

1 **DOI: <https://doi.org/10.47391/JPMA.180>**

2
3 **Saudi women's complementary alternative medicine practice and**
4 **attitudes in superficial injuries first aids**

5
6 **Samah Fathy Ibrahim¹, Sara Almujaivel², Shatha Bejad Al-harbi³, Aysha**
7 **Abdoh Alessa⁴, Ghaida Abdullah Alkfari⁵, Majdoleen Dakhil Al-Najim⁶**

8 **1** Department of Forensic Medicine and Clinical Toxicology, Princess Nourah Bint
9 Abdulrahman University, Riyadh, Saudia Arabia; **2-6** MBBS 4th Year Student, Princess
10 Nourah Bint Abdulrahman University, Riyadh, Saudia Arabia.

11 **Correspondence:** Samah Fathy Ibrahim **Email:** samahibraheem@yahoo.com

12
13 **Abstract**

14 **Objective:** To detect Saudi women's complementary and alternative medicine
15 (CAM) practice and attitudes in superficial injuries first aids.

16 **Methods:** A cross-sectional descriptive study included 500 women from
17 Princess Nourah bint Abdul Rahman University, Riyadh, Saudi Arabia. Pre-
18 designed questionnaire was used to collect their socio-demographic
19 characteristics, complementary and alternative medicine practice and attitude in
20 superficial injuries first aids.

21 **Results:** Most of the participants were young non-married women coming from
22 middle regions. Burn and superficial cuts represented the commonest superficial
23 injuries. Honey and medical herbs; myrrh were the commonly used CAM. Most
24 participants agreed that CAM is available. Half of participants believed that
25 CAM is safe that could be used without medical consultation.

26 **Conclusion:** There is increased interest and positive attitudes toward CAM use
27 among Saudi women, yet they are not aware about its interactions and side
28 effects.

29 **Keywords:** Complementary, Alternative medicine, Honey, Medical herbs,
30 Attitude, Safety, Efficacy, female, Saudi Arabia

31

32 **Introduction**

33 Complementary and alternative medicine (CAM) is defined by the World
34 Health Organization (WHO) as ‘the health practices, approaches, knowledge
35 and beliefs incorporating plant, animal and mineral-based medicines, spiritual
36 therapies, manual techniques and exercises, applied singularly or in combination
37 to treat, diagnose and prevent illnesses or maintain well-being’ (1).

38 Eighty percent of Asian and African populations rely on CAM for their primary
39 health-care needs. It might be based on their historical, societal norms or
40 cultural traditions, rather than on scientific evidence (2).

41 A superficial injury is an injury that affects skin only without affecting the
42 underlying muscles or organs. It includes bruises, lacerations, cuts and
43 abrasions. It heals in a short duration by primary healing provided infection
44 does not occur(3).

45 Due to the rise in wound care financial burden, complementary products are
46 becoming popular to overcome this obstacle (2). Moreover, Al-Daihan et al.
47 (2013) studied the antibacterial activity of four medicinal plants that are used as
48 herbal treatment by Saudi community. They found that *Z. officinale* and *C.*
49 *longa* could facilitate rapid wound healing due to its antibacterial activity (4).

50 Previous studies have investigated CAM use among Saudi population in
51 managing their chronic health problems. Al-Faris et al (2008) concluded that
52 failure of pharmacological therapy was the most important determinant of
53 alternative medicine use (5). In addition, Al-Rowais (2002) who studied the
54 prevalence of the herbal medicine use among diabetics, concluded that 17% of
55 the participants used herbal medicine (6). However, this study aimed to
56 determine the characteristics and attitudes of women using CAM in managing
57 superficial injuries for themselves and their family members especially children.

58 The collected data would guide the planning of effective strategies to raise
59 CAM awareness among general population especially females; who are
60 providing the majority of informal care to their families.

61

62 **Subjects and Methods**

63 Princess Nourah bint Abdulrahman's International Review Board approved
64 this cross-sectional observational study (H-01-R-059). Research assistants
65 met and interviewed women along selected areas within Princess Nourah bint
66 Abdulrahman University (PNU) for women, Riyadh, Saudi Arabia at pre-
67 determined time periods. To select meeting sites, all possible locations
68 leading to recreational center in middle of the university were selected. At
69 each site, interviews were conducted on two week days for three months.
70 Primary inclusion criteria were the ability and willingness of females to
71 participate. There were no specific exclusion criteria.

72 The minimal needed convenient sample, was taken from 65,000 Saudi female
73 attending PNU(7), was calculated using n4Studies program; estimating a
74 finite population proportion (8), with the following assumptions: standard
75 deviation ($\sigma=1.96$), level of significance 5% ($\alpha=0.05$), level of precision
76 ($d=0.2$), prevalence rate of CAM usage in previous study was about 30% (9).
77 The minimal needed sample size was 367 participants and it was increased to
78 five hundred to increase the results' confidence.

79 The data was collected using a pre-designed paper-and- pencil
80 questionnaire(9, 10).

81 Variables for assessing socio-demographic characteristics included age (in
82 years), level of education (primary, high, college, postgraduate), major
83 (medical versus non-medical), home residence (north, south, east, west,
84 middle), social status (single, married, widow/divorced) and monthly family
85 income. In addition to describing the study sample, these variables were used
86 as covariates in multivariate comparison analyses.

87 The following data; sources of CAM information, pattern of topical CAM
88 practices in managing superficial injuries, and participant's attitudes toward
89 topical CAM; were also collected.

90 Personal attitudes toward using CAM in managing superficial injuries were
91 rated using 3-level Likert scale with 1= disagree to 3 agree. Cronbach alpha
92 was 0.87 for the tested attitudes.

93 The questionnaire was pilot tested and then modified to ensure that questions
94 were comprehensible and clear. Before the survey, the trained data collectors
95 explained the study objectives and distributed the consent sheet together with
96 the questionnaire to all females. Females who agreed to participate in the
97 study signed the consent form and filled the questionnaire. Data collectors
98 immediately checked for completeness and any potential errors. The
99 participant was asked to fill in the items with missing data and /or to correct
100 errors if any.

101 All data were collected and analyzed using SPSS version 15 (SPSS Inc.,
102 Chicago, IL, USA). P-value less than 0.05 was considered statistically
103 significant. The results were further verified using multiple logistic regression
104 to control for covariates.

105

106 **Results**

107 There were 500 participants with age ranging from 21 to 30 years; average age
108 was 27 ± 9.6 years. They were divided into CAM users (45.6%) and CAM non-
109 users (54.4%). A greater portion of CAM users were young single female
110 coming from middle regions of Saudi Arabia with relatively poor
111 socioeconomic conditions, and attained non-medical college education. A
112 significant difference between the two groups was observed in all studied socio-
113 demographic characteristics (p -value<0.05) table 1.

114 Figure 1 shows that nearly half of the all participants had heard about CAM
115 from family member or friend (27%) followed by media and internet (18%)

116 Among the 228 CAM users, seventy percent used CAM many times in caring
117 superficial injuries as shown in figure 2. The common CAM treated superficial
118 injuries are presented in figure 3. Honey was higher in burn first aids (75%),
119 myrrh in superficial cuts (34%) and insects' stings (11%), while cold water
120 (39%) and olive oil (33%) in bruising. The main motivations for CAM users
121 were CAM ability to relief pain (83%) and reduce wound complication (75%)
122 as in figure 4.

123 Participants had a positive attitude toward CAM because of its availability
124 (70%), increasing public awareness through campaigns (64%), its effectiveness
125 (22%) and scientific researchers are effectively encourage CAM usage (22%).
126 Half of participants believed that CAM is safe that can be used with other
127 medications without medical consultation Table 2.

128

129 **Discussion**

130 The CAM self therapy in managing health related problems has been on the
131 rise. The individual decision is highly affected by the lay press to try over-the-
132 counter remedies(10).

133 Both gender use CAM, however, women have positive attitude toward trying
134 and frequently use CAM (11, 12). They are more conscious of their health and
135 are more open-minded (13). This study investigated Saudi
136 women's characteristics and attitude toward topical CAM in superficial injuries.

137 In this study, the rate of CAM use among women was in agreement with studies
138 done by Akyol et al.(11)and Guven et al.(12). However, AL-Alami et al.
139 (2017)found that the majority of CAM users were female who represent 27% of
140 the participants (14). The lower rate of CAM use could reflect individual
141 awareness about CAM potential side effects and interactions (10).

142 CAM use was significantly higher among young single woman coming from
143 middle regions of Saudi Arabia with relatively poor socioeconomic conditions,
144 and attained non-medical college education. With growing age, CAM usage is

145 amplified due to increase in health related problems (9, 15). However,
146 adolescents might decide to opt for treatments that fall outside the boundary of
147 mainstream medicine to develop skills to make the transition to adulthood (13).

148 The majority of individuals with low socioeconomic level depicted difficulties
149 in visiting physicians (9) and consumed the available environmental sources
150 (12). Moreover, family support of using CAM is rooted in personal beliefs
151 regarding effectiveness and traditional health approaches (16). Wootton and
152 Sparber suggested a bimodal CAM usage, in which higher-income families use
153 disposable CAM products as a supplement standard health care and lower-
154 income families use traditional healing as a substitute for conventional care.
155 (17)

156 Half of the participants had their knowledge from close related contacts, i.e.,
157 family members and friends. This explored the influence of people around
158 women on their CAM use decision as they provided assistance in informing
159 about success of treatment for health problems (16). This is in agreement with
160 the results of a study done by Adusumilli et al (2004). They studied the
161 prevalence of herbal medicine use in surgical patients (10).

162 Honey was most frequently used CAM in this study. The results are in
163 consistent with Al-Faris et al.(5), and Elolemy and Albedah(9) who stated that
164 CAM use is related to habits, beliefs and religious background among Saudi
165 population. In addition the medical herbs, including myrrh and krameria, were
166 also used (10, 11).

167 CAM preference is influenced by factors like public interest, difference in
168 participants' culture, knowledge, socioeconomic level, CAM availability and
169 health related problems (16).

170 In our study, presence of burn is a contributor to use honey, while presence of
171 superficial cuts is a contributor to use myrrh. Honey headed the Saudi CAM list
172 and is known as the best natural dressing. It reduces inflammation, controls
173 infection and relieves pain with soothing action. (18) Myrrh has been used as a

174 traditional remedy in Arab countries (e.g. Saudi Arabia) for long time. Early
175 Muslim scholars reported its many medicinal uses (4). Myrrh has been used
176 to treat wounds and ulcers due to its antioxidant, anti-inflammatory and
177 analgesic properties (19).

178 Saudi women also perceived that CAM has pain-relieving effects and reduce
179 wound complications, which is similar to results from Al-Daihan et al. and
180 Bakhotmah et al. (4, 18).

181 Saudi women sample having positive attitude towards CAM in superficial
182 injuries first aids, comprehended that CAM is safe, and could be used with other
183 prescribed medications without medical consultation. Unfortunately, this belief
184 could lead to unsuspected interactions with prescribed medications. For
185 instance, honey causes moderate slowing of blood clotting, which could
186 increase the chances of bruising and bleeding if it is taken with non-steroidal
187 anti-inflammatory drugs(20).

188 Our study has some limitations. For instance, our sample type was convenience
189 sampling of female presented in Princess Nourahbint Abdulrahman University.
190 There might have been a bias towards CAM listed with underreporting of those
191 not listed. However, this questionnaire has been hypothesized on the most
192 available CAM methods in Saudi Arabia (4, 5, 18).

193

194 **Conclusion**

195 CAM use in managing superficial injuries is highly accepted among Saudi
196 women due to its availability and safety when used with other medications.

197

198 **Recommendation**

199 Therefore, we would like to recommend that every medical file should reflect
200 the individual's CAM use with reporting its effects and training programs
201 should be planned to raise awareness among medical staffs and general
202 population.

203 **Disclaimer:** None to declare.

204 **Conflict of Interest:** None to declare.

205 **Funding Sources:** This research was funded by the Deanship of Scientific
206 Research at Princess Nourah bint Abdulrahman University through the fast-
207 track research-funding program.

208

209 **References**

210 1. World Health Organization. Traditional medicine: Fact sheet N134. 2008
211 [28 November 2018]. Available from:
212 <http://www.who.int/mediacentre/factsheets/fs134/en/>

213 2. Dorai AA. Wound care with traditional, complementary and alternative
214 medicine. Indian Journal of Plastic Surgery : Official Publication of the
215 Association of Plastic Surgeons of India. 2012;45(2):418-24.

216 3. Godoy T. How does a superficial injury occur? How is it treated? 2016
217 [10 October 2018]. Available from: <https://www.quora.com/How-does-a-superficial-injury-occur-How-is-it-treated>.

219 4. Al-Daihan S, Al-Faham M, Al-shawi N, Almayman R, Brnawi A, zargar
220 S, et al. Antibacterial activity and phytochemical screening of some medicinal
221 plants commonly used in Saudi Arabia against selected pathogenic
222 microorganisms. Journal of King Saud University - Science. 2013;25(2):115-20.

223 5. Al-Faris EA, Al-Rowais N, Mohamed AG, Al-Rukban MO, Al-Kurdi A,
224 Balla Al-Noor MA, et al. Prevalence and pattern of alternative medicine use: the
225 results of a household survey. Annals of Saudi medicine. 2008;28(1):4-10.

226 6. Al-Rowais NA. Herbal medicine in the treatment of diabetes mellitus.
227 Saudi medical journal. 2002;23(11):1327-31.

228 7. Princess Nora bint Abdul Rahman university. 2018 [18 October 2018].
229 Available from:
230 https://en.wikipedia.org/wiki/Princess_Nora_bint_Abdul_Rahman_University.

- 231 8. WD W. Biostatistics: A Foundation of Analysis in the Health Sciences.
232 Chichester—Brisbane—Toronto—Singapore: John Wiley and Sons; 1995.
- 233 9. Elolemy AT, AlBedah AM. Public knowledge, attitude and practice of
234 complementary and alternative medicine in Riyadh region, Saudi Arabia. Oman
235 medical journal. 2012;27(1):20.
- 236 10. Adusumilli PS, Ben-Porat L, Pereira M, Roesler D, Leitman IM. The
237 prevalence and predictors of herbal medicine use in surgical patients¹. Journal
238 of the American College of Surgeons. 2004;198(4):583-90.
- 239 11. Akyol AD, Yildirim Y, Toker E, Yavuz B. The use of complementary
240 and alternative medicine among chronic renal failure patients. Journal of clinical
241 nursing. 2011;20(7-8):1035-43.
- 242 12. Guven SD GM, Erturk NE, Özcan A. Use Of Complementary And
243 Alternative Treatment In The Patients with Hypertension. Balikesir Health
244 Sciences Journal 2013;2(3):160-6.
- 245 13. Patterson C, Arthur H. A complementary alternative medicine
246 questionnaire for young adults. Integr Med Insights. 2009;4:1-11.
- 247 14. ALAlami U, Saeed KA, Khan MA. Prevalence and Pattern of Traditional
248 and Complementary Alternative Medicine Use in Diabetic Patients in Dubai,
249 UAE. Arab Journal of Nutrition and Exercise (AJNE). 2017:118-27.
- 250 15. Miller MF, Bellizzi KM, Sufian M, Ambs AH, Goldstein MS, Ballard-
251 Barbash R. Dietary supplement use in individuals living with cancer and other
252 chronic conditions: a population-based study. Journal of the American Dietetic
253 Association. 2008;108(3):483-94.
- 254 16. Patterson C, Arthur H. A complementary alternative medicine
255 questionnaire for young adults. Integrative medicine insights. 2009;4:IMI.
256 S2281.
- 257 17. Wootton JC, Sparber A. Surveys of complementary and alternative
258 medicine: part I. General trends and demographic groups. Journal of alternative
259 and complementary medicine (New York, NY). 2001;7(2):195-208.

260 18. Bakhotmah BA, Alzahrani HA. Self-reported use of complementary and
261 alternative medicine (CAM) products in topical treatment of diabetic foot
262 disorders by diabetic patients in Jeddah, Western Saudi Arabia. BMC research
263 notes. 2010;3(1):254.

264 19. Nomicos EY. Myrrh: medical marvel or myth of the magi? Holistic
265 nursing practice. 2007;21(6):308-23.

266 20. Ahmed A, Khan RA, Azim MK, Saeed SA, Mesaik MA, Ahmed S, et al.
267 Effect of natural honey on human platelets and blood coagulation proteins.
268 Pakistan journal of pharmaceutical sciences. 2011;24(3):389-97.

269

270 -----

271

272

Provisionally Accepted for Publication

Table 1: Participants by socio-demographic characteristics.

Characteristics	Total No=500	CAM users No 228=(45.6%)	CAM non-users No=272 (54.4)%	P-value
<u>Age group (years)</u>				
≤20	147	49(33.3%)	98(66.7%)	0.000
21-30	209	92(44%)	117(56%)	
31-40	100	61(61%)	39(39%)	
≥41	44	26(59.1%)	18(40.9%)	
<u>Saudi region of origin</u>				
North	43	17(39.5%)	26(60.5%)	0.015
South	117	68(58%)	49(42%)	
East	30	13(43.3%)	17(56.7%)	
West	40	12(30%)	28(70%)	
Middle	270	118(43.7%)	152(56.3%)	
<u>Marital Status*</u>				
Single	313	119(38%)	194(62%)	0.000
Married	166	93(56%)	73(44%)	
Widow/Divorced	21	16(76.2%)	5(23.8%)	
<u>Family Income</u>				
High	168	64(38%)	104(62%)	0.004
Middle	107	48(45%)	59(55%)	
Low	225	116(51.8%)	109(48.2%)	
<u>Level of Education</u>				
College and above	378	157(41.5%)	221(58.5%)	0.001
High school	114	65(57%)	49(43%)	
Primary school	8	6(75%)	2(25%)	
<u>Major</u>				
Medical	145	54(37 %)	92(63 %)	0.008
Non-medical	354	174(49.2%)	180(50.8%)	

*The multivariate analysis indicated that the only confirmed factor, that was significantly associated with the use of CAM, was the marital status of the female (Odds Ratio, OR: .771 with 95% Confidence Interval, CI, .596-.997).

Table 2: Attitudes of adult Saudi women toward topical CAM in treating superficial injuries among all participants

Statement	Agree%	Don't know %	Disagree%	p-value
CAM is better for treatment than conventional medicine	114(22.8)	213(42.6)	173(34.6)	0.000
CAM can be used safely with other prescribed medications	277(55.4)	183(36.6)	40(8)	0.05
CAM is safe	214(42.8)	241(48.2)	45(9)	0.003
CAM is available	346(69.5)	112(22.5)	40(8)	0.001
CAM is cheap	221(44.4)	151(30.3)	126(25.3)	0.032
CAM can be used without consulting a medical practitioner	248(49.6)	155(31)	97(19.4)	0.012
The available researches encourage CAM usage	112(22.4)	237(47.4)	151(30.2)	0.01

Public campaigns encourage CAM usage	322(64.4)	149 (29.8)	29(5.8)	0.026
Cultural traditions increase CAM usage	231(46.2)	158(31.6)	111(22.2)	0.000

Provisionally Accepted for Publication