

The Use of Herbal Remedies and Supplementary Products among Chronic Disease Patients in Vietnam

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ABSTRACT The purpose of this paper was to determine the use of herbal remedies and supplementary products among chronic disease patients in Vietnam. A cross-sectional study was conducted in a health care setting using a random sample of 1601 adult patients (Mean age: 50.5 years, SD=22.7). From the total sample 43.6 percent indicated that they had been using herbal home remedies. In multivariate logistic regression analysis, older age, urban residence, having medium income, not engaging in problem drinking, having three or more chronic conditions, low drug medication adherence and poor health status was associated with herbal home remedy use. Commonly used herbal remedies included *Curcumin*, *Gynostemma pentaphyllum*, *Ganoderma lucidum*, *Aloe Vera*, *Artichoke*, *Globe artichoke* *Cynara scolymus* L., 1753, – *Asteraceae* and *Styphnolobium japonicum*. This paper confirms a high prevalence and a wide variety of herbal remedy use.

INTRODUCTION

In Vietnam, traditional medicine comprises of oriental medicine and Vietnamese traditional medicine (WHO 2001). The use of “traditional and complementary medicine” in Vietnam has been described as very popular (Tran et al. 2003; Pham et al. 2013; Peltzer et al. 2016a). The prevalence of herbal and supplementary remedy use has been found to be high in chronic disease patients in Association of Southeast Asian Nations (ASEAN) (Peltzer and Pengpid 2015) and other countries (Bisop and Lewith 2010; Nur 2010; Wazaify et al. 2013). Some studies found sociodemographic factors to be associated with herbal remedy use, including women, younger age, older age, those with higher education and higher income (Aziz and Tey 2009; Nur 2010).

In a population survey in Malaysia it was found that perceived poor health status was associated with increased herbal remedy use (Aziz and Tey 2009), while in a community sur-

vey in Turkey those with better perceived health status more frequently had used herbal remedies (Nur 2010). Some researches identified that the use of herbal remedies was negatively correlated with conventional drug medication adherence (Krousel-Wood et al. 2010; Tangkiatcumjai et al. 2013). In Turkey, the use of herbal remedies was influenced by “the mass media (45.1%), family members (43.1%), friends (32.0%) and neighbours (26.3%)” (Nur 2010). While among patients with chronic diseases in Jordan the decision to use herbal remedies was primarily influenced by the media (TV, newspapers, internet...) (Wazaify et al. 2013).

Wazaify et al. (2013) found that among patients with chronic diseases in Jordan, the most common herbal remedies used were: *Hibiscus sabdariffa* L., *Zingiber officinale* Rosc., *Olea europaea* L., *Camellia sinensis* (L.) Kuntze, *Crataegus aronia* (L.) DC., *Cinnamomum zeylanicum* Blume, and unidentified herbal mixture. Commonly used herbal remedies used by chron-

ic disease patients in Lao PDR included *Moringa pterygosperma*, *Curcuma longa* L., *Curcuma xanthorrhiza*, *Centella asiatica* L. Mushroom's Linchi, *Morinda citrifolia* L. (Peltzer et al. 2016c), and among chronic disease patients in Myanmar included *Ganoderma lucidum*, *Menispermum dauricum*, *Garcinia mangostana*, *Asiatic Penny-wort*, *Aloe Vera* L. (Peltzer et al. 2016b). In a community survey in Bangkok, Thailand, the use of frequently reported herbal products included *Andrographis paniculata*, *Curcuma Longa*, *Moringa spp.*, *Ginseng Panax spp.*, *Aloe vera*, and *Boersenbergia spp.* (Tangkiatkumjai et al. 2014). The Ministry of Health (2013) in Vietnam has 70 items on the essential herbal drug list: 10 for fever, 10 for rashes, 11 for gastrointestinal disorders, 10 for menstrual disorders, 8 for osteoarticular group, 9 for coughing, 7 for liver and 5 for the diuretics group. According to the Vietnam Ministry of Health (2013:7ff), "Production and management of phytopharmaceuticals and herbal medicine preparations is being strengthened. Some 872 wholesalers and retailers have been certified to meet conditions for traditional medicine business. Management of the origin and quality of traditional and herbal medicines faces some difficulties." In terms of supplementary remedies, vitamins, minerals, omega 3 and ginseng seem to have been commonly used among chronic disease patients Lao PDR (Peltzer et al. 2016c), Myanmar (Peltzer et al. 2016b), in a community survey in Bangkok, Thailand (Tangkiatkumjai et al. 2014), and in a national survey in South Korea (Lee and Kim 2009). In a household survey in Trinidad the most common herbal home remedies for diabetes were "*Catharanthus roseus*, *Momordica charantia* and *Azadirachta indica*" and for hypertension "*Artocarpus altilis* and *Tamarindus indica*." (Clement et al. 2015), and in a community survey in Turkey people traditionally most commonly used the plant remedies "*Salvia sp.* *Hypericum sp.* and *Achillea sp.*" for pain treatment (Fakir et al. 2016).

The use of home remedies for patients with chronic diseases has not been adequately researched and health care providers may have to provide information to their chronic disease patients on home remedy use (Parisius et al. 2014).

The objective of this paper was to document the use of herbal and supplementary products in a cross-sectional survey of patients with chronic diseases in Vietnam.

MATERIAL AND METHODS

Design

In a cross-sectional survey out-patients with chronic diseases were interviewed in urban and rural health facilities in Vietnam.

Sample and Procedure

Twenty health facilities, thirteen in urban and seven in rural areas, in eleven districts of three Northern provinces in Vietnam were conveniently selected. In each health facility, every eligible patient (21 years and above and having received treatment for a chronic condition in the past 12 months) was selected by using a systematic sampling procedure (Lee et al. 2004). All eligible patients were referred by a health care provider for a structured interview in Vietnamese language by an external research assistant after informed consent was obtained. The study was conducted in 2015. The "Committee of Research Ethics of Hanoi School of Public Health" and "The Committee of Research Ethics (Social Sciences) of Mahidol University (COA.No.: 2014/193.0807)" approved the study protocol.

Measures

Patients were asked about the names of herbal and supplementary medicines that they are using, their purpose, form, usage and how the remedy was obtained (Tangkiatkumjai et al. 2013). Finally, respondents were asked to indicate the sources of herbal and supplementary medicines information.

Tobacco use was assessed with two questions, 1) "Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes?" and 2) "Do you currently use any smokeless tobacco, such as snuff, chewing tobacco, betel?" Response options were "yes" or "no" (WHO 1998).

Problem drinking was measured by the "Alcohol Use Disorder Identification Test (AUDIT)-C", using a cut-off score of four for problem drinking (Bush et al. 1998). Cronbach alpha for the AUDIT-C 0.78 in this sample.

The "*Morisky Medication Adherence Scale (MMAS)*" was used to estimate medication adherence for specific chronic illnesses (Morisky et al. 2008). The MMAS has 8 items, for example, "Do you feel hassled by sticking to your treatment plan?" Scores generated from this mea-

sure range from 0 to 8, scores less than 6 were classified as low and scores above 6 as high adherence (Morisky et al. 2008).

Perceived health status was assessed with one question, with response options ranging from 1=very dissatisfied to 5=very satisfied.

Sociodemographic information included age, sex, formal education, and residency status.

Data Analysis

Frequencies and percentages were calculated to describe the sample. Herbal and supplementary remedies in Vietnamese language listed in the paper were compared with existing Vietnamese herbal terminologies (Ministry of Health 2013; Ngoc Van and Tap 2008; Tran et al. 2003) in order to identify scientific names of the remedies. Logistic regression estimated the impact of independent variables with the herbal remedy use (binary dependent variable). Statistical calculations were conducted with "IBM (International Business Machines Corporation) SPSS (Statistical Package for the Social Sciences) version 22".

RESULTS

Sample Characteristics

Overall, 1601 people were approached and all agreed to participate in the study (100 % response rate). The overall mean age of participants was 50.5 years (SD=22.7), range 21 to 99 years, 61.1 percent were women, 46.2 percent had Grade 6 to 12 and 46.5 percent postsecondary education, and half of the participants resided in an urban (47.5%) and half in rural (52.5%) areas. Respondents had been treated in the past 12 months for stomach and intestinal disease (39.6%), followed by gout and other musculoskeletal conditions, such as chronic backache (23.8%), arthritis (22.1%), hypertension (19.6%), cardiovascular disorder (9.6%), liver disease (9.1%), migraine or frequent headaches (6.9%), diabetes mellitus (6.2%), dyslipidaemia (6.2%), kidney disease (6.0%), asthma (4.0%), cancer (2.9%), thyroid disease (2.5%), mental disorder (2.1%), chronic obstructive pulmonary disease (0.9%), Parkinson's disease (0.7%), and epilepsy (0.3%). On an average, participants were having 1.6 (SD=1.0) chronic conditions.

Sources of Influence or Awareness of Herbal or Supplementary Remedies

The main sources of influence or awareness of herbal or supplementary remedies were family members (32.8%), health personnel in the health care facility (22.0%), friends (19.2%) and mass media (14.6%) (see Table 1).

Table 1: Sources of influence or awareness of herbal or supplementary remedies

Sources of influence or awareness	N	%
Family members	542	32.8
Health personnel in the health care facility	353	22.0
Friends	307	19.2
Mass media (TV, newspaper, radio, magazines)	233	14.6
Health personnel outside of health care setting	124	7.7
Other patients	110	6.9
TCAM practitioner	93	5.8
Other	82	5.1
Migrant advertisers	33	2.1
Your temple/church/religious group	2	0.1

Herbal and Supplement Remedies Used

Most frequently specific herbal remedies included *Curcumin* for gastric distress and good health, *Gynostemma pentaphyllum* for stomach problems, hypertension and good health, *Ganoderma lucidum* for arthritis, hypertension and good health, *Aloe vera* for good health, *Artichoke*, *Globe artichoke* *Cynara scolymus* L., 1753, – *Asteraceae* for liver, stomach, arthritis and hepatoma, *Styphnolobium japonicum* for hypertension and well-being. Unspecified herbal remedies included mainly traditional Vietnamese medicine and traditional Chinese medicine for gastric distress and well-being. Main supplement remedies included vitamins, *Adenosma glutinosum*, *Panax ginseng*, an herbal supplement for neurology, supplement foods, Omega 3 or fish oil, arthritis supplement and calcium. The most common form of using herbal remedies were crude herbs, capsules, pills and powder, and the most common forms of use were swallowed and making it into a drink or food using hot water. Herbal remedies were mostly obtained through a drug store, direct sale, folk remedy shop or stand, provided by their families or friends and their own garden. The most common form of

Table 2: Contd...

Scientific name of herbal remedy	Local name of herbal remedy	Purpose of using it	Form ^a	Usage ^b	How	N
<i>Enhydra fluctuans</i> Lour, <i>Glycyrrhiza uralensis</i>	Cây cam thảo	Stomach, good for health	6	3	5	9
<i>Eugenia operculata</i> roxb	Lá vôi	Stomach	6	3	5	4
<i>Fructus Schisandrae</i>	Ngũ vị tử	Arthritis, hypertension, cancer, Good for health	6	3	2,5,6	25
<i>Ganoderma lucidum</i>	Nấm lim xanh, Linh chi, Nấm linh chi, lin chi, nước vôi	Good for health	6	3	5	2
<i>Ganoderma lucidu,lentinula edodes</i>	Nấm hương, nấm linh chi	Acne	4	3	6	2
<i>Ganoderma lucidum,Artemisia vulgaris</i>	Nấm linh chi,ngai cứu	Health supplement, diabetes	1	1	1	4
<i>Glizadinax</i>	Glucosamine	Liver, good for health	1	1	1	7
<i>Glucosamine</i>	Sen Shark codilage	Liver	6	1	1,2	4
<i>Glycosaminoglycans</i>	Giáo cò lam	Health tonic, stomach, hypertension	6	3	1,2	26
<i>Gynostemma pentaphyllum</i>	Herbalige	Good for health	2	1	1	5
<i>Honey</i>	Mật ong	Stomach, ulcer, good for health	1	1	5	6
<i>Houttuynia cordata</i> Thunb	Rau diếp cá	Liver	6	3	5	1
<i>Lactuca indica</i> L.	Bồ công anh	Treatment	1	1	4	4
<i>Jasminum sambac</i>	Hoa nhài	Hypertension	1	3	6	3
<i>Mimosa</i>	Mimosa	Tranquillizer, arthritis	3	1	4	2
<i>Momordica charantia</i>	Mướp đắng	Good for health, Hypertension, Hyperglycemia	2,5,6	1,2,3	3,6,7	10
<i>Morinda citrifolia</i> L.	Rễ cây nhàu	Relieve pain	6	3	6	2
<i>Morus alba</i> L.	Dâu tằm, Lá dâu	Treatment, Good for health	7	2,3	7,8	5
<i>Mustard celery</i>	Bột cần tây	Health supplement	1	1	1	3
<i>Nelumbo nucifera</i>	Lá sen	Anti-ageing	2	1	3	5
<i>Passiflora foetida</i> L	lạc Lac, Cây lạc tiên	Backache/problem, Tranquillizer	6	3	5,6,7	3
<i>Perilla frutescens</i>	Tía tô;	No answer	6	3	1	2
<i>Phyllanthus urinaria</i> L.	Diệp hạ châu (= Chó đẻ răng cưa)	Liver, hypertension, good for health, arthritis	6	1,3	1,6	12
<i>Piper lolot</i>	Lá lốt	Good for health	6	3	3,7	3
<i>Planto hepato</i>	Cây lá gan	Liver, detoxification	6	3	6	2
<i>Pluchea indica</i>	Cúc tần	Treatment	2	2	1	2
<i>Polyscias fruticosa</i>	Lá đinh lăng, Đinh lăng	Heart disease, Good for health	3,3	1,5	1,6	4
<i>Prunella vulgaris</i> L.	Hà khô thảo	Hypertension	2	1	1	4
<i>Psidium guajava</i> L.	Ôi	Liver	6	3	7	3
<i>Radix Rehmanniae glutinosae</i>	Cây địa hoàng	Good for health	4	3	1	3
<i>Sesamum Indicum</i>	Hạt mè	Hyperglycemia, heart disease	3,6	1,3	5	5

^aForm: Pills=1, capsules=2, tablets=3, powder=4, solution=5, crude herbs=6, other=7; ^bUsage: swallow=1, topical use=2, make into a drink/food using hot water=3, inhale=4, other=5; ^c1=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

Table 2: Contd...

Scientific name of herbal remedy	Local name of herbal remedy	Purpose of using it	Form ^a	Usage ^b	How N obtained ^c
<i>Psidium guajava</i> L.	Oi	Liver	6	3	7
<i>Radix Rehmanniae glutinosae</i>	Cây địa hoàng	Good for health	4	3	1
<i>Sansevieria trifasciata</i>	Lá lưỡi hổ	Stomach	6	3	7
<i>Sesamum indicum</i>	Hạt mè	Hyperglycemia, heart disease	3,6	1,3	5
<i>Solanum procumbens, Elsholtzia cristata</i>	Cây cà gai leo – Cây kinh giới	Blood fats, Health supplement, liver, good for health	2,6	3	1,6
<i>Styli et stigmata Maydis</i>	râu ngô	Health supplement	7	5	8
<i>Styphnolobium japonicum</i>	Trà hoa hòe	Hypertension, well being	3,6	3	2,5,6,8
<i>Trientalis borealis</i>	Chè cam thảo	Treatment	6	3	2
<i>Walnut</i>	Cây óc chó	Good for health	7	5	6
<i>Ziziphus nummularia</i>	Táo Xanh	Stomach, good for health	4	2	1
<i>Zingiber officinale</i> Rosc.	Gừng	Cold, cough, gastric distress	6	3	6
Unspecified herbs					
<i>Methi</i> (Indian herb)	Methi	Diabetes	6	3	2,5
Traditional alcohol with herb, or with animals	Rượu gừng, rượu thuốc	Arthritis	6	5	6,8
Traditional Chinese medicine	Bách Nhu	Well-being	1,6	1	1,2
Traditional remedy (herb + animal bone)	Bách xà	Arthritis	1	1	1
Traditional Vietnamese medicine	Thuốc An Bào; Binh vị nam- bổ gan tiêu độc nhất nhất: An Bào, An cốt nam; Đại tràng tâm bình; Đông trùng hạ thảo	Stomach, gastric ulcer, good for health	1,3,6	1	1,2
Supplement	<i>Name of Supplement</i>				
<i>Adenosma glutinosum</i> ,	Nhân trần nhân sâm; nhân sâm; Sâm; tam thất;	Good for health	5,6	3	1,3,5,6
<i>Panax ginseng</i> ,	Rau diếp cá, nhân trần	Arthritis	3	3	1
Arthritis supplement	Viêm khớp Tâm Bình	Good for health	1	1,3	1,5
Calcium	Canxi- cần tây; Cần tây- canxi; canxi	Good for health	4	1	1,5
<i>Hanega</i>	Hanega	Neurology, mental, stomach, prostate	3	1	2
Herbal supplement for neurology	Hoạt huyết dưỡng não; Thuốc hoạt huyết dưỡng não CM2				37
<i>Green tea</i>	Trà xanh	Good for health	7	3	8
<i>Iron</i>	Viên sắt	Good for health	3	1	1
<i>Omega 3; Fish oil</i>	Omega 3; Dầu cá	Health supplement, stomach	2,3	1,2	1,3,6
Supplement foods	Thực phẩm bổ sung; thực phẩm chức năng; thuốc bổ sung vi chất hebelai		2,3	1,3	3,4
Vitamins	Vitamin	Well-being	1,3	1	1,2,4

^aForm: Pills=1, capsules=2, tablets=3, powder=4, solution=5, crude herbs=6, other=7; ^bUsage: swallow=1, topical use=2, make into a drink/food using hot water=3, inhale=4, other=5; ^c1=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

supplements included tablets, capsules and pills, and the typical usage by swallowing and making it into a drink or food using water. Supplements were mostly obtained from a drug store, health food store, hospital and direct sale (see Table 2).

Associations with Herbal Home Remedy Use

From the total sample 43.6 percent indicated that they have been using herbal home remedies. In multivariate logistic regression analysis, it was found that older age, urban residence, having medium income, not engaging in problem drinking, having three or more chronic conditions, low drug medication adherence and poor

health status were associated with herbal home remedy use (see Table 3).

DISCUSSION

The paper reports a high proportion of herbal remedy use among chronic disease patients in Vietnam, which compares with chronic disease patients in ASEAN and other countries (Peltzer and Pengpid 2015; Wazaify et al. 2013). Consistent with previous studies (Lee and Kim 2009; Tangkiatkumjai et al. 2014; Peltzer et al. 2016c), vitamins, minerals, Omega 3 or fish oil and ginseng were some of the most frequently used supplementary remedies.

In agreement with some previous studies (Aziz and Tey 2009; Nur 2010), this paper found that some sociodemographic factors (older age,

Table 3: Associations with herbal home remedy use

Variable	N (%) ratio (95% CI)	Unadjusted odds (95% CI) ^a	Adjusted odds ratio
Sex			
Female	436 (45.7)	1 (Reference)	--
Male	253 (41.6)	0.85 (0.69-1.04)	
Age (in years)			
21-45	282 (37.2)	1 (Reference)	1 (Reference)
46-60	218 (53.8)	1.97 (1.54-2.51)***	1.81 (1.37-2.41)***
61 or more	154 (54.0)	1.90 (1.51-2.61)***	1.86 (1.31-2.64)***
Geolocality			
Rural	295 (35.1)	1 (Reference)	1 (Reference)
Urban	403 (53.0)	2.09 (1.71-2.55)***	2.41 (1.89-3.08)***
Education			
<Grade6	50 (42.7)	1 (Reference)	--
Grade 6-12	335 (45.4)	1.11 (0.75-1.65)	
Postsecondary	313 (42.2)	0.98 (0.66-1.45)	
Income			
Low	212 (38.1)	1 (Reference)	1 (Reference)
Medium	247 (47.7)	1.48 (1.16-1.89)***	1.43 (1.09-1.86)***
High	239 (45.4)	1.36 (1.06-1.73)*	1.01 (0.74-1.39)
Alcohol Use (AUDIT >3)			
No	557 (47.0)	1 (Reference)	--
Yes	141 (34.0)	0.58 (0.46-0.73)***	0.65 (0.49-0.85)**
Current Tobacco Use			
No	574 (44.6)	1 (Reference)	--
Yes	98 (37.5)	0.75 (0.57-0.98)*	0.97 (0.67-1.42)
Chronic Conditions			
One	364 (38.7)	1 (Reference)	1 (Reference)
Two	190 (46.7)	1.39 (1.10-1.76)**	1.27 (0.96-1.68)
Three or more	138 (58.0)	2.19 (1.64-2.92)***	1.66 (1.16-2.39)**
Drug Medication Adherence			
Low	481 (47.5)	1 (Reference)	1 (Reference)
Good	160 (37.7)	0.67 (0.53-0.85)***	0.54 (0.42-0.71)***
Perceived Health Status			
Poor	151 (58.1)	1 (Reference)	1 (Reference)
Neither	383 (42.6)	0.54 (0.41-0.71)***	0.67 (0.48-0.94)*
Good	164 (37.1)	0.43 (0.31-0.58)***	0.59 (0.40-0.86)**

CI=Confidence Interval; ***p<0.001; **p<0.01; *p<0.05

better income) were associated with herbal remedy use. In addition, unexpectedly, this paper found a positive association between living in an urban area and herbal remedy use. It is possible that urban dwellers have higher income than rural dwellers and are therefore in a better position to purchase herbal remedies, especially the branded, more expensive herbal preparations sold in drug stores, rather than herbal home remedies (Aziz and Tey 2009). Further, the study found that chronic disease patients with several chronic conditions were more likely to use herbal remedies. Unlike in several previous studies (Aziz and Tey 2009; Nur 2010), this study did not find any gender difference in the use of herbal remedies.

This finding is in agreement with previous studies reporting the high proportion of herbal remedy use among chronic disease patients (Bisop and Lewith 2010; Nur 2010; Wazaify et al. 2013; Peltzer and Pengpid 2015). In agreement with a study in Malaysia (Aziz and Tey 2013), this paper found a positive association between poor health status and herbal remedy use. As also found in some previous research (Krousel-Wood et al. 2010; Tangkiatkumjai et al. 2013), this paper found that the use of herbal remedies was negatively correlated with conventional drug medication adherence. The concomitant use of herbal home remedies and conventional drugs may produce side effects so as to reduce adherence to conventional drug treatment. Further, not engaging in problem drinking was in this study associated with herbal remedy use, as also found in a study among chronic kidney disease patients in Thailand (Tangkiatkumjai et al. 2013). One possible explanation for this could be the experience or anticipation of alcohol-herbal use interaction effects (Lewis et al. 2015).

Some herbal remedies used in this paper (*Aloe vera* L., *Collagen*, *Ganoderma lucidum*, *Ginseng*) have also been reported to be used by chronic disease patients in Lao PDR and/or Myanmar (Peltzer et al. 2016a, b), *Cinnamomum zeylanicum* Blume in Jordan (Wazaify et al. 2013), *Zingiber officinale* Rosc in Jordan (Wazaify et al. 2013) and Turkey (Akbulut and Bayramoglu 2013), and several, for example, *Artemisia vulgaris* L., *Curcuma longa* L., *Phyllanthus urinaria* L., *Prunella vulgaris* L., *Zingiber officinale* Rosc., are listed on the essential herbal drug list in Vietnam (Ministry of Health 2013). *Zingiber officinale* Rosc has been reported to be beneficial for treating chronic conditions (Wazaify et al. 2013). A number of herbal remedies and in

particular supplements were used in this study for the purpose of health enhancement, rather than for the treatment of specific illnesses, as also found in previous studies (Nur 2010). The common use of *Momordica charantia* in this study for hypertension and hyperglycemia, in part, is similar to its common use for diabetes in Trinidad (Clement et al. 2015).

This paper found, in agreement with a previous study (Nur 2010), that one of the main sources of influence or awareness of herbal or supplementary remedies were family members. In previous studies (Nur 2010; Wazaify et al. 2013) the use of herbal remedies was mainly influenced by information from the mass media (45.1%), while this was to a lesser extent the case in this paper (14.6%). However, interesting was that 22 percent reported "health personnel in the health care facility" was a major source of information on herbal and supplementary remedies. In particular, health care providers can be utilized in providing accurate messages on the use of herbal remedies.

LIMITATIONS

The study was only conducted in a very specific geographic area in Vietnam, so that study results cannot be generalized to other geographic areas in Vietnam.

CONCLUSION

This study confirms a high prevalence and a wide variety of herbal remedy use among chronic disease patients in Vietnam. Knowledge of some of the herbal and supplementary remedies used and the predictors of its use may assist health care providers and national health authorities in patient care management.

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