World Journal of Biology Pharmacy and Health Sciences
eISSN: 2582-5542
Cross Ref DOI: 10.30574/wjbphs
Journal homepage: https://wjbphs.com/

(RESEARCH ARTICLE)

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USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN MOROCCO

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World Journal of Biology Pharmacy and Health Sciences, 2026, 28(02), 195–200

Publication history: Received in 10 August 2026; revised on 21 November 2026; accepted on 23 November 2026

Article DOI: https://doi.org/10.30574/wjbphs.2026.28.2.0546

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ABSTRACT

Complementary and alternative medicine (CAM) use is relevant to pharmaceutical counselling. This study aimed to describe CAM use in a sample recruited in community pharmacies and online in Morocco. An anonymous cross-sectional questionnaire survey was conducted from March to December 2020 in two pharmacies and three Facebook groups. Convenience sampling was used. Results were described separately by recruitment mode. Among 177 respondents, previous CAM use was reported by 47/80 pharmacy respondents (58.8%) and 42/97 online respondents (43.3%), corresponding to 50.3% overall. Herbal medicine was used by 43.8% and 30.9%, respectively. Relatives and acquaintances were frequently cited as information sources. These observations support exploring CAM use during pharmaceutical counselling. Non-probability recruitment and inconsistencies in some source data limit the generalisability of the findings.

Keywords: Complementary therapies; Herbal medicine; Community pharmacy; Cross-sectional survey; Morocco

1 INTRODUCTION

Complementary and alternative medicine (CAM) encompasses products and practices that differ in their use, supporting evidence and risks. Considering them together in a survey allows healthcare-seeking behaviour to be described, but does not imply shared efficacy or established safety. The World Health Organization (WHO) Global Traditional Medicine Strategy 2025–2034 emphasises the need to strengthen evidence and address the safety of traditional and complementary practices [1].

In Morocco, ethnobotanical surveys have documented the therapeutic use of plants for metabolic, cardiac and renal diseases [2]. A study published in 2025 in Settat Province combined interviews with herbalists and an online survey of local residents, illustrating the value of documenting different information and supply channels [3]. These studies describe local practices rather than providing a national estimate of CAM use.

Community pharmacies offer a relevant setting for exploring these practices. A survey of 284 pharmacies in the Fez-Meknes region documented the marketing of phytomedicines and food supplements [4]. That study examined pharmacy supply, whereas the present survey addresses respondents' reported practices; these perspectives are complementary.

Communication with healthcare professionals is another consideration. In a Canadian survey of naturopathic clinic attendees, being asked by a physician about natural product use was associated with discussing that use [5]. Although this finding cannot be directly transferred to Morocco, it supports examining information sources and communication in surveys of CAM use.

The primary objective of this study was to describe self-reported CAM use in a sample recruited in community pharmacies and online in Morocco. Secondary objectives were to describe awareness and use of selected practices, information sources, perceptions and reported discussions with a physician or pharmacist.

2 MATERIALS AND METHODS

2.1 Study design and setting

This observational cross-sectional survey was conducted from March to December 2020. Recruitment began in one pharmacy over a fifteen-day period before lockdown, continued through social media, and subsequently resumed in a second pharmacy located in what the thesis described as a more working-class neighbourhood. The pharmacies were located in Mohammedia and Rabat. Online recruitment used the Facebook groups "J'ai testé à Rabat", "J'ai testé et je recommande à Mohammedia" and "J'ai testé à Marrakech". Group membership does not establish respondents' place of residence.

2.2 Participants and recruitment

The target population was the general public. The thesis describes unselected attendees without formal inclusion or exclusion criteria. Recruitment therefore constituted convenience sampling, with voluntary participation online. The number of people approached, refusals and procedures to prevent duplicate responses were not documented. No prior sample size calculation was reported. No minors participated in the study.

2.3 Questionnaire and variables

The questionnaire appended to the thesis collected sex, age group, educational level, health coverage and a monthly income category. It also explored awareness of CAM, previous use, types of practices used, indications, motivations, information sources, perceptions, perceived adverse events and communication with a physician or pharmacist. Listed practices included herbal medicine, aromatherapy, homeopathy, acupuncture, mesotherapy, osteopathy, hijama and hypnosis.

The primary outcome was an affirmative response to a question about ever having used one or more CAM practices, without a restricted recall period. This represents self-reported lifetime use rather than current use. Awareness referred to reported recognition of a practice, rather than a validated assessment of knowledge. Opinions and perceived benefits were not measures of clinical efficacy. Questionnaire validation, pretesting, administration language and equivalence between pharmacy and online versions were not specified in the source document.

2.4 Data analysis

According to the thesis, initial data entry and analysis used Excel and the Statistical Package for the Social Sciences (SPSS). For this manuscript, consistent aggregate counts underwent arithmetic verification. Categorical variables are described as counts and percentages, separately by recruitment mode. The 95% confidence intervals (CIs) for proportions reporting CAM use were calculated using the Wilson method. These intervals describe binomial uncertainty conditional on the observed data; they do not correct selection bias or establish national representativeness.

No missing values were imputed, and counts for individual practices were not reconstructed from rounded percentages. Variables with unresolved inconsistencies, particularly sex in the pharmacy group and health coverage, were not used in association analyses. No multivariable analysis was performed using the aggregate data alone. Comparisons between recruitment modes are descriptive, and no independent determinants of CAM use are asserted.

Reporting draws on the transparency principles of Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) for observational studies and the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) for online surveys [6,7]. Undocumented information is identified as such; full compliance with these reporting frameworks is not claimed.

2.5 Ethical considerations

The questionnaire was anonymous, participation was voluntary and data confidentiality was maintained. The authors report that ethics committee approval was not required for this anonymous questionnaire survey; no formal ethics approval was obtained. Consent to participate was obtained orally. No minors participated in the study.

3 RESULTS

3.1 Participation and available characteristics

The study included 177 respondents: 80 recruited in pharmacies and 97 online. The online group included 56 women (57.7%) and 41 men (42.3%). Sex distribution in the pharmacy group was not analysed because of unresolved inconsistencies. University education was reported by 24/80 pharmacy respondents (30.0%) and 67/97 online respondents (69.1%). Table 1 presents sociodemographic characteristics with internally consistent counts in the source tables.

Age was described in categories, as collected in the questionnaire. Mean age and income were not retained because the individual data needed to verify these estimates were unavailable. Health coverage was excluded from the main description because of discrepancies between the source text and tables.

Table 1: Available sociodemographic characteristics

Characteristic	Pharmacy n = 80	Online n = 97
Age below 20 years	2 (2.5%)	16 (16.5%)
Age 21–39 years	23 (28.8%)	58 (59.8%)
Age 40–60 years	30 (37.5%)	18 (18.6%)
Age above 60 years	25 (31.3%)	5 (5.2%)
No formal schooling or primary education	31 (38.8%)	10 (10.3%)
Secondary education	25 (31.3%)	20 (20.6%)
University education	24 (30.0%)	67 (69.1%)

Counts were taken from the thesis cross-tabulations; percentages were recalculated using 80 pharmacy respondents and 97 online respondents. Original age categories were retained; the questionnaire leaves age twenty unclassified. Totals may differ from 100% because of rounding. Educational level replaces the imprecise term sociocultural level.

3.2 Previous use and awareness of selected practices

Previous use of at least one CAM practice was reported by 47/80 pharmacy respondents (58.8%; 95% CI 47.8–68.9) and 42/97 online respondents (43.3%; 95% CI 33.9–53.2). Overall, 89 of 177 respondents reported previous use (50.3%; 95% CI 43.0–57.6). The descriptive difference between recruitment groups was 15.5 percentage points. The combined proportion is not a national prevalence estimate (Table 2).

Table 2: Previous use of complementary and alternative medicine

Recruitment	Yes	No	Proportion and 95% CI
Pharmacy	47	33	58.8% [47.8–68.9]
Online	42	55	43.3% [33.9–53.2]
Combined	89	88	50.3% [43.0–57.6]

CI: confidence interval, calculated using the Wilson method. The groups include 80 pharmacy respondents and 97 online respondents. The intervals do not correct selection bias from convenience sampling.

Herbal medicine was the most widely recognised practice among those described, followed by hijama in both groups. Reported recognition of hypnosis and aromatherapy was higher among online respondents. Herbal medicine use was

reported by 43.8% of pharmacy respondents and 30.9% of online respondents. These proportions refer to all respondents within each recruitment group, rather than only to CAM users (Table 3).

Table 3: Awareness and reported use of selected practices

Indicator	Pharmacy n = 80	Online n = 97
Awareness of herbal medicine	96.2%	77.3%
Awareness of hijama	77.5%	71.1%
Awareness of aromatherapy	36.2%	53.6%
Awareness of hypnosis	27.5%	58.8%
Use of herbal medicine	43.8%	30.9%
Use of hijama	8.8%	3.1%

Percentages reported in the thesis, rounded to one decimal place, based on 80 pharmacy respondents and 97 online respondents. Multiple practices could be reported; proportions are not additive. Raw counts for each practice remain to be confirmed.

3.3 Information sources and communication with professionals

Relatives and acquaintances were frequently cited as information sources, and a positive experience reported by someone close to the respondent was cited as a reason for use. Numerical results for these items were not retained because the aggregate data did not allow their denominators or possible multiple responses to be verified. The communication question combined physicians and pharmacists; available data did not allow CAM users among its respondents to be identified with certainty. Therefore, neither a non-disclosure proportion among users nor a pharmacist-specific indicator was calculated.

3.4 Perceptions and reported adverse events

Perceptions varied, including favourable opinions and concerns about risks or lack of effect. Satisfaction proportions are not presented as therapeutic response rates. The thesis mentioned one account of clinical worsening attributed by a respondent to a practice. No clinical verification or causality assessment supported a causal relationship. This self-reported information does not allow the incidence of adverse events to be estimated.

4 DISCUSSION

4.1 Interpretation of the main findings

This survey describes previous CAM use in approximately half of the respondents, with a higher proportion in the pharmacy group. Herbal medicine played a prominent role in both groups. These observations describe self-reported practices in a community sample; they do not measure use in the Moroccan population or the efficacy of the practices.

The prominence of medicinal plants is consistent with practices described in Moroccan ethnobotanical surveys [2,3]. The Settat study published in 2025 examined plants and their modes of use, recruiting herbalists and online respondents [3]. It illustrates the value of examining complementary channels, but its methodology does not permit direct comparison of prevalence with the present survey.

Moroccan clinical studies provide another perspective. At the National Institute of Oncology in Rabat, a study of 100 patients reported medicinal plant use in 45% and highlighted the role of relatives and acquaintances [8]. In Marrakech, a survey of 170 patients with breast cancer reported herbal medicine use in 37% [9]. These studies involve cancer populations and do not measure the same phenomenon as lifetime use of any CAM practice. They support the relevance of the research question, but not direct comparison or extrapolation to the general public.

Differences between recruitment groups may reflect age, education, digital access or pharmacy attendance. University education was more frequent among online respondents. It would therefore be inappropriate to attribute the difference in use to data collection mode alone. Without verified individual-level data and adjusted analysis, no independent or causal relationship can be established.

4.2 Implications for pharmacy practice

The role of relatives and acquaintances and reports of limited communication with professionals support exploring CAM use during pharmaceutical consultations. However, the survey item did not distinguish physicians from pharmacists or establish reasons for a lack of discussion. It therefore cannot measure pharmacists' specific contribution or establish inadequate counselling.

Busse and colleagues reported an association between physician questioning and discussion of natural products [5]. In a United States survey of 127 pharmacists, Carr and Santanello also reported inconsistent enquiry and documentation of herbal medicine use [10]. These observations from other healthcare systems support studying communication quality in Moroccan community pharmacies; they do not demonstrate the effectiveness of an intervention in the present sample.

An approach for future evaluation could include an open question about products and practices used, recording exact names and patterns of use, identifying concomitant treatments and referring for medical assessment when indicated. The Fez-Meknes survey documented phytomedicines in the pharmacy supply channel [4], but the present study measures neither dispensing quality nor the effects of counselling. The benefits of such measures would require a dedicated evaluation.

The small number of reported adverse events does not establish safety. The questionnaire provided neither prospective follow-up of exposures nor clinical confirmation of events. The diversity of CAM calls for product-specific or practice-specific assessment rather than an overall safety judgement. This caution is consistent with the emphasis on evidence quality and safety in the WHO strategy [1].

In a survey of attendees consulting a herbalist in Fes, Zeggwagh and colleagues identified potentially toxic plants among the prescriptions studied [11]. This illustrates the importance of documenting species, preparations and doses. Our questionnaire did not allow such characterisation or an analysis of interactions; no conclusions about the risk of a specific plant can be drawn from these results.

4.3 Strengths and limitations

Recruitment in two settings allowed different profiles to be described and included people who might be less likely to complete an exclusively online questionnaire. The questionnaire included in the thesis also allows the reported variables to be compared with how they were collected.

Limitations include convenience sampling, voluntary participation, small recruitment groups and the absence of a verifiable response rate. Responses are susceptible to recall, social desirability and comprehension biases. Lifetime use does not establish current practice. The pandemic altered recruitment, but its effect on CAM use could not be isolated.

Lifetime recall, uncertain denominators and multiple responses, and inconsistencies in certain variables limit the precision of secondary results. No minors participated; the original age categories leave age twenty unclassified. Data were collected in 2020 and may not reflect current use. The added 95% CIs describe conditional statistical uncertainty but do not account for selection bias or reporting error.

Future surveys should specify a recall period, distinguish complementary use from replacement of conventional treatment, identify products, separate discussions with physicians and pharmacists, and document non-response. Online recruitment, duplicate prevention and participation rates should be described using CHERRIES [7]. A recent multicentre survey would be more appropriate for assessing current practices than assigning an updated date to these historical data.

5 CONCLUSION

In this sample recruited in community pharmacies and online in 2020, previous CAM use was frequent and herbal medicine played a prominent role. These observations support routinely exploring such use during pharmaceutical consultations. Between-group differences remain exploratory, and the data establish neither efficacy, safety nor independent determinants of use.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

All authors declare no conflict of interest.

Statement of informed consent

Informed Consent to participate was obtained orally.

Author contributions

Youness Motya, Jihane El Aydi and Yassir Bousliman all contributed to the preparation of the original French manuscript before its translation into English.

Data availability

The study dataset is anonymised. Enquiries concerning access to the data should be directed to the corresponding author.

Thesis origin and prior dissemination

This manuscript was developed from the pharmacy thesis authored by Jihane El Aydi and supervised by Professor Yassir Bousliman.

Use of artificial intelligence

Artificial intelligence assistance was used to structure and rephrase the text, identify inconsistencies, suggest bibliographic additions and generate an arithmetic verification script. It was also used to translate the manuscript and tables from French into English. Proportions and their confidence intervals were recalculated from aggregate thesis counts. The authors are responsible for verifying the data, references, translation and conclusions and for approving the final manuscript.

REFERENCES

[1] World Health Organization. Global traditional medicine strategy 2025–2034 [Internet]. Geneva: WHO; 2025 [cited 2026 Nov 8]. Available from: https://www.who.int/teams/integrated-health-services/traditional-complementary-and-integrative-medicine/global-strategies

[2] Jouad H, Haloui M, Rhiouani H, El Hilaly J, Eddouks M. Ethnobotanical survey of medicinal plants used for the treatment of diabetes, cardiac and renal diseases in the North centre region of Morocco (Fez–Boulemane). J Ethnopharmacol. 2001;77(2-3):175-82. doi:10.1016/S0378-8741(01)00289-6.

[3] Lahyaoui M, Dakka N, El Menyiy N, Sobeh M, Razi P, Goh KW, et al. Ethnobotanical survey of medicinal and aromatic plants used by the population of Settat Province, Morocco. Heliyon. 2025;11(3):e42323. doi:10.1016/j.heliyon.2025.e42323.

[4] Es-Safi I, Mechchate H, Amaghnouje A, El Moussaoui A, Cerruti P, Avella M, et al. Marketing and legal status of phytomedicines and food supplements in Morocco. J Complement Integr Med. 2021;18(2):279-85. doi:10.1515/jcim-2020-0168.

[5] Busse JW, Heaton G, Wu P, Wilson KR, Mills EJ. Disclosure of natural product use to primary care physicians: a cross-sectional survey of naturopathic clinic attendees. Mayo Clin Proc. 2005;80(5):616-23. doi:10.4065/80.5.616.

[6] von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP; STROBE Initiative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. PLoS Med. 2007;4(10):e296. doi:10.1371/journal.pmed.0040296.

[7] Eysenbach G. Improving the quality of Web surveys: the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). J Med Internet Res. 2004;6(3):e34. doi:10.2196/jmir.6.3.e34.

[8] El Orfi N, Boutayeb S, Haddou Rahou B, Aitouma A, Souadka A. Use of medicinal plants by cancer patients at the National Institute of Oncology, Rabat: a cross-sectional survey. Pan Afr Med J. 2021;40:18. doi:10.11604/pamj.2021.40.18.24992.

[9] Baladi A, El Fadli M, Tafenzi HA, El Bouaouidi K, Benhima N, Afani L, et al. Prevalence and associated factors of herbal medicine use among breast cancer patients: a cross-sectional study in Morocco. Ecancermedicalscience. 2024;18:1786. doi:10.3332/ecancer.2024.1786.

[10] Carr A, Santanello C. Pharmacists' knowledge, perceptions, and practices regarding herbal medicine. Innov Pharm. 2019;10(3). doi:10.24926/iip.v10i3.2059.

[11] Zeggwagh AA, Lahlou Y, Bousliman Y. Enquête sur les aspects toxicologiques de la phytothérapie utilisée par un herboriste à Fès, Maroc. Pan Afr Med J. 2013;14:125. doi:10.11604/pamj.2013.14.125.1746.