. (2014). Side effects of commonly prescribed analgesic medications. *Phys Med Rehabil Clin N Am*, 25(2), 457-470. doi: 10.1016/j.pmr.2014.01.007
- Chaiet, S. R., & Marcus, B. C. (2016). Perioperative Arnica montana for Reduction of Ecchymosis in Rhinoplasty Surgery. *Ann Plast Surg*, 76(5), 477-482. doi: 10.1097/sap.0000000000000312
- Chandrashekar, S. (2011). Complementary and alternative medicine in rheumatoid arthritis. *Chin J Integr Med*, 17(10), 731-734. doi: 10.1007/s11655-011-0870-4
- Chiam, E., Weinberg, L., Bailey, M., McNicol, L., & Bellomo, R. (2016). The haemodynamic effects of intravenous paracetamol (acetaminophen) in healthy volunteers: a double-blind, randomized, triple crossover trial. *Br J Clin Pharmacol*, 81(4), 605-612. doi: 10.1111/bcp.12841
- Chitindingu, E., George, G., & Gow, J. (2014). A review of the integration of traditional, complementary and alternative medicine into the curriculum of South African medical schools. *BMC Med Educ*, 14, 40. doi: 10.1186/1472-6920-14-40
- Chung, V. C., Yip, B. H., Yu, E. L., Liu, S., Ho, R. S., Sit, R. W., . . . Wong, S. Y. (2016). Patient Perceptions of Expression of Empathy From Chinese Medicine Clinicians in a Chinese Population: A Cross-Sectional Study. *Medicine (Baltimore)*, 95(17), e3316. doi: 10.1097/md.00000000000003316
- Clack, G. B., Allen, J., Cooper, D., & Head, J. O. (2004). Personality differences between doctors and their patients: implications for the teaching of communication skills. *Med Educ*, 38(2), 177-186.
- Clarke, T. C., Black, L. I., Stussman, B. J., Barnes, P. M., & Nahin, R. L. (2015). Trends in the use of complementary health approaches among adults: United States, 2002-2012. *Natl Health Stat Report*(79), 1-16.
- Cockburn, N., Pateman, K., Taing, M. W., Pradhan, A., & Ford, P. J. (2017). Managing the oral side-effects of medications used to treat multiple sclerosis. *Aust Dent J*, 62(3), 331-336. doi: 10.1111/adj.12510
- Common Side Effects of HIV Medicines. (2017). *Am Fam Physician*, 96(3), Online.

- Complementary and Alternative Medicine in the United States. (2005). from <https://http://www.ncbi.nlm.nih.gov/books/NBK83804/>
- Cook, T. F., Frighetto, L., Marra, C. A., & Jewesson, P. J. (2002). Patterns of use and patients' attitudes toward complementary medications: a survey of adult general medicine patients at a major Canadian teaching hospital. *Can J Clin Pharmacol*, 9(4), 183-189.
- Cooper, K., & Relton, C. (2010). Homeopathy for insomnia: a systematic review of research evidence. *Sleep Med Rev*, 14(5), 329-337. doi: 10.1016/j.smr.2009.11.005
- Cooper, V., Metcalf, L., Versnel, J., Upton, J., Walker, S., & Horne, R. (2015). Patient-reported side effects, concerns and adherence to corticosteroid treatment for asthma, and comparison with physician estimates of side-effect prevalence: a UK-wide, cross-sectional study. *NPJ Prim Care Respir Med*, 25, 15026. doi: 10.1038/npjpcrm.2015.26
- Cope, D. G. (2014). Using electronic surveys in nursing research. *Oncol Nurs Forum*, 41(6), 681-682. doi: 10.1188/14.onf.681-682
- Croce, A.J. (2000). The thought behind the action- Potency: What it is and what it means. *Homeopathy Today Online*, (April 2000). Retrieved from National center for Homeopathy website: <http://www.homeopathycenter.org/homeopathy-today/thought-behind-action-potency-what-it-and-what-it-means>
- Crocetti, E., Crotti, N., Feltrin, A., Ponton, P., Geddes, M., & Buiatti, E. (1998). The use of complementary therapies by breast cancer patients attending conventional treatment. *Eur J Cancer*, 34(3), 324-328.
- Crocker, R. L., Grizzle, A. J., Hurwitz, J. T., Rehfeld, R. A., Abraham, I., Horwitz, R., . . . Maizes, V. (2017). Integrative medicine primary care: assessing the practice model through patients' experiences. *BMC Complement Altern Med*, 17(1), 490. doi: 10.1186/s12906-017-1996-5
- Curtis, C., Liu, C., Bollerman, T. J., & Pinykh, O. S. (2017). Machine Learning for Predicting Patient Wait Times and Appointment Delays. *J Am Coll Radiol*. doi: 10.1016/j.jacr.2017.08.021
- Danno, K., Colas, A., Masson, J. L., & Bordet, M. F. (2013). Homeopathic treatment of migraine in children: results of a prospective, multicenter, observational study. *J Altern Complement Med*, 19(2), 119-123. doi: 10.1089/acm.2011.0821
- Dantas, F., Fisher, P., Walach, H., Wieland, F., Rastogi, D. P., Teixeira, H., . . . Weckx, L. L. M. (2007). A systematic review of the quality of homeopathic pathogenetic trials published from 1945 to 1995. *Homeopathy*, 96(1), 4-16.
- Dantas, F., & Rampes, H. (2000). Do homeopathic medicines provoke adverse effects? A systematic review. *Br Homeopath J*, 89 Suppl 1, S35-38.
- DeFilippis, M. (2018). The Use of Complementary Alternative Medicine in Children and Adolescents with Autism Spectrum Disorder. *Psychopharmacol Bull*, 48(1), 40-63.
- Derry, C. J., Derry, S., McQuay, H. J., & Moore, R. A. (2006). Systematic review of systematic reviews of acupuncture published 1996-2005. *Clinical Medicine*, 6(4), 381-386.
- Dilli Homoeopathic Anusandhan Parishad. (n.d.). Origin and growth of Homeopathy in India. 2018, from <http://www.homeoint.org/site/delhihomeo/historyindia.htm>
- DiMatteo, M. R. (1998). The role of the physician in the emerging health care environment. *West J Med*, 168(5), 328-333.
- Dolceamore, T. R., Altomare, F., Zurlo, F., & Miniero, R. (2012). Use of alternative-complementary-medicine (CAM) in Calabrian children. *Ital J Pediatr*, 38, 70. doi: 10.1186/1824-7288-38-70

- Dossett, M. L., Davis, R. B., Kaptchuk, T. J., & Yeh, G. Y. (2016). Homeopathy Use by US Adults: Results of a National Survey. *Am J Public Health, 106*(4), 743-745. doi: 10.2105/ajph.2015.303025
- Downer, S. M., Cody, M. M., McCluskey, P., Wilson, P. D., Arnott, S. J., Lister, T. A., & Slevin, M. L. (1994). Pursuit and practice of complementary therapies by cancer patients receiving conventional treatment. *BMJ, 309*(6947), 86-89.
- Doyle, C., Lennox, L., & Bell, D. (2013). A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open, 3*(1). doi: 10.1136/bmjopen-2012-001570
- Ducrest, I., Marques-Vidal, P., Faouzi, M., Burnand, B., Waeber, G., & Rodondi, P. Y. (2017). Complementary medicine use among general internal medicine inpatients in a Swiss university hospital. *Int J Clin Pract, 71*(7). doi: 10.1111/ijcp.12952
- Dutescu, R. M., Panfil, C., & Schrage, N. (2015). Osmolarity of prevalent eye drops, side effects, and therapeutic approaches. *Cornea, 34*(5), 560-566. doi: 10.1097/ico.0000000000000368
- Eardley, S., Bishop, F. L., Prescott, P., Cardini, F., Brinkhaus, B., Santos-Rey, K., . . . Lewith, G. (2012). A Systematic Literature Review of Complementary and Alternative Medicine Prevalence in EU. *Forschende Komplementarmedizin, 19*, 18-28.
- Eizayaga, F., Eizayaga, J., & Eizayaga, F. (1996). Homoeopathic treatment of bronchial asthma: Retrospective study of 62 cases. *British Homoeopathic Journal, 85*(1), 28-33.
- Elafros, M. A., Bui, E., & Birbeck, G. L. (2014). Medication side effects among people with epilepsy taking phenobarbital in Zambia. *Epilepsy Res, 108*(9), 1680-1684. doi: 10.1016/j.epilepsyres.2014.08.005
- Enblom, A., & Johnsson, A. (2017). Type and frequency of side effects during PC6 acupuncture: observations from therapists and patients participating in clinical efficacy trials of acupuncture. *Acupunct Med, 35*(6), 421-429. doi: 10.1136/acupmed-2016-011270
- Ernst, E. (2012). Homeopathy for eczema: a systematic review of controlled clinical trials. *Br J Dermatol, 166*(6), 1170-1172. doi: 10.1111/j.1365-2133.2012.10994.x
- European Central Council of Homeopaths. (2018). Regulatory status: The legal status of Homeopathy and Homeopathic practitioners. *The platform for Homeopathy profession in Europe*. Retrieved 2018, from <http://www.homeopathy-ecch.org/homeopathy-in-europe/regulatory-status/>
- Eysenbach, G., & Wyatt, J. (2002). Using the Internet for surveys and health research. *J Med Internet Res, 4*(2), E13. doi: 10.2196/jmir.4.2.e13
- Firkins, R., Eisfeld, H., Keinki, C., Buentzel, J., Hochhaus, A., Schmidt, T., & Huebner, J. (2018). The use of complementary and alternative medicine by patients in routine care and the risk of interactions. *J Cancer Res Clin Oncol*. doi: 10.1007/s00432-018-2587-7
- Fisher, C., Sibbritt, D., Hickman, L., & Adams, J. (2016). A critical review of complementary and alternative medicine use by women with cyclic perimenstrual pain and discomfort: a focus upon prevalence, patterns and applications of use and users' motivations, information seeking and self-perceived efficacy. *Acta Obstet Gynecol Scand, 95*(8), 861-871. doi: 10.1111/aogs.12921
- Flottorp, S., Farah, M. G., Thurmer, H., Johansen, M., & Fretheim, A. (2008). *Non-Pharmacological Interventions to Reduce the Risk for Cardiovascular Disease: A*

- Summary of Systematic Reviews*. Oslo, Norway: 2008 by The Norwegian Institute of Public Health (NIPH).
- Franik, S., Huidekoper, H. H., Visser, G., de Vries, M., de Boer, L., Hermans-Peters, M., . . . Wortmann, S. B. (2014). High prevalence of complementary and alternative medicine use in patients with genetically proven mitochondrial disorders. *J Inherit Metab Dis*. doi: 10.1007/s10545-014-9773-9
- Frank, R. (2002). Homeopath & patient--a dyad of harmony? *Soc Sci Med*, 55(8), 1285-1296.
- Frenkel, M. (2015). Is There a Role for Homeopathy in Cancer Care? Questions and Challenges. *Curr Oncol Rep*, 17(9), 43. doi: 10.1007/s11912-015-0467-8
- Fulop, J. A., Grimone, A., & Victorson, D. (2017). Restoring Balance for People with Cancer Through Integrative Oncology. *Prim Care*, 44(2), 323-335. doi: 10.1016/j.pop.2017.02.009
- Furnham, A., & Smith, C. (1988). Choosing alternative medicine: a comparison of the beliefs of patients visiting a general practitioner and a homoeopath. *Soc Sci Med*, 26(7), 685-689.
- Gaertner, K., Mullner, M., Friehs, H., Schuster, E., Marosi, C., Muchitsch, I., . . . Kaye, A. D. (2014). Additive homeopathy in cancer patients: Retrospective survival data from a homeopathic outpatient unit at the Medical University of Vienna. *Complement Ther Med*, 22(2), 320-332. doi: 10.1016/j.ctim.2013.12.014
- GBD 2016 Disease and injury incidence and prevalence collaborators. (2017, Sep 16). Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet*. 2017/09/19. Retrieved 10100, 390, from [https://http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32154-2/fulltext - %20](https://http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32154-2/fulltext-%20)
- Gediz, F., Payzin, B. K., Ecemis, S., Guler, N., Yilmaz, A. F., Topcugil, F., & Berdeli, A. (2016). Efficacy and safety of eculizumab in adult patients with atypical hemolytic uremic syndrome: A single center experience from Turkey. *Transfus Apher Sci*, 55(3), 357-362. doi: 10.1016/j.transci.2016.09.017
- Gemmell, H. A., & Hayes, B. M. (2001). Patient satisfaction with chiropractic physicians in an independent physicians' association. *J Manipulative Physiol Ther*, 24(9), 556-559. doi: 10.1067/mmt.2001.118980
- Georgopoulou, S., Prothero, L., & D'Cruz, D. P. (2018). Physician-patient communication in rheumatology: a systematic review. *Rheumatol Int*, 38(5), 763-775. doi: 10.1007/s00296-018-4016-2
- Ghosh, A. (2010). A short history of the development of homeopathy in India. *Homeopathy*, 99(2), 130-136. doi: 10.1016/j.homp.2009.10.001
- Ghosh, A., Roe, P., Shipley, M., & English, J. (1983). Homoeopathic treatment of osteoarthritis. *Lancet*, 1(8319), 304-305.
- Giordano, J., Garcia, M. K., Boatwright, D., & Klein, K. (2003). Complementary and alternative medicine in mainstream public health: a role for research in fostering integration. *J Altern Complement Med*, 9(3), 441-445. doi: 10.1089/107555303765551660
- Gleiss, A., Frass, M., & Gaertner, K. (2016). Re-analysis of survival data of cancer patients utilizing additive homeopathy. *Complement Ther Med*, 27, 65-67. doi: 10.1016/j.ctim.2016.06.001

- Global Wellness Institute. (2016). Wellness now a \$3.72 trillion global industry with 10.6% growth from 2013-2015. 2018, from <https://http://www.globalwellnessinstitute.org/wellness-now-a-372-trillion-global-industry/>
- Gmunder, R., & Kissling, R. (2002). [The Efficacy of homeopathy in the treatment of chronic low back pain compared to standardized physiotherapy]. *Z Orthop Ihre Grenzgeb*, 140(5), 503-508. doi: 10.1055/s-2002-34004
- Goldstein, M. S., & Glik, D. (1998). Use of and satisfaction with homeopathy in a patient population. *Altern Ther Health Med*, 4(2), 60-65.
- Gollschewski, S., Anderson, D., Skerman, H., & Lyons-Wall, P. (2005). Associations between the use of complementary and alternative medications and demographic, health and lifestyle factors in mid-life Australian women. *Climacteric*, 8(3), 271-278. doi: 10.1080/13697130500186610
- Gonzalez-Hernandez, A., Marichal-Cancino, B., MaassenVanDenBrink, A., & Villalon, C. (2018). Side effects associated with current and prospective antimigraine pharmacotherapies. *Expert Opin Drug Metab Toxicol*, 14(1), 25-41. doi: 10.1080/17425255.2018.1416097
- Gordon, J. S. (1996). Alternative medicine and the family physician. *Am Fam Physician*, 54(7), 2205-2212, 2218-2220.
- Gottschling, S., Meyer, S., Langler, A., Scharifi, G., Ebinger, F., & Gronwald, B. (2014). Differences in use of complementary and alternative medicine between children and adolescents with cancer in Germany: a population based survey. *Pediatr Blood Cancer*, 61(3), 488-492. doi: 10.1002/pbc.24769
- Grabia, S., & Ernst, E. (2003). Homeopathic aggravations: a systematic review of randomised, placebo-controlled clinical trials. *Homeopathy*, 92(2), 92-98.
- Grant, S. J., Bin, Y. S., Kiat, H., & Chang, D. H. (2012). The use of complementary and alternative medicine by people with cardiovascular disease: a systematic review. *BMC Public Health*, 12, 299. doi: 10.1186/1471-2458-12-299
- Gross, D. A., Zyzanski, S. J., Borawski, E. A., Cebul, R. D., & Stange, K. C. (1998). Patient satisfaction with time spent with their physician. *J Fam Pract*, 47(2), 133-137.
- Gunther, M. (1999). [The homeopathic patient: comparative results of homeopathic and conventional GP patient interviews]. *Med Ges Gesch*, 18, 119-136.
- Guthlin, C., Lange, O., & Walach, H. (2004). Measuring the effects of acupuncture and homoeopathy in general practice: an uncontrolled prospective documentation approach. *BMC Public Health*, 4, 6. doi: 10.1186/1471-2458-4-6
- Guyatt, G. H., Townsend, M., Berman, L. B., & Keller, J. L. (1987). A comparison of Likert and visual analogue scales for measuring change in function. *J Chronic Dis*, 40(12), 1129-1133.
- Ha, J. F., & Longnecker, N. (2010). Doctor-patient communication: a review. *Ochsner J*, 10(1), 38-43.
- Hagedoorn, M., Uijl, S. G., Van Sonderen, E., Ranchor, A. V., Grol, B. M., Otter, R., . . . Sanderman, R. (2003). Structure and reliability of Ware's Patient Satisfaction Questionnaire III: patients' satisfaction with oncological care in the Netherlands. *Med Care*, 41(2), 254-263. doi: 10.1097/01.mlr.0000044904.70286.b4
- Hahnemann, S. . (1921). *Organon of Medicine* (W. Boericke, Trans. 6th ed.). New Delhi: Indian books and periodicals publishers.

- Hama, R., & Bennett, C. L. (2017). The mechanisms of sudden-onset type adverse reactions to oseltamivir. *Acta Neurol Scand*, 135(2), 148-160. doi: 10.1111/ane.12629
- Harland, N. J., Dawkin, M. J., & Martin, D. (2015). Relative utility of a visual analogue scale vs. a six-point Likert scale in the measurement of global subject outcome in patients with low back pain receiving physiotherapy. *Physiotherapy*, 101(1), 50-54. doi: 10.1016/j.physio.2014.06.004
- Hartmann, N., Neiningner, M. P., Bernhard, M. K., Syrbe, S., Nickel, P., Merckenschlager, A., . . . Bertsche, A. (2016). Use of complementary and alternative medicine (CAM) by parents in their children and adolescents with epilepsy - Prevalence, predictors and parents' assessment. *Eur J Paediatr Neurol*, 20(1), 11-19. doi: 10.1016/j.ejpn.2015.11.003
- Hartog, C. S. (2009). Elements of effective communication--rediscoveries from homeopathy. *Patient Educ Couns*, 77(2), 172-178. doi: 10.1016/j.pec.2009.03.021
- Herman, P. M., Poindexter, B. L., Witt, C. M., & Eisenberg, D. M. (2012). Are complementary therapies and integrative care cost-effective? A systematic review of economic evaluations. *BMJ Open*, 2(5). doi: 10.1136/bmjopen-2012-001046
- Ho, D., Jagdeo, J., & Waldorf, H. A. (2016). Is There a Role for Arnica and Bromelain in Prevention of Post-Procedure Ecchymosis or Edema? A Systematic Review of the Literature. *Dermatol Surg*, 42(4), 445-463. doi: 10.1097/dss.0000000000000701
- Hoare, C., Li Wan Po, A., & Williams, H. (2000). Systematic review of treatments for atopic eczema. *Health Technol Assess*, 4(37), 1-191.
- Holdcraft, L. C., Assefi, N., & Buchwald, D. (2003). Complementary and alternative medicine in fibromyalgia and related syndromes. *Best Pract Res Clin Rheumatol*, 17(4), 667-683.
- Homeopathy Research Institute. (n.d.). Homeopathy Research Institute Essential Evidence from <https://http://www.hri-research.org/resources/essentialevidence/>
- Hopathy. (2017). Homeopathic case taking. from <https://hopathy.com/organon-philosophy/case-taking/>
- Hsu, K. Y., Dunn, J. E., Bradshaw, Y. S., & Conboy, L. (2014). Lessons from an acupuncture teaching clinic: patient characteristics and pain management effectiveness. *Explore (NY)*, 10(5), 284-293. doi: 10.1016/j.explore.2014.06.004
- Huang, A., Seshadri, K., Matthews, T. A., & Ostfeld, B. M. (2013). Parental perspectives on use, benefits, and physician knowledge of complementary and alternative medicine in children with autistic disorder and attention-deficit/hyperactivity disorder. *J Altern Complement Med*, 19(9), 746-750. doi: 10.1089/acm.2012.0640
- Huang, T., Shu, X., Huang, Y. S., & Cheuk, D. K. (2011). Complementary and miscellaneous interventions for nocturnal enuresis in children. *Cochrane Database Syst Rev*(12), CD005230. doi: 10.1002/14651858.CD005230.pub2
- Hunold, K. M., Esserman, D. A., Isaacs, C. G., Dickey, R. M., Pereira, G. F., Fillingim, R. B., . . . Platts-Mills, T. F. (2013). Side effects from oral opioids in older adults during the first week of treatment for acute musculoskeletal pain. *Acad Emerg Med*, 20(9), 872-879. doi: 10.1111/acem.12212
- Indo Asian News Service. (2018). Traditional medicine: 50% rise in patients seeking Homeopathic treatment, *Hindustan Times*. Retrieved from <https://http://www.hindustantimes.com/more-lifestyle/traditional-medicine-50->

[rise-in-patients-seeking-homeopathic-treatment/story-52z9z5s4BNXauWr81CjBr\].html](http://www.medicines.com/health/india-gets-first-state-of-the-art-homoeopathy-research-lab/story-m1fsmodr8SB1VSIZeet0YJ.html)

- Inglehart, M. R., Lee, A. H., Koltuniak, K. G., Morton, T. A., & Wheaton, J. M. (2016). Do Waiting Times in Dental Offices Affect Patient Satisfaction and Evaluations of Patient-Provider Relationships? A Quasi-experimental Study. *J Dent Hyg*, 90(3), 203-211.
- Itamura, R., & Hosoya, R. (2003). Homeopathic treatment of Japanese patients with intractable atopic dermatitis. *Homeopathy*, 92(2), 108-114.
- Jacobs, J., Chapman, E. H., & Crothers, D. (1998). Patient characteristics and practice patterns of physicians using homeopathy. *Arch Fam Med*, 7(6), 537-540.
- Jadhav, M. P., Jadhav, P. M., Shelke, P., Sharma, Y., & Nadkar, M. (2011). Assessment of use of complementary alternative medicine and its impact on quality of life in the patients attending rheumatology clinic, in a tertiary care centre in India. *Indian J Med Sci*, 65(2), 50-57. doi: 10.4103/0019-5359.103961
- Jasemi, M., Valizadeh, L., Zamanzadeh, V., & Keogh, B. (2017). A Concept Analysis of Holistic Care by Hybrid Model. *Indian J Palliat Care*, 23(1), 71-80. doi: 10.4103/0973-1075.197960
- Jonas, W. B., Linde, K., & Ramirez, G. (2000). Homeopathy and rheumatic disease. *Rheum Dis Clin North Am*, 26(1), 117-123, x.
- Jong, M. C., Buskin, S. L., Ilyenko, L., Kholodova, I., Burkart, J., Weber, S., . . . Klement, P. (2016). Effectiveness, safety and tolerability of a complex homeopathic medicinal product in the prevention of recurrent acute upper respiratory tract infections in children: a multicenter, open, comparative, randomized, controlled clinical trial. *Multidiscip Respir Med*, 11, 19. doi: 10.1186/s40248-016-0056-1
- Joos, S., Eicher, C., Musselmann, B., & Kadmon, M. (2008). [Development and implementation of a 'curriculum complementary and alternative medicine' at the Heidelberg Medical School]. *Forsch Komplementmed*, 15(5), 251-260. doi: 10.1159/000152678
- Kalder, M., Knoblauch, K., Hrgovic, I., & Munstedt, K. (2011). Use of complementary and alternative medicine during pregnancy and delivery. *Arch Gynecol Obstet*, 283(3), 475-482. doi: 10.1007/s00404-010-1388-2
- Kassab, S., Cummings, M., Berkovitz, S., van Haselen, R., & Fisher, P. (2009). Homeopathic medicines for adverse effects of cancer treatments. *Cochrane Database Syst Rev*(2), CD004845. doi: 10.1002/14651858.CD004845.pub2
- Katz, D., Tengekyon, A., Kahan, N., & Calderon-Margalit, R. (2018). Patient and physician characteristics affect adherence to screening mammography: A population-based cohort study. *PLoS One*, 13(3), e0194409. doi: 10.1371/journal.pone.0194409
- Katz, T. (1995). Homoeopathic treatment of premenstrual symptoms. *Complement Ther Nurs Midwifery*, 1(5), 133-137.
- Kaul, R. (2017). India gets first state-of-the-art Homoeopathy research lab, *Hindustan Times*. Retrieved from <https://http://www.hindustantimes.com/health/india-gets-first-state-of-the-art-homoeopathy-research-lab/story-m1fsmodr8SB1VSIZeet0YJ.html>
- Kaur, S., & Singh, V. (2018). Asthma and Medicines - Long-Term Side-Effects, Monitoring and Dose Titration. *Indian J Pediatr*. doi: 10.1007/s12098-017-2553-4

- Keely, E., Traczyk, L., & Liddy, C. (2015). Patients' Perspectives on Wait Times and the Referral-Consultation Process While Attending a Tertiary Diabetes and Endocrinology Centre: Is Econsultation an Acceptable Option? *Can J Diabetes*, 39(4), 325-329. doi: 10.1016/j.jcjd.2014.12.010
- Keil, T., Witt, C. M., Roll, S., Vance, W., Weber, K., Wegscheider, K., & Willich, S. N. (2008). Homoeopathic versus conventional treatment of children with eczema: a comparative cohort study. *Complement Ther Med*, 16(1), 15-21. doi: 10.1016/j.ctim.2006.10.001
- Kelland, K. . (2011). Chronic disease to cost \$47 trillion by 2030: WEF, Health News, Reuters. Retrieved from <https://http://www.reuters.com/article/us-disease-chronic-costs/chronic-disease-to-cost-47-trillion-by-2030-wef-idUSTRE78H2IY20110918>
- Keller, M., Blench, M., Tolentino, H., Freifeld, C. C., Mandl, K. D., Mawudeku, A., . . . Brownstein, J. S. (2009). Use of unstructured event-based reports for global infectious disease surveillance. *Emerg Infect Dis*, 15(5), 689-695. doi: 10.3201/eid1505.081114
- Kemppainen, L. M., Kemppainen, T. T., Reippainen, J. A., Salmenniemi, S. T., & Vuolanto, P. H. (2017). Use of complementary and alternative medicine in Europe: Health-related and sociodemographic determinants. *Scand J Public Health*, 1403494817733869. doi: 10.1177/1403494817733869
- Kent, J. (2003). *The Art and Science of Homeopathic Medicine*: Dover Publications.
- Kent, J. (2009). *Lectures on Homeopathic Philosophy*: Watchmaker publishing.
- Kim, D., Lim, B., & Kim, C. (2015). Relationship between patient satisfaction with medical doctors and the use of traditional Korean medicine in Korea. *BMC Complement Altern Med*, 15, 355. doi: 10.1186/s12906-015-0879-x
- Ko, G. D., & Berbrayer, D. (2000). Complementary and alternative medicine: Canadian physiatrists' attitudes and behavior. *Arch Phys Med Rehabil*, 81(5), 662-667.
- Koley, M., Saha, S., Arya, J. S., Choubey, G., Ghosh, A., Das, K. D., . . . Ali, S. S. (2016). Patients' preference for integrating homeopathy (PPIH) within the standard therapy settings in West Bengal, India: The part 1 (PPIH-1) study. *J Tradit Complement Med*, 6(3), 237-246. doi: 10.1016/j.jtcme.2015.03.001
- Koley, M., Saha, S., & Ghosh, S. (2015). A double-blind randomized placebo-controlled feasibility study evaluating individualized homeopathy in managing pain of knee osteoarthritis. *J Evid Based Complementary Altern Med*, 20(3), 186-191. doi: 10.1177/2156587214568668
- Koley, M., Saha, S., Ghosh, S., Mukherjee, R., Kundu, B., Mondal, R., . . . Choubey, G. (2013). Evaluation of patient satisfaction in a Government Homeopathic Hospital in West Bengal, India. *International Journal of High Dilution Research*, 12(43), 52-61.
- Kompoliti, K., Fan, W., & Leurgans, S. (2009). Complementary and alternative medicine use in Gilles de la Tourette syndrome. *Mov Disord*, 24(13), 2015-2019. doi: 10.1002/mds.22724
- Kronenberg, F., & Fugh-Berman, A. (2002). Complementary and alternative medicine for menopausal symptoms: a review of randomized, controlled trials. *Ann Intern Med*, 137(10), 805-813.
- Kumar, D., Bajaj, S., & Mehrotra, R. (2006). Knowledge, attitude and practice of complementary and alternative medicines for diabetes. *Public Health*, 120(8), 705-711. doi: 10.1016/j.puhe.2006.04.010



- Kumar, D., Goel, N. K., Pandey, A. K., & Sarpal, S. S. (2016). Complementary and alternative medicine use among the cancer patients in Northern India. *South Asian J Cancer*, 5(1), 8-11. doi: 10.4103/2278-330x.179689
- Kupferer, E. M., Dormire, S. L., & Becker, H. (2009). Complementary and alternative medicine use for vasomotor symptoms among women who have discontinued hormone therapy. *J Obstet Gynecol Neonatal Nurs*, 38(1), 50-59. doi: 10.1111/j.1552-6909.2008.00305.x
- Ladas, E. J., Lin, M., Antillion, F., Rivas, S., Chantada, G., Cacciavillano, W., . . . Kelly, K. M. (2015). Improving our understanding of the use of traditional complementary/alternative medicine in children with cancer. *Cancer*, 121(9), 1492-1498. doi: 10.1002/cncr.29212
- Ladas, E. J., Rivas, S., Ndao, D., Damoulakis, D., Bao, Y. Y., Cheng, B., . . . Antillon, F. (2014). Use of traditional and complementary/alternative medicine (TCAM) in children with cancer in Guatemala. *Pediatr Blood Cancer*, 61(4), 687-692. doi: 10.1002/pbc.24791
- Laengler, A., Spix, C., Seifert, G., Gottschling, S., Graf, N., & Kaatsch, P. (2008). Complementary and alternative treatment methods in children with cancer: A population-based retrospective survey on the prevalence of use in Germany. *Eur J Cancer*, 44(15), 2233-2240. doi: 10.1016/j.ejca.2008.07.020
- Lakatos, P. L., Czeglédi, Z., David, G., Kispal, Z., Kiss, L. S., Palatka, K., . . . Lakatos, L. (2010). Association of adherence to therapy and complementary and alternative medicine use with demographic factors and disease phenotype in patients with inflammatory bowel disease. *J Crohns Colitis*, 4(3), 283-290. doi: 10.1016/j.crohns.2009.11.011
- Lakdawala, P. D. (2015). Doctor-patient relationship in psychiatry. *Mens Sana Monogr*, 13(1), 82-90. doi: 10.4103/0973-1229.153308
- Lao, L., & Berman, B. M. (2008). [The Center for Integrative Medicine at the University of Maryland: the first complementary and alternative medicine center in a US medical school]. *Zhong Xi Yi Jie He Xue Bao*, 6(11), 1205-1209. doi: 10.3736/jcim20091120
- Lee, J., Lee, J., Choi, H., & Lee, J. (2014). Oseltamivir (Tamiflu)-induced bilateral acute angle closure glaucoma and transient myopia. *Indian J Ophthalmol*, 62(12), 1165-1167. doi: 10.4103/0301-4738.109531
- Lee, M. H. M., Pan, D. S. T., Huang, J. H., Chen, M. I., Chong, J. W. C., Goh, E. H., . . . Yu, Y. (2017). Results from a Patient-Based Health Education Intervention in Reducing Antibiotic Use for Acute Upper Respiratory Tract Infections in the Private Sector Primary Care Setting in Singapore. *Antimicrob Agents Chemother*, 61(5). doi: 10.1128/aac.02257-16
- Lim, M. K., Sadarangani, P., Chan, H. L., & Heng, J. Y. (2005). Complementary and alternative medicine use in multiracial Singapore. *Complement Ther Med*, 13(1), 16-24. doi: 10.1016/j.ctim.2004.11.002
- Lin, C., Albertson, G., Schilling, L., Cyran, E., Anderson, S., Ware, L., & Anderson, R. (2001). Is patients' perception of time spent with the physician a determinant of ambulatory patient satisfaction? *Arch Intern Med*, 161(11), 1437-1442.
- Lin, J., Chao, J., Bickell, N., & Wisnivesky, J. . (2017). Patient-provider communication and hormonal therapy side effects in breast cancer survivors. *Women Health*, 57(8), 976-989. doi: 10.1080/03630242.2016.1235071

- Lohre, A., Rise, M. B., & Steinsbekk, A. (2012). Characteristics of visitors to practitioners of homeopathy in a large adult Norwegian population (the HUNT 3 study). *Homeopathy*, 101(3), 175-181. doi: 10.1016/j.homp.2012.05.004
- Long, L., & Ernst, E. (2001). Homeopathic remedies for the treatment of osteoarthritis: a systematic review. *Br Homeopath J*, 90(1), 37-43.
- Lopez-Gil, S., Nuno-Lambarri, N., Chavez-Tapia, N., Uribe, M., & Barbero-Becerra, V. J. (2017). Liver toxicity mechanisms of herbs commonly used in Latin America. *Drug Metab Rev*, 49(3), 338-356. doi: 10.1080/03602532.2017.1335750
- Loquai, C., Schmidtman, I., Garzarolli, M., Kaatz, M., Kahler, K. C., Kurschat, P., . . . Huebner, J. (2017). Interactions from complementary and alternative medicine in patients with melanoma. *Melanoma Res*, 27(3), 238-242. doi: 10.1097/cmr.0000000000000339
- Loudon, I. (2006). A brief history of homeopathy. *J R Soc Med*, 99(12), 607-610.
- Maguire, P., & Pitceathly, C. (2002). Key communication skills and how to acquire them. *BMJ*, 325(7366), 697-700.
- Maharashtra University of Health Sciences. (2017). Maharashtra University of Health Sciences. from <https://http://www.muhs.ac.in/Default.aspx>
- Mahmoudian, A., & Sadri, G. (2014). Homeopathy satisfaction in Iran. *Iran J Nurs Midwifery Res*, 19(5), 496-502.
- Major, J. M., Zhou, E. H., Wong, H. L., Trinidad, J. P., Pham, T. M., Mehta, H., . . . Willy, M. E. (2016). Trends in rates of acetaminophen-related adverse events in the United States. *Pharmacoepidemiol Drug Saf*, 25(5), 590-598. doi: 10.1002/pds.3906
- Malapane, E., Solomon, E. M., & Pellow, J. (2014). Efficacy of a homeopathic complex on acute viral tonsillitis. *J Altern Complement Med*, 20(11), 868-873. doi: 10.1089/acm.2014.0189
- Manchanda, R., Koley, M., Saha, S., Sarkar, D., Mondal, R., Thakur, P., . . . Mittal, R. (2016). Patients' Preference for Integrating Homoeopathy Services within the Secondary Health Care Settings in India: The Part 3 (PIIH-3) Study. *J Evid Based Complementary Altern Med*. doi: 10.1177/2156587216650116
- Manya, K., Champion, B., & Dunning, T. (2012). The use of complementary and alternative medicine among people living with diabetes in Sydney. *BMC Complement Altern Med*, 12, 2. doi: 10.1186/1472-6882-12-2
- Marchisio, P., Bianchini, S., Galeone, C., Baggi, E., Rossi, E., Albertario, G., . . . Principi, N. (2011). Use of complementary and alternative medicine in children with recurrent acute otitis media in Italy. *Int J Immunopathol Pharmacol*, 24(2), 441-449.
- Marcus, D. M., & McCullough, L. (2009). An evaluation of the evidence in "evidence-based" integrative medicine programs. *Acad Med*, 84(9), 1229-1234. doi: 10.1097/ACM.0b013e3181b185f4
- Marian, F. (2007). Complementary medicine: equity issues in evaluation and policy-making. *Forsch Komplementmed*, 14 Suppl 2, 2-9. doi: 10.1159/0000112202
- Marian, F., Joost, K., Saini, K. D., von Ammon, K., Thurneysen, A., & Busato, A. (2008). Patient satisfaction and side effects in primary care: an observational study comparing homeopathy and conventional medicine. *BMC Complement Altern Med*, 8, 52. doi: 10.1186/1472-6882-8-52
- Marom, T., Marchisio, P., Tamir, S. O., Torretta, S., Gavriel, H., & Esposito, S. (2016). Complementary and Alternative Medicine Treatment Options for Otitis Media: A

- Systematic Review. *Medicine (Baltimore)*, 95(6), e2695. doi: 10.1097/md.0000000000002695
- Marques-Vidal, P., Pecoud, A., Hayoz, D., Paccaud, F., Mooser, V., Waeber, G., & Vollenweider, P. (2008). Prevalence and characteristics of homeopathy users in a representative sample of the Lausanne population: CoLaus study. *Pharmacoepidemiol Drug Saf*, 17(2), 209-211. doi: 10.1002/pds.1500
- Martel, M. O., Finan, P. H., Dolman, A. J., Subramanian, S., Edwards, R. R., Wasan, A. D., & Jamison, R. N. (2015). Self-reports of medication side effects and pain-related activity interference in patients with chronic pain: a longitudinal cohort study. *Pain*, 156(6), 1092-1100. doi: 10.1097/j.pain.000000000000154
- Mathie, R. T., Frye, J., & Fisher, P. (2015). Homeopathic Oscillocochinum(R) for preventing and treating influenza and influenza-like illness. *Cochrane Database Syst Rev*, 1, CD001957. doi: 10.1002/14651858.CD001957.pub6
- Mathie, R. T., Lloyd, S. M., Legg, L. A., Clausen, J., Moss, S., Davidson, J. R., & Ford, I. (2014). Randomised placebo-controlled trials of individualised homeopathic treatment: systematic review and meta-analysis. *Syst Rev*, 3, 142. doi: 10.1186/2046-4053-3-142
- Mathie, R. T., Ramparsad, N., Legg, L. A., Clausen, J., Moss, S., Davidson, J. R., . . . McConnachie, A. (2017). Randomised, double-blind, placebo-controlled trials of non-individualised homeopathic treatment: systematic review and meta-analysis. *Syst Rev*, 6(1), 63. doi: 10.1186/s13643-017-0445-3
- Mathie, R. T., Roberts, E. R., & Rutten, A. L. (2016). Adverse effects of homeopathy: we clearly need more details. *Complement Ther Med*, 29, 235. doi: 10.1016/j.ctim.2016.05.011
- Mayo Clinic. (2018). Integrative Medicine. 2018, from <https://http://www.mayoclinic.org/tests-procedures/complementary-alternative-medicine/about/pac-2039358>
- Medicare Provider Experience Survey. (n.d.). 2018, from <https://http://www.cms.gov/Medicare/Quality-Payment-Program/Resource-Library/2017-CAHPS-for-MIPS-Survey-%E2%80%93Sample-Copy.pdf>
- Medicines Policy. (2018). from <http://www.who.int/medicines/areas/policy/en/>
- Mercer, S. W., Reilly, D., & Watt, G. C. (2002). The importance of empathy in the enablement of patients attending the Glasgow Homoeopathic Hospital. *Br J Gen Pract*, 52(484), 901-905.
- Milgrom, L. R. (2006). Is homeopathy possible? *J R Soc Promot Health*, 126(5), 211-218.
- Milton, D. (1998). Alternative and complementary therapies: integration into cancer care. *AAOHN J*, 46(9), 454-461; quiz 462-453.
- Minhas, R. (2007). Does copying clinical or sharing correspondence to patients result in better care? *Int J Clin Pract*, 61(8), 1390-1395. doi: 10.1111/j.1742-1241.2007.01432.x
- Ministry of AYUSH. (n.d., 2017). About the ministry. from <http://ayush.gov.in/about-us/about-the-ministry>
- Mitchell, A., McCrea, P., Inglis, K., & Porter, G. (2012). A randomized, controlled trial comparing acetaminophen plus ibuprofen versus acetaminophen plus codeine plus caffeine (Tylenol 3) after outpatient breast surgery. *Ann Surg Oncol*, 19(12), 3792-3800. doi: 10.1245/s10434-012-2447-7

- Moffitt Cancer Center. (2018). Healing & Wellness. from <https://moffitt.org/patient-family/healing-wellness/>
- Molassiotis, A., Fernandez-Ortega, P., Pud, D., Ozden, G., Platin, N., Hummerston, S., . . . Kearney, N. (2005). Complementary and alternative medicine use in colorectal cancer patients in seven European countries. *Complement Ther Med, 13*(4), 251-257. doi: 10.1016/j.ctim.2005.07.002
- Molassiotis, A., Scott, J. A., Kearney, N., Pud, D., Magri, M., Selvekerova, S., . . . Patiraki, E. (2006). Complementary and alternative medicine use in breast cancer patients in Europe. *Support Care Cancer, 14*(3), 260-267. doi: 10.1007/s00520-005-0883-7
- Moore, P., Vargas, A., Nunez, S., & Macchiavello, S. (2011). [A study of hospital complaints and the role of the doctor-patient communication]. *Rev Med Chil, 139*(7), 880-885. doi: /S0034-98872011000700008
- Morrell, P. (2003). Triumph of the light--isopathy and the rise of transcendental homeopathy, 1830-1920. *Med Humanit, 29*(1), 22-32. doi: 10.1136/mh.29.1.22
- Morris, M., Pellow, J., Solomon, E. M., & Tsele-Tebakang, T. (2016). Physiotherapy and a Homeopathic Complex for Chronic Low-back Pain Due to Osteoarthritis: A Randomized, Controlled Pilot Study. *Altern Ther Health Med, 22*(1), 48-56.
- Mortada, M., Neuenschwander, P., & Tekko, S. S. (2014). Influenza and oseltamivir phosphate (Tamiflu) in infants: what you need to know. *Pediatr Nurs, 40*(1), 16-20.
- Murthy, V., Sibbritt, D. W., & Adams, J. (2015). An integrative review of complementary and alternative medicine use for back pain: a focus on prevalence, reasons for use, influential factors, self-perceived effectiveness, and communication. *Spine J, 15*(8), 1870-1883. doi: 10.1016/j.spinee.2015.04.049
- Nabi, M., Taher, A., Sheikh, H., Dulal, S.R., Alam, K., & Islam, M. (2015). A STUDY ON ATTITUDE AND SATISFACTION OF PATIENTS TOWARDS UNANI AND AYURVEDIC HEALTH CARE SERVICE WITHIN MEDICAL PLURALISM IN THE CONTEXT OF BANGLADESH. *International Journal of Pharmaceutical Sciences and Research.*
- Nadareishvili, I., Lunze, K., Tabagari, N., Beraia, A., & Pkhakadze, G. (2017). USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN GEORGIA. *Georgian Med News*(272), 157-164.
- Nafradi, L., Nakamoto, K., & Schulz, P. J. (2017). Is patient empowerment the key to promote adherence? A systematic review of the relationship between self-efficacy, health locus of control and medication adherence. *PLoS One, 12*(10), e0186458. doi: 10.1371/journal.pone.0186458
- Nagai, J., Uesawa, Y., Shimamura, R., & Kagaya, H. (2017). Characterization of the Adverse Effects Induced by Acetaminophen and Nonsteroidal Anti-Inflammatory Drugs Based on the Analysis of the Japanese Adverse Drug Event Report Database. *Clin J Pain, 33*(8), 667-675. doi: 10.1097/ajp.0000000000000457
- National Center for Complementary and Alternative Medicine. (2000). Expanding Horizons of Healthcare: Five-Year Strategic Plan 2001-2005. Retrieved NIH Publication No. 01-5001, from <https://nccih.nih.gov/sites/nccam.nih.gov/files/about/plans/fiveyear/fiveyear.pdf>
- National Center for Complementary and Integrative Medicine. (2015). Herb-drug interactions. Retrieved April 2018, from <https://nccih.nih.gov/health/providers/digest/herb-drug>

- National Center for Complementary and Integrative Medicine. (2017). National Center for Complementary and Integrative Health. from <https://nccih.nih.gov>
- National Center for Complementary and Integrative Medicine. (n.d.). Complementary, Alternative, or Integrative Health: What's in a name? Retrieved January 2018, from <https://nccih.nih.gov/health/integrative-health>
- National Center for Homeopathy. (2017). Practicing Homeopathy. Retrieved 2018, from <http://www.homeopathycenter.org/practicing-homeopathy>
- Nayak, C., Singh, V., Singh, V. P., Oberai, P., Roja, V., Shitanshu, S. S., . . . Mathew, G. (2012). Homeopathy in chronic sinusitis: a prospective multi-centric observational study. *Homeopathy, 101*(2), 84-91. doi: 10.1016/j.homp.2012.02.002
- Nezvalova-Henriksen, K., Spigset, O., & Nordeng, H. (2013). Effects of ibuprofen, diclofenac, naproxen, and piroxicam on the course of pregnancy and pregnancy outcome: a prospective cohort study. *BJOG, 120*(8), 948-959. doi: 10.1111/1471-0528.12192
- Nishtala, P. S., & Salahudeen, M. S. (2016). Cognitive adverse effects and brain deterioration associated with use of anticholinergic activity medicines in older adults. *Evid Based Med, 21*(6), 235. doi: 10.1136/ebmed-2016-110555
- Nissen, S. E., Yeomans, N. D., Solomon, D. H., Luscher, T. F., Libby, P., Husni, M. E., . . . Lincoff, A. M. (2016). Cardiovascular Safety of Celecoxib, Naproxen, or Ibuprofen for Arthritis. *N Engl J Med, 375*(26), 2519-2529. doi: 10.1056/NEJMoa1611593
- Oberbaum, M., Singer, S. R., Friehs, H., & Frass, M. (2005). Homeopathy in emergency medicine. *Wien Med Wochenschr, 155*(21-22), 491-497. doi: 10.1007/s10354-005-0228-7
- Olowofela, A. O., & Isah, A. O. (2017). A profile of adverse effects of antihypertensive medicines in a tertiary care clinic in Nigeria. *Ann Afr Med, 16*(3), 114-119. doi: 10.4103/aam.aam\_6\_17
- Ong, F., Seah Lee, W., Lin, C., Ng, R. T., Yee Wong, S., Lim, S. L., . . . Aw, M. (2017). Complementary and alternative medicine (CAM) practices and dietary patterns in children with inflammatory bowel disease in Singapore and Malaysia. *Pediatr Neonatol.* doi: 10.1016/j.pedneo.2017.12.007
- Oren-Amit, A., Berkovitch, M., Bahat, H., Goldman, M., Kozer, E., Ziv-Baran, T., & Abu-Kishk, I. (2017). Complementary and alternative medicine among hospitalized pediatric patients. *Complement Ther Med, 31*, 49-52. doi: 10.1016/j.ctim.2017.02.002
- Oshikoya, K. A., Senbanjo, I. O., Njokanma, O. F., & Soipe, A. (2008). Use of complementary and alternative medicines for children with chronic health conditions in Lagos, Nigeria. *BMC Complement Altern Med, 8*, 66. doi: 10.1186/1472-6882-8-66
- Owen, J. M., & Green, B. N. (2004). Homeopathic treatment of headaches: a systematic review of the literature. *J Chiropr Med, 3*(2), 45-52. doi: 10.1016/s0899-3467(07)60085-8
- Oyunchimeg, B., Hwang, J. H., Ahmed, M., Choi, S., & Han, D. (2017). Complementary and alternative medicine use among patients with cancer in Mongolia: a National hospital survey. *BMC Complement Altern Med, 17*(1), 58. doi: 10.1186/s12906-017-1576-8
- Palm, J., Kishchuk, V. V., Ulied, A., Fernandez, J. P., De Jaegere, S., Jong, M. C., . . . Klement, P. (2017). Effectiveness of an add-on treatment with the homeopathic medication SilAtro-5-90 in recurrent tonsillitis: An international, pragmatic, randomized,

- controlled clinical trial. *Complement Ther Clin Pract*, 28, 181-191. doi: 10.1016/j.ctcp.2017.05.005
- Parkman, C. A. (2001). Alternative therapies for osteoarthritis. *Case Manager*, 12(3), 34-36. doi: 10.1067/mcm.2001.115958
- Paterson, W. G., Barkun, A. N., Hopman, W. M., Leddin, D. J., Pare, P., Petrunia, D. M., . . . van Zanten, S. V. (2010). Wait times for gastroenterology consultation in Canada: the patients' perspective. *Can J Gastroenterol*, 24(1), 28-32.
- Patriani Justo, C.M., & De Andrea Gomes, M.H. (2008). Conceptions of health, illness and treatment of patients who use homeopathy in Santos, Brazil. *Homeopathy*, 97(1), 22-27. doi: 10.1016/j.homp.2007.05.009
- Patwardhan, K., Pathak, J., & Acharya, R. (2017). Ayurveda formulations: A roadmap to address the safety concerns. *J Ayurveda Integr Med*, 8(4), 279-282. doi: 10.1016/j.jaim.2017.08.010
- Peng, W., Adams, J., Hickman, L., & Sibbritt, D. W. (2014). Complementary/alternative and conventional medicine use amongst menopausal women: results from the Australian Longitudinal Study on Women's Health. *Maturitas*, 79(3), 340-342. doi: 10.1016/j.maturitas.2014.08.002
- Peng, W., Adams, J., Sibbritt, D. W., & Frawley, J. E. (2014). Critical review of complementary and alternative medicine use in menopause: focus on prevalence, motivation, decision-making, and communication. *Menopause*, 21(5), 536-548. doi: 10.1097/GME.0b013e3182a46a3e
- Peng, W., Liang, H., Sibbritt, D., & Adams, J. (2016). Complementary and alternative medicine use for constipation: a critical review focusing upon prevalence, type, cost, and users' profile, perception and motivations. *Int J Clin Pract*, 70(9), 712-722. doi: 10.1111/ijcp.12829
- Perry, R., Terry, R., & Ernst, E. (2010). A systematic review of homoeopathy for the treatment of fibromyalgia. *Clin Rheumatol*, 29(5), 457-464. doi: 10.1007/s10067-009-1361-2
- Pilkington, K., Kirkwood, G., Rampes, H., Fisher, P., & Richardson, J. (2005). Homeopathy for depression: a systematic review of the research evidence. *Homeopathy*, 94(3), 153-163.
- Pilkington, K., Kirkwood, G., Rampes, H., Fisher, P., & Richardson, J. (2006). Homeopathy for anxiety and anxiety disorders: a systematic review of the research. *Homeopathy*, 95(3), 151-162. doi: 10.1016/j.homp.2006.05.005
- Pilkington, K., Rampes, H., & Richardson, J. (2006). Complementary medicine for depression. *Expert Rev Neurother*, 6(11), 1741-1751. doi: 10.1586/14737175.6.11.1741
- Pittler, M. H., & Ernst, E. (2005). Complementary therapies for reducing body weight: a systematic review. *Int J Obes (Lond)*, 29(9), 1030-1038. doi: 10.1038/sj.ijo.0803008
- Poole, J. (2014). Individualised homeopathy after cancer treatment. *Nurs Times*, 110(41), 17-19.
- Posadzki, P., & Ernst, E. (2013). Prevalence of CAM use by UK climacteric women: a systematic review of surveys. *Climacteric*, 16(1), 3-7. doi: 10.3109/13697137.2012.742503
- Posadzki, P., Lee, M. S., Moon, T. W., Choi, T. Y., Park, T. Y., & Ernst, E. (2013). Prevalence of complementary and alternative medicine (CAM) use by menopausal women: a

- systematic review of surveys. *Maturitas*, 75(1), 34-43. doi: 10.1016/j.maturitas.2013.02.005
- Posadzki, P., Watson, L., Alotaibi, A., & Ernst, E. (2013a). Prevalence of complementary and alternative medicine (CAM)-use in UK paediatric patients: a systematic review of surveys. *Complement Ther Med*, 21(3), 224-231. doi: 10.1016/j.ctim.2012.11.006
- Posadzki, P., Watson, L., Alotaibi, A., & Ernst, E. (2013b). Prevalence of use of complementary and alternative medicine (CAM) by patients/consumers in the UK: systematic review of surveys. *Clin Med*, 13(2), 126-131. doi: 10.7861/clinmedicine.13-2-126
- Prasad, R. (2007). Homeopathy booming in India. *Lancet*, 370(9600), 1679-1680. doi: 10.1016/s0140-6736(07)61709-7
- Quattropani, C., Ausfeld, B., Straumann, A., Heer, P., & Seibold, F. (2003). Complementary alternative medicine in patients with inflammatory bowel disease: use and attitudes. *Scand J Gastroenterol*, 38(3), 277-282.
- Reid, R., Steel, A., Wardle, J., Trubody, A., & Adams, J. (2016). Complementary medicine use by the Australian population: a critical mixed studies systematic review of utilisation, perceptions and factors associated with use. *BMC Complement Altern Med*, 16, 176. doi: 10.1186/s12906-016-1143-8
- Reid, S. (2002). A survey of the use of over-the-counter homeopathic medicines purchased in health stores in central Manchester. *Homeopathy*, 91(4), 225-229.
- Reilly, D. (2001a). Comments on complementary and alternative medicine in Europe. *J Altern Complement Med*, 7 Suppl 1, S23-31.
- Reilly, D. (2001b). The puzzle of homeopathy. *J Altern Complement Med*, 7 Suppl 1, S103-109.
- Relton, C., Cooper, K., Viksveen, P., Fibert, P., & Thomas, K. (2017). Prevalence of homeopathy use by the general population worldwide: a systematic review. *Homeopathy*, 106(2), 69-78. doi: 10.1016/j.homp.2017.03.002
- Remy, C., Marret, E., & Bonnet, F. (2005). Effects of acetaminophen on morphine side-effects and consumption after major surgery: meta-analysis of randomized controlled trials. *Br J Anaesth*, 94(4), 505-513. doi: 10.1093/bja/aei085
- Ren, J., Huang, X., Zhang, T., Zhou, X., Liu, C., & Wang, X. (2018). Patient satisfaction with prescribed medicines in community health services in China: A cross-sectional survey 6 years after the implementation of the national essential medicines policy. *Health Soc Care Community*. doi: 10.1111/hsc.12548
- Riley, D., Fischer, M., Singh, B., Haidvogel, M., & Heger, M. (2001). Homeopathy and Conventional Medicine: An Outcomes Study Comparing Effectiveness in a Primary Care Setting. *The Journal of Alternative and Complementary Medicine*, 7(2), 149-159. doi: 10.1089/107555301750164226.
- Rocha, V., Ladas, E. J., Lin, M., Cacciavillano, W., Ginn, E., Kelly, K. M., . . . Castillo, L. (2017). Beliefs and Determinants of Use of Traditional Complementary/Alternative Medicine in Pediatric Patients Who Undergo Treatment for Cancer in South America. *J Glob Oncol*, 3(6), 701-710. doi: 10.1200/jgo.2016.006809
- Rossi, E., Crudeli, L., Endrizzi, C., & Garibaldi, D. (2009). Cost-benefit evaluation of homeopathic versus conventional therapy in respiratory diseases. *Homeopathy*, 98(1), 2-10. doi: 10.1016/j.homp.2008.11.005

- Rossi, E., Di Stefano, M., Picchi, M., Panozzo, M. A., Noberasco, C., Nurra, L., & Baccetti, S. (2018). Integration of Homeopathy and Complementary Medicine in the Tuscan Public Health System and the Experience of the Homeopathic Clinic of the Lucca Hospital. *Homeopathy*. doi: 10.1055/s-0038-1636839
- Rossi, E., Endrizzi, C., Panozzo, M. A., Bianchi, A., & Da Fre, M. (2009). Homeopathy in the public health system: a seven-year observational study at Lucca Hospital (Italy). *Homeopathy*, 98(3), 142-148. doi: 10.1016/j.homp.2009.04.001
- Sakamoto, J. T., Ward, H. B., Vissoci, J. R. N., & Eucker, S. A. (2018). Are Nonpharmacologic Pain Interventions Effective at Reducing Pain in Adult Patients Visiting the Emergency Department? A Systematic Review and Meta-analysis. *Acad Emerg Med*. doi: 10.1111/acem.13411
- Salamonsen, A. (2016). Use of complementary and alternative medicine in patients with cancer or multiple sclerosis: possible public health implications. *Eur J Public Health*, 26(2), 225-229. doi: 10.1093/eurpub/ckv184
- Sales, Gmpg, Barbosa, I. C. P., Canejo Neta, L. M. S., Melo, P. L., Leitao, R. A., & Melo, H. M. A. (2018). Treatment of chikungunya chronic arthritis: A systematic review. *Rev Assoc Med Bras (1992)*, 64(1), 63-70. doi: 10.1590/1806-9282.64.01.63
- Samuels, N., Freed, Y., Weitzen, R., Ben-David, M., Maimon, Y., Eliyahu, U., & Berger, R. (2017). Feasibility of Homeopathic Treatment for Symptom Reduction in an Integrative Oncology Service. *Integr Cancer Ther*, 1534735417736133. doi: 10.1177/1534735417736133
- Sarris, J., Moylan, S., Camfield, D. A., Pase, M. P., Mischoulon, D., Berk, M., . . . Schweitzer, I. (2012). Complementary Medicine, Exercise, Meditation, Diet, and Lifestyle Modification for Anxiety Disorders: A Review of Current Evidence. *Evidence-Based Complementary and Alternative Medicine*.
- Schaerer, N. (2015). What is holistic health and how can I achieve it? , 2018, from <https://http://www.ivy.edu.au/blog/health-wellbeing/holistic-health-can-achieve/>
- Schafer, T., Riehle, A., Wichmann, H. E., & Ring, J. (2002). Alternative medicine in allergies - prevalence, patterns of use, and costs. *Allergy*, 57(8), 694-700.
- Schmacke, N., Muller, V., & Stamer, M. (2014). What is it about homeopathy that patients value? and what can family medicine learn from this? *Qual Prim Care*, 22(1), 17-24.
- Schwarz, S., Knorr, C., Geiger, H., & Flachenecker, P. (2008). Complementary and alternative medicine for multiple sclerosis. *Mult Scler*, 14(8), 1113-1119. doi: 10.1177/1352458508092808
- Seo, H. J., Baek, S. M., Kim, S. G., Kim, T. H., & Choi, S. M. (2013). Prevalence of complementary and alternative medicine use in a community-based population in South Korea: a systematic review. *Complement Ther Med*, 21(3), 260-271. doi: 10.1016/j.ctim.2013.03.001
- Shang, A. J., Huwiler-Muntener, K., Nartey, L., Juni, P., Dorig, S., Sterne, J. A., . . . Egger, M. (2005). Are the clinical effects of homoeopathy placebo effects? Comparative study of placebo-controlled trials of homoeopathy and allopathy. *Lancet*, 366(9487), 726-732.
- Sharples, F. M., van Haselen, R., & Fisher, P. (2003). NHS patients' perspective on complementary medicine: a survey. *Complement Ther Med*, 11(4), 243-248.
- Shendurnikar, N., & Thakkar, P. A. (2013). Communication skills to ensure patient satisfaction. *Indian J Pediatr*, 80(11), 938-943. doi: 10.1007/s12098-012-0958-7



- Shepherd, D. . (2004). *Magic of the Minimum Dose*: C.W. Daniel.
- Shewamene, Z., Dune, T., & Smith, C. A. (2017). The use of traditional medicine in maternity care among African women in Africa and the diaspora: a systematic review. *BMC Complement Altern Med*, 17(1), 382. doi: 10.1186/s12906-017-1886-x
- Shin, D., Roter, D., Cho, J., Kim, S., Yang, H., Suh, B., . . . Park, J. (2015). Attitudes toward disclosure of medication side effects: a nationwide survey of Korean patients, caregivers, and oncologists. *Psychooncology*, 24(11), 1398-1406. doi: 10.1002/pon.3807
- Shin, S., Kim, J., Yu, A., Seo, H. S., Shin, M. R., Cho, J. H., . . . Lee, E. (2017). A Herbal Medicine, Gongjindan, in Subjects with Chronic Dizziness (GOODNESS Study): Study Protocol for a Prospective, Multicenter, Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Clinical Trial for Effectiveness, Safety, and Cost-Effectiveness. *Evid Based Complement Alternat Med*, 2017, 4363716. doi: 10.1155/2017/4363716
- Shiple, M., Berry, H., Broster, G., Jenkins, M., Clover, A., & Williams, I. (1983). Controlled trial of homoeopathic treatment of osteoarthritis. *Lancet*, 1(8316), 97-98.
- Shrestha, N., Mongkolchati, A., Rattanapan, C., & Wongsawass, S. (2012). Assessment of patient satisfaction at a traditional medicine hospital in Nepal. *Journal of Public Health and Development*, 10(3).
- Shumer, G., Warber, S., Motohara, S., Yajima, A., Plegue, M., Bialko, M., . . . Fetters, M. D. (2014). Complementary and alternative medicine use by visitors to rural Japanese family medicine clinics: results from the international complementary and alternative medicine survey. *BMC Complement Altern Med*, 14, 360. doi: 10.1186/1472-6882-14-360
- Sibbritt, D. W., & Adams, J. (2010). Back pain amongst 8,910 young Australian women: a longitudinal analysis of the use of conventional providers, complementary and alternative medicine (CAM) practitioners and self-prescribed CAM. *Clin Rheumatol*, 29(1), 25-32. doi: 10.1007/s10067-009-1299-4
- Singh, V., Raidoo, D. M., & Harries, C. S. (2004). The prevalence, patterns of usage and people's attitude towards complementary and alternative medicine (CAM) among the Indian community in Chatsworth, South Africa. *BMC Complement Altern Med*, 4, 3. doi: 10.1186/1472-6882-4-3
- Sleath, B., Callahan, L., DeVellis, R. F., & Sloane, P. D. (2005). Patients' perceptions of primary care physicians' participatory decision-making style and communication about complementary and alternative medicine for arthritis. *J Altern Complement Med*, 11(3), 449-453. doi: 10.1089/acm.2005.11.449
- Sleath, B., Callahan, L. F., Devellis, R. F., & Beard, A. (2008). Arthritis patients' perceptions of rheumatologists' participatory decision-making style and communication about complementary and alternative medicine. *Arthritis Rheum*, 59(3), 416-421. doi: 10.1002/art.23307
- Smith, P. J., Clavarino, A., Long, J., & Steadman, K. J. (2014). Why do some cancer patients receiving chemotherapy choose to take complementary and alternative medicines and what are the risks? *Asia Pac J Clin Oncol*, 10(1), 1-10. doi: 10.1111/ajco.12115
- Smolle, J. (2003). Homeopathy in dermatology. *Dermatol Ther*, 16(2), 93-97.
- Solomon, D., & Adams, J. (2015). The use of complementary and alternative medicine in adults with depressive disorders. A critical integrative review. *J Affect Disord*, 179, 101-113. doi: 10.1016/j.jad.2015.03.031

- Solomon, D. H., Husni, M. E., Libby, P. A., Yeomans, N. D., Lincoff, A. M., Lupsilonscher, T. F., . . . Borer, J. S. (2017). The Risk of Major NSAID Toxicity with Celecoxib, Ibuprofen, or Naproxen: A Secondary Analysis of the PRECISION Trial. *Am J Med*, *130*(12), 1415-1422 e1414. doi: 10.1016/j.amjmed.2017.06.028
- Sorrentino, L., Piraneo, S., Riggio, E., Basilico, S., Sartani, A., Bossi, D., & Corsi, F. (2017). Is there a role for homeopathy in breast cancer surgery? A first randomized clinical trial on treatment with *Arnica montana* to reduce post-operative seroma and bleeding in patients undergoing total mastectomy. *J Intercult Ethnopharmacol*, *6*(1), 1-8. doi: 10.5455/jice.20161229055245
- Stam, C., Bonnet, M. S., & van Haselen, R. A. (2001). The efficacy and safety of a homeopathic gel in the treatment of acute low back pain: a multi-centre, randomised, double-blind comparative clinical trial. *Br Homeopath J*, *90*(1), 21-28.
- Steel, A., Adams, J., Sibbritt, D., Broom, A., Gallois, C., & Frawley, J. (2012). Utilisation of complementary and alternative medicine (CAM) practitioners within maternity care provision: results from a nationally representative cohort study of 1,835 pregnant women. *BMC Pregnancy Childbirth*, *12*, 146. doi: 10.1186/1471-2393-12-146
- Steel, A., Cramer, H., Leung, B., Lauche, R., Adams, J., Langhorst, J., & Dobos, G. (2016). Characteristics of Homeopathy Users among Internal Medicine Patients in Germany. *Forsch Komplementmed*, *23*(5), 284-289. doi: 10.1159/000450818
- Stewart, M. A. (1995). Effective physician-patient communication and health outcomes: a review. *CMAJ*, *152*(9), 1423-1433.
- Stomski, N. J., Morrison, P., & Meehan, T. (2016). Mental health nurses' views about antipsychotic medication side effects. *J Psychiatr Ment Health Nurs*, *23*(6-7), 369-377. doi: 10.1111/jpm.12314
- Stout, C. W., Weinstock, J., Homoud, M. K., Wang, P. J., Estes, N. A., 3rd, & Link, M. S. (2003). Herbal medicine: beneficial effects, side effects, and promising new research in the treatment of arrhythmias. *Curr Cardiol Rep*, *5*(5), 395-401.
- Stub, T., Kristoffersen, A. E., Alraek, T., Musial, F., & Steinsbekk, A. (2015). Risk in homeopathy: Classification of adverse events and homeopathic aggravations--A cross sectional study among Norwegian homeopath patients. *Complement Ther Med*, *23*(4), 535-543. doi: 10.1016/j.ctim.2015.06.004
- Stub, T., Salamonsen, A., & Alraek, T. (2012). Is it possible to distinguish homeopathic aggravation from adverse effects? A qualitative study. *Forsch Komplementmed*, *19*(1), 13-19. doi: 10.1159/000335827
- Suen, L. J., Huang, H. M., & Lee, H. H. (2014). [A comparison of convenience sampling and purposive sampling]. *Hu Li Za Zhi*, *61*(3), 105-111. doi: 10.6224/jn.61.3.105
- Swartzman, L. C., Harshman, R. A., Burkell, J., & Lundy, M. E. (2002). What accounts for the appeal of complementary/alternative medicine, and what makes complementary/alternative medicine "alternative"? *Med Decis Making*, *22*(5), 431-450. doi: 10.1177/027298902236943
- Taylor, D. M., Walsham, N., Taylor, S. E., & Wong, L. (2006). Potential interactions between prescription drugs and complementary and alternative medicines among patients in the emergency department. *Pharmacotherapy*, *26*(5), 634-640. doi: 10.1592/phco.26.5.634
- The University of Arizona Center for Integrative Medicine. (2016). What is Integrative Medicine? , from <https://integrativemedicine.arizona.edu/about/definition.html>

- Thirthalli, J., Zhou, L., Kumar, K., Gao, J., Vaid, H., Liu, H., . . . Nichter, M. (2016). Traditional, complementary, and alternative medicine approaches to mental health care and psychological wellbeing in India and China. *Lancet Psychiatry*, 3(7), 660-672. doi: 10.1016/s2215-0366(16)30025-6
- Thomley, B. S., Mahapatra, S., Bauer, B. A., Mallory, M. J., Li, G. X., Do, A., & Chon, T. Y. (2017). Patient feedback for acupuncture practice improvement: A survey from Mayo Clinic. *Chin J Integr Med*, 23(11), 816-821. doi: 10.1007/s11655-017-2779-2
- Trichard, M., Chaufferin, G., & Nicoloyannis, N. (2005). Pharmacoeconomic comparison between homeopathic and antibiotic treatment strategies in recurrent acute rhinopharyngitis in children. *Homeopathy*, 94(1), 3-9.
- Trichard, M., Lamure, E., & Chaufferin, G. (2003). Study of the practice of homeopathic general practitioners in France. *Homeopathy*, 92(3), 135-139.
- Tveito, M., Correll, C. U., Bramness, J. G., Engedal, K., Lorentzen, B., Refsum, H., & Hoiseth, G. (2016). Correlates of major medication side effects interfering with daily performance: results from a cross-sectional cohort study of older psychiatric patients. *Int Psychogeriatr*, 28(2), 331-340. doi: 10.1017/s1041610215001544
- Ullman, D. (1991). *Discovering Homeopathy: Medicine of the 21st century*. Berkeley: North Atlantic Books.
- Ullman, D. (2017). A condensed history of Homeopathy. Retrieved February 8, 2018, from <https://homeopathic.com/a-condensed-history-of-homeopathy/>
- US Department of Health and Human Services ASPE. (2013). The feasibility of using electronic health data for research on small populations. Coverage of Asian-American subpopulations in federal data collection. 2017, from <https://aspe.hhs.gov/report/feasibility-using-electronic-health-data-research-small-populations/coverage-asian-american-subpopulations-federal-data-collection>
- van Haselen, R. A., Reiber, U., Nickel, I., Jakob, A., & Fisher, P. A. (2004). Providing Complementary and Alternative Medicine in primary care: the primary care workers' perspective. *Complement Ther Med*, 12(1), 6-16. doi: 10.1016/s0965-2299(03)00140-7
- Van Wassenhoven, M. (2004). Towards an evidence-based repertory: clinical evaluation of *Veratrum album*. *Homeopathy*, 93(2), 71-77.
- Van Wassenhoven, M., Goossens, M., Anelli, M., Sermeus, G., Kupers, P., Morgado, C., . . . Bezerra, M. (2014). Homeopathy and health related Quality of Life: a patient satisfaction survey in six European countries and Brazil. *Homeopathy*, 103(4), 250-256. doi: 10.1016/j.homp.2014.08.005
- Van Wassenhoven, M., & Ives, G. (2004). An observational study of patients receiving homeopathic treatment. *Homeopathy*, 93(1), 3-11.
- Vickers, A. J. (2000). Clinical trials of homeopathy and placebo: analysis of a scientific debate. *J Altern Complement Med*, 6(1), 49-56. doi: 10.1089/act.2000.6.49
- Vithoulkas, G. (2017). Serious mistakes in meta-analysis of homeopathic research. *J Med Life*, 10(1), 47-49.
- Waisse, S. (2017). Private and institutionalised patients' use of homeopathy in the early nineteenth century. *Homeopathy*, 106(4), 250-259. doi: 10.1016/j.homp.2017.07.001

- Wang, F., Zhang, P., Cao, N., Hu, J., & Sorrentino, R. (2014). Exploring the associations between drug side-effects and therapeutic indications. *J Biomed Inform*, *51*, 15-23. doi: 10.1016/j.jbi.2014.03.014
- Watanabe, H., Kamiyama, T., Sasaki, S., Kobayashi, K., Fukuda, K., Miyake, Y., . . . Sueki, H. (2016). Toxic epidermal necrolysis caused by acetaminophen featuring almost 100% skin detachment: Acetaminophen is associated with a risk of severe cutaneous adverse reactions. *J Dermatol*, *43*(3), 321-324. doi: 10.1111/1346-8138.13073
- Weiner, D. K., & Ernst, E. (2004). Complementary and alternative approaches to the treatment of persistent musculoskeletal pain. *Clin J Pain*, *20*(4), 244-255.
- Weyl Ben Arush, M., Geva, H., Ofir, R., Mashiach, T., Uziel, R., & Dashkovsky, Z. (2006). Prevalence and characteristics of complementary medicine used by pediatric cancer patients in a mixed western and middle-eastern population. *J Pediatr Hematol Oncol*, *28*(3), 141-146. doi: 10.1097/01.mph.0000210404.74427.10
- Widmer, M., Donges, A., Wapf, V., Busato, A., & Herren, S. (2006). The supply of complementary and alternative medicine in Swiss hospitals. *Forsch Komplementmed*, *13*(6), 356-361. doi: 10.1159/000097254
- Wigal, S. B., Childress, A., Berry, S. A., Belden, H., Walters, F., Chappell, P., . . . Palumbo, D. (2017). Efficacy and Safety of a Chewable Methylphenidate Extended-Release Tablet in Children with Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol*, *27*(8), 690-699. doi: 10.1089/cap.2016.0177
- Wilkinson, S. (1998). Focus groups in health research: exploring the meanings of health and illness. *J Health Psychol*, *3*(3), 329-348. doi: 10.1177/135910539800300304
- Wolf, U., Maxion-Bergemann, S., Bornhoft, G., Matthiessen, P. F., & Wolf, M. (2006). Use of complementary medicine in Switzerland. *Forsch Komplementmed*, *13 Suppl 2*, 4-6. doi: 10.1159/000093488
- World Health Organization. (2018). Traditional, Complementary, and Integrative Medicine. from <http://www.who.int/traditional-complementary-integrative-medicine/about/en/>
- World Health Organization. (n.d.). Economic burden of disease. 2018, from <http://www.who.int/choice/economicburden/en/>
- Xuan, J., Huang, M., Lu, Y., & Tao, L. (2018). Economic Evaluation of Safflower Yellow Injection for the Treatment of Patients with Stable Angina Pectoris in China: A Cost-Effectiveness Analysis. *J Altern Complement Med*. doi: 10.1089/acm.2017.0284
- Yancy, W. S., Jr., Macpherson, D. S., Hanusa, B. H., Switzer, G. E., Arnold, R. M., Buranosky, R. A., & Kapoor, W. N. (2001). Patient satisfaction in resident and attending ambulatory care clinics. *J Gen Intern Med*, *16*(11), 755-762.
- Yang, L., Sibbritt, D., & Adams, J. (2017). A critical review of complementary and alternative medicine use among people with arthritis: a focus upon prevalence, cost, user profiles, motivation, decision-making, perceived benefits and communication. *Rheumatol Int*, *37*(3), 337-351. doi: 10.1007/s00296-016-3616-y
- Zanasi, A., Lanata, L., Saibene, F., Fontana, G., Dicipinigitis, P. V., Venier, V., & De Blasio, F. (2016). Prospective study of the efficacy of antibiotics versus antitussive drugs for the management of URTI-related acute cough in children. *Multidiscip Respir Med*, *11*, 29. doi: 10.1186/s40248-016-0059-y

- Zschocke, I., Ortland, C., & Reich, K. (2017). Evaluation of adherence predictors for the treatment of moderate to severe psoriasis with biologics: the importance of physician-patient interaction and communication. *J Eur Acad Dermatol Venereol*, 31(6), 1014-1020. doi: 10.1111/jdv.14178
- Zuzak, T. J., Bonkova, J., Careddu, D., Garami, M., Hadjipanayis, A., Jazbec, J., . . . Langer, A. (2013). Use of complementary and alternative medicine by children in Europe: Published data and expert perspectives. *Complement Ther Med*, 21, S34-S47.

## Appendices

## Appendix A: IRB for Phase I

IRB Study Closed

To: Asmita Mhaskar

RE: Validate survey questionnaire

PI: Asmita Mhaskar

Link: Pro00026762

Author: Various Menzel (Research Integrity & Compliance)

Logged For (Study): Validate survey questionnaire

Activity Date: 7/15/2016 9:27 AM

This activity will close the IRB Study and change the state to Closed - Never Approved.

Comments:

The Chair has reviewed this application and has determined: "Activities described in the application are designed to evaluate the nature of questionnaire items and not designed to contribute to generalizable knowledge. The activities do not constitute research per USF IRB criteria; USF IRB approval and oversight are not required."

## Appendix B: IRB for Phase 2



RESEARCH INTEGRITY AND COMPLIANCE  
Institutional Review Boards, FWA No. 00001669  
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799  
(813) 974-5638 • FAX (813) 974-7091

September 6, 2016

Asmita Mhaskar  
Global Health  
Tampa, FL 33612

RE: **Exempt Certification**

IRB#: Pro00025473

Title: To assess patient satisfaction with Homeopathic clinics and Homeopathic medicines in Pune and Mumbai, India.

Dear Asmita Mhaskar:

On 9-5-16, the Institutional Review Board (IRB) determined that your research meets criteria for exemption from the federal regulations as outlined by 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:  
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF HRPP policies and procedures.

Please note, as per USF HRPP Policy, once the Exempt determination is made, the application is closed in ARC. Any proposed or anticipated changes to the study design that was previously declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not limit your ability to conduct your research project.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have



any questions regarding this matter, please call 813-974-5638.

Sincerely,

*John A. Schinka, Ph.D.*

John Schinka, Ph.D., Chairperson  
USF Institutional Review Board

## Appendix C: Study Flyer

**Please ask your doctor or the clinic receptionist for the:**  
**PATIENT SATISFACTION SURVEY**

**Eligibility:** You are invited to complete the survey if:

- You are 18 years of age or over, AND
- This is NOT your first visit to this doctor, AND
- You have NOT filled out this survey before

**What we expect from you:**

- It will take 5 minutes of your time to complete this survey and seal it in the envelope provided!

**Potential benefits and compensation:**

- Your feedback from this survey along with feedback received from other patients will be compiled together to better understand patients' opinions about Homeopathic medicines and the clinics.
- You will not be paid for filling out this survey.

**The doctor will not be reading your completed survey.**

For questions regarding this survey you can contact the principal investigator at:

Email: [amhaskar@health.usf.edu](mailto:amhaskar@health.usf.edu)

Thank you for your support and time  
Asmita Mhaskar, BHMS, MPH.

## Appendix D: Survey

Clinic number:

**Please read the instructions, the questions and the answer choices carefully before marking your choice.**

You (participant) has to be 18 years of age or older to fill out this survey.

DO NOT fill out the survey if this is your FIRST visit to this Homeopathic doctor. If you have filled it once before, then please do NOT fill this survey again. Please do not write your name, address or any contact information on the survey or on the envelope.

The 'doctor' in the questions below refers to the Homeopathic doctor you are visiting in this clinic only. After answering all of the questions, please put the survey in the envelope provided, seal the envelope and give it to the receptionist or the doctor. Do not take the survey home. Thank you for your time.

Please check mark  only one choice for each question.

|  |   |
|--|---|
| Your Age (in years)  |   |
| Gender   | <input type="checkbox"/> Male<br><input type="checkbox"/> Female  |
| Highest education completed  | <input type="checkbox"/> No schooling<br><input type="checkbox"/> Primary school<br><input type="checkbox"/> High school<br><input type="checkbox"/> College (12 <sup>th</sup> standard)<br><input type="checkbox"/> Bachelor's degree<br><input type="checkbox"/> Master's degree or above |
| How would you describe the complaint you have come for today to visit this doctor: | <input type="checkbox"/> Acute (short term temporary illness)<br><input type="checkbox"/> Chronic (long term illness)   |
| I take Homeopathic medicines for my acute complaints:                              | <input type="checkbox"/> Never<br><input type="checkbox"/> Sometimes<br><input type="checkbox"/> Always   |

|   |   |
|---|---|
| I take Homeopathic medicines for my chronic complaints:       | <input type="checkbox"/> Never<br><input type="checkbox"/> Sometimes<br><input type="checkbox"/> Always   |
| How long have you been seeking medical care with this doctor? | <input type="checkbox"/> Less than 6 months<br><input type="checkbox"/> At least 6 months but less than 1 year<br><input type="checkbox"/> At least 1 year but less than 3 years<br><input type="checkbox"/> At least 3 years but less than 5 years<br><input type="checkbox"/> 5 years or more |

How strongly do you AGREE or DISAGREE with each of the following statements? For each, please make a check mark in one box. **Please note: higher the number the more you agree.**

| Questions  | Strongly disagree          | Disagree                   | Uncertain                  | Agree                      | Strongly Agree             |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <b>Your past experience with Homeopathy</b>  |                            |                            |                            |                            |                            |
| Homeopathic medicines have helped me feel better in the past (before visits to this doctor)  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>Your experience with Homeopathic medicines</b>  |                            |                            |                            |                            |                            |
| The medicines are easy to consume/take   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I feel better after taking medicines given/prescribed by this doctor   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| After taking Homeopathic medicines I have never felt any side-effects from the medicines   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| The treatment (total cost of consultation and medicines) is affordable   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I seek Homeopathic medicines in emergency care as well   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| My illness worsened initially after taking Homeopathic medicines   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Compared to Allopathic medicines, I prefer/will prefer to take Homeopathic medicines for any acute illness (e.g. cough, fever, etc.) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

| Questions   | Strongly disagree          | Disagree                   | Uncertain                  | Agree                      | Strongly Agree             |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Compared to Allopathic medicines, I prefer/will prefer to take Homeopathic medicines for <u>chronic</u> illness (e.g. arthritis, diabetes, high blood pressure, asthma etc.)            | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>Your perceptions about Homeopathic medicines</b>   |                            |                            |                            |                            |                            |
| Each patient can receive a different Homeopathic medicine for the same illness (e.g. Mr. Joshi may receive medicine A for his ulcer and Mr. Patil may receive medicine B for his ulcer) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Effect of Homeopathic medicines is reduced with consumption of foods items such as coffee, garlic etc.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Illness can worsen initially after taking Homeopathic medicines   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>Your experience with this doctor</b>   |                            |                            |                            |                            |                            |
| This doctor listens to my health complaints carefully   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| This doctor explains health related things to me in a way that I can understand   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| This doctor shows concern/cares about my health   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| This doctor gives me easy to understand instructions about how to take my medicines   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| This doctor seems knowledgeable about the illness that I suffer from  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I feel this doctor is capable of taking care of my illness  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Just talking to the doctor will not make me better; I do need the Homeopathic medicine as well in order for my health complaints to improve   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I get enough time with this doctor  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>Your experience in the waiting room and appointments</b>   |                            |                            |                            |                            |                            |
| It is easy to get an appointment with this doctor   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

| Questions  | Strongly disagree          | Disagree                   | Uncertain                  | Agree                      | Strongly Agree             |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| I am able to get an appointment whenever I need it                                       | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| The doctor sees me within 30 minutes of my appointment time                              | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I do not mind waiting for more than 30 minutes before the doctor sees me                 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>Your experience with the assistant doctor/receptionist/staff</b>                      |                            |                            |                            |                            |                            |
| I feel welcome in this clinic  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| My questions or concerns about medicines or any other concerns are respectfully answered | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I am given directions on how to take the medicine in a way that I understand             | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| <b>Overall satisfaction</b>  |                            |                            |                            |                            |                            |
| Overall, I am highly satisfied with this doctor  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Overall, I am highly satisfied with this clinic  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Overall, I am highly satisfied with Homeopathic medicines                                | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I will recommend this doctor to my friends and family members                            | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I recommend my friends and family members to seek/use Homeopathic medicines              | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**Please check mark YES or NO for the questions below**

|  |  |
|--|--|
| <p>Is there anything you would like to see changed in regards to your experience with this Homeopathic doctor during the consultation and examination?</p> <p><u>If you chose YES</u>, please write in a few words what you would like to see changed:</p> | <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> |
|--|--|

Is there anything you would like to see changed in regards to your experience with this Homeopathic clinic in general?

If you chose YES, please write in a few words what you would like to see changed:

If you chose NO, you are finished with this survey.

YES

NO

**We sincerely thank you for your time.**