Knowledge, attitude and practices survey on traditional systems of medicine among the university students

K. Sukanya
Academic Consultant, Department of Statistics, Sri Padmavati Mahila Visvavidyalayam, Tirupati, Andhra Pradesh, India PINCODE:517501.
Email: sukanya.sudha27@gmail.com

T. Sukeerthi
Academic Consultant, Department of Statistics, Sri Padmavati Mahila Visvavidyalayam, Tirupati, Andhra Pradesh, India PINCODE:517501.
Email:tptsukeerthi2309@gmail.com

Dr. D. Sujatha
Assistant Professor, Institute of Pharmaceutical technology,
Sri PadmavathiMahilaVisvavidyalayam,Tirupati, Andhra Pradesh, India PINCODE:517501.
Email: drsujathasai@gmail.com

S. Kalpana
B.Pharmacy, Institute of Pharmaceutical technology,
Sri PadmavathiMahilaVisvavidyalayam,Tirupati, Andhra Pradesh, India PINCODE:517501.
Email: kalpanasanikommu0@gmail.com

Abstract---India is rich with many traditional systems of medicine and Ayurveda is most commonly practiced among them. There are very few studies showing the knowledge, attitude, and practices (KAP) of general population about traditional medicine and its use. Hence, the primary objective of this study was to assess Knowledge, Attitude, practices of university students with different educational background towards traditional systems of medicine. A cross sectional online survey was carried out in Sri Padmavati Mahila Visva vidyalayam, Tirupati using self-designed, structured questionnaire on 188 university students. The study sample was heterogeneous as regards to the educational qualification. The survey was conducted online using the Google forms. All the data was analyzed and given as descriptive statistics followed by statistical comparisons using the software SPSS 20.0. (Statistical package for Social Sciences) All the participants in the study were female students with an average age

group of 19 -24 years. Among the respondents, 55 (29.2%) pharmacy and 14 (7.4%) non pharmacy students had good knowledge, whereas 33(17.5%) pharmacy and 15 (7.9%) non pharmacy students had good attitude score towards utilization of traditional systems of medicine. Self-medication was also noted among 103 (54.7%) students among the whole respondents, which was alarming. The participants were of the belief that traditional medicine can be used to treat cough/cold and other respiratory problems, Fever, other mild illness and as nutritional supplements. Regarding the duration of therapy for traditional medicine, usage of traditional medicine treatment less than one month was the most common practice observed both in pharmacy and non-pharmacy students. The practice of identifying adverse effects and approaching physician to treat them properly was lacking among all the respondents. Many of them were not aware of identifying side effects, ailments that can be treated with traditional medicine and are attracted to the promotional information of traditional medicine. The results indicate need to conduct educational and awareness programs about traditional system of medicines to encourage their safe usage and minimize untoward effects caused by traditional medicine. To compare more than two independent samples the Kruskal-Wallis H test is a preferred statistical tool in many cases.

Keywords---Traditional medicine, Kruskal-Wallis H Test, SPSS.

Introduction

The use of traditional medicine (TM) also called complementary and alternative medicine(CAM) related to unorthodox medical systems is increasing worldwide with a focus 1obalance mind-body-spirit paradigm of a whole person with or without disease. Traditional medicine ,accepted for its role in the maintenance of health and the treatment of physical and psychological diseases is based on indigenous theories, beliefs, attitude, knowledge and experiences that are handed down from generation to generation. In other words, WHO described TM as including "diverse health practices, approaches, knowledge and beliefs incorporating plant, animal, and/or mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness" (WHO.,2013).The World Health Organization (WHO) defined TM as 'the sum of the total knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as in the prevention ,diagnosis ,improvement or treatment of physical and mental illnesses"(WHO.,2013).

It is a well-known fact that Traditional Systems of medicines always played important role in meeting the global health care needs. They are continuing to do so at present and shall play major role in future also. The system of medicines which are considered to be Indian in origin or the systems of medicine, which have come to India from outside and got assimilated into Indian culture are known as Indian Systems of Medicine (PrasadLV et al.,2002).India is known for

its traditional medicinal systems--Ayurveda, Siddha, and Unani. Medical systems are found mentioned even in the ancient Vedas and other scriptures. The Ayurvedic concept appeared and developed between 2500 and 500 BC in India. (Subhose V et al,2005).India has the unique distinction of having six recognized systems of medicine in this category. They are Ayurveda, Siddha, Unani and Yoga, Naturopathy and Homoeopathy. Though Homoeopathy came to India in 18th Century, it completely assimilated in to the Indian culture and got enriched like any other traditional system hence it is considered as part of Indian Systems of Medicine (Ravishankar B et al.,2007).
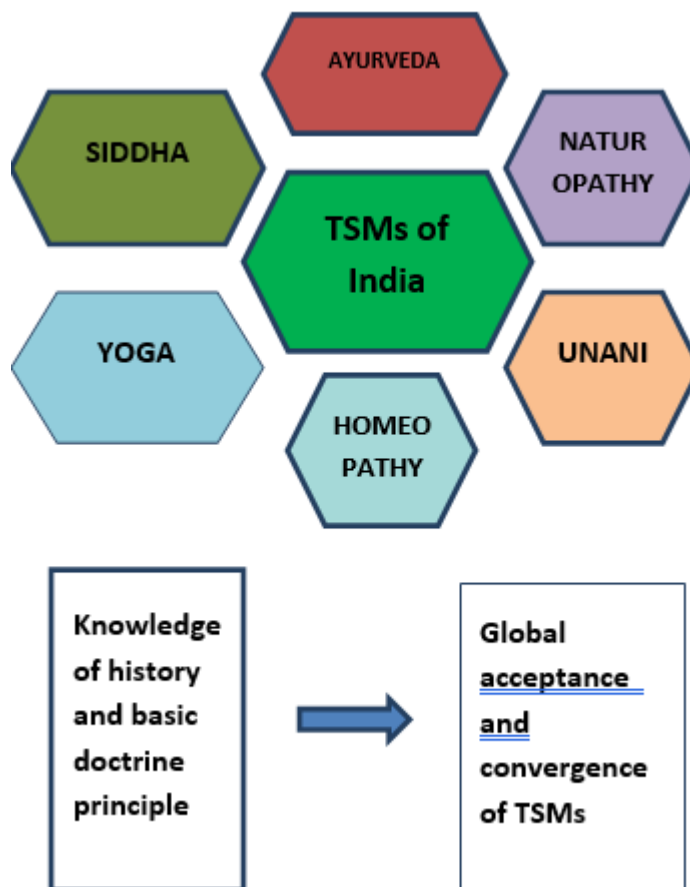
Adverse effects of Traditional medicine:

Among consumers, there is a wide spread misconception that "natural" always means "safe", and a common belief that remedies from natural origin are harmless and carry no risk. However, some medicinal plants are inherently toxic. Further as with all medicines, herbal medicines are expected to have side effects ,which may be of an adverse nature. Some adverse events reported in association with herbal products are attributable to problems of quality. Major causes of such events are adulteration of herbal products with undeclared other medicines and potent pharmaceutical substances, such as corticosteroids and non-steroidal

anti-inflammatory agents. Adverse events may also arise from the mistaken use of the wrong species of medicinal plants incorrect dosing, errors in the use of herbal medicines both by health-care providers and consumers, interactions with other medicines and use of products contaminated with potentially hazardous substances, such as toxic metals, pathogenic microorganisms and agrochemical residues.

- It is generally believed that traditional) medicine has little side effects compared to modern medicine. In fact, traditional medicines are sometimes used to counteract the side effects of some modern medicine.

- However, taking high doses of quinine for a prolonged period may cause hearing loss,

German health officials recently reported 40 cases of liver damage which were linked to herbal medicine containing kava-kava.

- While the use of traditional medicine is rising globally, health experts have insufficient data about how it affects patients.
-
- The World Health Organization (WHO) hopes to set up a global monitoring system to monitor the adverse side effects of traditional medicines.

Marketing of Traditional medicine

Around 80% of the population continues to use traditional medicine in Africa, Asia and Latin America and many governments in these regions have incorporated traditional medicine practices to help meet their primary health care needs, In industrialized countries, almost half the population now regularly use some form of TCAM (United States,42%; Australia, 48%; France, 49%; Canada,70%),and considerable use exists in many developing countries (China,40%; India, 70%;Chile, 71%; Colombia,40%; upto80%inAfrican countries)

Table.1 Usage of Traditional Medicine in Developing and Developed Countries

Developed country	Usage of traditional medicine
Belgium	31%
United States	42%
Australia	48%
France	49%
Canada	70%

Source: WHO Traditional Medicine Strategy 2002-2005,World Health Organization, Geneva.

Developing country	Usage of traditional medicine
Uganda	60%
Tanzania	60%
Rwanda	70%
India	70%
Benin	80%
Ethiopia	90%

Medicinal Plants Used in Alternative/Traditional medicines

Alternative medicines are being used by about 60 percent of the world's population. These medicines are not only used by the rural masses for their primary health care in developing countries but are also used in developed countries where modern medicines dominate(Ballabh B et al,2007).

The Indian subcontinent is a vast repository of medicinal plants that are used in traditional medical treatments. The alternative medicines in the traditional systems are derived from herbs, minerals and organic matter, while for the preparation of herbal drugs only medicinal plants are used. Use of plants as a source of medicine has been an ancient practice and is an important component of the health care system in India. In India, about 70 percent of rural population depends on the traditional ayurvedic system of medicine. Most healers/practitioners of the traditional systems of medicine prepare formulations by their own recipes and dispense to the patients. In the Western countries, approximately 40 percent of people are using the herbal medicine for the treatment of various diseases. This interest in traditional medicines is growing rapidly due to the attention being given to it by the governmental agencies and different NGO's comprising of general public and researchers as well as the increased side effects, adverse drug reactions and cost factor of the modern medicines. India is the largest producer of medicinal plants. There are currently about 250,000 registered medical practitioners of the Ayurvedic system, as compared to about 700,000 of the modern medicine. In India, around 20,000 medicinal plants have been recorded; however, traditional practitioners use only 7,000-7,500 plants for curing different diseases. The proportion of use of plants in the different Indian systems of medicine is Ayurveda 2000, Siddha 1300, Unani 1000,Homeopathy 800, Tibetan 500, Modern 200, and folk 4500.tn India, around

25,000 effective plant-based formulations are used in traditional and folk medicine. More than 1.5million practitioners are using the traditional medicinal system for health care in India. It is estimated that more than7800 manufacturing units are involved in the production of natural health products and traditional plant-based formulations in India, which are require s more than 2000 tons of medicinal plant raw material annually(PandeyMMetal.,2008).More than 1500 herbals are sold as dietary supplements or ethnic traditional medicines. Alternative medicines are being used by those people who do not use or cannot be helped by conventional medicinal system (Pandey MM et al,2013).

Review Of Literature

Definition of KAP survey

A KAP survey usually is conducted to collect information on the knowledge (i. e, what is known),attitudes (i.e. what is thought), and practices (i.e. what is done) about general and /or specific topics of a particular population.(AndradeCetal,2020)KAP comprises of three components- knowledge, attitude, and practice. These types of studies are a good way to assess health care delivery, KAP studies are easy to conduct, measurable, and easily interpretable. This makes these studies a useful survey methodology. Most of the KAP studies lack in measuring attitude properly (the second part of a standard KAP survey questionnaire).Attitudes are acquired characteristics of an individual . Attitude includes three components:

(a) A cognitive or knowledge element

(b) An affective or feeling element.

(c) A tendency to action.

Attitude has been defined as a relatively enduring organization of beliefs around an object, subject, or concept which predisposes one to respond in some preferential manner. (Raina Set al,2013)

Need to conduct a KAP survey

A KAP survey can generate data that can be used for the following purposes:
- ✓ To identify knowledge gaps, cultural beliefs, and behavioral patterns that may identify needs ,problems, and barriers to help plan and implement interventions.

- ✓ To deepen the understanding of commonly known information, attitudes, and factors that influence behavior.

- ✓ To generate base line levels and measure changes that result from interventions.

- ✓ To assess and identify communications processes and sources important for program implementation and effectiveness.

✓ To help set program priorities and make program decisions (Andrade C et al,   2020).Can include yes/no questions, true/false questions, multiple choice, or scaled questions Closed questions can be categorized into 5 different types:

Types of Questions included in KAP studies

Perhaps the most important part of the survey process is the creation of questions that accurately measure the opinions, experiences and behaviors of the public. There arc three main types of questions.

1.Open-ended Questions

Open-ended questions ask participants to come up with their own responses and allow there searcher to document the opinions of the respondent in his or her own words. These types of questions are useful for obtaining in-depth information on facts with which the researcher is not very familiar, opinions, attitudes and suggestions, or sensitive issues. Completely open-ended questions allow the researcher to probe more deeply into issues, thus providing new insights, bringing to light new examples or illustrations and allowing for different interpretations and a variety of responses.

2.Partially Categorized Questions

Partially categorized questions are like open-ended questions, but some answers have already been pre-categorized to facilitate recording and analysis. There is also usually an alternative titled "other" with a black space next to it. The advantages of these types of questions are that answers can be recorded quickly, and the analysis is often easier. One of the major risks is that the respondent will pre-categorize too quickly, resulting in a potential loss of interesting and valuable information. In addition, interviewers may try to force the information into the listed categories instead of exploring the question more thoroughly. If the respondent hesitates when answering a question, the interviewer maybe tempted to present possible answers, causing bias. Therefore, the researcher must always avoid presenting possible answers the study participant.

3.Closed Questions

Closed questions have a list of possible answers from which respondents must choose.

They

- Multiple Choice- this question type is useful when the researcher would like participants to select the most relevant response.

- Likert Scale- this question type is appropriate when the researcher would like to identify how respondents feel about a certain issue, The scale typically ranges from extremely not important, not important, neutral,

important, to extremely important, or strongly disagree, disagree, neutral, agree to strongly agree.

- Numerical- these questions are used when possible responses are numeric inform. For example, these questions are useful for asking someone's age.

- Ordinal- these questions are useful when participants are asked to rank a series of responses.

- Categorical- this question type is appropriate when respondents are asked to identify themselves into a specific category. For example, they may be asked if they are male or female. Closed questions are commonly used for obtaining data on background information such as age, marital status, or education. Closed questions may also be used to assess a respondent's opinions or attitudes by choosing a rating on a scale. Additionally, closed questions maybe used to elicit specific information in an efficient manner.

Survey Protocol and Questionnaire Development

The following is an outline and brief discussion of practical steps for survey protocol and questionnaire development. In general, a survey protocol should include the following items

- A statement of the problem or its background Survey goals and objectives.

- Survey methodology including the survey population, survey design, survey sampling

- Plan, enrollment and consent procedures, data collection procedures, data management and analysis plans

- Questionnaires Although, no one protocol can fit all KAP surveys, The following provides general steps for KAP surveys.

Step 1: Review existing information

Before composing a survey protocol, it will be important to determine the overall goals and objectives of the survey.

Step 2: Determine survey goals

After reviewing relevant information, the next step is to determine what the overall goal of the survey is. Will the goal of the survey be to explore and collect information about the population or a specific topic? Will it be to establish base line data prior to an intervention?

Step 3: Define survey objectives

Once the overall goal of the KAP survey has been determined, specific objectives should be defined. These objectives will determine what information will be collected during the survey.

Step 4 :Outline survey methodology

Once the survey objectives have been defined, the next step will be to outline the survey methodology. This will include identifying the survey population and determining the study design, sampling plan, and data collection and analysis plan. It is strongly advised that staff or technical partners with expertise in survey design and data analysis be involved.

Survey population

The survey population will be determined by the information review and survey objectives. In general, this population may be defined by demographic characteristics(e.g, age, sex, religion, urban/rural residence, income level, education, employment status, ethnic or language group),job or social category. Selection of the survey population will depend on the survey objectives, time, and resources, as different groups maybe surveyed.

Survey design

Most KAP surveys are cross-sectional surveys that collect data at a specific point in time. Although these types of surveys are subject to sampling, response, and recall biases, they are the most convenient for situations in which time and resources are limited.

Sampling plan

The survey sample is the set of survey participant selected from the larger survey population. The survey sampling plan will determine how participants are selected and can address the generalizability, certainty, and precision of results by defining who is included in the survey and how many people are needed. To provide the most appropriate survey sample while considering time and resource constraints, the sampling plan should be developed with the assistance of someone knowledgeable in survey methodology in order. In general there are three main categories of sampling-random, purposeful and convenience sampling. While random sampling may be the most methodologically rigorous, each of sampling method as advantages and disadvantages. A procedure for survey participant enrollment should be outlined as well as details for obtaining informed consent from potential survey participants. In some cases, verbal consent will be appropriate, particularly where written and signed consent forms are not culturally appropriate or possible. During the consent process, it will be important to assure survey participants that the information they provide will be kept confidential.

Data collection

As previously stated, data for a KAP survey are collected through a structured, standardized questionnaire that may include both quantitative and qualitative data and also may include observations. Types of data to be collected are dependent on the survey objectives and questions to be answered Quality control of data collection should be provided daily during the survey period by survey team. The mode of data collection(e.g.paper questionnaire, smart phone, tablet) should be determined based on the feasibility of use in the survey area, existing resources for training and supplies, and availability of technological support in the field during the survey period. Modes of data back-up should be specified (e.g. paper forms for smart phones).

Data management and analysis

A plan for data management, including quality control, and analysis should be outlined at the time of protocol development. Allocation of data entry, cleaning, and analysis tasks to specific personnel or groups should be made, as should plans for data storage.

Step 5 :Develop the survey questionnaire

The survey questionnaire should be prepared with the survey objectives in mind. Content should be relevant to the key questions to be answered, and questions should be framed in a manner that will minimize bias and best reflect knowledge, attitudes, and practices. Types of questions to include are both closed-ended and open-ended questions. Close-ended questions have a pre-determined set of answers (easier to standardize for data entry and analysis). Open-ended questions do not have a pre-determined set of answers and are more likely to include qualitative data (potential difficulties for data analysis, but still informative).Findings from questions may also be substantiated by observations.

Basic steps for the conduct of a K.AP study

- Identification of the topic of study

- Selection of the target population

- Preparation of the KAP questions

- provision of options for answers

- development of a scoring system for the instrument

- validation of the instrument.

Topic Identification and Selection of the Target Population

Identification of the topic of study and selection of participant group(s) for the survey are the starting points for a KAP study. A good research question

addresses a felt need. The target population for a KAP survey, therefore, selects itself, because it is the population in which the need exists. There is no purpose in surveying a population in which no need exists

Preparation of the Questions

The preparation of the KAP questionnaire involves framing the questions, creating options for answers, planning the scoring, and validating the instrument. The "questions" can be in the form of actual questions or in the form of statements; for convenience, in the rest of this article, the term "questions" or "items" will be used to include both contexts. The process of framing the questions that assess knowledge, attitudes, and practice begins with defining the expected level of knowledge in the targeted population. The assessment of knowledge is relevant only in so far as it influences attitudes and practice. A similar strategy of framing of population-specific questions applies to the assessment of attitudes, which are defined as a relatively enduring system of beliefs surrounding a subject, object, or concept that predisposes a person to respond in a preferential manner. Likewise, a similar strategy applies to the assessment of practice, or behaviors related to knowledge and attitudes in the field.

Questions must be framed with care. They must also avoid questions that are too difficult because the questionnaire is not an examination form. Other questions to avoid are those that may mean different things to different people, contain difficult words or concepts, use technical terms or colloquial phrases, are long and hard to understand, or address more than one issue in the same question or has double negatives. Care must be taken to avoid framing questions such that the ideal answer to all questions is "Yes"; respondents will then get into the mental set of ticking "Yes." Care must also be taken to avoid questions the answers to which can be guessed from the content of previous or sub sequent questions.

Preparing options for Answers

When creating items about knowledge, attitudes and practice, the options for the answers must be created with caution. When offering options for answers, care must be taken to avoid Knowledge, Attitude and Practices (KAP) survey is a quantitative method (pre defined questions formatted in standardized questionnaires) that provides access to quantitative and qualitative information.KAP surveys reveal misconceptions or misunderstandings that may represent obstacles to the activities that we would like to implement and potential barriers to behavior change. Note that a KAP survey essentially records an "opinion" and is based on the "declarative" (i.e. statements). In other words, the KAP survey reveals what was said, but there may be considerable gaps between what is said and what is done.

A KAP survey can:

- Measure the extent of a known situation; confirm or disprove a hypothesis; provide new tangents of a situation's reality.

- Enhance the knowledge, attitude, and practices of specific themes; identify what is known and done about various health-related subjects.

- Establish the baseline (reference value) for use in future assessments and help measure the effectiveness of health education activities ability to change health-related behaviors.

- Suggest an intervention strategy that reflects specific local circumstances and the cultural factors that influence them; plan activities that are suited to the respective population involved (DuMondeM.,2011).

The Shortcomings of KAP Surveys

Data can be hard to Interpret accurately

One of the main shortcomings of KAP surveys is that it is difficult to ensure an accurate interpretation of data. Researchers should be very cautious regarding the interpretation of results. The reliability of the data can be frequently impacted by underlying contextual and cultural factors.

SPSS Software:

SPSS is powerful statistical software, which was earlier known as Statistical packages for social sciences. It is Windows-based and shares all the facilities with other Windows applications. It is a comprehensive integrated system for flexible statistical data analysis and data management solution. The current version in use are **SPSS 16.0, 20.0**. It is a computer program used for survey authoring and deployment, data mining, text analytics and collaboration and deployment. It has all major analytical tools for handling a large volume of data as well as complicated multivariate analyses. Working knowledge in one of the statistical packages like SPSS is a must for contemporary research analysis.

Statistical Tool

The Kruskal-Wallis H test is a rank based nonparametric test which can be used to determine whether there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable. It is used for comparing two or more independent samples of equal or different sample sizes. To analysis microbiome data, Kruskal-Wallis H test is more suitable test and it is more appropriate to use ranks rather than actual values to avoid testing being affected by the presence of outliers or by the non normal distribution of data. Kruskal-Wallis H test is also called as equivalent one way ANOVA on ranks.

The H test can be used to answer all of the questions in hypothetical example by replacing the actual data with rankings. There are some advantages of using the original observations are the calculation of data are simplified, data only available in ordinal form often may be used and the assumptions of the parametric test procedure are too far from reality, if the usual test is used but it is possible that

the usual test may not have as good a chance as a rank test of detecting the real interest.

Here, the procedure to calculate the Kruskal-Wallis H test using SPSS.

Enter the data in a Microsoft Excel sheet and save the data. Import data from Excel to SPSS software.On the main screen, click on **Analyze**, **Nonparametric Tests**, **Legacy Dialogs**, **k Independent Samples**.
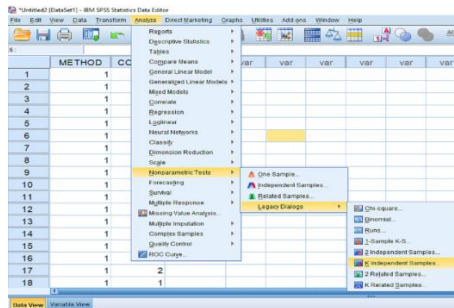
The following dialogue box appears:
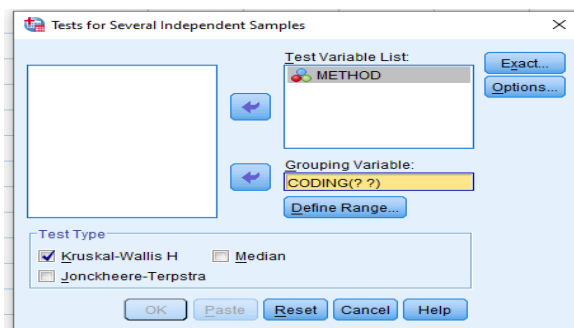
 Move the variable containing your method into the box labelled "test variable list" and move the variable containing the codes that identify the different conditions into the box labelled "grouping variable", Then click on "define range" and tell SPSS about the codes for the various conditions as follows:
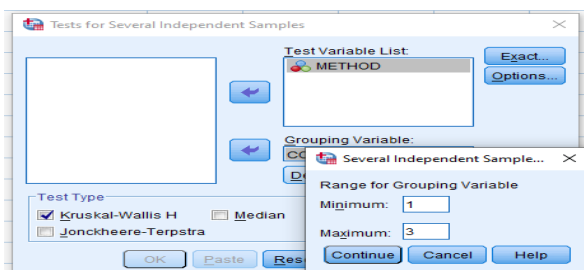
Here, I have three conditions, so the minimum is "1" and the maximum is "3". Then click on "continue". Next, click on options and select "descriptive statistics" to get the mean for each condition. Finally, click on "OK" to perform the test.

Results

Table: 1: Age wise distribution of Respondents
N=400

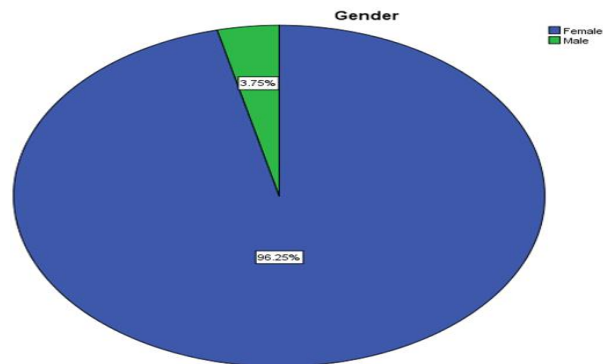| S. No.	Age	Frequency	Percentage (%)
1.	15-20 years	119	29.8
2.	21-25 years	254	63.5
3.	More than 25 years	27	6.8
Total		400	100.0

The data in table:1 shows the age wise distribution of respondents. More than half (63.5%) of the respondents were between the age of 21-25 years. (29.8%) percent of them were between the age of 15-20 years. Remaining were (6.8%) more than 25 years. The same was depicted in the figure:
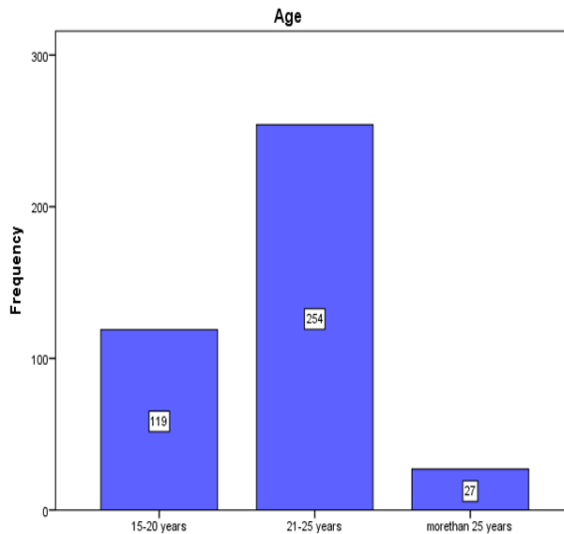
Table: 2: Gender wise distribution of respondents
N=400

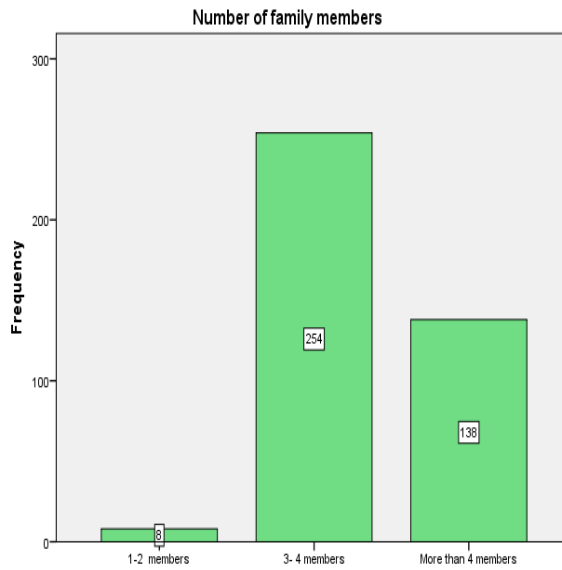| S. No.	Gender	Frequency	Percentage (%)
1.	Female	385	96.3
2.	Male	15	3.8
Total		400	100.0

Above table represents that among 400 samples 385 (96.3%) were Female and 15 (3.8%) were Males.

Table: 3: Distribution of Respondents family members
N=200

| S. No.	Number of family members	Frequency	Percentage (%)
1.	1-2 members	8	2.0
2.	3- 4 members	254	63.5
3.	More than 4 members	138	34.5
Total		400	100.0

The table:3 and figure reveals that almost more than half of the respondents (63.5%) family members are 3-4 members. (34.5%) of them family members are more than 4 members. Only 2 percent of the respondents family members are 1-2 members.

Number of family members

Table: 4: Distribution of Education of Respondents
N=400

S. No.	Education of Respondents	Frequency	Percentage (%)
1.	PG	199	49.8
2.	Ph.D	5	1.3
3.	UG	196	49.0
Total		400	100.0

Among the respondents as shown in table:4 (49.8%) of the respondents were studying PG courses. (49%) of them were studying UG courses. Remaining (1.3%) of them were studying ph.D.


Education
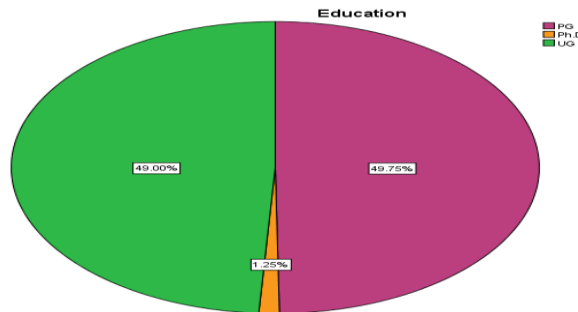
Table: 5: Distribution of Family Income
N=400

S. No.	Respondents family income	Frequency	Percentage (%)
1.	1-5 lakhs annually	104	26.0
2.	Above 5 lakhs annually	35	8.8
3.	Less than 1lakh annually	261	65.3
Total		400	100.0

The table:7 and figure reveals that more than half of the respondents (65.3%) monthly income was less than 1lakh annually. (26%) of the respondents their family income was 1-5 lakhs annually. Remaining (8.8%) of their family income was above 5 lakhs annually.
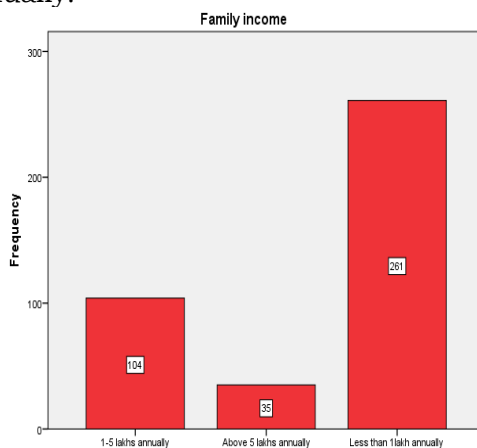
Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
GROUP	1200	2.00	.817	1	3	1.00	2.00	3.00
KAP	1200	2.00	.564	1	3	2.00	2.00	2.00

Ranks

	CODING	N	Mean Rank
GROUP	Knowledge	189	549.71
	Attitude	818	599.03
	Practice	193	656.46
	Total	1200	

Test Statistics[a,b]

	METHOD
Chi-Square	10.245
Df	2
Asymp. Sig.	.006

a. Kruskal Wallis Test

b. Grouping Variable:

CODING

The Kruskal-Wallis result is found in the **Test Statistic** table; the **Asymp.Sig.** statistic defined a **p value** of **.006**; this is less than α (.05), so we would conclude that there is a statistically significant difference among the performances of the methods.

Conclusion

Based on the findings of research in a traditional medicine a Kruskal-Wallis H test showed that there was a statistically significant difference between the knowledge, attitude and practice methods, x^2 = 10.245, p = 0.006, with a mean rank score of 549.71 Knowledge, 599.03 Attitude and 656.46 Practice.To fulfil the gap between knowledge, attitude and practice about traditional medicine, more research particularly quality clinical trials that evaluates the mechanisms, safety and cost- effectiveness of traditional therapies need to be carried out. Moreover, large scale epidemiological studies should be conducted both in the urban and rural parts of the country, comparing the trend of practices among qualified physicians of all the systems of medicine. Government initiatives to promote the findings of such research will build confidence in the population. The benefit of the population lies in the optimal balance and evidence-based use of all the health systems and this need to be encouraged especially in developing countries like India with inadequate doctor patient ratio.

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