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RESEARCH ARTICLE

A study to assess the knowledge towards evidence- based healthcare among the healthcare professionals of Vadodara: A Cross-Sectional Study

Wadhwa Medha[1]*, Kalyan Pulkit[2], Sharma Rahul[1], Thakkar Mital[1], Chatterjee Subhasish[3], Darji Prachi[4], Kumari Uma[4], Pithadia Devanshi[4], Vahora Sifa[4], Christian Sibya[4], Patil Yash[4]

1 Assistant Professor, Department of Management, Sumandeep Vidyapeeth Deemed to be University, Vadodara, 391760, India
2 Reader, Department of Public Health Dentistry, KM Shah Dental College & Hospital, Sumandeep Vidyapeeth Deemed to be University, Vadodara, 391760, India
3 Professor & Principal, Department of Management, Sumandeep Vidyapeeth Deemed to be University, Vadodara, 391760, India
4 Student, Department of Management, Sumandeep Vidyapeeth Deemed to be University, Vadodara, 391760, India

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* **Corresponding author**.

drmedhakalyan@gmail.com

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Abstract

Objectives: The present study is to assess the Knowledge of Evidence Based Healthcare amongst healthcare professionals of Vadodara in India. **Methods/Statistical analysis:** A cross-sectional design as the study evaluates the present level of knowledge towards the practice of evidence-based healthcare among 186 healthcare professionals through a structured close-ended questionnaire in April 2019. The data was analyzed using SPSS version 21 and an independent-sample t-test was carried out to evaluate the difference in the level of knowledge among the healthcare professionals based on gender. **Findings:** The mean difference in the score among males and females of the on evidence-based healthcare is -2.794 indicating that the knowledge of the female respondents was more than male respondents. The significant p-value (less than 0.05) and confidence interval (narrow and one-sided) shows there is a significant difference in knowledge of evidence-based healthcare among males and females. The present study concludes that the level of knowledge among the healthcare professionals is low related to the practice of evidence-based healthcare and proper interventional methods must be designed to enhance their knowledge. The knowledge would help them to have a positive attitude towards the practice of evidence-based healthcare. **Novelty:** Evidence based healthcare caught the interest of healthcare professionals since a decade. The study aims to address the knowledge of the healthcare professionals towards this emerging concept to keep them abreast with the emerging trends in the global scenario.

Keywords: Evidence Based Practice; Knowledge; Healthcare; Evidence based; Healthcare

1 Introduction

It is generally accepted that the more experience a physician possesses, the better the quality of healthcare delivery. However, with time the knowledge gained by a healthcare professional gets outdated as with changing times, new discoveries, new diseases and new line of treatments appear which is hard for a clinician to keep a track of. Moreover, these newer trends require theoretical shift which a practicing healthcare professional cannot adjust with. Furthermore, the patient, nowadays are well aware about these trends and demand the best quality care. This creates more difficult situation for the healthcare professionals. [(1)]

Evidence-based health care is the conscientious use of current best evidence in making decisions about the care of individual patients or the delivery of health services. The best available recent evidence does not stand alone, rather it needs to be integrated with the clinical expertise and the preference of patients. The triad of practicing evidence based decision making requires the clinicians to be well aware with the concepts of evaluating and integrating the evidence. [(2)]

In various developed nations, the concept of evidence-based practice had been popular since mid-1990s. [(3)] The use of evidence-based practice gives the best approach of clinical decision making by providing recent interventions which would be safe, effective and efficient as reflected in the evidence. [(1)] This evidence-based practice also helps in ensuring the continuous professional development of the healthcare professionals, which is an essential requirement of the healthcare professional. [(2)]

Even though, evidence-based practice is becoming popular, majority of the healthcare professionals lack the knowledge, skills and expertise of the same. They also resist practicing the newer method in their clinical decision making as they lack the confidence to do so. [(3)] Even the post-graduate students rely heavily on their instructor's expertise, intuition and senior's guidance. This method has the huge possibility of giving poor outcomes. [(1)] Self-search of articles of relevance, and getting research into learning and subsequently into practice. Thus, encouraging creativity into our obsolete teaching system will be our savior; this creativity must come in form of Evidence-Based Education. The adaptability of the evidence-based practice into real world requires a more real approach. The knowledge, attitude and skills of healthcare professionals should be up to the mark for practicing the evidence-based practice. [(4–7)] Sumandeep Vidyapeeth is the pioneer of this education system and assessing the knowledge, the attitude of postgraduates towards the concept of evidence-based healthcare, and the perceived barriers regarding the same will be helpful. Hence the present study is aimed to assess the Knowledge of Evidence Based Healthcare amongst healthcare professionals of Vadodara.

Objectives:

- To assess the knowledge of evidence-based healthcare practice among the healthcare professionals of Vadodara in India
- To assess the difference in knowledge related to evidence-based practice with respect to gender.
- To assess the difference in knowledge related to evidence-based practice with respect to years of experience.

2 Materials and Methods

2.1 Study Design

A cross-sectional descriptive design as the study evaluates the present level of knowledge towards the practice of evidence-based healthcare. The study got the ethical approval from the institutional ethical board viz. SVIEC/OW/2016/16

2.2 Place of Study

The study was undertaken in the Vadodara district where the registered healthcare professionals were included in the study who had given the consent to participate in the study.

2.3 Source of Data

Primary through structured close-ended questionnaire

2.4 Sample Description

The population of the study was healthcare professionals from the Medical, Dental, Physiotherapy, Pharmacy, Nursing, and Healthcare Management discipline in Vadodara city. Simple random sampling was used for data collection. A total sample of 186 was taken using the following formula:

$$\text{Sample Size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{2^2 \times p(1-p)}{e^{2N}}\right)}$$

Where,

Population Size = N | Margin of error = e | z-score = z

Margin of Error is 5% and Confidence Interval is 95% and hence corresponding z-score is 1.96.

2.5 Data Collection Tool

The structured questionnaire containing items in the local language pertaining to socio-demographic factors and knowledge-related questions on evidence-based healthcare was given to healthcare professionals. The data collection tool was checked for suitability by a pilot study. The content validity ratio after seeking opinion from 5 experts was 0.95 and cronbach's alpha value for the reliability test was also statistically significant (0.91, p value less than 0.05).

Knowledge is facts, information, and skills acquired through experience or education and it is a theoretical or practical understanding of the subject. There were ten multiple choice questions in the questionnaire on various aspects of evidence-based practice where in the healthcare professionals have to mark their answer. They were awarded '1' marks for correct answer and '0' for incorrect answer.

2.6 Statistical Hypothesis

The following are the null hypothesis put to test using a statistical test for the current study:

Ho1: There is no statistical difference in the knowledge towards evidence-based practice among healthcare professionals with respect to gender

Ho2: There is no statistical difference in the knowledge towards evidence-based practice among healthcare professionals with respect to the years of experience

2.7 Statistical Analysis

The data was collected, coded in MS Excel, and analysed using SPSS version 23. The descriptive statistics and independent-sample t-test were used to assess the difference in the knowledge level of healthcare professionals towards evidence-based practice with respect to gender and years of experience.

3 Results and Discussion

Table 1 shows that the mean years of clinical experience of the186 respondents is 2.09 with a standard deviation of 0.934. The minimum year of clinical experience is one year and the maximum year of clinical experience is five years. Table 2 shows that majority, that is, 65.1% of respondents were males and 34.9% were females.

Table 1. Showing Descriptive Statistics of Clinical Experience

Parameter	N	Minimum	Maximum	Mean	Std. Deviation
Clinical Experience	186	1	5	2.09	.934

Table 2. showing frequency distribution of gender of the healthcare professionals

Gender	Frequency	Percent
Male	121	65.1
Female	65	34.9
Total	186	100.0

Table 3 shows that among the 186 respondents, the number of respondents with incorrect responses to the first step towards evidence-based practice was 83, that is 44.6% and correct response was given by 103 respondents, which is 55.4% of total respondents. There were only 22, that is 11.8% respondents who did not know the correct source to find evidence while 88.2% of total respondents (166) were having the knowledge to find the correct source for evidence searching. A similar number as mentioned were also knowledgeable about the correct way to identify the gap in the professional practice. The knowledge of confidence interval was seen in only 65.6% of respondents while the majority of them, that is 63.4% were not knowing sensitivity and specificity. The number of respondents with an incorrect response when asked about meta-analysis was 75, that is 40.3% and correct response was given by 111 respondents, which is 59.7% of total respondents. An almost similar number of respondents gave incorrect responses with respect to knowing what is systematic review is, that is 43.5% and correct response was given by 105 respondents, which is 56.5% of total respondents. Very few respondents, that is, 29(15.6%) did not understood the concept of bias while 84.4% of total respondents, that is 157 respondents understood the term. The number of respondents with the incorrect response for the question pertaining to the reason to review the evidence critically was 35, that is 18.8% and correct response was given by 151 respondents, which is 81.2% of total respondents. The percentage of the respondents did not know about relative risk, that is 41.9% while 58.1% of total respondents were knowing the concept of relative risk.

Table 3. shows the frequency distribution of the healthcare professionals to the knowledge regarding the evidence-based practice

Q.1 What is the first step towards evidence-based healthcare practice?	Frequency	Percent
Incorrect Response	83	44.6
Correct Response	103	55.4
Total	186	100
Q.2 Which among the following can be used as a source of evidence-based practice in different areas of evidence-based healthcare?	Frequency	Percent
Incorrect Response	22	11.8
Correct Response	164	88.2
Total	186	100
Q.3 How to identify the gaps in your professional practice?	Frequency	Percent
Incorrect Response	22	11.8
Correct Response	164	88.2
Total	186	100
Q.4What do you understand by confidence interval?	Frequency	Percent
Incorrect Response	64	34.4
Correct Response	122	65.6
Total	186	100
Q.5 Which among the following is true for sensitivity and specificity?	Frequency	Percent
Incorrect Response	118	63.4
Correct Response	68	36.6
Total	186	100
Q.6 Which explains the term Meta analysis?	Frequency	Percent
Incorrect Response	75	40.3
Correct Response	111	59.7
Total	186	100
Q.7 Which explains the term systematic review?	Frequency	Percent
Incorrect Response	81	43.5
Correct Response	105	56.5
Total	186	100
Q.8 What do you understand by bias?	Frequency	Percent
Incorrect Response	29	15.6
Correct Response	157	84.4
Total	186	100
Q.9 Why it is important to analyze the evidence critically?	Frequency	Percent
Incorrect Response	35	18.8
Correct Response	151	81.2
Total	186	100
Q.10 What do you mean by relative risk?	Frequency	Percent
Incorrect Response	78	41.9
Correct Response	108	58.1
Total	186	100

Table 4 shows the mean knowledge score of all the participantswas 6.74 with a standard deviation of 1.186. The mean score of males was 5.27±0.865 while in the females was 8.06±0.716.

Table 4. shows the total knowledge score and difference in score with respect to gender of healthcare professionals

Knowledge Score	Mean	N	Std. Deviation
Knowledge Score for Males	5.27	121	.865
Knowledge Score for Females	8.06	65	.716
Total Score	6.74	186	1.186

Table 5 shows the mean difference between the knowledge score of males and females. The 2-sample independent t-test shows that the mean difference in females was 2.794 higher than males. The p-value was less than 0.05 indicating that there is a significant difference between the males and females, thus rejecting the null hypothesis.

Table 6 shows that the mean knowledge score of the participants was6.82±1.136 in healthcare professionals with less than 3 years of experience and 6.38±1.35 in healthcare professionals with more than 3 years of experience.

Table 5. shows the total knowledge score and difference in score with respect to gender of healthcare professionals

Mean Difference in Knowledge Score of healthcare professionals with respect to gender	Std. Deviation	95% lower Confidence Interval of the Difference	95% upper Confidence Interval of the Difference	T Value (p value)
-2.794	1.050	-3.058	-2.529	-21.124 (<0.0001

Table 6. shows the total knowledge score and difference in score with respect to number of years of experience of healthcare professionals

Knowledge Score	Mean	N	Std. Deviation
Knowledge Score of Healthcare professionals with less than 3 years of experience	6.8235	153	1.13
Knowledge Score of Healthcare professionals with more than 3 years of experience	6.3871	31	1.35
Total Score	6.74	186	1.186

Table 7 shows that the mean difference in the knowledge of healthcare professionals was 0.436. This mean difference in the knowledge score of the healthcare professionals was not statistically significant as the p-value is more than 0.05, thus failing to reject the null hypothesis.

Table 7. shows the total knowledge score and difference in score with respect to years of experience of healthcare professionals

Mean Difference in Knowledge Score of healthcare professionals with respect to years of experience	Std. Deviation	95% lower Confidence Interval of the Difference	95% upper Confidence Interval of the Difference	T Value (p value)
0.436	0.23	-0.02	0.89	1.88(0.061)

The present study showed that the average total score was 6.74 out of 10. Heiwe S et al (2011) [(8)] study on dieticians, occupational therapists and physical therapists showed positive attitude towards evidence based practice and willingness to follow evidence based decision making. Prabhu. S, John J, Saravanan. S (2012) [(1)] also revealed in the study that around 27.8% of dental post graduates were not familiar with the evidence-based dentistry. The authors found students from clinical background to be more educated than those from non-clinical background. The present study also reveals the healthcare professionals having a moderate level of knowledge where the males had lower knowledge scores as compared to females. Ntaganira J (2012) [(9)] evaluated that the healthcare professionals in Rwanda and Uganda benefitted from evidence-based practice.

Abu-Gharbieh E, Khalidi D, Baig M, Khan S (2014) [(2)] evaluated the proficiency of practice of EBM among the pharmacy students which was very good. The present study also evaluated the knowledge of the professionals towards various aspects of evidence-based practice which was moderate.

Bahammam MA, Linjawi AI (2014) [(10)] evaluated the final year Saudi dental and medical students and found low level of knowledge related to the evidence based practice. Wadhwa M, Kalyan P, Kalanthrakath T (2015) [(11)] showed moderate knowledge and positive attitude among the medical and dental post-graduate students indicating that positive attitude can be used to train the budding healthcare professionals towards the practice of evidence-based medicine. The previous studies and the present study highlights that the evidence-based practice has still not fully developed and there are resistances that need to be overcome by various interventional measures. Morrow A, Chan P et al (2021) [(5)] in their randomized controlled trial concluded that healthcare professionals who participated in evidence-based training program were satisfied and willing to implement evidence-based healthcare delivery approach to patients. Tucker S, McNett M et al (2021) [(6)] aimed to facilitate the health care professionals towards implementation of evidence-based practice. The authors implemented different models of teaching for application of research into the local population and deliver high quality of patient care. Baker NNA, AlrubAbu S et al (2021) [(7)] also noted the importance of training in their research on undergraduate nursing students. They found that students had moderate belief and knowledge while lower implementation score of evidence-based practice. The importance of training was felt by these authors also which is similar to the findings of the present study.

4 Conclusion

The present study concludes that the level of knowledge among the healthcare professionals is low related to the practice of evidence-based healthcare and proper interventional methods must be designed to enhance their knowledge. The knowledge of females was more than males and the difference in the knowledge was statistically significant with p value less than 0.05. The knowledge of healthcare professionals with respect to years of experience was same indicating that no matter whether the healthcare professional is recent in practice or has years of experience, their knowledge towards evidence-based practice is similar. This requires attention as increase in knowledge would help them to have a positive attitude towards the practice of evidence-based healthcare.

The healthcare practice nowadays requires healthcare professionals to deliver care that is patient-centered, value-based, and with the use of the latest knowledge and technology. Also, gone are the days where the patients had maximum trust in the doctor and for the Doctor was equivalent to God. Patients are well informed and with an increase in the number of private practitioners, the competition has also increased with respect to having a good reputation and a greater number of patients. Evidence-based healthcare is a growing phenomenon all over

the world. In developed countries, healthcare professionals are practicing this method to provide quality treatment care while in developing country like India the healthcare professionals still rely on their clinical expertise and the theory taught to them during their graduation or post-graduation days. The present study is limited to exploring the knowledge of healthcare professionals towards evidence-based healthcare practice and future studies exploring their attitudes and perception towards the same shall help in better implementation of evidence-based practice.

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