



POPULARITY AND CUSTOMER PREFERENCES FOR HERBAL MEDICINES IN NIGERIA[†] QUESTIONNAIRE BASED SURVEY

Okoh Judith¹ — Okafor Ijeoma² — Kokonne Ekere³ — Ajeh Isaac⁴ — Isimi Christianah⁵ — Olayemi Olubunmi⁶ — Emeje Martins^{7†}

^{1,2,3,4,5,6,7}Department of Pharmaceutical Technology & Raw Materials Development, National Institute for Pharmaceutical Research & Development, Abuja, Nigeria

ABSTRACT

This study was designed to ascertain the availability, affordability, and consumption of medicinal plants in Nigeria. A structured questionnaire was used for data collection. The age group of individuals interviewed was between 10 - 59 years. Results show that, herbal medicine awareness and usage was 97 % and 82 % respectively. Most respondents (97 %) admitted to having knowledge of medicinal herbs and their sources of information included family members (58 %), friends (21 %), Herbalist (9 %), and Pharmacy (3 %). Majority (54 %) of the participants took these medicinal herbs in liquid form. On sources of procurement, 17 percent of participants prepared these medicinal plants themselves, 19 % from pharmacies and 17 % from herbalists. Twenty three percent engaged in self-medication, while 21 % obtained their preparations from herbalists. Sixty-five percent said the products are safe and effective, while sixty-nine percent had no side effects while using the products. On affordability, 15 - 52 % admitted that herbal medicines are very affordable, while 20 % agreed that they are expensive. Over half of respondents' preferred locally manufactured herbal medicines. Analysis of sources of foreign medicinal goods shows that most (75 %) were from USA. About 78 % of the participants do not take these medicinal herbs with conventional drugs, alcohol (72 %) or cigarette (80 %). Overall, 69 % of our respondents have benefitted from the consumption of medicinal remedies. It is concluded that, the awareness, perception and access to medicinal herbs in Nigeria is increasing which is likely due to dearth of public health facilities. This calls for health administrators to design appropriate programs to implement and ensure the effective monitoring of circulating herbal products.

Keywords: Herbal medicine, Knowledge, Perception, Attitude, Use, Public health

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Contribution/ Originality

This survey is one of a very few to investigate the knowledge, perception and use of herbs in a civilized society. Our results provide the first scientific information in Nigeria in this respect and may inform policy decisions towards improving public health

1. INTRODUCTION

Herbal medicines has remained popular in the post-civilization healthcare system of various people globally despite the predominance of orthodox medicines with over 80 % of the population of developing countries depending on herbal medicine for basic healthcare (Mukherjee, 2002; Bodeker *et al.*, 2005; Bandaranayake, 2006; Osemene *et al.*, 2011). Traditional medical systems globally have a rich history of use amongst indigenous people

[†] Corresponding author

and comprise all kinds of folk medicine, unconventional medicine and kind of healing method that has been passed down through tradition of a community or ethnic group. It usually involves the use of locally sourced plant drugs, animal parts and mineral which are employed in the alleviation of a wide range of diseases conditions of various origins. Practices that involve the mind and body enhance the therapeutic effects that are derived from the practice of CAM (López-Jornet *et al.*, 2011). Although herbs are often perceived as “natural” and therefore safe, many different side effects have been reported owing to active ingredients, contaminants, or interactions with drugs. Because of variations in the social and economic status, experiences, beliefs and religion inherent in cultures and traditions of people, herbal preparations made from different plant parts have been seen to contain different active medicinal compounds based on the species of plants used, the different plant parts used such as seeds, flowers, roots, leaves, bark and other parts, and storage conditions, sun, humidity, the soil type, the season of harvest, and the climate conditions. Herbal mixtures are prepared using fruit extracts, exudates from bark of plants, volatile oils, powdered herbs, and fatty oils obtained from leaves, fruits, stems and bark of plant. These are prepared in specialized forms such as liquid, powders, oils and teas. They are also made as topical preparations to exert their therapeutic effects. Traditionally, herbal medicines represent the backbone of clinical care in providing wholeness and wellness within a community that is entrenched in diverse cultures and traditions. In spite of availability of conventional therapies, medicinal plants have been utilized in diagnosis, improvements or treatments in all aspects of healthcare and have also been used for healing.

There has been a world-wide increase in the popularity and preference for herbal medicines over the years, consequently leading to a global rise in sale despite the abundance and availability of conventional drugs. In advanced societies, there is the perception that herbal products enhance healthy living, this has led them to spend their livelihood purchasing them in order to remain healthy. This is what is reflected as a drastic rise in the sale both in the market and superstores (Roberts and Tyler, 1997; Blumenthal *et al.*, 1998; World Health Organization, 2002; Kong *et al.*, 2003; Pal and Shukla, 2003; WHO, 2005; Bandaranayake, 2006). The apparent rise may also be due to the affordability of these medicines, the ability to treat multiple illnesses due to its different active components, the mistaken belief that they are devoid of toxicities, and the art of self-medication. The increased cost of medical care and the inability of Nigerians to access existing conventional therapies may be responsible for the increasing popularity of medicinal herbs and other practices such as bone settings, manual manipulations, massage therapies and phytomedicines. Nigeria is located in the sub-Saharan region; it is a tropical country with lush vegetation and warm to hot climate and moisture throughout the year. It is distinguished by a wet and dry season making it possible to grow various types of herbs adapted to the seasons. Because of its rich vegetation, there is abundant cultivation of medicinal herbs even though they are widely distributed in other parts of the world. Of these plants, over 120 types are identified within a community of over 300 ethnic groups. The indigenous people of Nigeria use medicinal herbs prepared by a process of decoctions using the aerial parts of these plants, which are major sources of food. Other methods of preparation of medicinal herbs include macerations, tinctures, and infusions. Decoctions is made by boiling medicinal plant parts especially the tough plant parts made of the bark and roots to extract the water soluble components. The process involves boiling these plant parts for 1-2 hours to soften and release the active components (Jeruto and Lukhoba, 2011; Okach *et al.*, 2013). Cold maceration is used for medicinal plants that are easily destroyed by heat. The process involves placing the medicinal herb in water and leaving overnight to extract the active components. Tinctures are alcoholic and water extracts of plants that are not soluble in water, prepared by using a 25 % ethanol to obtain active components from plants. Other solvents used include vinegar, mainly used when alkaloids are desired. The alcohol is used as a preservative for such preparations. Infusion is the method used to prepare plant parts that are very fragile. It involves boiling of water and pouring over the herbal material and left for some time to obtain the extract.

2. MATERIALS AND METHODS

A well-structured questionnaire was designed and used to obtain information from respondents from the 6 area council in Abuja, with 6 researchers and volunteers who conducted oral interviews on respondents to ascertain their perception and how medicinal plants have been of benefit to them. Other sources of this information were gathered from various pharmacies where customers were interviewed directly and the information obtained was assembled in logical sequence. The questionnaire was presented as multiple choice questions designed in two parts; the first was personal information, to get data based on specific parameters like age, sex, location, educational qualification, state of origin and local government areas. The second part, was to gain the respondent's views and knowledge as well as the use of medicinal herbs. The data collated was analyzed using descriptive statistical analysis as percentages and standard deviations.

3. RESULTS AND DISCUSSION

The overall responses obtained from this survey and the different percentage distribution is given in Figures 1 to 7. Out of the 300 questionnaires distributed in this survey, 97 % of the respondents, mostly within the age bracket of 20 - 29 years, said they were aware of herbal medicines in Nigeria, but only about 82 % agreed that, they use herbal medicines (Figs.1 and 2); curiously, this data supports [WHO Report \(2003\)](#) that 80 % of Africans use herbal medicines. In addition, 69 % of respondents claimed they did not experience any side effects, while 65 % said the medicines are very effective (Figs. 1 and 3). Of this number, majority (65 %) were men and 35 % were females. The growing use of herbal medicines as observed in this study, may be attributed to the believe by our respondents that herbal medicines are either more effective (Figs. 1 and 3), can address multiple ailments, more affordable or are devoid of adverse effects. Some of the respondents physically interviewed said that, they have lost confidence in diagnosis of their ailment by physicians. This attitude and perception has led to serious or rampant cases of self-medication ([Bandaranayake, 2006](#)) and this is corroborated in our study too. Researchers like [Van and Hardon \(1990\)](#); [Refuerzo et al. \(2005\)](#) opined that, self-medication has become a major global problem among communities all over the world because of the difficulty that exists in patients assessing medical care and due to the increased cost of services. One major factor that has led to a significant increase in the art of self-medication is the promotion of these medications by families, herbal product marketers, and close acquaintances and sometimes, the electronic media. In less developed countries, the high cost of conventional drugs and inaccessibility to medical care, is largely responsible for people resulting to herbal medicines as well as complementary and alternative products ([Van and Hardon, 1990](#)). This attitude has been linked to increase in toxicities observed mostly in pregnant women ([Kebede et al., 2009](#)). On the effect of education on knowledge, perception and attitude of consumers of herbal medicines, we discovered that, 40 % of respondents agreed they had attended higher institutions. This result is consistent with reports by [Lee et al. \(2007\)](#) who had earlier reported that, the consumption of herbal medicines increased with increase in level of qualification.

Fig. 4 summarizes the sources of information on herbal medicines. The family plays a major influence in creating awareness for the use of herbal medicines in Nigeria, 58 % of the respondents confirmed this. Other sources of information included friends and herbalists which accounted for 21 and 9 % respectively, while only 3 % obtained information from pharmacies. The implication of this finding is that, most of the information available to consumers of herbal medicines is not from professionals. This is potentially very dangerous. Although similar figures (30 % awareness from families, 13 % from healthcare professionals, and 6 % from herbalist) were published by [Ibrahim et al. \(2011\)](#) it is surprising that, in 2016, these figures rather than decrease, is increasing. This point to the lack of awareness or professionalism in managing herbal medicines in Nigeria or merely substantiates the position of WHO on transfer of believes from one generation to the other ([World Health Organization, 2015](#)). It has been argued

among clinicians that, one of the main hindrances to involvement of healthcare professionals in promoting herbal medicines is lack of standardization, characterization and contamination of herbal products. The regulatory and legislative concerns governing the sale and use of herbal medicines varies greatly from nation to nation. This however is due largely to the beliefs and traditions of the people found in a geographical area.

About 53 % of the respondents said that herbal medicines are affordable (Fig. 5). The reason for the cost effectiveness of herbs may be due to the relatively cheap production as against the cost of standardization, production and clinical trials a conventional drug may undergo to be regarded safe for human consumption. Safety concerns are also mounting as the majority of individuals believe that these medicinal plants are of natural origin, hence devoid of toxicities. This is factually untrue as side effects do exist, especially with herbs containing compounds that are very toxic (Sinniah *et al.*, 1989; Ali, 1994; Halim, 2003; Tonia *et al.*, 2012).

Fig. 6 shows that, 72, 80 and 77 % of the respondents are aware of the implications of taking herbal medicines with alcohol, cigarettes and conventional drugs respectively. Recent reports have it that, the 20 % of the US population took herbal medicines with conventional drugs with the belief that the co-administration would give a better result than using either of the medications alone and about 50 % actually took the medications concurrently (Kuo *et al.*, 2004).

From our study, 58 % of the respondents said they prefer and use the liquid dosage forms of herbal medicines (Fig. 7). The predominant forms in which herbal medicines are taken in Nigeria therefore is the liquid form. It has been argued that, the lack of official guidelines for the preparation of these remedies has contributed to the lack of other dosage forms in Nigeria (Kunle *et al.*, 2012). In the United States, the safety and efficacy of herbal preparations are unknown, because manufacturers of these products are not mandated to submit these evidences to the United State Food and Drug Administration. Therefore, most of these products go into the market without formal reports of their efficacy. For instance, the extract of Ginkgo Biloba has been known to interact with anticoagulants and antiplatelet to cause bleeding. However, it has been promoted as a product that enhances the logical functioning of the brain. Another dietary supplement widely used to improve mood and mental functions is Ginseng, though well tolerated; it has been discovered to cause a decrease in response to warfarin when taken concomitantly (Melanie, 1999).

4. CONCLUSION

The survey carried out shows that the popularity of herbal medicine use in Nigeria is increasing without limitations to age, gender and status of Nigerians. There is increased knowledge, perception and receptive attitude of consumers towards herbal medicines. The predominant form of herbal medicine conveniently taken in Nigeria is the liquid dosage form. Hitherto, there was dearth of scientific information on the knowledge, perception and attitude of consumers to herbal medicines in Nigeria; this study therefore provides the first scientific information in this regard and the data obtained may inform policy decision towards improving public health in Nigeria while serving as a nexus for similar studies in other African countries.

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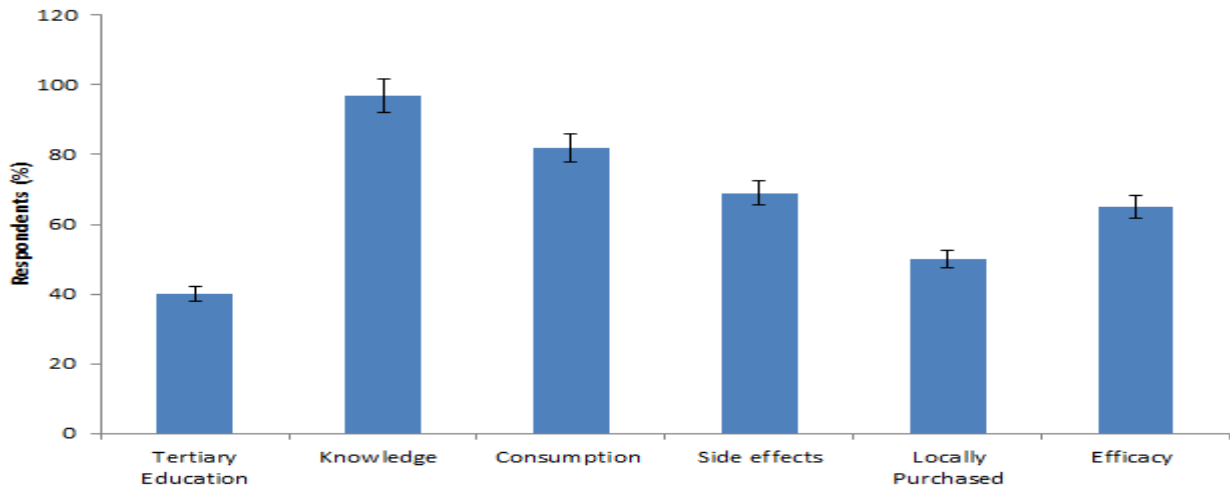


Fig-1. knowledge , perception and attitude of consumers of Herbal Medicines

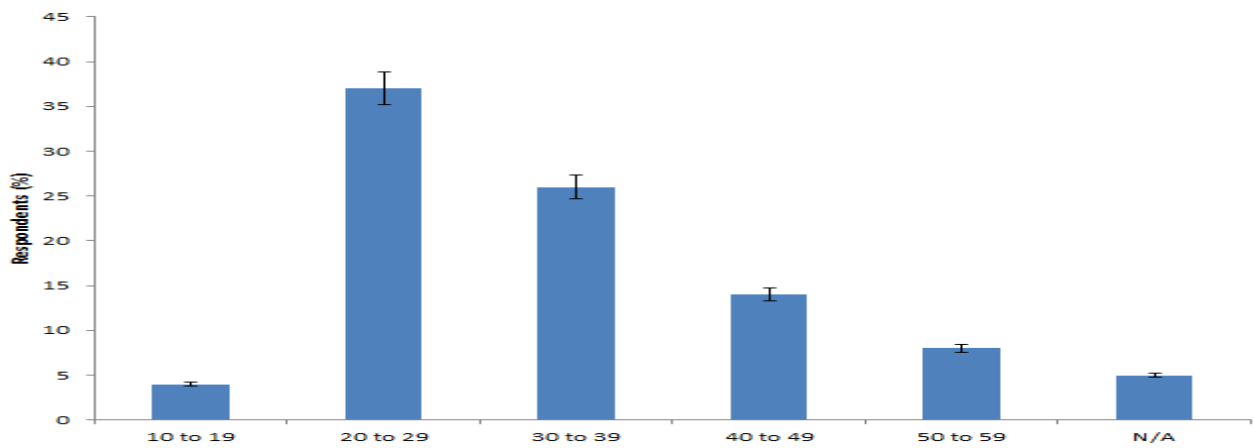


Fig-2. Age of respondents (years)

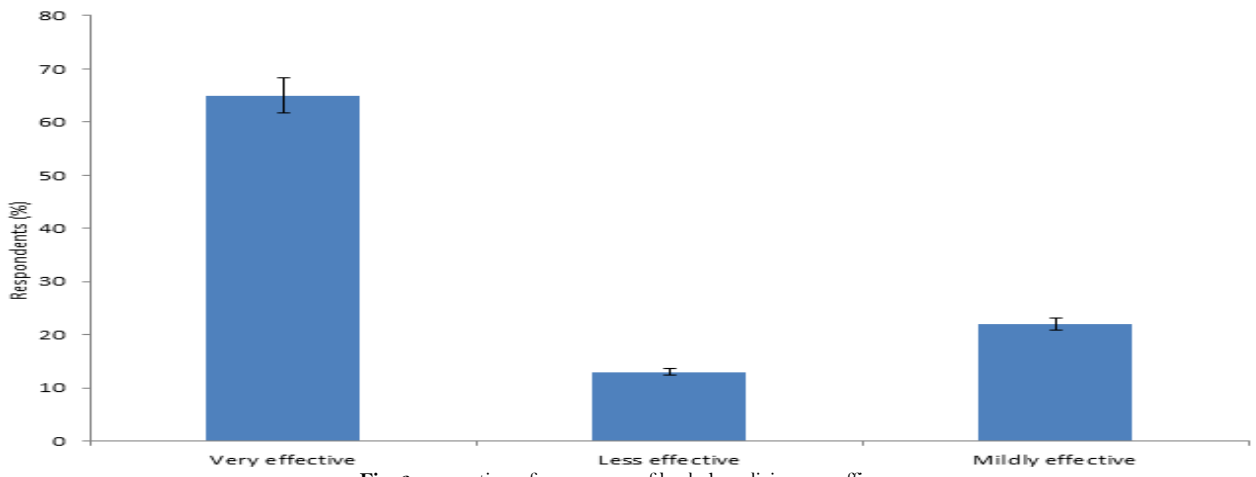


Fig-3. perception of consumers of herbal medicines on efficacy

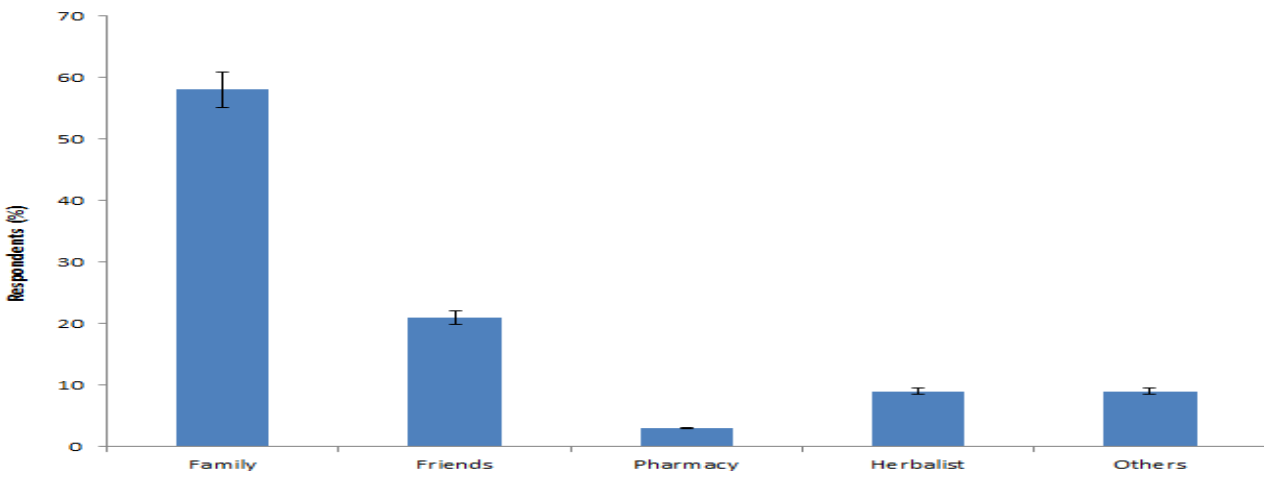


Fig-4. Sources of Information of Herbal Medicines

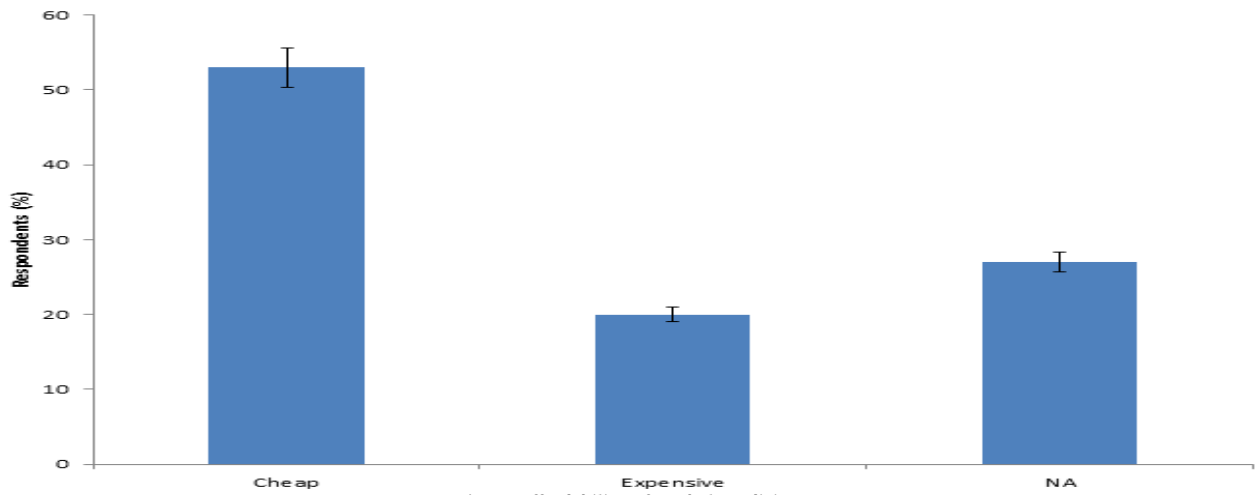
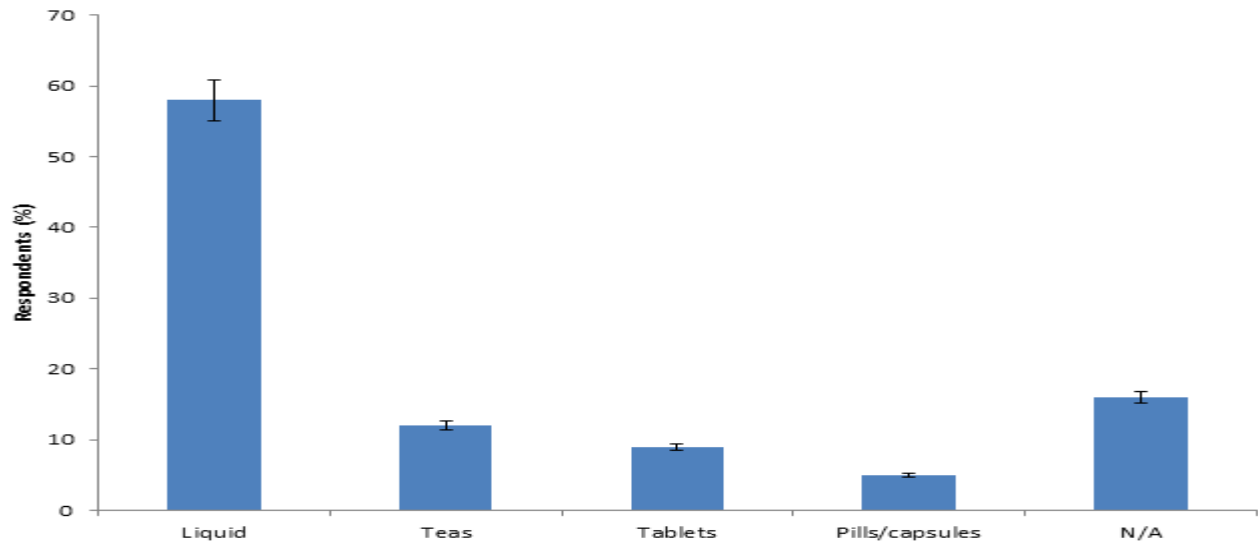
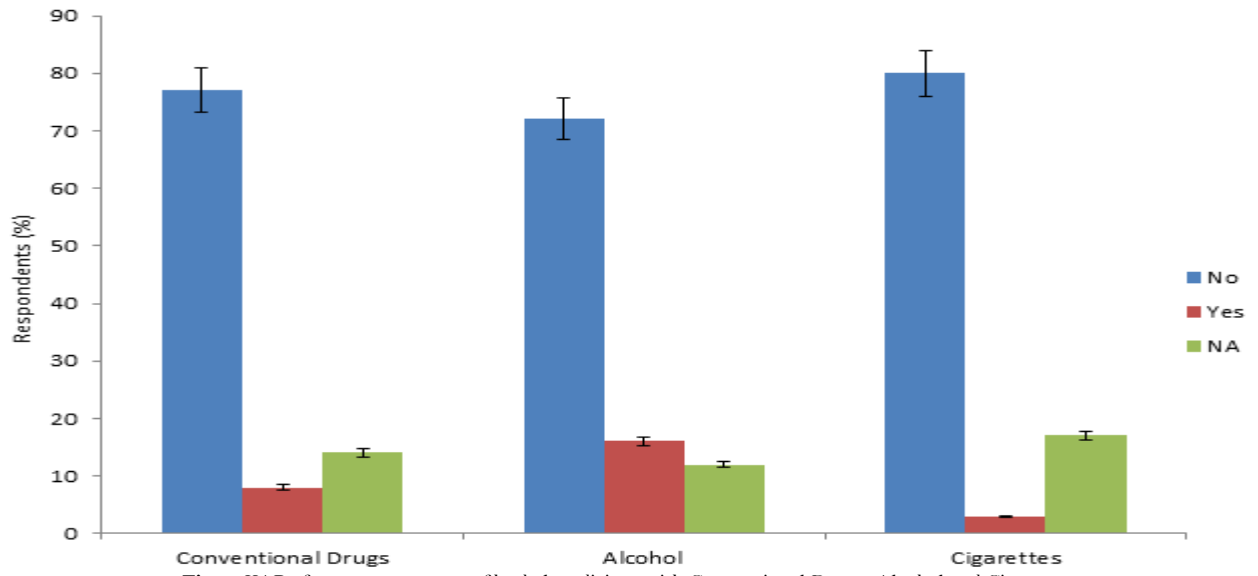


Fig-5. Affordability of Herbal Medicines



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