Peltzer et al., Afr J Tradit Complement Altern Med. (2016) 13(3):150-155
http://dx.doi.org/10.4314/ajtcam.v13i3.18

TRADITIONAL, COMPLEMENTARY AND ALTERNATIVE MEDICINE USE OF CHRONIC DISEASE PATIENTS IN A COMMUNITY POPULATION IN MYANMAR

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Abstract

Background: The aim of this study was to assess the prevalence and associated factors of Traditional, Complementary and Alternative Medicine's (TCAM) use of chronic disease patients in a community setting in Myanmar.
Materials and Methods: A cross-sectional community survey was conducted in the Kyauk Tan Township with the International Complementary and Alternative Medicine Questionnaire (I-CAM-Q).
Results: Of the 1600 participants in the survey, the overall prevalence of any TCAM use (providers, products or self-care) was 95.1% (TCAM provider= 14.6%, TCAM products=65.0%, and self-help TCAM=86.2%) in the past 12 months. For all different types of TCAM providers, TCAM products and self-help TCAM more than 90% of participants perceived the TCAM as very or somewhat helpful. In multivariate logistic regression analysis, older age, no formal education, rural residence and having two or more chronic conditions were associated with any TCAM use.
Conclusions: TCAM use, especially TCAM products and self-help TCAM, seem to be common in Myanmar.

Key words: Complementary medicine, Traditional medicine, Utilization, Chronic diseases, Community survey, Myanmar

Introduction

In Myanmar, traditional, complementary and complementary medicine (TCAM) seems well established, with a central level Department of Traditional Medicine, 25 traditional medicine hospitals (16-100 beds) at the intermediate level, and 237 traditional medicine clinics providing health care services all over the country (Ministry of Health, Myanmar, 2014 p.138; WHO 2012, p.8). Several studies in Myanmar seem to show that a large proportion of the population has been using traditional medicine (Zin *et al*., 1992; Tran *et al*., 2003). In a community survey in Yangon division and Southern Shan state, 67.2-83.2% utilized traditional medicine (Zin *et al*., 2006).

Some research seems to indicate that TCAM users were more likely to suffer from one or more chronic conditions (Peltzer and Pengpid, 2015; Pharmacology Research Division, Department of Medical research, Lower Myanmar, 2005). Factors associated with TCAM use in chronic disease patients include older age (Hasan et al., 2009), female gender (Mollaoğlu and Aciyurt, 2013; Sirois, 2008), high levels of education (Mollaoğlu and Aciyurt, 2013; Sirois, 2008), and two or more chronic diseases (Saydah and Eberhardt, 2006; Sirois, 2008).

The aim of this study was to conduct a cross-sectional survey on the prevalence and associated factors of TCAM use of chronic disease patients in a community setting in Myanmar.

Materials and Methods

Study Setting

The study was conducted in Kyauktan Township, Myanmar. The total population of Kyauktan Township was 167921 (28419 in urban and 139502 in rural areas); urban composed of 9 wards/blocks and rural of 90 villages (Myanmar Central Statistical Organization, 2014). For the urban population one maternal and child health (MCH) centre is responsible for the MCH care of the urban population, and 9 health centres (2 station health units and 7 rural health centres) were responsible for providing health care to the rural population (Personal communication Dr Win Myint Oo, 10 June 2015).

Sample and Procedure

A multi-staged random sampling procedure was applied. In the urban study area on the first stage, 6 wards out of 9 were selected randomly, and at the second stage 140 persons with a chronic disease were selected randomly from each ward. Midwives identified a list of persons with chronic diseases first and then selected study subjects. In the rural study area on the first stage, 4 health centres out of 9 were selected randomly, at the second stage 5 villages were randomly selected from each health centre selected on the previous stage, and at the third stage, 40 persons with chronic diseases were selected randomly from each village. Basic health care staff identified a list of persons with chronic diseases first and then selected the study subjects. In both urban and

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rural areas, only one person (18 years and above) from each household was randomly selected. Participants were informed about the nature of this study prior to taking informed consent and proceeding with the interview. Trained research assistants conduct interviews with the community members at their homes, using structured questionnaires. The questionnaire was translated and back-translated by certified translators into the study language, Burmese. The questionnaire was pre-tested for validity in a sample of community members, which did not form part of the final sample. The Committee on Research Ethics (Social Sciences) of Mahidol University (COA No.: 2014/193.0807), and the Research and Ethical Committee of University of Medicine 1, Yangon, Myanmar approved the study protocol.

Measure

The "*International questionnaire to measure use of complementary and alternative medicine*" (I-CAM-Q) (Quandt *et al*., 2009; Re *et al*., 2012) was used. The I-CAM-Q contains three sections. Section 1 asks about "Visiting health care providers", section 2 about the "Use of herbal medicine and dietary supplements" and section 3 about "Self-help practices", the motivation of the treatment and helpfulness of the TCAM treatment over the previous 12 months (Re *et al*., 2012). Patients were also asked about the names of herbal and supplementary medicines they were using, their purpose and form of usage (Tangkiatkumjai *et al*., 2013).
Clinical information included the number of chronic diseases.

Data Analysis

Frequencies, means, and standard deviations, were calculated to describe the sample. Multivariate logistic regression was used with the independent variables of gender, age, education, geo-locality, and number of co-morbid medical conditions, and the dependent variable was any TCAM use (provider and/or TCAM products) in the past 12 months. P levels of <0.05 were considered significant. All statistical analyses are carried out using IBM (International Business Machines Corporation) SPSS (Statistical Package for the Social Sciences) version 22.

Results

Sample characteristics

Overall, 1600 persons were approached and all agreed to participate in the study (100 % response rate). The overall mean age of participants was 55.7 years (SD=15.1), 69.9% were women, most (64.4%) had Grade 6 to 12 education, and half of the participants resided in an urban and half in rural areas. Respondents had been treated in the past 12 months for hypertension (42.8%), followed by diabetes mellitus (13.9%), gout and other musculoskeletal conditions (12.2%), stomach and intestinal disease (9.6%), stroke (8.9%) and arthritis (8.8%) (see Table 1).

Table 1: Sample characteristics

Variables	**N**	**%**
Sites		
Urban districts	800	50.0
Rural districts	800	50.0
Age - Mean (SD) (range 18-94)	55.7	15.1
Gender		
Male	482	30.1
Female	1118	69.9
Education		
No formal education	158	9.9
Grade1-5	345	21.6
Grade 6-12	1030	64.4
Postsecondary	67	4.2
Chronic conditions Treated in the past 12 months, for the following conditions..	N	%
1) Hypertension	685	42.8
2) Diabetes mellitus	222	13.9
3) Gout and other musculoskeletal conditions, such as chronic backache	196	12.2
4) Stomach and intestinal disease	154	9.6
5) Stroke	143	8.9
6) Arthritis	140	8.8
7) Asthma	105	6.6
8) Coronary artery disease	102	6.4
9) Chronic obstructive pulmonary disease (COPD)	95	5.9
10) Cardiac failure	93	5.8
11) Dyslipidaemia	79	4.9
12) Liver disease	59	3.7
13) Migraine or frequent headaches	54	3.4
14) Cardiac arrhythmias	44	2.8
15) Kidney disease	32	2.0
16) Thyroid disease	22	1.4

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17)	Cancer	19	1.2
18)	Mental disorder	12	0.8
19)	Parkinson's disease	10	0.6
20)	Epilepsy	8	0.5
21)	Other	197	6.7
Number of chronic conditions – Mean (SD) (range 1-5)		1.4	0.8

Health Care Providers Consulted

Table 2 shows the participants' utilization of various health care providers in the past 12 months. In all, 233 (14.6%) had visited a TCAM provider in the past year, 12.9% one type and 2.6% two or more types. The TCAM providers most commonly consulted were the massage therapist (7.2%), and herbalist (2.0%). Participants consulted TCAM providers mainly because of long term illness. For all different types of TCAM providers more than 90% of participants perceived the consultation as very or somewhat helpful (see Table 2).

Table 2: Health care providers seen in the past 12 months

Health care providers consulted in the past 12 months	**Visited**	**Motivation**			**Helpfulness**
		Acute illness	Long term illness	To improve well-being	Very/ somewhat
	N (%)	%	%	%	%/%
Medical practitioner	1276 (79.8)	19.4	64.9	15.8	22.3/77.4
Herbalist	32 (2.0)	21.9	50.0	28.1	28.1/71.9
Spiritual healer	17 (1.1)	41.2	35.3	23.5	23.5/76.5
Acupuncturist	9 (0.6)	44.4	55.6	--	--/100
Homeopath	20 (1.2)	50.0	30.0	20.0	--/100
Chiropractor	29 (1.8)	13.8	75.9	10.3	6.9/93.1
Yoga practitioner	2 (0.1)	--	100	---	--/100
Massage therapist	116 (7.2)	10.3	79.3	10.3	13.8/86.2
Other	37 (2.3)	27.0	70.3	2.7	24.3/75.7

TCAM Products and Self-help TCAM

The use of TCAM products (herbal medicine and supplements) in the past 12 months was the second most commonly used TCAM modality, with 1040 (65.0%) of participants having utilized at least one type in the past 12 months, 52.0% one type and 13.0% two or more types. The most frequently used TCAM products have been herbal medicines (53.2%), followed by vitamins/minerals (14.6%), and other supplements (9.9%). In terms of self-help TCAM, 1380 (86.2%) had used self-help TCAM in the past 12 months, the most common being "prayer for own health" (73.5%) and meditation (40.2%). The most frequently mentioned motivation for the use of TCAM products were in terms of herbal medicines and homeopathic remedies the treatment of a long term illness, while the most commonly mentioned motivation for the use of vitamins, other supplements and self-help TCAM such as meditation and prayer for own health was to improve well-being. More than 90% of participants perceived the use of their different TCAM products and self-help TCAM as very or somewhat helpful (see Table 3). The prevalence of any TCAM use (providers, products or self-care) was 95.1%.

Table 3: Use of herbal medicine and dietary supplements, and self-help practices

TCAM modality	**Used**	**Motivation**			**Helpfulness**
		Acute illness	Long term illness	To improve well-being %	Very/ somewhat
	N (%)	%	%		%
Use of herbal medicine and dietary supplements, including tablets, capsules and liquids					
Herbs/herbal medicine	851 (53.2)	11.2	81.9	6.9	10.6/89.2
Vitamins/minerals	234 (14.6)	1.3	25.2	73.5	21.4/78.6
Homeopathic remedies	8 (0.5)	--	75.0	25.0	37.5/62.5
Ginseng	10 (0.6)	--	40.0	60.0	--/100
Other supplements	158 (9.9)	3.2	25.9	70.9	7.6/92.4
Self-help practices					
Meditation	643 (40.2)	0.6	13.4	86.0	14.9/83.2
Yoga	10 (0.6)	--	20.0	80.0	20.0/80.0
Qigong	12 (0.8)	--	16.7	83.3	--/100
Relaxation techniques	192 (12.0)	4.2	14.6	81.2	8.3/91.7
Attend traditional healing ceremony	77 (4.8)	2.6	28.6	68.8	7.8/92.2
Prayer for own health	1176 (73.5)	1.6	14.9	83.5	14.4/85.3
Other	11 (0.7)	--	--	100	--/40.0

Table 4 provides details about the most commonly used TCAM products (herbal and dietary supplements) in the past 12 months, the purpose of using it and how it was obtained. The most frequently used remedies were *Lingzhi* (product of Lingzhi

http://dx.doi.org/10.4314/ajtcam.v13i3.18

mushroom; Ganoderma lucidum) (3.5%), followed by Yetsar (salt) (3.1%), Thwaysay (1.5%), balm (1.1%), moonseed vine (0.9%), mangosteen (0.5%) and Pennywort (0.5%). Many of the TCAM products were used for the purpose of health tonic or a number of chronic conditions (hypertension, diabetes, asthma, gout, headache, back pain, gastrointestinal disorders, and mental disorders). Most frequently TCAM products had been obtained from the drug store, followed by folk remedy shops or stands, health food store, and own garden (see Table 4).

Table 4: Details of herbal and dietary supplements used

Local name of herbal or dietary supplement	Scientific name of herbal or dietary supplement	N (%)	Purpose of using it	How obtained#
Lingzhi mushroom	Ganoderma lucidum	56 (3.5)	Aches, back pain, diabetes, health tonic, mental disorder	1,2,3
Yetstar (salt)*	*	50 (3.1)	Appetizer, digestion, asthma, cough	1,2
Thwaysay**	**	24 (1.5)	Appetizer, giddiness, fever, headache, gastritis, health tonic	1,2
Balm	Camphorated oil	18 (1.1)	Aches, mucolytic, stomach ache	1
Moonseed vine	Menispermumdauricum DC	15 (0.9)	Digestion, stomach ache, health tonic, stroke	2,1,7
Mangosteen	Garcinia mangostana	8 (0.5)	Aches, diabetes, health tonic	1,6
Myinkhwa ywet	Asiatic Pennywort	8 (0.5)	Health tonic	3,7
Sesame oil	Sesamum indicum (oil)	6 (0.4)	Aches	3
Gooseberry	Emblica officinalis	5 (0.4)	Diabetes, piles	2,6,7
Than ma naing kyauk ma naing	Alysicarpusvaginalis DC	4 (0.3)	Health tonic	2,7
Bird-nest	***	4 (0.3)	Health tonic	1
Morinda	Morinda angustifolia	4 (0.3)	Health tonic	3
Taung Dan Gji	Premnaintegrifolia	4 (0.3)	Aches	3,7
Aloe	Aloe vera L.	6 (0.4)	Hypertension	3
Fame (liver support)	****	6 (0.4)	Liver support	1
Licorice	Glycyrrhiza glabra	4 (0.2)	Stomach ache	2,7
Mushroom	Agaricus bisporus	4 (0.3)	Dysphoea, heart, health tonic	1
Citron root	Root of Citrus limon	3 (0.2)	Aches	1,2
White pepper	Piper nigrum	3 (0.2)	Diabetes, health tonic	6,7
Lemon	Citrus limonia; Citrus medica var. acida	2 (0.1)	Health tonic	3,7
Lingzhi tea	Ganoderma lucidum	2 (0.1)	Diabetes	1
Tumeric	Curcuma longa	2 (0.1)	Health tonic	6
Citron leaf	Leaf of Citrus limon	2 (0.1)	Mental disorder	1
Dragon's blood	Dracaena fragrans; kind of long-steemed Kaempferia	2 (0.1)	Headache, health tonic	7
Gwei: Dau Ywet	Dregeavolubilis	2 (0.1)	Liver support, Anti-inflammatory	7
Drum stick	Moringa oleifera	2 (0.1)	Hypertension	7
Garlic	Allium sativum	2 (0.1)	Hypertension	3
Bamboo leaf	Leaf of Bamboo plant	2 (0.1)	Health tonic	7
Leaf of betel vine	Piper betle	2 (0.1)	Cough	7
Spinach	Amaranthus blitum, A paniculatus	2 (0.1)	Anaemia	3
Water cress	Ipomaea aquatica	2 (0.1)	Headache	3
Almond leaf	Leaf of Terminalia catappa	1 (0.1)	Liver support, Diarrhoea & Dysentery, Stomach problem	7
Soya bean leaf	Dolichos biflorus	1 (0.1)	Asthma	1
Tamarind	Tamarind (Tamarindus indica) fruit	1 (0.1)	Constipation, Wind colic	7

1=Drug store, 2=Folk remedy shop/stand, 3=Health food store, 4=Hospital, 5=Direct sale, 6=Provided by their family/ friends, 7=Own garden, 8=Other

* Traditional supportive medicine composed of Liquorice, Rock salt, Ammonium Chloride, Clove, Camphor, Kaempferia, Bishop's Weed, Aniseed, Cress, Ginger, Pineapple flower, Camel's thorn, Nutmeg

** Herbal tonic having red sandal wood as the main ingredient

*** Edible bird-nest of the swiftlets Callocalia fuciphaga; C esculanta

**** Alternative medicine for liver support

Associations with Any TCAM Use

In multivariate logistic regression analysis, older age, no formal education, rural residence and having two or more chronic conditions was associated with any TCAM use (see Table 5).

http://dx.doi.org/10.4314/ajtcam.v13i3.18

Table 5: Associations between sociodemographic variables, chronic conditions and TCAM usage (provider and TCAM products)

Variable	Unadjusted Odds Ratio (95% CI)	P-value	Adjusted Odds Ratio (95% CI)[a,b]	P-value
Sex				
Female	1.00		---	
Male	0.95 (0.76-1.19)	0.661		
Age (in years)				
18-45	1.00		1.00	
46-60	1.46 (1.12-1.90)	0.005	1.23 (0.93-1.62)	0.147
61-101	1.98 (1.52-2.58)	<0.001	1.71 (1.29-2.27)	<0.001
Education				
No formal education	1.00		1.00	
Grade1-5	2.35 (1.56-3.53)	<0.001	2.51 (1.65-3.81)	<0.001
Grade 6-12	1.35 (0.95-1.90)	0.091	1.60 (1.12-2.28)	0.010
Postsecondary	0.68 (0.38-1.21)	0.194	0.87 (0.48-1.57)	0.639
Geo-locality				
Rural	1.00		1.00	
Urban	0.72 (0.58-0.89)	0.003	0.68 (0.54-0.85)	0.001
Chronic conditions				
One	1.00		1.00	
Two	1.40 (1.09-1.79)	0.008	1.48 (1.13-1.94)	0.004
Three or more	1.86 (1.22-2.83)	0.004	2.01 (1.30-3.12)	0.002

CI=Confidence Intervals; [a]Using "enter" LR selection of variables; [b]For Hosmer and Lemeshow Chi-square 16.31, df8, 0.038; Cox and Snell R^2 0.05; Nagelkerke R^2 0.06

Discussion

The study found, among chronic disease patients in a community in Myanmar an overall prevalence of any TCAM use (providers, products or self-care) of 95.1% (TCAM provider= 14.6%, TCAM products=65. 0%, and self-help TCAM=86. 2%) in the past 12 months, which seems to be similar to a previous community survey in the general population in Myanmar (67.2-83.2%) (Zion *et al*., 2006) and Southern Lao PDR (59% in the past 6 months) (Sydara *et al*., 2005).

The most common TCAM providers found in this study were the massage therapist and herbalist. This finding was similar to a previous community survey in Southern Lao PDR (Sydara *et al*., 2005). The prominence of traditional herbal medicine in Myanmar has been documented previously (Awale *et al*., 2006; Tran *et al*., 2003). This study found a high proportion of participants that indicated they use TCAM products (herbal medicines and homeopathic remedies) for long term illness. This finding was also found in other studies (Pharmacology Research Division, Department of Medical Research, Lower Myanmar, 2005, Satyapan *et al*., 2010; Sydara *et al*., 2005).

This study confirms previous research (Saydah and Eberhardt, 2006; Sirois, 2008), indicating that TCAM users were more likely to suffer from two or more chronic conditions (Saydah and Eberhardt, 2006; Sirois, 2008). As expected, this study found that TCAM utilization was higher in rural than urban communities. This finding was also consistent with those of other studies (Adams *et al*., 2011; Karmakar *et al*., 2012). Awale *et al*. (2006) note that in rural areas in Myanmar the TCAM provider may be the more accessible and affordable source of health care. Older age was in this study, as previously found (Chong *et al*., 2008; Hasan *et al*., 2009), to be associated with TCAM use. It is possible that older people in this study in Myanmar still stick more to traditional culture, including the use of traditional medicine. Unlike some previous studies (Mollaoğlu and Aciyurt, 2013; Sirois, 2008), this study did not find an association between female gender, high levels of education and TCAM use.

Study Limitations

While the study was conducted in one geographic area in Myanmar, findings cannot be generalized to other areas in Myanmar. There may have been a recall bias, given that study participants were retrospectively asked over the past 12 months about TCAM utilization.

Conclusion

The data indicate that TCAM use, in particular TCAM products such as herbal medicines, and self-help TCAM, is common and most participants were satisfied with its use in Myanmar.

Acknowledgement

This project received support from Mahidol University, Thailand.

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