Elshafie RM, Ahmed M, Siddiqui A, Shabeeb A, Gillani SW. A Cross-Sectional Observational Questionnaire-Based Survey on the Preference of Herbal Medication use among the general population of UAE. Pharmacy Practice. 2025 Jan-Marc;23(1):3020.
https://doi.org/10.18549/PharmPract.2025.1.3020

Original Research

A Cross-Sectional Observational Questionnaire-Based Survey on the Preference of Herbal Medication use among the general population of UAE

Riham Mohamed Elshafie, Mariya Ahmed, Anzal Siddiqui, Ahmed Shabeeb, Syed Wasif Gillani

Received (first version): 01-Dec-2023 Accepted: 23-Feb-2024 Published online: 20-Feb-2025

Abstract

Background: The objective of this study is to evaluate the trends of herbal medication use among the general population and preferences toward herbal medicine over allopathic medication. **Methods:** a community-based cross-sectional study was used to conduct this study. A self-developed and pre-validated questionnaire was distributed online through social media channels such as Facebook and WhatsApp to the public from different emirates in the UAE. The males and females above 18 years old were invited to participate in our study. **Results:** A total of 206 participants completed the survey with the response rate of 77.7%. The majority of participants were females 135 (65.5%) rest males 71 (34.5%). The study found no significant difference between gender and medication preference (p=0.594). The use pattern of herbal medication among the respondents, was categorized by gender. The results indicate that 63 (79.7%) of the respondents had taken herbal medication in the past 10 years, with a slightly higher proportion of females (61.9%) compared to males (38.1%). When asked if they had made their primary care providers aware of their herbal medication usage, a total of 45 (56.9%) of the respondents reported informing healthcare providers, with a higher proportion of females (57.8%) compared to males (42.2%) (p=0.013). **Conclusion:** The study concluded no gender-based differences in preferring herbal compared to allopathic medications. The study identified no significant disparities based on location or length of stay in the UAE among those using herbal medications. The study found that significantly higher number of participants (43.1%) were not informing their healthcare providers regarding the use of herbal medications.

Keywords: herbal medications; public survey; otc; public health; uae

INTRODUCTION

In the United States of America, approximately 8% of hospital admissions were attributed to unfavorable or side effects of allopathic medications.[1] Annually, over 100,000 individuals die due to these adverse reactions.[2] Surprisingly, the number of people killed by pharmaceutical drugs in the United States is at least three times larger than the number killed by drunk drivers.[3] Even seemingly "safe" over-the-counter medications can cause thousands of deaths each year.[4] On the other hand, deaths or hospitalizations related to herbal drugs are extremely rare and challenging to track.[5] In fact, the National Poison Control Centers of the United States lack a category for side effects or adverse reactions to herbs in their database.[6-7]

Consequently, an increasing number of people are turning to herbal therapy each year, believing that herbal medicines are chemical-free and safer.[8-10]

While the mechanisms of action of herbs are generally unknown, many therapeutic plants have been found to possess antioxidant properties.[11] These properties have proven effective in treating various conditions such as cancer, memory loss, Alzheimer's disease, atherosclerosis, diabetes, and other cardiovascular illnesses.[12] Additionally, the antioxidant properties of herbal remedies can help reduce the toxicity of hazardous chemicals or other treatments.[13] Overall, herbal medicines aim to promote healing and often have gentler effects.[14] However, it is essential to acknowledge that things can and do go wrong, usually due to the misidentification of plants, incorrect preparation, or improper administration.[15]

Herbal medications consist of various complex substances, such as polysaccharides and tannins, which can alter and influence the effects of the "active components".[16-17] Research has shown that providing pure and isolated elements of herbs cannot replicate the effects of whole plant extracts.[18] Unlike allopathic drugs, designed to elicit specific reactions and often associated with known side effects, herbal medications often have a range of complementary or synergistic effects on physiological systems.[19] These effects are generally in the same general therapeutic direction and tend to have minimal negative consequences.[20,21] The activities of herbal medicine are too complex to be fully explained using traditional medication action phrases.[22]

Riham Mohamed ELSHAFIE. Pharmacy Practice Department, College of Pharmacy, Taibah University, Al Madinah Al Munawwarah, Saudi Arabia; Clinical Pharmacy Department, ASUSH, Ain Shams University, Cairo, Egypt.
Mariya AHMED. College of Pharmacy, Gulf Medical University, Ajman, UAE.
Anzal SIDDIQUI. College of Pharmacy, Gulf Medical University, Ajman, UAE.
Ahmed SHABEEB. College of Pharmacy, Gulf Medical University, Ajman, UAE.
Syed Wasif GILLANI*. Chair, Department of Pharmacy Practice, College of Pharmacy, Gulf Medical University, Ajman, UAE. dr.syedwasif@gmu.ac.ae

www.pharmacypractice.org (eISSN: 1886-3655 ISSN: 1885-642X)

Herbal vs. allopathic medicine: Pharmaceutical drugs are specific in their actions and target particular pathologies, while herbal medicines can have a broad range of effects on the physiological system.[23] However, some plant remedies have actions similar to pharmaceuticals.[24]

The present study aims to examine the prevalence of herbal medicine use compared to allopathic medicine among adults in the UAE. This study focused on understanding people's preferences and views on the usage of herbal or allopathic medicine. The objective of this study is to evaluate the trends of herbal medication use among the general population and preferences toward herbal medicine over allopathic medication.

METHODOLOGY

Study design and site

A cross sectional questionnaire-based survey was conducted from September 2022 to March 2023 among the general population of the UAE.

Population and sample size

The study population included residents and local nationals of the UAE. This study was carried out among a convenience sample of the population of the UAE. the Online survey was sent to the population through social media channels and through individual messages.

A target sample size of 265 was chosen based on logistics and convenience and seems to be reasonable. confidence level is 95%, Standard deviation of 0.5, and a confidence interval (margin of error) of ± 5, z score = 1.96.

Inclusion and exclusion criteria

Our inclusion criteria included (1) participants who are 18 years old and older, (2) Residents of the UAE only, (3) participants that can read and understand English language. There were no exclusion criteria used to reach the whole population except (1) those who refused to participate in the study (2) those who refused to give consent form.

Ethical statement

Ethical approval was obtained from the Institutional Review Board (Ref. no. IRB/COP/STD/57/OCT-2022). Each participant gave their written informed consent for volunteering to participate in the study. At the start of the study, a brief explanation of the study's goals and objectives were also given. Prior to analysis, the respondents' identity was guaranteed.

Operational definition

Herbal medicines are substances derived from plants that are used to improve health, prevent disease, and treat illnesses. They can be derived from various parts of the plant, including roots, stems, leaves, flowers, or seeds. On the other hand, allopathic drugs are created using man-made chemicals rather than natural ingredients. The belief that herbal medicines are safer than allopathic drugs is widespread, leading to increased use of herbal medicine worldwide, including in the United Arab Emirates (UAE).

Questionnaire Deployment and Data Collection:

Self-administered questionnaires were used for data collection. The questionnaire was developed by the researchers and underwent evaluation for content validity and face validity by a panel of experts. It was divided into two sections: one focused on herbal medicines and the other on allopathic medications. The questionnaire also included sections to inquire about participants' attitudes towards herbal medicines and allopathic medications, their health-related characteristics, and demographic information. The questionnaire employed various response formats, including single-answer, multiple-answer, and open-ended questions to gather participants' opinions.

A pilot study was conducted among 15 volunteers to determine the validity and reliability of the questionnaire. The questionnaire showed a good reliability (Cronbach alpha = 0.812).

Data collection

All participants were invited to participate via social media channels, and convenient sampling was employed. We reached the participants by providing a link to the survey. While maintaining the respondents' identity and confidentiality, we identified the study's objectives. Responses that were incomplete were not included in the analysis. Online data was gathered, examined, and then transformed into an excel sheet. Only completed surveys were considered and further examined. Only the researchers had access to the anonymized survey responses.

Statistical analysis

The Statistical Package for Social Sciences (SPSS) version 21 was used for all analyses. Using standardized input codes, data was entered into a computer. Descriptive analysis (Percentage and frequency) was used to describe the participant's demographic variables. The association between the variables were assessed using Chi- Square and P Values. Statistical significance was set at $P < 0.05$ for all the tests. P values less than 0.05 were considered statistically significant. Continuous data were summarized as frequency (%) and categorical data as mean (SD).

RESULTS AND FINDINGS

A total of 206 participants completed the survey with the response rate of 77.7%. The majority of participants were females 135 (65.5%) rest males 71 (34.5%). The study found no significant difference between gender and medication preference (p=0.594). The Mean ± SD age was 25.68 ± 8.402 of respondents. Out of 206 participants, 79 (38.3%) preferred herbal medication, and 127 (61.7%) preferred Allopathic medication (p=0.081) in Table 1 & figure 1. The findings also showed no significant difference in medication preference based on location or length of stay in the UAE.

The use pattern of herbal medication among the respondents,

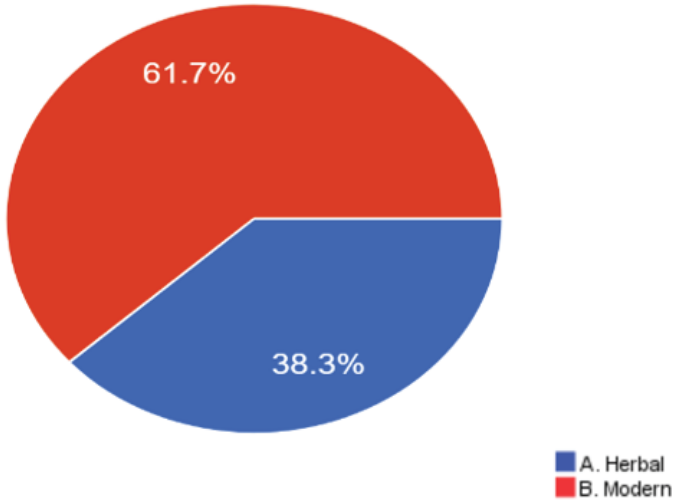

Figure 1. The respondent's preference for the use of Herbal medication and Allopathic Medication

Table 1. Demographic & Social Characteristics of Respondents Using Herbal and Allopathic Medications

Characteristics Herbal (n=79)		**Preferences n(%)**		**P value***
		Allopathic (n=127)		
Gender	Male	29 (40.8)	42 (59.2)	0.594
	Female	50 (37.0)	85 (63.0)	
Age (Mean ± SD)		25.68 ± 8.402		0.081
Where do you live in UAE?	Ajman	25 (31.6)	42 (33.0)	0.866
	Dubai	25 (31.6)	43 (33.9)	
	Sharjah	29 (36.7)	42 (33.1)	
How long have you lived in the UAE?	<1 year	7 (8.9)	5 (3.9)	0.426
	1-5 years	4 (5.1)	10 (7.9)	
	6-10 years	5 (6.3)	13 (10.3)	
	11-15 years	15 (18.9)	28 (22.0)	
	>15 years	48 (60.8)	71 (55.9)	

* Chi-square, significant difference with 0.05.

was categorized by gender. The results indicate that 63 (79.7%) of the respondents had taken herbal medication in the past 10 years, with a slightly higher proportion of females (61.9%) compared to males (38.1%). However, there was no statistically significant difference in herbal medication usage between males and females (p=0.761) in Table 2.

When asked if they had made their primary care providers aware of their herbal medication usage, a total of 45 (56.9%) of the respondents reported informing healthcare providers, with a higher proportion of females (57.8%) compared to males (42.2%) (p=0.013). (Table 2)

The frequency of herbal medication use showed that (25.3%) reported (n= 20) reported using herbal medication once a while, in contrast a total of 15 (18.9%) used on most days, and few 8 (10.1%) showed daily use practices. The majority of the respondents 77 (97.5%) reported that herbal medication helped them, while only 2 (2.5%) reported denial. (Table 2)

A total of 127 (61.6%) reported preference towards allopathic medication use. The findings showed a significant difference among the frequency of use of synthetic medication with gender (p=0.003). Specifically, a higher percentage of females 36 (42.4%) reported using synthetic medication "a few days" compared to males 8 (19.1%) (p = 0.003). In contrast, males were more reported higher trends 15 (35.7%) reported using it "most days" compared to females 12 (14.1%). (Table 3)

No significant differences were found with other questions with gender. This includes questions related to the past 10 years' usage of synthetic medication, making primary care providers aware of usage, the effectiveness of the medication, and side effects. The p-values for these questions were 0.272, 0.201, 0.393, and 0.939, respectively.

Table 2. Use Pattern of Herbals Medication (n = 79)

Questions Male (n=29)		Gender n(%) Female (n= 50)		P value*
Have you taken the herbal medicine in the past 10 years	Yes	24 (82.8)	39 (78.0)	0.761
	No	5 (17.2)	11 (22.0)	
Have you made your primary care providers aware of your usage	Yes	19 (65.5)	26 (52.0)	**0.013**
	No	10 (34.5)	24 (48.0)	
How often do you use your herbal medicine	A few days	10 (34.5)	20 (40.0)	0.987
	Every Day	3 (10.3)	5 (10.0)	
	Most days	6 (20.7)	9 (18.0)	
	None	2 (6.9)	4 (8.0)	
	Once a while	8 (27.6)	12 (24.0)	
Do this herbal medication help	Yes	28 (96.6)	49 (98.0)	0.805
	No	1 (3.4)	1 (2.0)	
Do these herbal medication have side effects	Never	23 (79.3)	39 (78.0)	0.859
	Sometimes	6 (20.7)	11 (22.0)	
	Often	0	0	

* Chi-square, significant difference with 0.05.

Table 3. Use Pattern of Allopathic Medication (n = 127)

Questions Male (n= 42)		Gender n(%) Female (n=85)		P value*
Have you taken any synthetic medication in the past 10 years	Yes	39 (92.8)	71 (83.5)	0.272
	No	3 (7.2)	14 (16.5)	
Have you made your primary care provider aware of your usage?	Yes	32 (76.2)	75 (88.2)	0.201
	No	10 (23.8)	10 (11.8)	
How often do you use your synthetic medication?	A few days	8 (19.1)	36 (42.4)	**0.003**
	Every day	11 (26.2)	9 (10.6)	
	Most Days	15 (35.7)	12 (14.1)	
	None	4 (9.5)	9 (10.6)	
	Once	4 (9.5)	19 (22.3)	
Do these medications help	Yes	39 (92.8)	83 (97.6)	0.393
	No	3 (7.2)	2 (2.4)	
Have you experienced any side effects	never	32 (76.2)	67 (78.8)	0.939
	Sometimes	9 (21.4)	16 (18.8)	
	Often	1 (2.4)	2 (2.4)	

* Chi-square, significant difference with 0.05.

DISCUSSION

The outcomes of this investigation offer valuable insights into the predilections and convictions of adults in the United Arab Emirates (UAE) concerning the utilization of herbal and allopathic medicine.[1] The discussion section systematically analyzed the results within the framework of extant literature, elucidating any concordances or disparities with studies conducted across diverse populations.[2] Additionally, the implications of these findings were deliberated upon, underscoring the paramount importance of factoring in safety and efficacy considerations in the utilization of herbal and allopathic drugs.[3]

The primary objective of the present study was to scrutinize the demographic and social attributes of respondents employing herbal and allopathic medications in the UAE. The data indicated

that there was no statistically significant difference between gender and medication preference, signifying that gender did not wield influence in determining the selection between herbal and allopathic medications.[4] This discovery is consistent with antecedent investigations.[25,26] that also reported a lack of substantive association between gender and the adoption of complementary and alternative medicine.

The average age of the respondents was 25.68, with a standard deviation of 8.402. However, specific information regarding the age range or distinct age cohorts within the sample was not provided. A more in-depth exploration into age-specific preferences and medication utilization patterns could furnish valuable insights.[5]

Concerning medication preference, 61.7% of respondents favored allopathic medication, while 38.3% favored herbal medication. Despite the non-statistically significant p-value of 0.081, it is noteworthy that there was a higher prevalence of allopathic medication use among adults, indicating a substantial proclivity toward allopathic medications.[26]

The investigation delved into the usage patterns of herbal medication among respondents, with a particular focus on gender distinctions. The results unveiled that 63.1% of respondents had utilized herbal medication in the past decade, with a slightly higher prevalence among females (71.1%) compared to males (36.9%). Nevertheless, the dissimilarity in herbal medication usage between genders did not attain statistical significance, positing that gender alone may not be a decisive factor influencing the employment of herbal medicine in the UAE. This underscores the necessity of comprehending the prevalence of herbal product use in specific regions or localities.[27]

The study identified no significant variance in medication preference based on location or length of stay in the UAE. However, future research could explore potential regional variations in herbal medication preferences within the UAE.[27]

Regarding disclosure practices to primary care providers about herbal medication usage, 47.4% of respondents acknowledged having done so. A slightly elevated proportion of females (52.0%) reported informing their providers compared to males (39.6%). While statistically non-significant, this observation implies a considerable proportion of respondents refrain from divulging their herbal medication usage to healthcare providers, with potential ramifications for coordinated and comprehensive healthcare management.[27]

Concerning the frequency of herbal medication use, the majority of respondents (43.7%) reported occasional usage, while 24.8% used it most days, and only 9.7% reported daily use. Moreover, a substantial proportion (63.1%) attested to the efficacy of herbal medication, with only a marginal percentage (1.0%) asserting its ineffectiveness. These findings underscore the prevalent perception of herbal medication as beneficial among respondents.

In summation, it is evident that the utilization of herbal and allopathic medication is subject to multifarious influences. The outcomes align with prior investigations that have reported the absence of significant gender disparities in the adoption of complementary and alternative medicine. Nonetheless, the study did not expound upon the factors impacting medication preferences or utilization patterns in the UAE, leaving room for exploration in future research endeavors.

LIMITATIONS

This study had certain limitations that should be acknowledged. Firstly, the study relied on self-reported data, which may be subject to recall bias or social desirability bias. Secondly, the cross-sectional design only captured a snapshot of participants' preferences and views at a specific point in time. Longitudinal studies could provide more insights into changes in preferences over time. Additionally, the study was conducted in the UAE, limiting the generalizability of the findings to other populations or countries.

CONCLUSION

The study concluded no gender-based differences in preferring herbal compared to allopathic medications. The study identified no significant disparities based on location or length of stay in the UAE among those using herbal medications. The study found that significantly higher number of participants (43.1%) were not informing their healthcare providers regarding the use of herbal medications. Among them 70.5% were females and rest 29.5% were males.

ACKNOWLEDGMENT: none

DECLARATIONOF INTEREST: none

FUNDING SOURCE: none

References

1. Herbal versus Synthetic Medicines [Internet]. News-Medical.net. [cited 2023 May 27]. Available from: https:///www.news-medical.net/health/Herbal-versus-Synthetic-Medicines.aspx
2. Ekor M. The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety. Front Pharmacol. 2014;4:177. https://doi.org/10.3389/fphar.2013.00177
3. James PB, Taidy-Leigh L, Bah AJ, Kanu JS, Kangbai JB, Sevalie S. Prevalence and correlates of herbal medicine use among women seeking care for infertility in Freetown, Sierra Leone. Evid Based Complement Alternat Med. 2018;2018:9493807. https://doi.org/10.1155/2018/9493807
4. Awad A, Al-Shaye D. Public awareness, patterns of use and attitudes toward natural health products in Kuwait: a cross-sectional

survey. BMC Complement Altern Med. 2014;14:105. https://doi.org/10.1186/1472-6882-14-105
5. Cecilia NC, Al Washali A, Albishty AAAMM, Suriani I, Rosliza A. The use of herbal medicine in Arab countries: a review. Int J Public Health Clin Sci. 2017;4:1-14.
6. Saleh A, Atwa H, Ismail MA. Studying complementary and alternative practices in Bedouin community: family based study, North Sinai, Egypt. World Fam Med J. 2012;99:1-9.
7. Albadr BO, Alrukban M, Almajed J, Alotaibi K, Alangari A, Bawazir A, Aljasser A. Attitude of Saudi medical students towards complementary and alternative medicine. J Fam Community Med. 2018;25:120. https://doi.org/10.4103/jfcm.JFCM_98_17
8. Wazaify M, Alawwa I, Yasein N, Al-Saleh A, Afifi FU. Complementary and alternative medicine CAM) use among Jordanian patients with chronic diseases. Complement Ther Clin Pract. 2013;19:153-7. https://doi.org/10.1016/j.ctcp.2013.03.001
9. Benzie IF, Wachtel-Galor S. Herbal medicine: biomolecular and clinical aspects: CRC press. 2011.
10. Aziz Z, Tey N. Herbal medicines: prevalence and predictors of use among Malaysian adults. Complement Ther Med. 2009;17:44-50. https://doi.org/10.1016/j.ctim.2008.04.008
11. Sawalha AF, Sweileh WM, Sa'ed HZ, Jabi SW. Self-therapy practices among university students in Palestine: focus on herbal remedies. Complement Ther Med. 2008;16:343-9. https://doi.org/10.1016/j.ctim.2007.12.002
12. Al Saeedi M, El Zubier A, Bahnassi A, Al Dawood K. Patterns of belief and use of traditional remedies by diabetic patients in Mecca, Saudi Arabia. 2003.
13. Lawshe CH. A quantitative approach to content validity. Pers Psychol. 1975;28:563-75. https://doi.org/10.1111/j.1744-6570.1975.tb01393.x
14. World Medical A. World medical association declaration of Helsinki: ethical principles for medical research involving human subjects. JAMA. 2013;310:2191-4. https://doi.org/10.1001/jama.2013.281053
15. DeVon HA, Block ME, Moyle-Wright P, Ernst DM, Hayden SJ, Lazzara DJ, et al. A psychometric toolbox for testing validity and reliability. J Nurs Scholarsh. 2007;39(2):155-164. https://doi.org/10.1111/j.1547-5069.2007.00161.x
16. Ibrahim IR, Hassali MA, Saleem F, Al Tukmagi HF, Dawood OT. Use of complementary and alternative medicines: a cross-sectional study among hypertensive patients in Iraq. J Pharm Health Serv Res. 2018;9:59-65. https://doi.org/10.1111/jphs.12209
17. AlBraik FA, Rutter PM, Brown D. A cross-sectional survey of herbal remedy taking by United Arab Emirates (UAE) citizens in Abu Dhabi. Pharmacoepidemiol Drug Saf. 2008;17:725-32. https://doi.org/10.1002/pds.1591
18. Rashrash M, Schommer JC, Brown LM. Prevalence and predictors of herbal medicine use among adults in the United States. J Patient Exp. 2017;4:108-13. https://doi.org/10.1177/2374373517706612
19. Eddouks M, Maghrani M, Lemhadri A, Ouahidi ML, Jouad H. Ethnopharmacological survey of medicinal plants used for the treatment of diabetes mellitus, hypertension and cardiac diseases in the south-east region of Morocco (Tafilalet). J Ethnopharmacol. 2002;82:97-103. https://doi.org/10.1016/S0378-8741(02)00164-2
20. Ali-Shtayeh MS, Jamous RM, Jamous RM, Salameh NM. Complementary and alternative medicine (CAM) use among hypertensive patients in Palestine. Complement Ther Clin Pract. 2013;19:256-63. https://doi.org/10.1016/j.ctcp.2013.09.001.
21. Hasan SS, Ahmed SI, Bukhari NI, Loon WCW. Use of complementary and alternative medicine among patients with chronic diseases at outpatient clinics. Complement Ther Clin Pract. 2009;15:152-7. https://doi.org/10.1016/j.ctcp.2009.02.003
22. Amira OC, Okubadejo NU. Frequency of complementary and alternative medicine utilization in hypertensive patients attending an urban tertiary care centre in Nigeria. BMC Complement Altern Med. 2007;7:30. https://doi.org/10.1186/1472-6882-7-30
23. Valli G, Giardina EG. Benefits, adverse effects and drug interactions of herbal therapies with cardiovascular effects. J Am Coll Cardiol. 2002;39:1083-95. https://doi.org/10.1016/S0735-1097(02)01749-7
24. Chao MT, Wade C, Kronenberg F. Disclosure of complementary and alternative medicine to conventional medical providers: Variations by race/ethnicity and type of CAM. J Natl Med Assoc. 2008;100(11):1341-9. https://doi.org/10.1016/s0027-9684(15)31514-5
25. Adibe, Professor Maxwell. Prevalence of concurrent use of herbal and synthetic medicines among outpatients in a mission hospital in Nigeria. International Journal of Drug Development & Research. 1. 2009
26. Harnack LJ, Rydell SA, Stang J. Prevalence of use of herbal products by adults in the Minneapolis/St Paul, Minn, Metropolitan area. Mayo Clin Proc. 2001;76(7):688-94. https://doi.org/10.4065/76.7.688
27. Bisrat H, Anteneh H, Fekadu F, Ranyia A A-M. A Survey on the Use of Complementary and Alternative Medicine Among Ethiopian Immigrants in the USA. J Complement Med Alt Healthcare. 2017;1(4):555-68. https://doi.org/10.19080/JCMAH.2017.01.555568