

RESEARCH ASSIGNMENT

PROJECT TITLE:

***KNOWLEDGE, ATTITUDE AND PERCEPTION OF PRIVATE PRACTITIONERS BASED IN
GAUTENG, SOUTH AFRICA, REGARDING EVIDENCE-BASED PRACTICE.***

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DECLARATION

I, Dr. Wouter De Wet, hereby declare that this dissertation is my own idea and the result of my own original research; that it has not been submitted for any degree or examination at any other University, and that all the sources I have used or quoted have been indicated and acknowledged with complete references.

Dr Wouter de Wet

ABSTRACT

Background

Evidence-based medicine (EBM) involves the care of patients using the best available evidence from the results of good quality clinical research to guide clinical decision making¹⁻³. By incorporating the principles of Evidence-based Medicine (EBM), the family practitioner would be able to treat a patient according to the best clinical research available. This principle is implemented widely in the USA, Canada, the United Kingdom and Europe. In South Africa, however, EBM is not yet as widely incorporated into family practice. This is so despite the plethora of websites available to practitioners and the relative ease with which applicable research evidence can be found.

Very few published studies are available regarding EBM or Evidence-based Practice (EBP) in the South African context. The findings of this study would thus highlight reasons and/ or barriers preventing family practitioners from implementing EBM in their respective practices. This could also lead to further research into possible methods of implementation of EBM into South African family practices.

Aim:

The aim of the study was to describe the perceptions, knowledge and attitudes of private practitioners regarding evidence based practice and to identify the barriers encountered in evidence based practice.

Methods

A questionnaire survey of general practitioners in Gauteng, South Africa, was conducted. Questionnaires were distributed to a random sample of practitioners in the Gauteng region. Two hundred and twenty one (221) practitioners participated in the survey and responded to questionnaires mailed to them. The questionnaire was mailed, faxed or e-mailed to the practitioners, which they then completed and returned for statistical analysis.

Study design

The study design is that of quantitative, statistical analysis (descriptive cross-sectional survey).

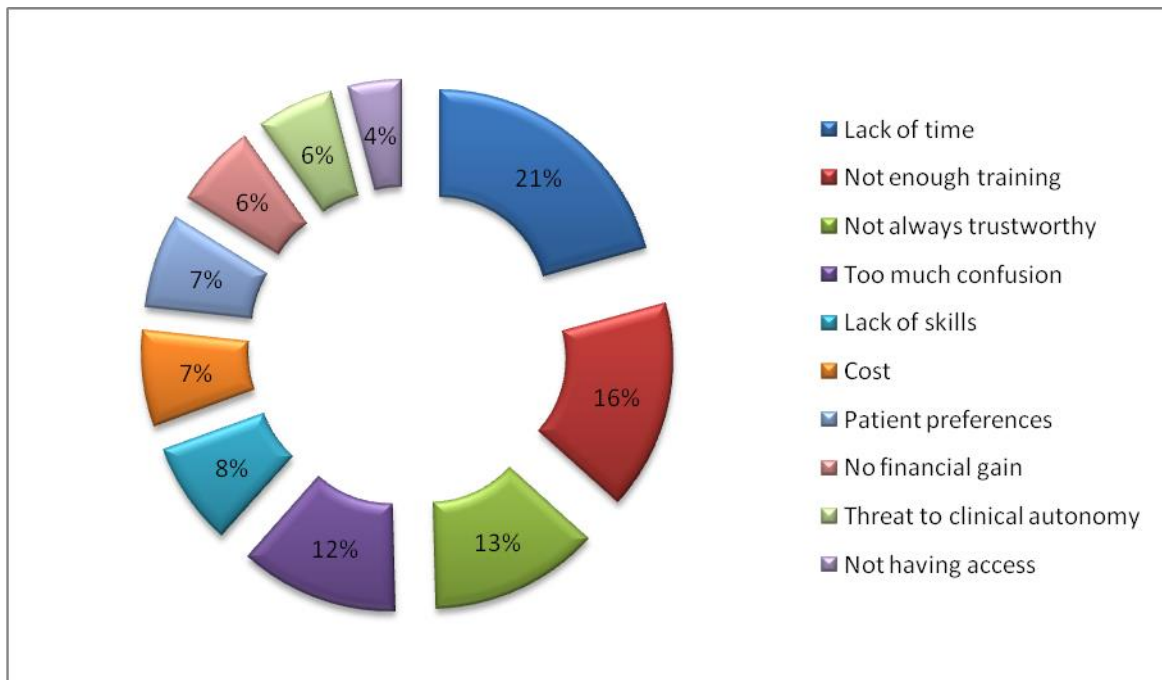
Setting

General practitioners were randomly selected from a list of practitioners in the Gauteng Province. Doing a nationwide survey would have been a mammoth undertaking. It was therefore decided to limit the research to one province and therefore it was only concentrated on practitioners practicing in the Gauteng area.

Results

It is interesting to note that of the two hundred and twenty one participants in this study; only 10% of the practitioners were against using EBM in their practices. This, however, stands in stark contrast to the 56% of practitioners who do not implement EBM in their practices or make use of the EBM principle at all. The major barriers preventing practitioners from implementing EBM is depicted in

the following graph: Lack of time and the training in aspects of Evidence-based medicine were the main barriers preventing the full scale implementation of EBM in family practices in Gauteng.



Conclusion

Participating Gauteng doctors were in principle, very positive towards the implementation of EBM in their respective practices. Most of the participants agreed that EBM would benefit their patients' care and treatment. Very few of the participants, however, make use of EBM in practice. A lack of training and time constraints were the main barriers with regards to the implementation of EBM. Proper training of medical students at undergraduate level at faculties of health sciences, would go a long way assisting prospective doctors in mastering the concept of EBM and increasing their overall awareness of EBM. Further definitive research would assist in establishing whether such awareness would be associated with improved implementation of evidence in the form of evidence based guidelines in practice.

INTRODUCTION, BACKGROUND AND MOTIVATION

In 1992, two Canadian physicians from Mc Master University, Gordon Guyatt and David Sackett, published a manifesto calling for “evidence-based medicine” (EBM) ⁴. Their idea was simple; the choice of treatment should be based on the best evidence and, when available, the best evidence should come from clinical research evidence. They didn’t call on doctors to be exclusively guided by statistical studies, but wanted research evidence to play a bigger role in treatment decisions. The idea that doctors should give special emphasis to clinical research evidence remains controversial to this day.

Alternatives to evidence based medicine in day-to-day information management, include reliance on the eminence, vehemence, eloquence or confidence of the source ⁵. On the other hand, evidence based medicine is intended to compliment, not replace, clinical judgment tailored to individual patients.

A physician however cannot be driven by the statistical results if the physician does not know what the research result is. For statistical analysis to have impact there needs to be some kind of a transmission mechanism that disseminates the analysis to the decision makers. The critics of evidence-based medicine often focus on the lack of information. They claim that in many instances high-quality statistical studies just don’t exist to provide guidance for the many questions that arise in day-to-day clinical decision making. A deeper reason for resistance is just the opposite problem: there is too much evidence based information for any individual practitioner to reasonably absorb.⁶

The internet and web browser was only released in 1993. This new technology started making it possible for doctors at grassroots level taking care of patients, to systematically practice evidence-based medicine. A host of computer assisted search engines and databases now exist that are dedicated to putting doctors in touch with relevant clinical research evidence.

South African doctors, like their colleagues worldwide are probably facing the same problems. Doctors trained before the internet and computer era might be less informed about all this “new” information (information overload) and it seems that few are aware of databases that are available and lack the skills and proficiency required to find, critically appraise and implement new clinical research in decision making and in so doing keep up with new trends.

LITERATURE REVIEW

A literature search was done using various data bases such as Medline, Google Scholar and Cochrane and the key words used in the search strategy were:

- i) Evidence based medicine, implementation, and family practice.
- ii) Evidence-based Medicine (EBM) and family practice.
- iii) Evidence-based Guidelines and family practice.
- iv) Barriers to implementation of clinical research evidence.
- v) Critical appraisal of clinical research evidence.

It is evident from the literature search that various studies and articles have been published in different countries with similar aims and objectives as this proposed study. However, little published literature could be found which deals with the South African context. An incredible amount of information and literature has been written on the topic and the process of evidence-based medicine has been well documented. Various website and database sources are available to assist physicians in evidence based clinical decision making and among the frequently accessed databases are Cochrane Library ⁷ and MEDLINE. ⁸

The World Wide Web has opened many possibilities for practitioners to obtain clinical information ⁹ and even to utilize it as a tool for preventative practice such as for example Chlamydia screening etc. ¹⁰ A review on evidence-based medicine by Robert H. Fletcher ¹¹ gives a fairly comprehensive list of sources of EBM. It is impossible for a clinician to keep up with all important new developments simply by reading a few journals. Many useful sites are available to maintain a comprehensive surveillance on new developments in clinical practice.

Unfortunately, very little literature is available with regards to the South African context to compare this research study with. A South African study ¹² which did not focus on family practitioners, but on EBM and mental health care, conducted a questionnaire survey on South African psychiatrist and GPs with interest in mental health. This study with a response rate of 51%, showed that the majority of respondents have access to a computer and the internet, but that very few are aware of electronic and web-based medical decision making tools. Although the overall understanding of epidemiological terminology was shown to be low, the respondents indicated a willingness to understand EBM. The high response rate of this study was remarkable because the target group was more selected and more easily accessible, since it was limited to South African psychiatrist and selected GPs only.

Evidence based practice clearly entails more than just the incorporation of clinical trial evidence in practice and Ncayiyana (SAMJ Jan 2007) in his editorial stated clearly that " EBM is more than randomized controlled trials (RCT's) and systematic reviews ¹³. His opinion is that RCT's are by no means always reliable or consistent, and that if EBM is equated exclusively with RCT's and systematic reviews, this would constitute a misrepresentation of EBM as it encompasses best evidence from all sources including-observational studies, cohort studies and case studies of rare events, as well as RCT's. He concludes with a quote from Sackett: 'Good doctor's use both individual clinical expertise and best available external evidence, and neither alone is enough. Without clinical expertise, practice risks becoming tyrannized by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient.'²

McColl and H Smith published a questionnaire survey ¹⁴ which looked at the perceptions and attitudes of General practitioners to evidence based medicine. This study was done in the former Wessex region of England and a randomly selected sample of 25% of all GPs in the area was questioned. The study had similar objectives, which were to determine the attitudes of general practitioners toward evidence based medicine and their related needs. Respondents' attitudes towards EBM, ability to access and interpret evidence, perceived barriers to practicing EBM, and best method of moving from opinion based to EBM were elicited. Respondents mainly welcomed EBM but had a low level of awareness of extracting journals and review publications. Once again the

major perceived barrier to practicing EBM was lack of personal available time. Respondents thought that the best way to move from opinion based practice towards EBM was by using guidelines or protocols developed by colleagues.

Research done in Saudi Arabia also focused on the barriers that physicians face practicing evidence - based medicine ¹⁵. Their conclusion was that the main barriers were lack of training in EBM (72.9%), facilities (34.4%), and time (29.2%). The least mentioned barriers were the lack of relevant evidence (10.4%) and the negative impact on medical skills (10.4%).

A useful form of research from the interpretivist paradigm, was used by Mike Cranney and Erica Warren ^{in 2001}¹⁶ to explore GPs opinions regarding EBM.. They used semi-structured interviews with focus groups from nine practices in Merseyside and managed to identify several barriers impeding GPs from pursuing recognized good practice and implementing Evidence-based guidelines in their management of hypertension in the elderly. These barriers included amongst others the effect of time pressure and financial considerations as well as the absence of an effective computer system in their practices.

A good example of how EBP (evidence based practice) is being used in everyday patient care is the protocol for a proposed study by Murray et al. ¹⁷ They investigated the efficacy of an evidence-based theory guided interventions in assisting clinicians to strengthen their patient decision support skills as far as deciding about a place of care at the End of-Life.

The teaching of EBM by Universities differs, and many publications have been written on this subject. Mount Sinai School of Medicine in New York has integrated EBM into clinical topics, and instead of teaching EBM as an independent concept, integrated EBM teaching is implemented in some of their new curricula. They hope that this will bridge the gap between the teaching and the practicing of EBM ¹⁸. However whether this has a long-term effect on students is debatable. Yew and Reid explored the long-term behaviours of students after completing a 3-year CA/EBM curriculum. ¹⁹ .Their conclusions were not very favourable as most of the students did not regularly practice their skills learned in EBM. Most said they used continuing education meetings and reading journals to keep abreast. Even here, time and workload pressure again appear to be a major barrier .The impact of an EBM educational intervention on primary care doctors` attitudes, knowledge and clinical behaviour has also been described.^[20]

Evidence in the form of guidelines and the implementation of it in practice, therefore remains a controversial problem that needs to be investigated with the South African context in mind. The implementation and acceptance of evidence-based practice guidelines has also been studied by various researchers. Wiener-Ogilvie et al did a study in Scotland to try and establish whether practices were complying with British Asthma Guidelines. They concluded that implementation of key recommendations was variable and also in the process described a few theoretical and practical barriers. ²¹

A Dutch survey ²² with similar results, found that in 2001, Dutch general practitioners did not adhere to the guidelines for the treatment of infectious conjunctivitis published five years previously. A similar finding was recorded in Slovenia where research concluded that hypertension guidelines had a marginal impact on everyday primary care ²³. Another study²⁴ showed that while most practitioners were aware of the recommendation of the hypertension guidelines, many did not agree with the

content or adopt them. They concluded that a lack of awareness of the guidelines is seldom the problem and that most GPs are unlikely to implement elements of guidance they disagree with, even if given financial incentives²⁴

A systematic review and meta-synthesis of qualitative studies was done by Carlsen et al in Norway. They explored and synthesised qualitative research on GPs attitudes and experiences with clinical practice guidelines and concluded that the purpose of the guideline may influence how guidelines are received and implemented.²³

AIM AND OBJECTIVES:

The aim of the study was therefore to describe the perceptions, knowledge and attitudes of private practitioners regarding evidence based practice and to identify the barriers encountered in evidence based practice.

The objectives of this study were:

- i) To describe the perceptions, knowledge and attitudes of private practitioners regarding evidence based practice.
- ii) To describe the barriers and shortcomings preventing family practitioners from implementing evidence-based way of practicing.
- iii) To record the factors that have influenced practitioners to adopt the principles of evidence based practice.
- iv) To determine the number of respondents already implementing evidence based practice.
- v) To make recommendations to health educators, practitioners and EBM information providers on the practice of evidence based medicine.

METHODS

Study design:

This study design was a descriptive cross-sectional survey.

Setting:

A questionnaire survey of general practitioners in the South African province of Gauteng was conducted. General practitioners were randomly selected from a list of practitioners in this Province. Doing a nationwide survey would have been an enormous task. It was therefore decided to limit the research to a smaller area which only concentrated on practitioners practicing in the Gauteng area.

Sample selection:

Names and addresses (including telephone numbers/e-mail addresses) were obtained from national or local databases, such as the SA medical and Dental Council, the South African Medical Association,

the South African Academy of Family Practice and medical mailing companies. A statistician calculated the required sample size of participants as 246 practitioners. Practitioners were randomly selected from the final database obtained from The South African Medical Association.

Inclusion criteria included:

- i) Practitioners whose contact information was available and updated (this would include either a postal address, telephone number/s and or email address).
- ii) Practitioners who are actively involved in family or general private practice either full-time or part-time.
- iii) Practitioners who were willing to participate in the survey.

Exclusion criteria included:

- i) Not actively practicing in family or general practice (full-time or part-time).
- ii) Not practicing in the Gauteng area.

A covering information letter was dispatched with the definition of what EBM is, the purpose of the research, as well as an explanation for the motivation of doing the survey (see annexure 1). Non-respondents to the postal survey were twice contacted telephonically after 1 month and if an e-mail address was available, via e-mail in an attempt to improve the response rate to the questionnaire survey.

Piloting of questionnaire

Telephone numbers and names of randomly selected general practitioners were obtained from the South African Medical Association. Two part-time assistants were trained as field workers and were employed to try and obtain as many responses as possible. The two assistants used prepaid cell phone cards. They phoned practices and requested a telephonic interview with the practitioner. Attempts to complete the questionnaire over the telephone were made. Practitioners refusing to complete the questionnaire over the telephone were asked to complete the questionnaire either by fax or e-mail. These questionnaires were then either faxed or e-mailed the same or following day. A survey of this nature has several well recognized limitations.

Limitations include the fact that It is well known that self-reported behaviour is often different from actual behaviour; participants may not have had the motivation to complete the whole questionnaire; the questions are pre-determined and may not have elicited important unanticipated beliefs or behaviours of the practitioners, the fact that surveys are sometimes over-interpreted and the ever-present problem of poor response rate especially among medical practitioners.

STATISTICAL ANALYSIS

Data was analyzed using the statistical program of Microsoft Excel as well as EPI 6. Data was analyzed using information from the questionnaires of all respondents. Data being predominantly descriptive was analyzed using descriptive analysis with the calculation of central tendency such as means, modes and medians. Frequencies, proportions and summary statistics were used to describe

the study data in relation to relevant variables. Results were presented as means; frequencies; Odds ratios (OR) with 95 percent confidence intervals (95% CI). Statistical significance was defined at the alpha level of 0.05. Data was collated in Excel and analyzed with the help of the Centre for Statistical Consultation using Stat Soft Inc. (2008) version 8.

ETHICAL CONSIDERATIONS

An introductory letter accompanied the questionnaire and addressed the following issues.

- i) The purpose of this survey.
- ii) The expected benefits of the survey to the participant.
- iii) Protection of confidentiality and anonymity of the participant
- iv) Informed consent.
- v) Provision of all contact details of the researcher.

Confidentiality:

- i) Adequate care was taken to protect the confidentiality of all participating practitioners.
- ii) Every questionnaire was assigned a code number to keep information linking the number to a specific individual separate from the research record, and to limit access to linking and identification of that information.

Participant's protection and consent:

- i) A survey of this extend had very little risk for the participants.
- ii) Replies were handled with anonymity and confidentiality.
- iii) The subjects responding to the survey did not belong to the traditional list of vulnerable subjects.
- iv) By completing the questionnaire, it was understood that the participant granted voluntary informed consent.

RESULTS

As stated above, a questionnaire survey of general practitioners in South Africa was conducted. General practitioners were randomly selected from a list of practitioners in the Gauteng Province. What follows below is analysed data from these questionnaires, sectioned to meet the specific outcomes and objectives of this research paper. The full set of raw data that these following results and charts are based upon can be found as annexure four at the end of this research paper.

Basic Demographic data:

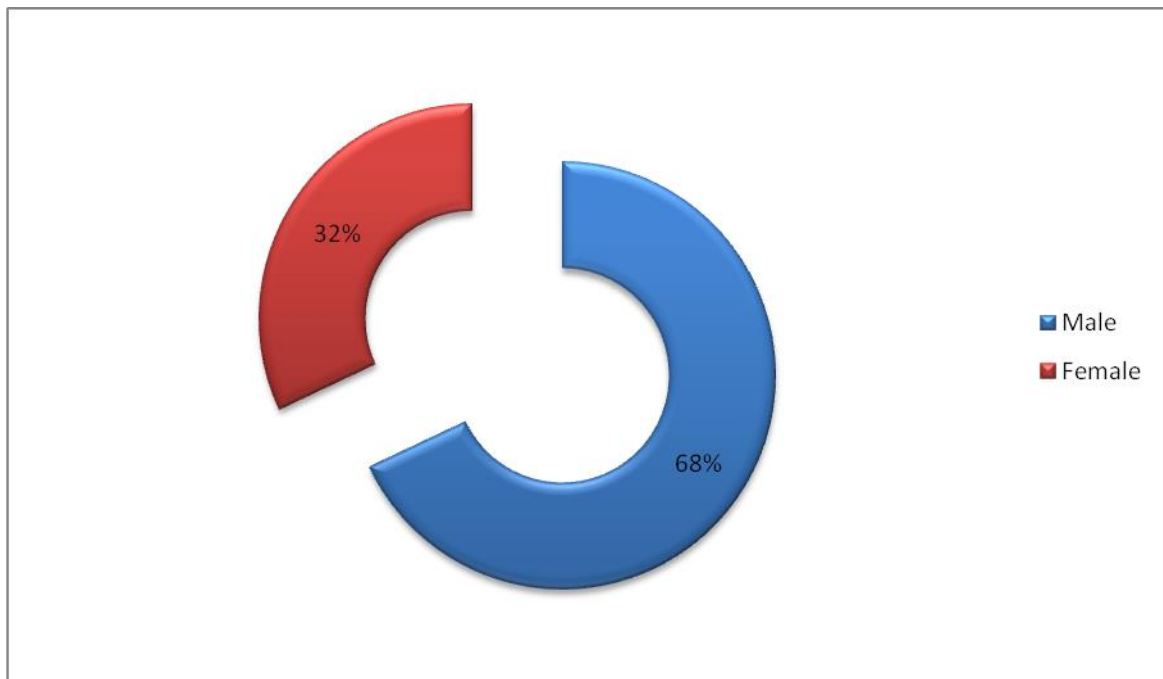


Figure 1: Gender of the participants:

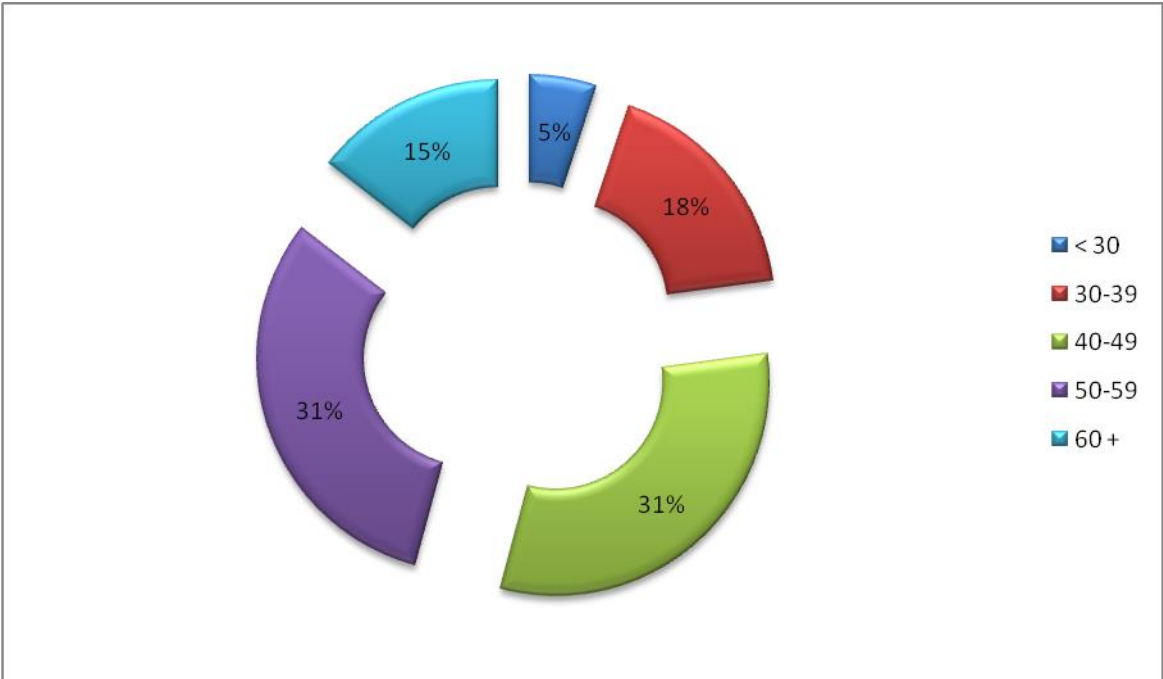


Figure 2: The different age groups of the participants:

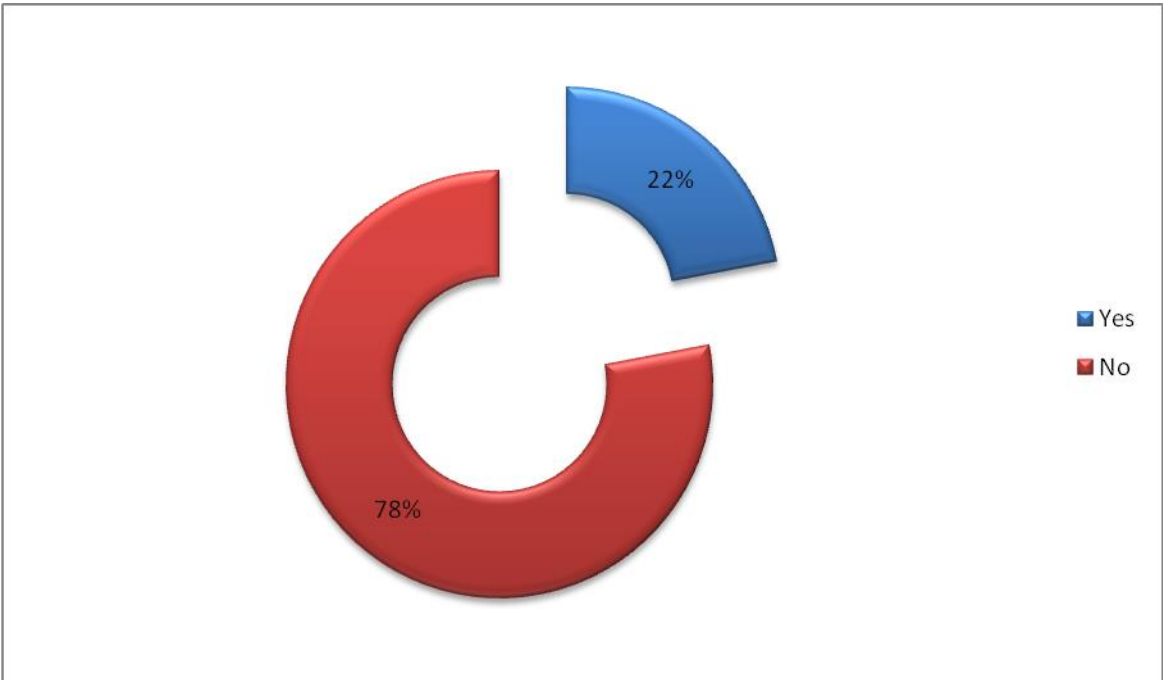


Figure 3: Whether the participant has a postgraduate degree

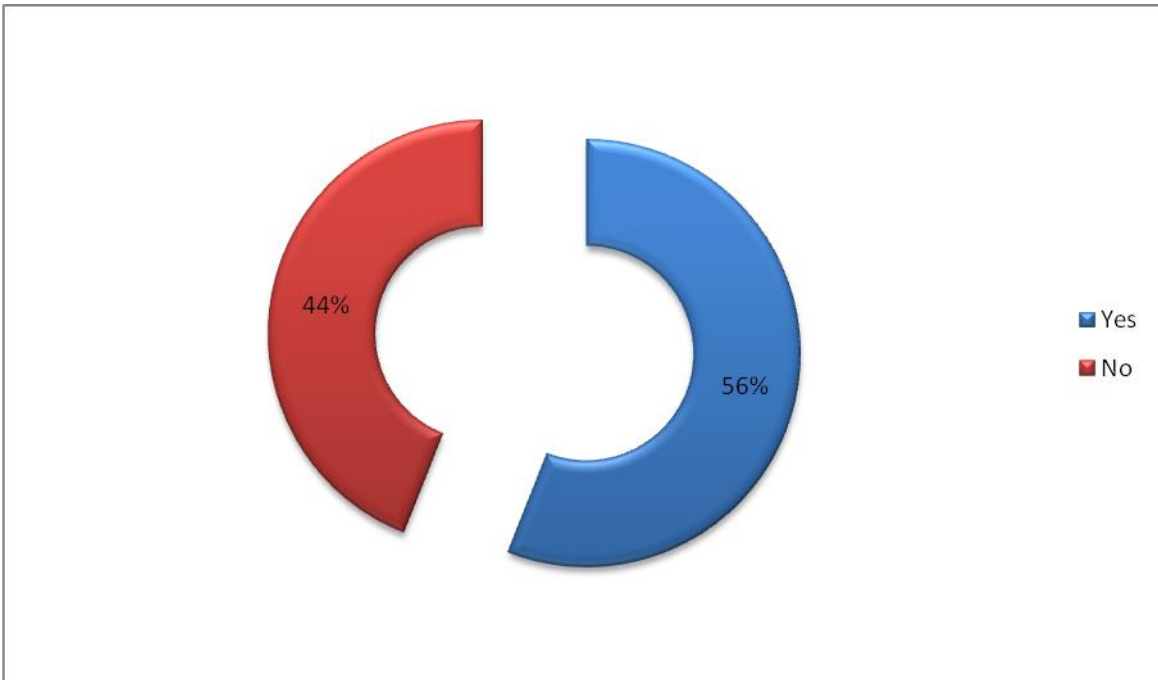


Figure 4: Whether English is used as a first language in their practices:

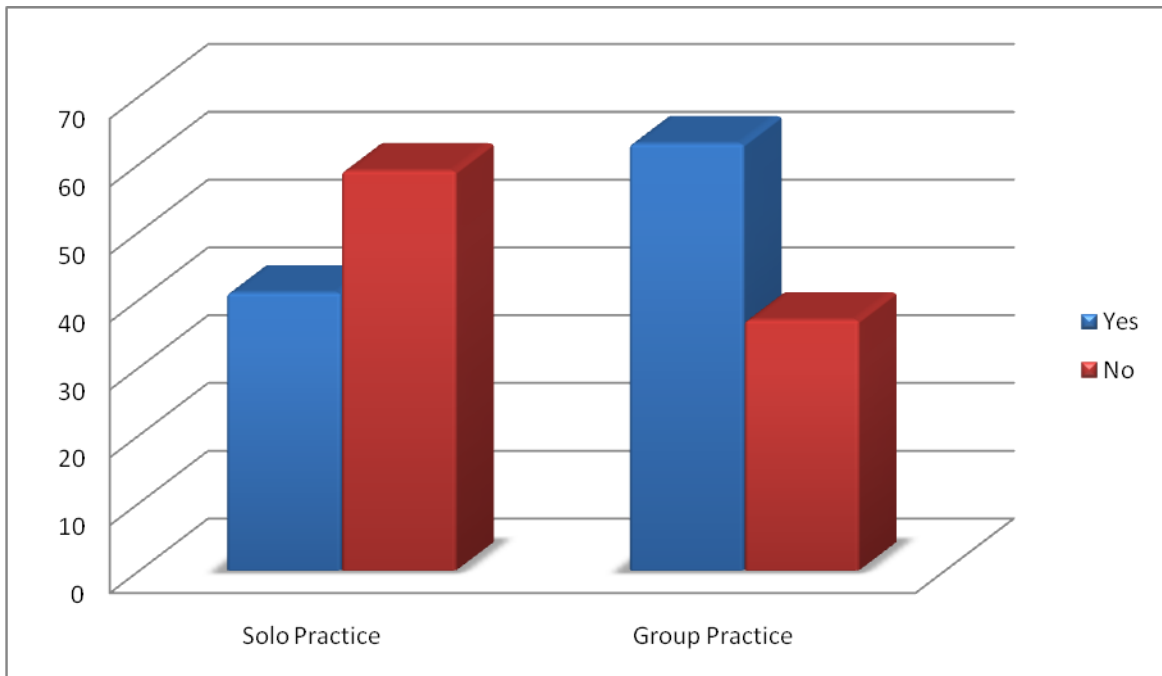


Figure 5: Whether this practice constitutes a group or solo practice:

Section one

Questions posed to participants with regards to their **perceptions** and **attitude** concerning evidence based practice were the following:

- How would you describe your personal attitude towards the current promotion of evidence based medicine?
 - Of all the participants, two hundred and twenty three responded to this question.
 - Five (2% of the total) participants responded that their personal attitude was extremely unwelcoming towards the promotion of EBM.
 - Seventeen (8% of the total) participants responded that they were unwelcome towards the promotion of EBM.
 - One hundred and forty four participants (66% of the total) responded that they were welcoming towards the promotion of EBM.
 - Fifty three (24% of the total) participants responded that they were extremely welcoming to the promotion of EBM.
 - The chart below (figure 6) depicts the personal attitude of the correspondents as a percentage, as stated above.

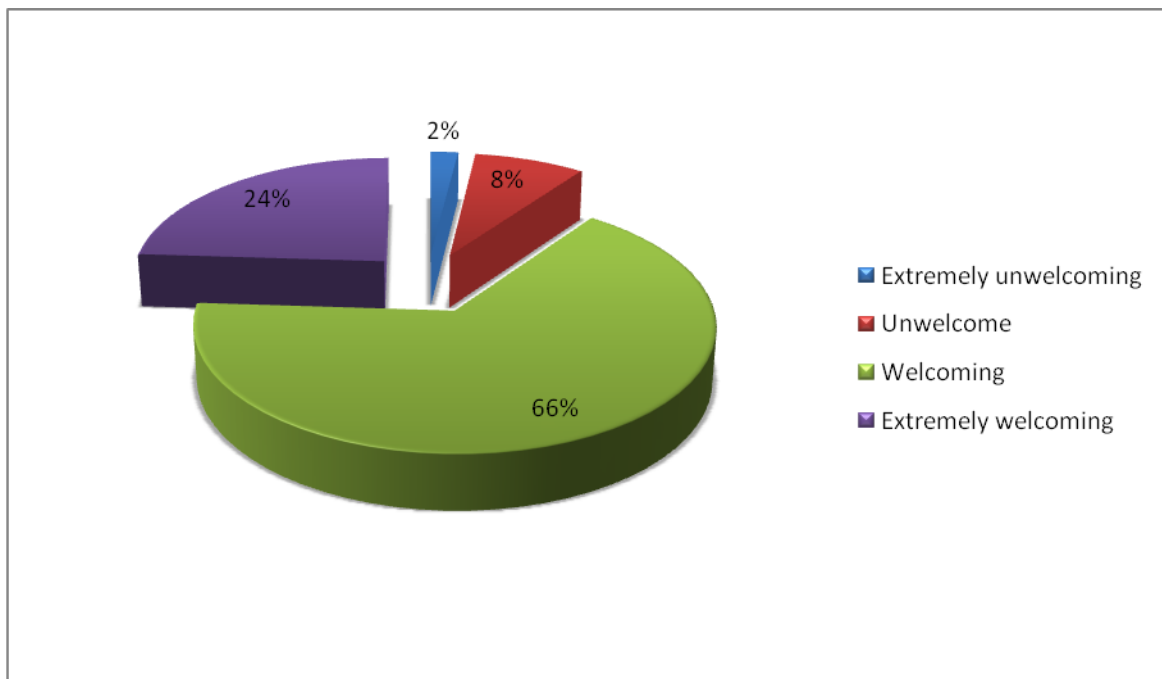


Figure 6: Summary of the personal attitudes of the correspondents with regards to EBM

- What the respondents thought the attitude of most of your General Practitioner colleagues towards evidence based medicine was?
 - Of the 218 participants who responded to this question, four (2%) responded that they feel that their colleagues' attitude towards EBM would be extremely unwelcoming.
 - Fifty one participants (23%) responded that their colleagues would be unwelcoming towards EBM.
 - One hundred and fifty four participants (71%) responded that they feel that their colleagues would be welcoming towards EBM.
 - Nine participants (4%) responded that their colleagues would be extremely welcoming towards EBM.
 - The chart below (figure 7) depicts how the participants felt their colleagues' attitude towards EBM would be, as the percentage stated above.

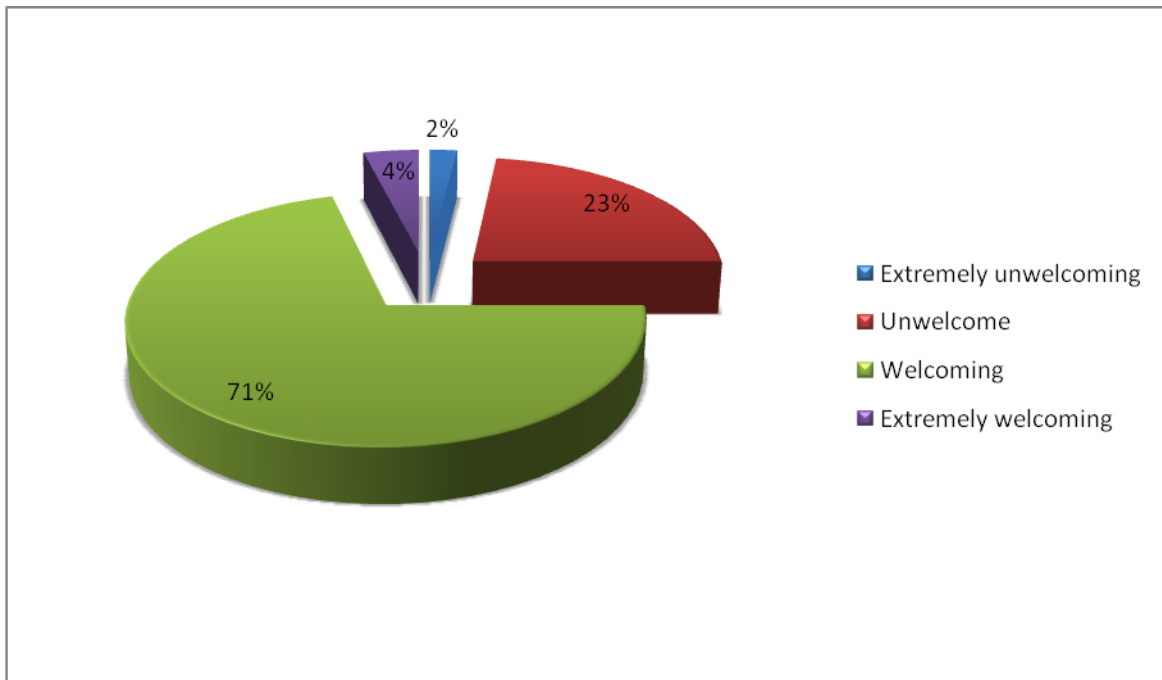


Figure7: Attitudes of colleagues with regards to EBM

- How useful do you think are research findings in your day to day management?
 - Of the two hundred and twenty (218) respondents who answered this question, four (2%) responded that they feel it is totally useless.
 - Five participants (2%) felt that it is useless.
 - One hundred and forty nine (68%) felt that it is useful.
 - Sixty two participants (28%) felt that it is extremely useful.
 - The chart below (figure 8) depicts how useful research findings would be in the day to day management of the correspondents' practice as a percentage, as stated above.

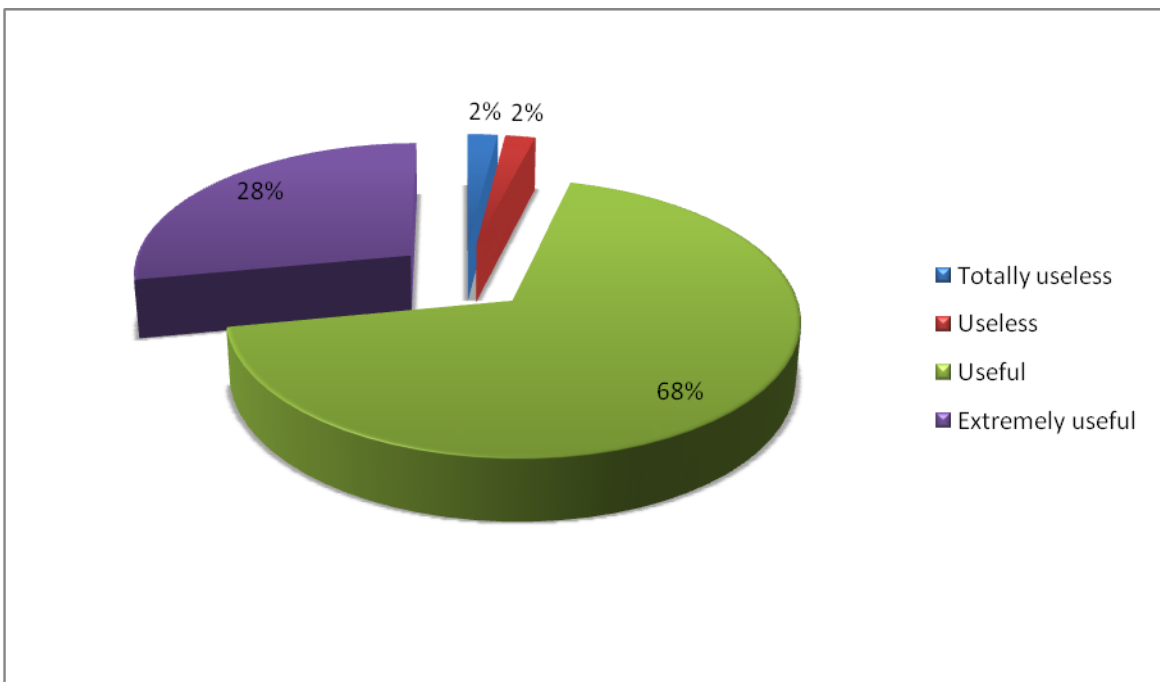


Figure 8: Usefulness of research findings in day to day practice decision making

- Practicing evidence based medicine improves patient care.
 - Of the two hundred and eighteen (218) participants who responded to this statement, one respondent (0.4%) strongly disagreed with the statement.
 - Thirteen participants (6%) disagreed.
 - One hundred and seventeen (54%) agreed.
 - Eighty seven participants (40%) strongly agreed.
 - Below is a chart (figure 9) that depicts the sentiment, represented as a percentage as stated above, of the participants towards the above mentioned statement.

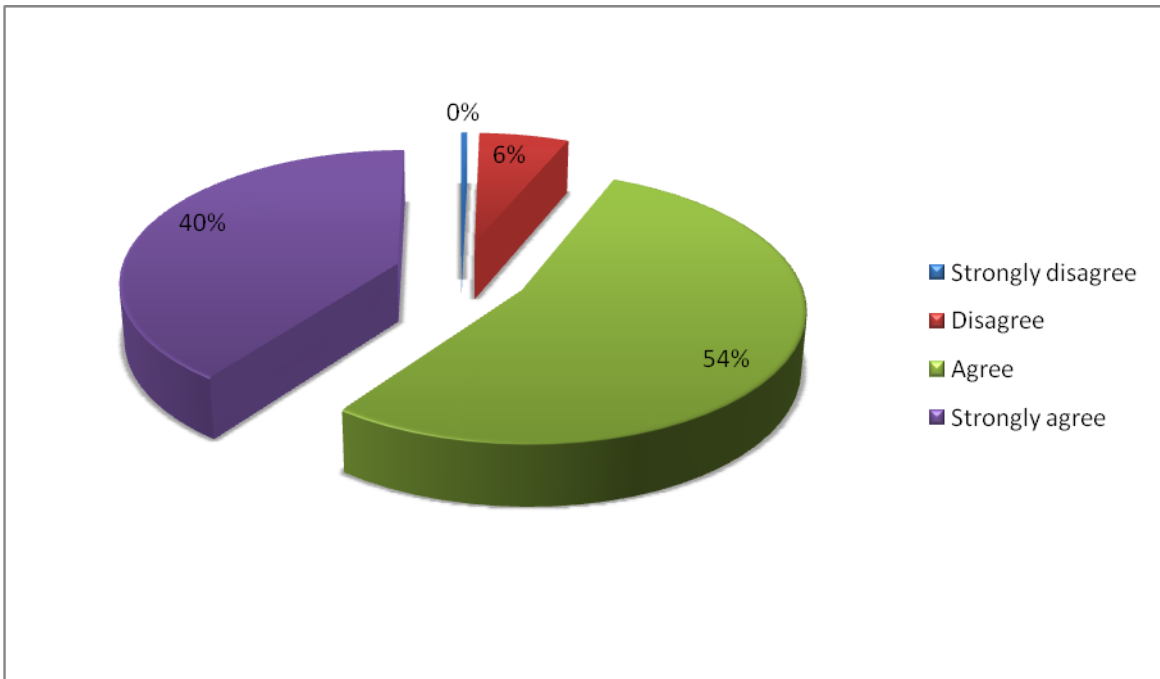


Figure 9: Whether EBM improves patient care

- The adoption of EBM, however worthwhile as an ideal, places another demand on already overloaded General practitioners.
 - Of the two hundred and eighteen (218) participants who answered this question, twelve (6%) strongly disagreed with this statement.
 - Forty nine (22%) disagreed with this statement.
 - One hundred and eleven (51%) agreed with this statement.
 - Forty six participants (21%) strongly agreed with this statement. (figure 10)

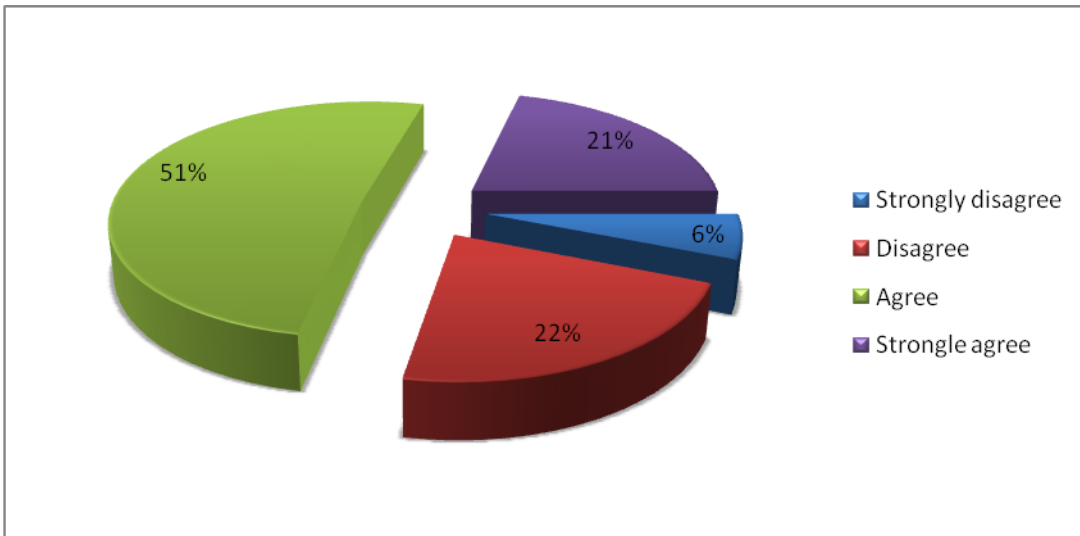


Figure 10: Whether EBM overloads GP

- Would you use a handheld computer or your cellular phone in your daily practice to access EBM database or Clinical Guidelines if the option was available?
 - Of the two hundred and six participants who responded to this question, one hundred and eighteen (57%) indicated that they would use a handheld computer or a cellular phone in their daily practice to access EBM database or Clinical Guidelines, if the option were available.
 - Eighty eight participants (43%) responded that they would not make use of a handheld computer or a cellular phone in their daily practice to access EBM database or Clinical Guidelines, even if the option were available to them.
 - Below is a chart (see figure 11) that depicts the above mentioned findings.

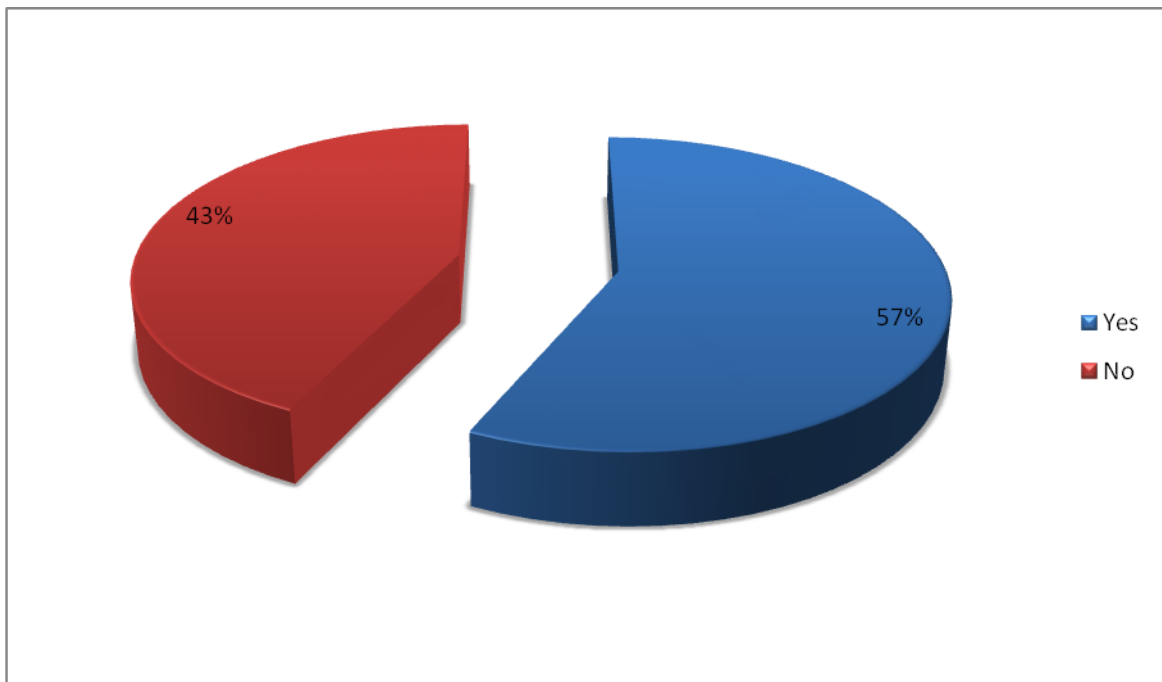


Figure 11: Whether a handheld palmtop computer chart would be of assistance

- Would you like to learn more about EBM?

Two hundred and twenty (220) participants answered this question. They were asked to answer either “Yes” or “No” to the following:

- *I do not wish to learn more about EBM:*
 - Yes – 15 (6.81%)
 - No – 205 (93.19%)
- *I already know enough about EBM:*
 - Yes – 4 (1.81%)
 - No – 216 (98.19%)
- *Attending a workshop or CME on EBM:*
 - Yes – 64 (29.09%)
 - No – 156 (70.91%)
- *Receive training through the internet or other electronic means:*
 - Yes – 48 (21.81%)
 - No – 172 (78.19%)
- *Read about it in journals:*
 - Yes – 42 (19.09%)
 - No – 178 (80.91%)

All the “Yes” answers were calibrated to represent a percentage out of one hundred, which is stipulated in the chart below:

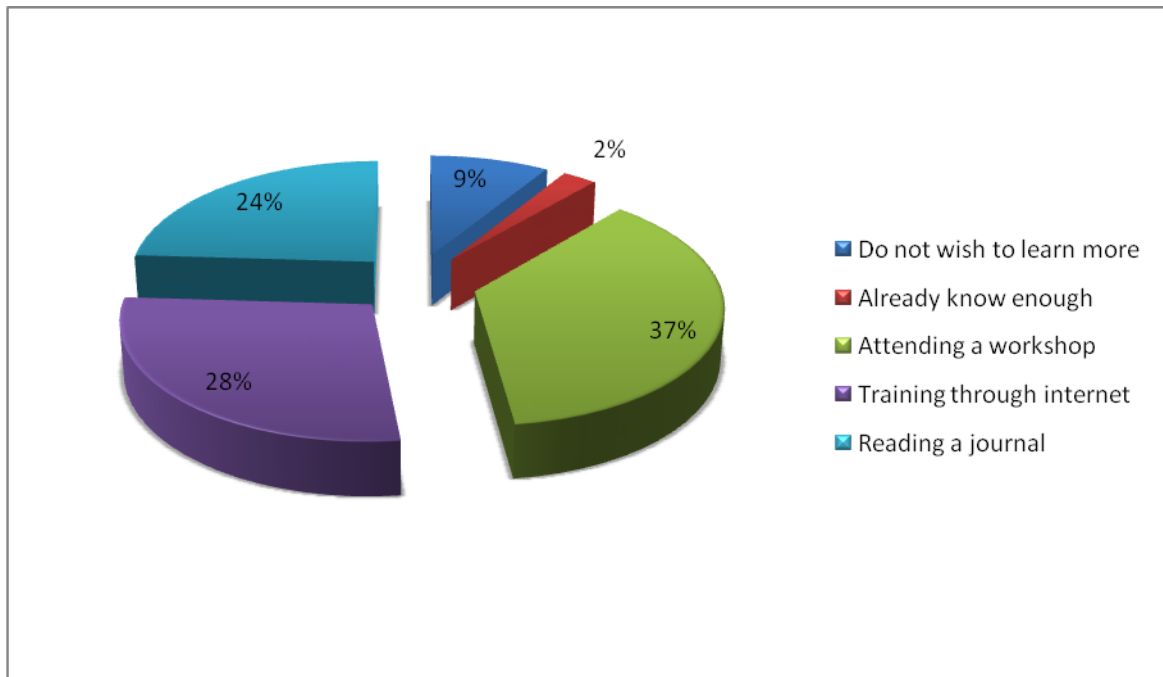


Figure 12: Need to learn more about EBM

Questions posed to participants with regards to their **knowledge** and awareness concerning evidence based practice were the following:

The following two questions were posed to determine the knowledge of private practitioners with regards to evidence based practice. Two hundred and twenty one (221) participants responded to this question. To both questions, participants could answer either “Yes” or “No”:

- Have you received training in search strategy?
 - Yes – 46 (16%)
 - No – 175 (84%)
- Have you attended any courses on EBM?
 - Yes – 46 (16%)
 - No – 175 (84%)

The following graph (see figure 13) depicts these findings:

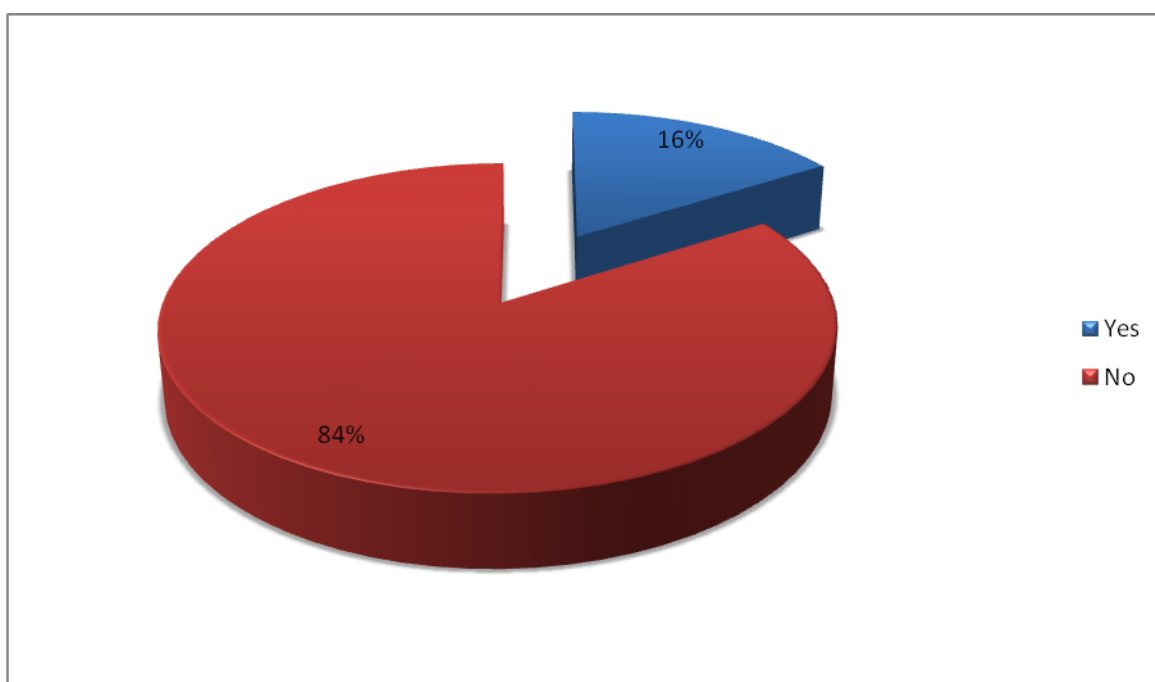


Figure 13: Knowledge regarding Evidence-based practice (EBP)

In relation to the above two questions, it was also important to know whether the participants were aware of databases relevant to EBM. The participants were asked if they were aware of the following databases. In each of these cases, the number of participants who answered either “Yes” or “No” is displayed alongside the appropriate answer:

- Bandolier (n=215)

- Yes – 12 (5.6%)
- No – 203 (94.4%)

- Cochrane database of Systemic review (n=215)
 - Yes – 81(37.7%)
 - No – 134 (62.3%)

- DXS Stellmed (n=214)
 - Yes – 32 (15.0%)
 - No – 182 (85.0%)

- Medline (n=214)
 - Yes – 99 (46.3%)
 - No – 115 (53.7%)

- Melissa (n=95)
 - Yes –12 (12.6%)
 - No –83 (87.4%)

The following graph (see figure 14) depicts the percentage of “Yes” answers of each of the four questions in relation to each other.

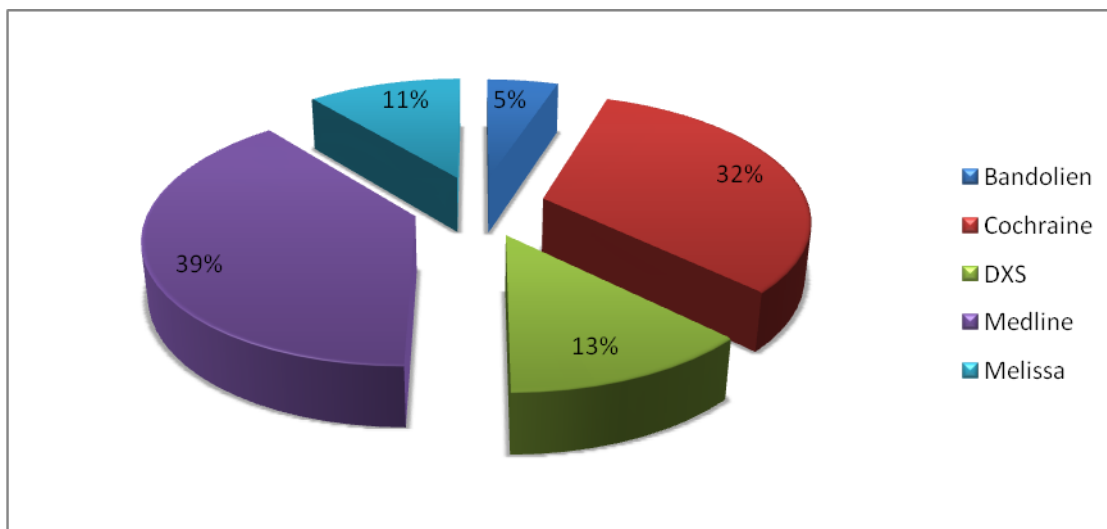


Figure 14: Awareness of Evidence-based databases

Section two

The following could be viewed as factors that have influenced practitioners to adopt the principles of evidence based practice. Some of the questions that are applicable to this section of the study were explored in the section above. In such a case, a cross reference to the applicable graph will be given. Every graph was assigned a specific footnote, and the corresponding number appears as a cross-reference below:

- How would you describe your personal attitude towards the current promotion of the evidence based medicine? (1)
- What do you think is the attitude of most of your General Practitioner colleagues towards evidence based medicine? (2)
- How useful do you think are research findings in your day to day management? (3)
- Practicing evidence based medicine improves patient care. (4)
- The adoption of EBM, however worthwhile as an ideal, places another demand on already overloaded General practitioners. (5)
- Do you use Clinical Guidelines in your practice?
 - Of the one hundred and twenty three participants who answered this question, seventy seven (63%) stated that they do not make use of clinical guidelines
 - Only forty six (37%) stated that they do make use of Clinical Guidelines.

The following graph (see figure 15) depicts the Clinical Guidelines findings:

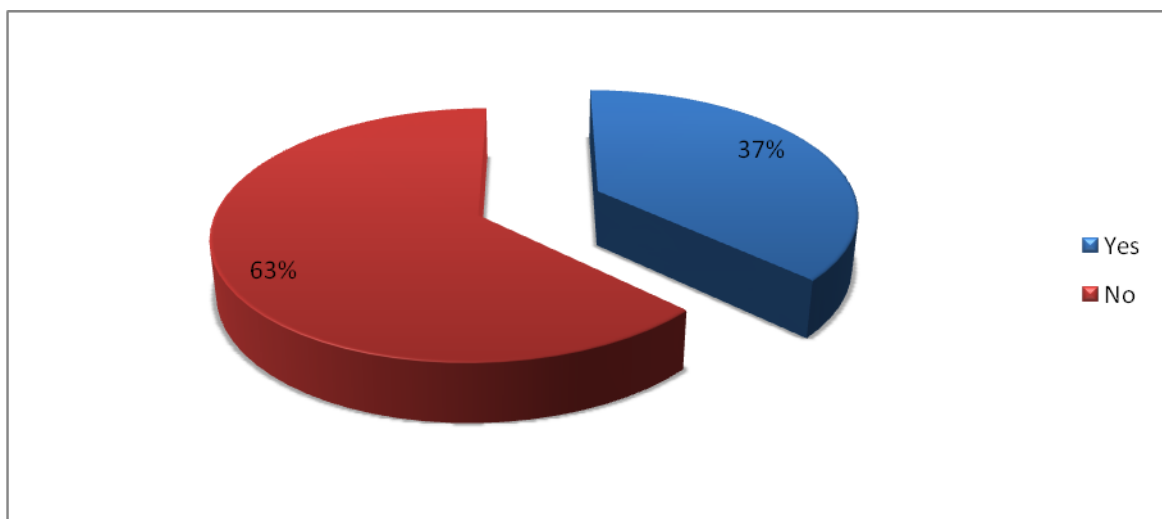


Figure 15: GPs making use of clinical practice guidelines

The following question was asked to establish whether or not General Practitioners had access to a database (like Medline), either at home, at their surgery or anywhere else.

- Do you have access to a database **at home?** – two hundred and thirteen participants answered this question.
 - Yes – 116 (54.7%)
 - No – 97 (45.3%)
- Do you have access to a database **at your surgery?** – two hundred and twelve participants answered this question.
 - Yes – 86 (40.6%)
 - No – 126 (59.4%)
- Do you have access to a database **anywhere else?** – two hundred and nine participants answered this question.
 - Yes – 46 (22.0%)
 - No – 163 (78.0%)

The following graph (see figures 16a and 16b) depict the findings relative to each other and the second graph depicts their value to a hundred:

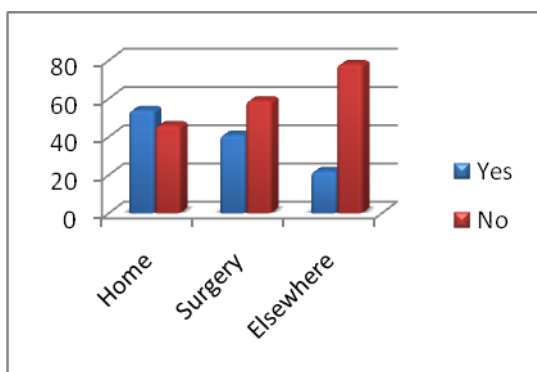


Figure 16a: Access to databases

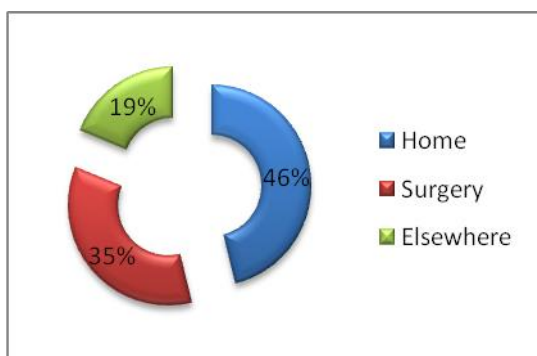


Figure 16b: Access to databases

In order to ascertain how many of the participants to this study are already implementing evidence based practice, the following question was posed:

- How often have you used a database (like Medline) in the past year?
 - Two hundred and fourteen (214) respondents participated in this question. The options to this question were:
 - Almost daily (27%)
 - Very often (16%)
 - Seldom (38%)
 - Not at all (19%)
 - From this we can clearly see that 81% of all participants used a database in their practice, but only 43% of users are frequent users.
 - The following charts (see figure 17 and 18) depict the above findings:

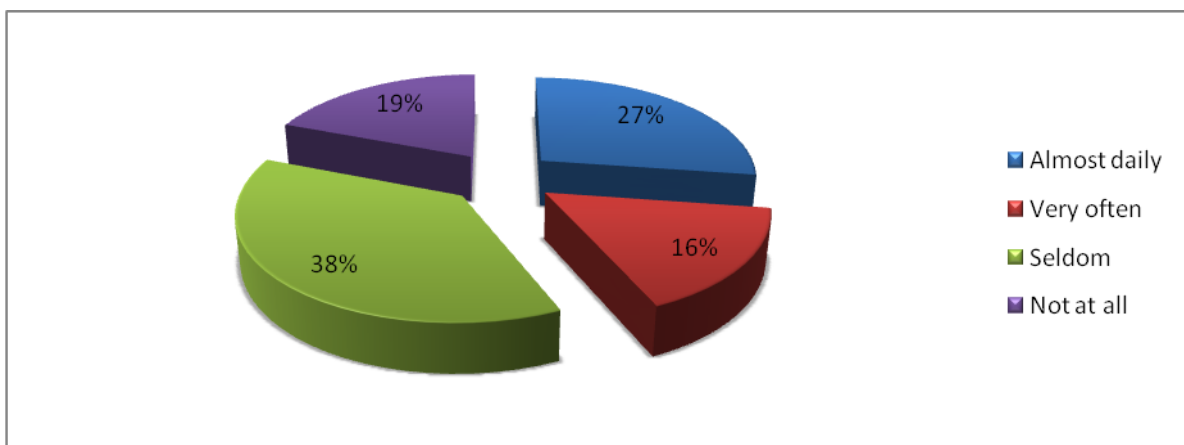


Figure 17: Percentage of respondents using database in the last year

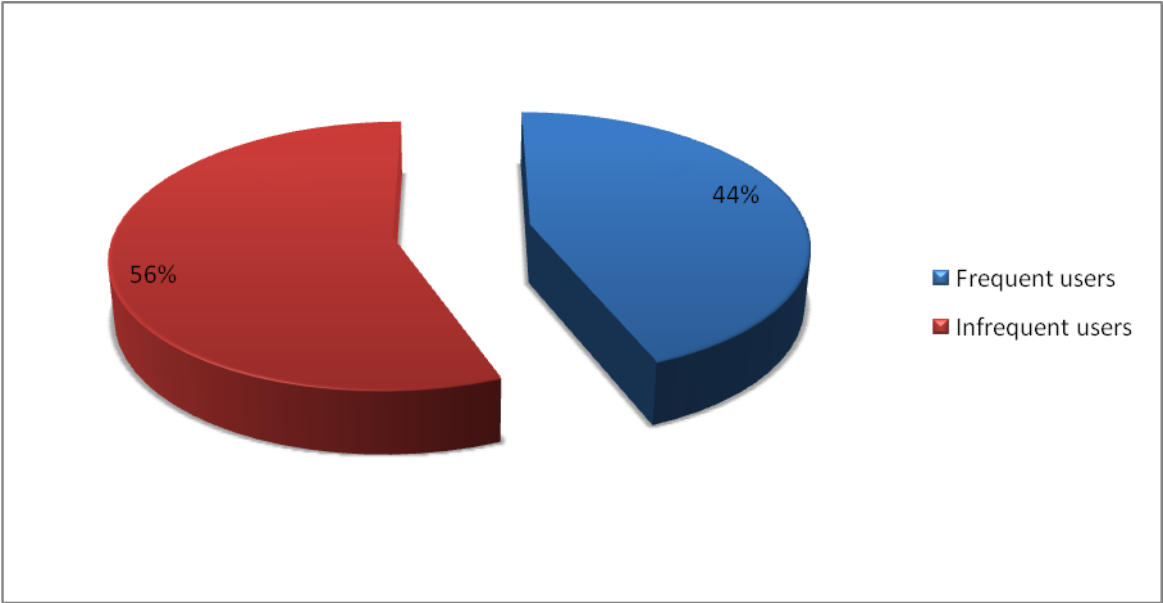


Figure 18: Percentage of respondents using database in the last year

Section three

The following section depicts the shortcomings preventing the participation family practitioners from implementing evidence-based practice. Participants were asked to answer either “Yes” or “No” to the following options, that they felt were most relevant barriers to them for not implementing EBM in general practice. For all but the first option, two hundred and twenty one participants partook in this section. Two hundred and twenty participants contributed in the first option. The “Yes” answers were used to ascertain the barriers in implementing EBM. These “Yes” answers are indicated as a number after each option.

- The following factors are perceived to be major barriers in implementing EBM in General Practice:
 - a) Lack of time (163/220) (74%)
 - b) Lack of computer skills (62/221) (28%)
 - c) Cost of computers and computer software (57/221) (25.8%)
 - d) Not having access to the World Wide Web (32/221) (14.5%)
 - e) Not enough training in critical appraisals skills (125/221) (57%)
 - f) No financial gain in using EBM (50/221) (22.6%)
 - g) Too much evidence causes confusion (94/221) (43%)
 - h) Evidence based medicine is a threat to clinical autonomy (46/221) (20.8%)
 - i) The evidence is not always trustworthy or unbiased (102/221) (46%)
 - j) Patient preferences are more important than EBM (56/221) (25.3%)

The following graphs (see figures 17; 18) depict each question’s relative value to a hundred and the value of the questions to each other:

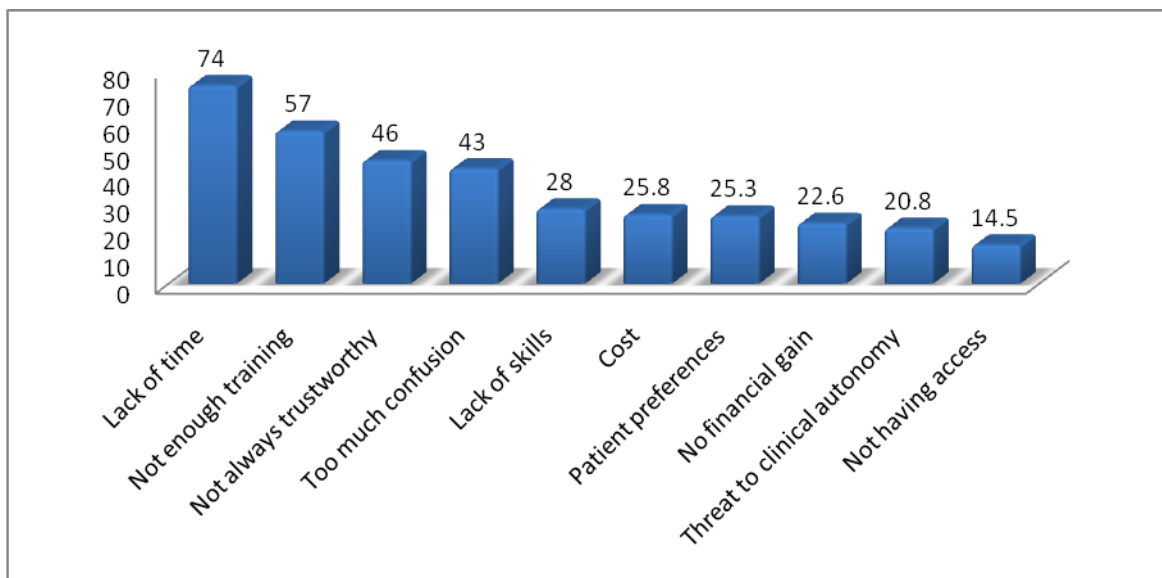


Figure 19: Barriers to implementation

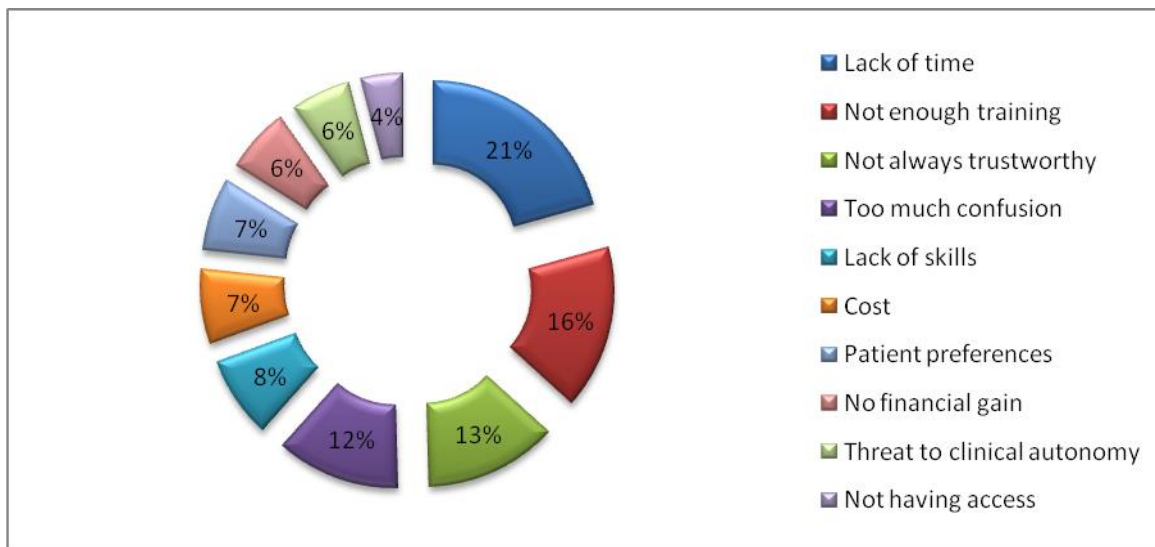


Figure 20: Barriers to implementation

From the above, one can clearly deduce that even though the participating practitioners had a positive perception with regards to EBM, stipulated in section one, time and training were listed as the major barriers when it comes to implementing EBM in their respective practices.

DISCUSSION

The findings of this research study corresponds with other research done, showing that even if the participants were fully aware of, and trained in the use of EBM as an aid when considering treatment plans, a lack of time would still act as a barrier, hindering the incorporation of EBM in the participants' respective practices.

This research further demonstrates that, even though Gauteng based practitioners regard EBM as a useful tool in their respective practices, few actually make use of EBM databases when considering patient treatment-plans. This observation, underscored by the time and training barriers discussed above, is clearly at odds with the positive perceptions listed in section one of this study. Furthermore, only 44% of the participants frequented EBM databases in their practices, with the majority stating that even though they make use of databases, this occurs as the exception rather than the rule, with 63% of the participants stating that they do not at all make use of clinical guidelines in their practices.

Moreover, 66% of the participating practitioners stated that they were positive about the current promotion of evidence based medicine, with 68% of all practitioners believing that research findings were useful in the day to day management of their practices and a staggering 94% of participants stating that EBM ultimately improves patient care. Again at odds with above findings, only 16% of the participants attended any courses or received any training in search strategy or on EBM.

It is thus finding the perfect balance between time management and training in specific search strategy and in EBM that would enhance the uptake of this new paradigm shift in practice and make this method of medical practice worthwhile. EBM therefore should perhaps serve as a

complimentary aid to clinical judgment and be viewed as a way of improving “traditional” patient care especially if elements of it are incorporated in decision making in practice..

Practitioners could acquire the necessary skills with relative ease to effectively search databases for clinical guidelines and other EBM counterparts in order to improve on their normal patient diagnostic reasoning skills, in considering the efficacy and effectiveness of patient treatment interventions and in deliberating on the prognosis of a particular disorder..

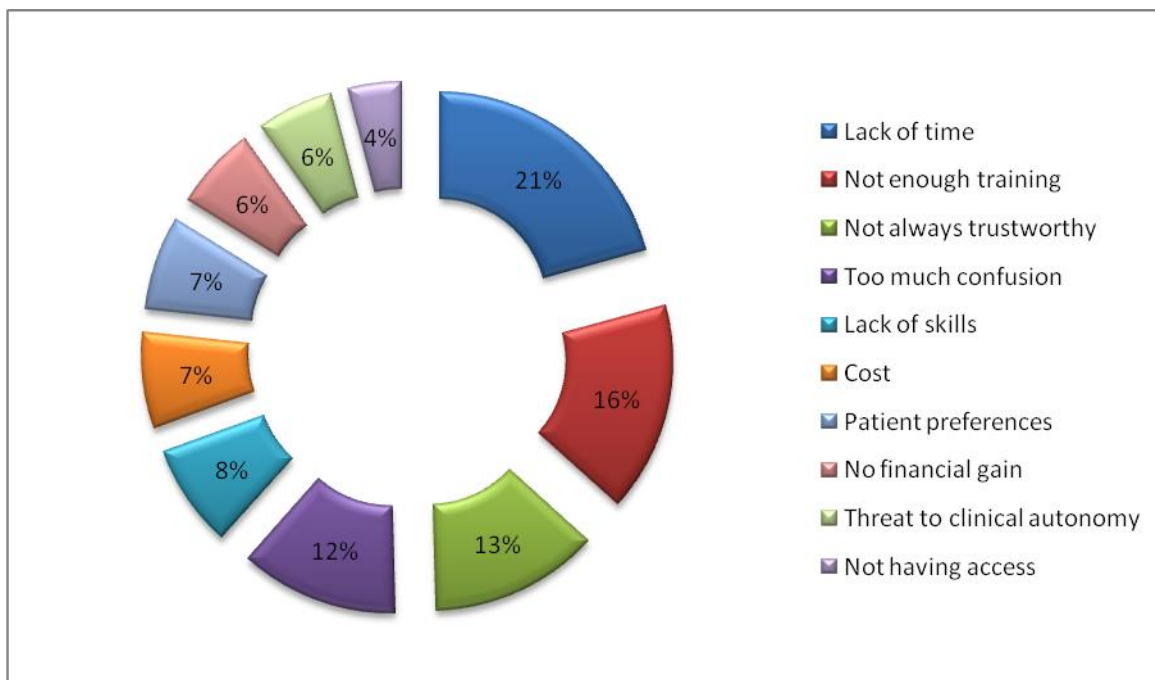
For the sake of this study, the viability of the implementation of EBM in general practice clearly lies in the equilibrium between time and training. The use of EBM should compliment and not replace clinical judgement, tailored to individual patients.

As a total of 62% of the respondents lie in the age group between 40 and 60 years of age (thus a pre-internet generation), and training in the use of EBM were listed as a major barrier preventing the implementation of EBM in family practice, time management plays a crucial role. Every practice, with the assistance of the internet, now has the potential to become a virtual medical library with different database access. Doctors have the opportunity to locate the best treatment, based on clinical research evidence, fairly quickly and with great ease, should they choose this option. On the other hand, information overload can occur should practitioners be unfamiliar with the databases or any other resources available to them, rendering the feasibility of implementing EBM impractical. Ongoing training in this area and in the field of critical appraisal of clinical research evidence can play a vital role in improving the uptake of research evidence in clinical decision making

With the correct training, doctors now have the ability to stay up to date with the latest treatment plans, based on clinical research evidence, that, according to the outcomes of this study, 94% of the respondents stated would be beneficial to their patients.

It is thus imperative for any practitioner wanting to stay informed regarding the latest treatment plan, to implement EBM, starting with training in the correct use of databases and other options available to them. The lack of implementation of EBM among Gauteng physicians is, according to the findings in this paper, not based in an unwilling attitude towards EBM. It rather constitutes a combination of time constraints, coupled with a lack of training. According to the findings in this paper, practitioners believe that EBM would improve patient care. Being able to fully utilise resources in a time effective manner seems to be the key factor in the implementation of EBM in practice.

It is clear that the most common barriers against the implementation of EBM in Gauteng practices lie in a combination of time constraints and a lack of adequate training.



Should a practitioner become proficient in the use of EBM databases, time would no longer be such a major barrier. Practitioners would be able to search for effective treatment plans, based on clinical research evidence for their patients which may greatly improving patient care and contribute to the overall utilization of evidence in practice. Whether this would result in improved quality of care should be investigated in more definitive research study designs

CONCLUSION

Participating Gauteng doctors were in principle, very positive towards the implementation of EBM in their respective practices. Most of the participants agreed that EBM would benefit their patients' care and treatment. Very few of the participants, however, make use of EBM in practice. A lack of training and time constraints were the main barriers with regards to the implementation of EBM. Proper training of medical students at undergraduate level at faculties of health sciences, would go a long way assisting prospective doctors in mastering the concept of EBM and increasing their overall awareness of EBM. Further definitive research would assist in establishing whether such awareness would be associated with improved implementation of evidence in the form of evidence based guidelines in practice.

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ANNEXURE 1

INFORMATION LETTER

DR. WOUTER DE WET

PO BOX 305

FOCHVILLE

2515

TEL: (018) 771 2170 / 2345

EMAIL: wdw@iafrica.com

Dear Colleague,

Thank you for devoting time to reading this letter, and to complete the following questionnaire. I am doing a research project as part of my post-graduate studies in Family Medicine and Primary Care at the University of Stellenbosch.

The questionnaire should not take more than 5-10 minutes to complete and would hopefully help to improve the day to day care of your patients.

What is EVIDENCE-BASED MEDICINE (EBM)?

EBM has been defined as the conscientious, explicit and judicious use of current best evidence in making decisions with individual patients. It combines and integrates the external clinical evidence (in the form of scientific research) with the family physicians clinical experience, expertise, wisdom, judgment and proficiency² EBM therefore reduces the knowledge gap between clinical research and practice.

The aim of this survey is to try and determine what the attitude of family practitioners in South Africa is towards EBM, and the use of Clinical Guidelines. This would hopefully help to explore shortcomings in the EBM process and identify the needs of the individual practitioner with regards to implementing EBM and using Guidelines in practice.

Your confidentiality and anonymity will be protected at all times. You are under no obligation to complete the survey, although your response would be highly appreciated.

Please return the questionnaire in the pre-paid envelope supplied. You will receive formal feedback on the results of this research which greatly depends on your help, and the results could benefit you and your patient!

Thank you again for your valuable time and assistance.

Kind regards and best wishes.

Yours sincerely

ANNEXURE 2

EBM QUESTIONNAIRE

1. How would you describe your personal attitude toward the current promotion of Evidence-based Medicine (EBM)?

a) Extremely Unwelcome	b) Unwelcome	c) Welcoming	d) Extremely Welcoming
---------------------------	-----------------	-----------------	---------------------------

2. What do you think is the attitude of most of your General Practitioner colleagues towards Evidence-based Medicine?

a) Extremely Unwelcome	b) Unwelcome	c) Welcoming	d) Extremely Welcoming
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3. How useful do you think are research findings in your day to day management?

a) Totally Useless	b) Useless	c) Useful	d) Extremely Useful
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4. Practicing evidence based medicine improves patient care.

a) Strongly Disagree	b) Disagree	c) Agree	d) Strongly Agree
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5. The adoption of EBM, however worthwhile as an ideal, places another demand on already overloaded General Practitioners.

a) Strongly Disagree	b) Disagree	c) Agree	d) Strongly Agree
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6. The following factors are perceived to be major barriers in implementing EBM in General Practice:

[Kindly select the 5 options that you feel are most relevant to you and insert the number in the space provided]

- a) Lack of personal time.
- b) Lack of computer skills.
- c) Cost of computers and computer software.
- d) Not having access to the World Wide Web.
- e) Not enough training in critical appraisals skills.
- f) No financial gain in using EBM.
- g) Too much evidence causes confusion.
- h) Evidence based medicine is a threat to clinical autonomy.
- i) The evidence is not always trustworthy or unbiased.
- j) Patient preferences are more important than EBM.

--	--	--	--	--

7. Are there any other factors that you can think of that can be a major barrier in implementing EBM?

8. How often have you used a database (like Medline) in the past year?

a) Almost daily	b) Very often	c) Seldom	d) Not at all
--------------------	------------------	--------------	------------------

9. Have you received training in search strategy?

a) Yes	b) No
--------	-------

10. Have you attended any courses on EBM?

a) Yes	b) No
--------	-------

11. Would you like to learn more about EBM and how?
[Kindly select one of the following]

a)	I do not wish to learn more about EBM.
b)	I already know enough about EBM.
c)	Attending a workshop or CME meetings on EBM.
d)	Receive training through the Internet or other electronic means.
e)	Read about it in journals.

12. Do you use Clinical Guidelines in your practice? (e.g. Hypertension Guidelines, etc.)

a) Yes	b) No
--------	-------

13. Do you have access to Medline (or any other database)?

At home	a) Yes	b) No
At your surgery	a) Yes	b) No
Anywhere else	a) Yes	b) No

14. Are you aware of the following databases relevant to EBM?

Bandolier	a) Yes	b) No
Cochrane database of Systemic review	a) Yes	b) No
DXS Stellmed	a) Yes	b) No
Medline	a) Yes	b) No

15. Would you use a handheld computer or your cellular phone in your daily practice to access EBM database or Clinical Guidelines if the option was available?

a) Yes	b) No
--------	-------

16. Kindly complete the personal details section below.

a) Sex : Male _____ / Female _____

b) Age Group : <30 _____ / 30-39 _____ / 40-49 _____ / 50-59 _____ / 60+ _____

c) Do you have a post-graduate qualification in family medicine? Yes _____ / No _____

d) Do you use English as a first language in your practice? Yes _____ / No _____

e) Are you in a Group Practice? Yes _____ / No _____ OR
alone in practice? Yes _____ / No _____

ANNEXURE 3

	STELLENBOSCH UNIVERSITY FACULTY OF HEALTH SCIENCES	
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COMMITTEE FOR HUMAN RESEARCH (CHR)

INVESTIGATOR'S DECLARATION

(To be completed in typescript)

The principal investigator, as well as all sub- & co-investigators must each sign a separate declaration.

A. RESEARCHER

Surname	De Wet			Initials	W.J	Title	DR
Capacity	Principal investigator	X	Sub-investigator		Co-investigator		
Department	FAMILY MEDICINE AND PRIMARY CARE						
Present position	GENERAL PRACTITIONER			E-mail	wdw@iafrica.com		
Telephone no.	(w)	018-771-2170	Cell	082 5567320		Fax	018-771-6228

B. PROJECT TITLE (MAXIMUM OF 250 CHARACTERS FOR DATABASE PURPOSES)

PERCEPTIONS, KNOWLEDGE AND ATTITUDES OF PRIVATE PRACTITIONERS BASED IN GAUTENG, SOUTH AFRICA, REGARDING EVIDENCE-BASED PRACTICE

I, **Dr Wouter De Wet** _____ declare
that

- I am **suitably qualified and experienced** to perform and/or supervise the above research study.
- I agree to conduct or supervise the described study **personally**.
- I agree to conduct the study in accordance with the relevant, current protocol and will only change the protocol after approval by the **CHR**, except when urgently necessary to protect the safety, rights, or welfare of subjects. In such a case, I am aware that I should notify the CHR without delay.
- I agree to timorously report to the CHR **serious adverse events** that may occur in the course of the investigation.
- I agree to maintain **adequate and accurate records** and to make those records available for inspection by the appropriate authorised agents when and if necessary.

- I agree to comply with all other requirements regarding the obligations of clinical investigators and all other pertinent requirements in the Declaration of Helsinki, as well as South African and ICH GCP Guidelines and the Ethical Guidelines of the Medical Research Council of South Africa and the Department of Health.
- I agree to comply with all regulatory and monitoring requirements of the CHR.
- I agree that I am conversant with the above **guidelines**.
- I will ensure that every patient (or other involved persons, such as relatives), shall at all times be **treated in a dignified manner and with respect**.
- I will submit all required reports within the stipulated **time frames**.
- I have no **financial or personal relationship(s)**, which may inappropriately influence me in carrying out this research study. **OR**
- I have the following financial/personal relationships that may present a potential conflict of interest with respect to this research project:-

Principal / Sub- / Co-investigator (print name) : _____

Signature : _____

Date : _____

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

Title of the Research Project:

***PERCEPTIONS, KNOWLEDGE AND ATTITUDES OF PRIVATE PRACTITIONERS BASED IN
GAUTENG, REGARDING EVIDENCE-BASED PRACTICE***

REFERENCE NUMBER :

PRINCIPAL INVESTIGATOR : ***DR. WOUTER DE WET***

ADDRESS : ***P.O.BOX 305, FOCHVILLE, 2515***

CONTACT NUMBER : ***(018) 771 2345***

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff or doctor any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Committee for Human Research at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

Dear Dr. _____ , the purpose of this research is as follows:

- i) This study will be conducted in primary care practices in the Cape Metropolis and seeks to understand the role and relevance of evidence in contemporary health care in the Western Cape.
- ii) To gain insight into the experiences, attitudes, perceptions and understanding of clinical practitioners (private and public sector) with regard to evidence based practice.
- iii) To gain insight into the perceived problems and main barriers to guideline implementation in primary health care practice.

Where will the study be conducted; are there other sites; total number of participants to be recruited at your site and altogether.

Why have you been invited to participate?

- i) Your practice /community health centre has been randomly selected to form part of this study and you are invited to participate as part of a group of 12 doctors looking at how to improve the implementation of the latest asthma guidelines in your practice.

What will your responsibilities be?

- i) Your responsibilities will be to complete a survey questionnaire based on the objectives of this research...

Will you benefit from taking part in this research?

- i) You will receive formal feedback on the results.

Are there any risks involved in your taking part in this research?

- ii) There are no risks involved to yourself or your patients in taking part in this research study.

If you do not agree to take part, what alternatives do you have?

- i) You are under no obligation to complete the questionnaire.

Who will have access to your medical records?

- i) Your medical records will not be accessed.

What will happen in the unlikely event of some form injury occurring as a direct result of your taking part in this research study?

- i) A questionnaire has no risk of any injury.

Will you be paid to take part in this study and are there any costs involved?

No, you will not be paid to take part in the study but your transport and meal costs will be covered for each study visit. There will be no costs involved for you, if you do take part.

Is there anything else that you should know or do?

- i) You can contact the Committee for Human Research at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by your study doctor.
- ii) You will receive a copy of this information and consent form for your own records.

DECLARATION BY PARTICIPANT

(Kindly complete the section below)

I, _____ agreed to take part in a genetic research study entitled _____ (*insert title of study*).

I declare that:

- i) I had read to me this information and consent form and it was written in a language with which I am fluent and comfortable.
- ii) I had a chance to ask questions and all my questions had been adequately answered.
- iii) I understood that taking part in this study was **voluntary** and I had not been pressurised to take part.
- iv) I knew that I could choose to leave the study at any time and would not be penalised or prejudiced in any way.
- v) I knew that I could be asked to leave the study before it was finished, if the study doctor or researcher felt it was in my best interest, or if I did not follow the study plan, as agreed to.

Signed _____ at _____ (*place*) _____ on _____ (*date*)
_____ 2008.

Signature of Participant

Signature of Witness

DECLARATION BY INVESTIGATOR

I, **DR. WOUTER DE WET**

declare

that:

- i) I explained the information in this document to _____
- ii) I encouraged him/her to ask questions and took adequate time to answer them.
- iii) I was satisfied that he/she adequately understood all aspects of the research, as discussed above
- iv) I did/did not use a translator. *(If a translator is used then the translator must sign the declaration below.*

Signed _____ at _____ (place) _____ on _____ (date)
_____ 2008.

Signature of Participant

Signature of Witness

DECLARATION BY TRANSLATOR

I, _____ declare
that: _____

- i) I assisted the investigator (*name*) _____ to explain the information in this document to (*name of participant*) _____ using the language medium of Afrikaans/Xhosa.
- ii) We encouraged him/her to ask questions and took adequate time to answer them.
- iii) I conveyed a factually correct version of what was related to me.
- iv) I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed _____ at _____ (*place*) _____ on _____ (*date*)
_____ 2008.

Signature of Participant

Signature of Witness