

The Impact of the Healthcare System in Barbados (Provision of Health Insurance and the Benefit Service Scheme) on the Use of Herbal Remedies by Christian Churchgoers

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ABSTRACT

Aim: To determine the impact of health insurance and the government's Benefit Service Scheme, a system that provides free drugs to treat mostly chronic illnesses to persons aged 16 to 65 years, on the use of herbal remedies by Christian churchgoers in Barbados.

Methods: The eleven parishes of Barbados were sampled over a six-week period using a survey instrument developed and tested over a four-week period prior to administration. Persons were asked to participate and after written informed consent, they were interviewed by the research team. The data were analysed by the use of IBM SPSS version 19. The data were all nominal, so descriptive statistics including counts, the frequencies, odds ratios and percentages were calculated.

Results: More than half of the participants (59.2%) were female, a little less than a third (29.9%) were male, and one tenth of the participants (10.9%) did not indicate their gender. The majority of the participants were between the ages of 41 and 70 years, with the age range of 51–60 years comprising 26.1% of the sample interviewed. Almost all of the participants were born in Barbados (92.5%). Approximately 33% of the respondents indicated that they used herbal remedies to treat various ailments including chronic conditions. The odds ratio of persons using herbal remedies and having health insurance to persons not using herbal remedies and having health insurance is 1.01 (95% CI 0.621, 1.632). There was an increase in the numbers of respondents using herbal remedies as age increased. This trend continued until the age group 71–80 years which showed a reduction in the use of herbal remedies, 32.6% of respondents compared with 38.3% of respondents in the 61–70-year category.

Conclusions: The data demonstrated that only a third of the study population is using herbal remedies for ailments. Health insurance was not an indicator neither did it influence the use of herbal remedies by respondents. The use of herbal remedies may not be associated with affluence. The reduction in the use of herbal remedies in the age group 71–80 years could be due to primarily a lower response rate from this age group, and secondarily due to the Benefit Service Scheme offering free medication to persons who have passed the age of 65 years.

Keywords: Alternative medicine, bush teas, cleansers, healthcare, herbal remedies

El Impacto del Sistema de Salud en Barbados (Provisión de Seguro de Salud y Plan de Servicios y Beneficios) sobre el Uso de Remedios Herbarios por parte de los Feligreses Cristianos

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RESUMEN

Objetivo: Investigar si el Seguro de Salud y el Plan de Servicios y Beneficios del Gobierno – un sistema que proporciona medicina libremente para tratar principalmente enfermedades crónicas en personas

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de 16 a 65 años de edad – influyen en el uso de remedios herbarios por los feligreses cristianos en Barbados.

Métodos: Se realizó un muestreo en once provincias de Barbados por un período de seis semanas, usando como instrumento una encuesta desarrollada y probada durante un periodo de cuatro semanas antes de ser aplicada. Se le pidió participación a distintas personas y luego de obtener el consentimiento informado por escrito, las mismas fueron entrevistadas por el equipo de investigación. Los datos fueron analizados mediante la versión 19 de IBM SPSS. Todos los datos eran nominales, de modo que se calcularon las estadísticas descriptivas, incluyendo conteos, frecuencia, cociente de probabilidades (odds ratio), y porcentajes.

Resultados: Más de la mitad de los participantes (59.2%) eran mujeres; poco menos de un tercio (29.9%) eran hombres; y una décima parte de los participantes (10.9%) no indicó su sexo. La mayoría de los participantes se encontraban entre las edades de 41 y 70 años, para un rango de edad de 51–60 años que comprendía el 26.1% de la muestra entrevistada. Casi todos los participantes nacieron en Barbados (92.5%). Aproximadamente 33% de los entrevistados indicaron que usaban remedios herbarios para tratar varias dolencias, incluyendo condiciones crónicas. El odds ratio de las personas que usan remedios herbarios y poseen seguro de salud es 1.01 (95% CI 0.621, 1.632). Se produjo un aumento en el número de entrevistados que usaban remedios herbarios, según aumentaba su edad. Esta tendencia continuó hasta el grupo etario de 71–80 años, el cual mostró una reducción en el uso de remedios herbarios, 32.6% de los entrevistados en comparación con el 38.3% de los entrevistados en la categoría de los 61–70 años.

Conclusiones: Los datos mostraron que sólo una tercera parte de la población está usando remedios herbarios para sus dolencias. El seguro de salud no fue un indicador ni influyó sobre el uso de remedios herbarios por los entrevistados. El uso de remedios herbarios no puede asociarse con la afluencia. La reducción en el uso de remedios herbarios en el grupo etario 71–80 años podrían deberse principalmente a una tasa de respuesta más baja de este grupo etario, y secundariamente al Plan de Servicios y Beneficios que ofrece medicamentos gratuitamente a personas que han pasado la edad de 65 años.

Palabras claves: medicina alternativa, infusiones, limpiadores, atención a la salud, remedios herbarios

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INTRODUCTION

Although research has been conducted on the history of the use of herbal remedies in Barbados, there has not been enough research done on its modern usages and the socio-economic factors which influence these practices. The University of the West Indies, Cave Hill Campus, has formed an Ethnopharmacology Research Group (ERG) to investigate this association. This group was involved in a two-part study that looked at the biochemical interactions between herbal remedies and conventional medications, and the sociological reasons why Barbadians continue to use these herbal remedies. This was a collaborative effort between McGill University, Canada and the University of West Indies. The group explored and examined factors that influence why Barbadians today might use herbs as opposed to conventional medicines, and whether these factors influence the combined usage of herbal remedies and conventional medications. In this paper, emphasis will be placed on the healthcare system of Barbados as a factor in determining if the lack or existence of a public healthcare system influences the use of herbal remedies among churchgoers.

This study was done using a sample of religious persons due to the common belief that the plant provisions by

the creator, God, were made to be used as food and medicine by the rest of his creation – humans and animals. The Bible, the book of faith used by Christians, has several references about the herbs: 1 Kings 21: 2, 1 Kings 4:33 and more specifically references about medicinal herbs, John 19: 29–30 and Psalms 51: 7 (1). Even though the use of herbal remedies may be considered prominent in the Christian church, we intend to investigate how socio-economic factors may impact the use of these herbs.

The Caribbean has a rich base of folklore practices involving the use of medicinal plants and also a strong foundation of Christian religious beliefs. These folklore practices are historically linked to the immigrants from West Africa and the East Indies, and to the original native inhabitants, Amerindians, from some territories in the Caribbean (2). Barbados is an island found in the Lesser Antilles of the West Indies whose vegetation is strongly influenced by the seasonal climate associated with the island's geographical location, which supports the rich diversity of plants. It has over 650 species of flowering plants found in the wild, two of which are considered endemic to the island (3).

Iris Bayley, a Barbadian horticulturalist, has suggested that while herbal medication may not be as popular as it was

in the past, it is still quite regularly used by the Barbadian population (4). There are two reasons that can be speculated why there has been a decrease in use. First, there is an enhancement in education and research on related medicinal properties, which has made the locals more sceptical of the benefits of using these herbal remedies. Furthermore, conventional medicines have also been demonstrated to be very effective, so Barbadians may not feel the need to use alternative medications. Secondly, there are fewer species of plants that are used for bush medication. In the days of colonization, there were thousands of plants; recently, however, there are only about 600–700 species of plants, both imported and indigenous (3, 4). The decrease in the number of overall species of plants on the island was due to deforestation to make room for sugar cane plantations, and other vegetable crops (4).

The ageing population of the island is tied closer to the immigrants' generation's practices and are those who tend to use herbal remedies more. These practices have been passed down to younger generations for continuity. In addition, the ageing population tends to suffer more with chronic conditions, thus requiring multiple medications, for which the risk for drug-herb interactions is the greatest as a result of the herbal practices and polypharmacy (5).

Most herbs have yet to be subjected to the same rigorous efficacy and safety trials as prescription drugs. Herbs sold in their natural state (such as leaves, roots, oils, teas *etc*) or as marketed dietary supplements may vary significantly. Even different batches of the same herbs or product from the same planter/producer may differ in content and potency due to the plants' harvested time and location (6). In addition, most of the currently available systematic reviews address herbal preparations which are marketed and widely used in industrialized countries. However, many herbs used in Caribbean folk medicine seem to be rarely investigated (7). More so, the problem is heightened by the fact that many Barbadians will simply diagnose and try to cure themselves instead of seeing a physician. Even the most sophisticated of the locals will do this (4).

Barbadians will often describe herbal remedies as "cleansers" of the body that can get rid of any disease or illness. This claim may be due to religious beliefs as in the case of the use of hyssop (*Hyssopus officinalis*) in biblical days for purification as cited in the Christian Bible in Psalms 51:7 (1). In a study done with Hispanic patients in the United States of America (USA), many of the patients responded that they used herbal remedies to augment conventional drug results, meaning that they believe that the drug interaction was only positive and no adverse events would occur (8).

Worldwide, traditional herbal remedies were in decline because of the development of pharmaceuticals. Recently, however, there is a big switch to natural remedies as the general public is becoming more interested in organic and natural products (9). In 1986, an article in the Daily Nation

newspaper expressed how the younger Barbadian population has increased their interest in alternative medicines, but not necessarily in traditional backyard bush (10).

Healthcare in Barbados

Barbados is a densely populated Caribbean island with an estimated total population of 269 000 dispersed over 166 square miles of land area (11). The population density was 1627 inhabitants per square mile, representing an increase of approximately 8000 inhabitants over a ten-year period (11). The crude birth rate decreased from 15.1 births/1000 inhabitants in 2001 to 11.8 in 2005. The crude death rate averaged 8.6 deaths per 1000 inhabitants in the period 2001–2005 (11). There is both a public and a private stream of healthcare (12). The public stream is run by the government, and it offers free access to primary, secondary, and tertiary healthcare (13). There is a fee, however, for the use of laboratory equipment, X-ray machines and drug services. Public healthcare is provided in eight clinics, and in the Queen Elizabeth Hospital, which is the only public general hospital in Barbados. In total, there are approximately 350 doctors, 800 nurses, and 200 pharmacists in the public health sector with government expenses of US\$142 million in 1999–2000 (12). The Benefit Service Scheme provides free drugs to patients 65 years and older and to patients aged 16 years and younger, leaving patients between the ages 16 and 65 years to purchase drugs at their own expense. Moreover, the drugs that are free to patients in the 16–65-year age group are limited to the treatment of certain disorders, such as diabetes, hypertension, cancer, asthma and epilepsy (11). It is one of the aims of this study to investigate if this age-regulated system influences the use of herbal remedies in the population. It will also determine if the government's policy on providing medication for mainly chronic diseases has influenced the practice of polypharmacy with herbal remedies in the population.

The private stream also offers primary, secondary and tertiary healthcare, but it is not free (12). It is run by general practitioners and specialists. The private stream is primarily focussed on curative practices, maternal and child services. Apparently, Barbadians spend approximately 6% of their personal budget on healthcare. This health expenditure is not very high, and demonstrates that either Barbadians take advantage of the free public healthcare, or they do not use it at all (12). The study performed with Hispanic patients in the USA suggested that patients may often use alternative medications because they cannot afford the conventional medicines (8). Without health insurance, it is highly unlikely that Barbadians could utilize this private stream of healthcare on a regular basis. In realizing the aim, the study will investigate the percentage of Barbadians with health insurance to give insight on the possible utilization of the private stream of healthcare in Barbados and also the influence of affluence on the use of herbal remedies.

SUBJECTS AND METHODS

Questionnaires were distributed to eleven Christian churches (ten Anglican and one Moravian) just after their Sunday service for six weeks. The members of the congregation were informed about the project from a church bulletin and from an announcement by the Parson during the service. Prospective members of the congregation were identified and asked by a researcher to participate. If the person accepted, then the participant was asked to read and sign the consent form, which explained the confidentiality of the questionnaires, that participants would not be compensated for participating, and that they could withdraw from participating whenever they wished. The consent form and project received approval from the University of the West Indies/Ministry of Health Institutional Review Board. The six-page questionnaire included questions about the participant's demographic information, their perception of their own health, whether they take herbs to treat chronic or minor illnesses, how they found out about herbal remedies if they take them, the participant's relationship with their doctor, and the participant's perception of the use of herbs. Researchers interviewed participants that had difficulty completing the questionnaire. The questionnaires were then coded and separated from the consent forms to ensure confidentiality.

Only variables with relevance to the specific aim of this study were assessed from the collected data. The relevant data were analysed using IBM SPSS version 19. They were all nominal, so descriptive statistics including counts, frequencies, percentages and odds ratio were calculated. The results were displayed in tables and graphs.

RESULTS

Demographic Characteristics

The total number of questionnaires collected from the eleven churches was 375. More than half of the participants (59.2%) were female, a little less than a third (29.9%) were male, and one tenth of the participants (10.9%) did not indicate their gender. The majority of the participants were between the ages of 41 and 70 years, with the age range of 51–60 years comprising 26.1% of the sample interviewed. Almost all of the participants were born in Barbados (92.5%).

Use of Herbal Remedies and Potential Influences from the Healthcare System

When asked about the intake of herbal remedies to treat diseases associated with fever, diarrhoea, headache, toothache, maintenance of health, eczema, sore eye, athlete's foot, constipation, vomiting, cough, joint pain, back pain, cuts, sores, or other, approximately half of the participants (54.4%) answered that they did not, approximately one third (33.6%) answered that they did and approximately one eighth (12%) did not respond. About half of the participants (52.3%) indicated that they have a chronic condition, and 40% of the population judged their health as good when asked to rate their health as either poor, fair, good, very good

or excellent. The odds ratio of persons using herbal remedies and having health insurance to the ratio of persons not using herbal remedies and having health insurance is 1.01 (95% CI 0.621, 1.632).

DISCUSSION

The use of herbal remedies by Barbadians has decreased over the decades because of i) deforestation to clear land for sugar cane farming during colonialism and ii) increased awareness of the lack of therapeutic capacity of some plants and the potential adverse events, inclusive of drug-herb interactions and toxicity that are associated with some of the plants (4). Even with the reduction in its use, herbal remedies are still prominent as a treatment option for various ailments among the respondents. The survey indicated that at least 33.6% of the respondents used herbal remedies to treat different conditions including chronic diseases (Table).

Table: The association between health insurance and the use of herbal remedies within the sample population.

	Have Health Insurance		Did not answer	Total	
	Yes	No			
Use herbal remedies	Yes	71 (18.93%)	44 (11.73%)	11 (2.93%)	126 (33.59%)
	No	109 (29.07%)	68 (18.13%)	27 (7.2%)	204 (54.4%)

Barbadians comprised 92.5% of the respondents; 5.6% of the persons who used herbal remedies were below the age of 40 years. This group could be using herbs based on ancestral influences or probably using co-modified products from the herbal retail markets. Approximately fifty per cent of the respondents (52.3%) indicated that they had a chronic condition, and 40% of the sample judged their health as good when asked to rate their health as either poor, fair, good, very good or excellent. These respondents were churchgoers. It could be inferred that the relatively high use of herbal remedies within this group of respondents may be due to religious persuasion. There are various sections cited in the Christian Bible which mentioned the use of herbs for medicinal purposes. Respondents may have had the perception that God's natural creation is just as efficacious as conventional medicine. The majority of responders who used herbal remedies were females and this is possibly due to their maternal caring and nurturing functions within the family unit and the fact that there were more female churchgoers than males.

A majority of the respondents were between the ages of 41–70 years and it is possible that most churchgoers may be within these age groups but this could also be due to a higher interest in the topic to these groups who may have a stronger preservation of ancestral influences on the use of herbal remedies.

The objectives of this research were evaluated based on the results gathered from the statistical analysis of any association between participants having health insurance and using herbal remedies. One of the objectives of the study was to determine if the age of the respondents had any impact on the use of herbal remedies (Figure). The odds ratio analysis

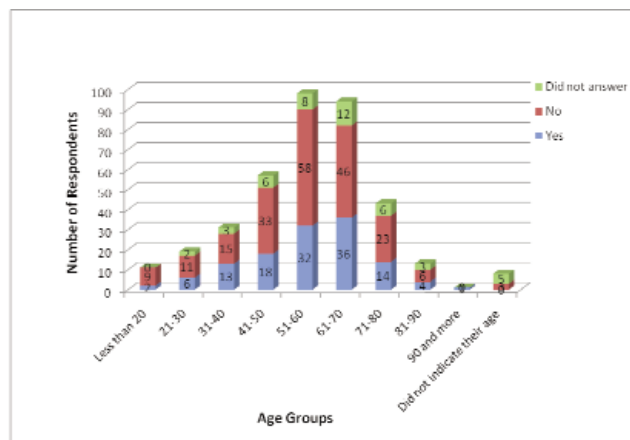


Figure: The use of herbal remedies by Christian churchgoers categorized in age groups.

investigating any association between having health insurance and the use of herbal remedies indicated that health insurance was not an indicator, neither did it influence the use of herbal remedies by respondents. It is very plausible that persons with health insurance are less likely to use herbal remedies as an alternative. The data analysis did not preclude this finding. The result could be explained with the difference in opinion of the use of herbal remedies in the 21st century. These medicine forms are now co-modified, attractive to a wide demography of persons and are commercially viable (8). Hence the use of herbal remedies may not be associated with affluence.

The Benefit Service Scheme provides free drugs to patients 65 years and older, and to patients aged 16 years and younger, leaving patients between the ages of 16 and 65 years to purchase prescribed drugs at their own expense for ailments outside of the scope of diabetes, hypertension, cancer, asthma and epilepsy. Thirty-two respondents (8.5%) within the age group of 51–60 years indicated that they used herbal remedies. There was a lower number of respondents in the 61–70 age group, however, 36 of the respondents (9.6%) within that age group mentioned that they used herbal remedies. There was an increase in the numbers of respondents and the percentage of the sample population using herbal remedies as age increased. This trend continued until the age group 71–80 years which showed a reduction in the use of herbal remedies, 32.6% of respondents compared with 38.3% of respondents in the 61–70-year category. This coincides

with aged participants who may now benefit from the provision of free drugs.

This marked reduction could be due to, primarily, a lower response rate from this age group and to the Benefit Service Scheme offering free medication to persons who have passed the age of 65 years. It was also noted that the percentage of persons who did not use herbal remedies reduced when the percentage of herbal remedy users peaked in the age group 61–70 years. This is a possible indication that impending retirement and the existing cost of drug therapy to persons between 61–65 years, ages prior to retirement, may have convinced them to consider herbal remedies as an alternative to conventional drugs.

It must be noted that the Benefit Service Scheme only provides medication for the following disorders: diabetes, hypertension, cancer, asthma and epilepsy between the age groups of 16–65 years old. The data indicate that the scheme may slightly influence locals to seek alternative therapy for non-formulary and costed pharmacotherapy. Ailments not covered by the scheme within the supported age groups may also be a possible explanation for the use of herbal remedies by the respondents.

In the Caribbean today, the increase in development, agriculture of selected crops and increased knowledge or awareness of the medicinal effects of plants have diminished the use of herbal remedies. It was clearly shown in the data that approximately one third of the sample population used herbal remedies. As mentioned earlier, most herbal remedies in the Caribbean are not tested and validated for the intended use. This may result in adverse events which increase complications in the therapy of illnesses. It is desired that the data from this project will be able to channel efforts into understanding some of the factors which influence the use of herbal remedies. A focussed approach should be developed by the Ministry of Health and healthcare providers to sensitize persons who may be adversely affected by systems implemented to provide health for the people. This approach should also continue to emphasize the need for an increase in the awareness of the herbal remedies and the need for pharmacological validation prior to use.

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