Author’s response to reviews

Title: Herbal or traditional medicine consumption in a Thai worker population: pattern of use and therapeutic control in chronic diseases.

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General comments

1. We have changed the title to ‘Herbal or traditional medicine consumption in a Thai worker population: pattern of use and therapeutic control in chronic diseases.’

Changing ‘non-communicable disease’ to ‘chronic diseases.’

Reviewer 1

This is an interesting and meaningful paper. The author investigates the frequency of use and related factors for HTM use in a Thai worker population.
1. However, although the authors listed Top ten herbal and traditional medicine according to self-reported conditions or laboratory defined diseases, the frequency of use, the average dose and the period of use were not calculated.

In addition, this study is a cross-sectional survey that readers cannot understand the practical effects of HTM on non-communicable disease.

Response:

The main aims of this study were to explore the prevalence of herbal and traditional medicine (HTM) usage in Thailand in the large population (6,796 volunteers) and evaluate the associations with demographic factors or self-reported chronic diseases. We did not aim to fully assess the safety and effectiveness of HTM. The data on the frequency of use, dose and period of use were not collected in the survey. The reviewer is correct in saying that this is a cross-sectional study and as such, the practical effects of HTM on chronic conditions cannot be ascertained. Although we examined the relationship between the level of therapeutic control of CV risk factors and HTM use, this part of the analysis was exploratory in nature. Our study provided similar level of information to a recent study published in BMC Complementary and Alternative Medicine:


The words used in the background part may have been confusing. In particular the word ‘frequency’ has been replaced by ‘prevalence’ to refer to the numbers of people using HTM rather than the frequency of HTM usage. The aims of this study have been more clearly defined in the introduction and points raised by the reviewer has been addressed as the limitation in the discussion section.

Abstract

‘We examined the prevalence and factors associated with HTM use in a Thai worker population. In addition, we explored the relationship between HTM use and therapeutic control of cardiovascular risk factors and documented the most common types of HTM used in various chronic diseases.’

Introduction P 5

‘The main aims of this study were to examine the prevalence and factors associated with HTM use in a Thai worker population. In addition, we will explore the relationship between HTM use
and therapeutic control of CVD risk factors, and also document the most common types of HTM used in various chronic diseases.

Discussion P 13

‘There are several limitations of the study. This was a cross-sectional analysis, and causal relationship between HTM use and disease status or therapeutic control cannot be established. Data was not available on the dose or duration of HTM use, which would be important in defining HTM exposure. In addition, we did not have data on the reason or expectations of subjects for using HTM. Therefore, our study probably reflects the HTM prevalence and consumption behavior rather than the effects of specific HTM on CVD control. The list of HTM was by obtained by recall and many people did not list the HTM used. Thus the data represented a general pattern of HTM prevalence rather than a formal assessment of specific HTM use.’

Reviewer 2:

The aim of this study was to examine the frequency and risk factors with HTM in a Thai worker population and document the most common types of HTM used in various NCD conditions.

1. However, this article seems too long to be published and the scope in content is too wide. I suggest the anthers to focus on the main subject and condense the contents, also to delete some figures by using description. Other suggestions as below:

1 To describe the detailed measurements of blood pressure, glucose, CKD, and obesity, etc., seems not necessary. They are general basic data for any subject underwent physical check-up as study needed.

Response:

We have moved the figures to supplementary figures and added extra data to the text. We have deleted some details in the methods section as recommended. However, we have retained definitions of clinical diseases used in the paper such as CKD, hypertension, and diabetes as these definition criteria (especially with regards to medication usage) may vary between different studies.

The following has been modified:

Methods

P5:
‘A set of standardized, detailed questionnaires was also given to each participant to inquire about their demographic data and general health including questions about awareness of specific chronic diseases.’ 

P 6

Blood tests were performed in a laboratory in compliance with ISO 15189 as detailed previously. [10]

HTM users were more likely (p<0.05) to have self-reported diabetes mellitus (HTM users, 13% vs Non-users, 9%), dyslipidemia (HTM users, 48% vs Non-users, 41%), liver diseases (HTM users, 14% vs Non-users, 10%) and cancer (HTM users, 5% vs Non-users, 4%) and tended to have higher proportion of self-reported hypertension, but there were no differences in established CVD. (Supplementary Figure S1) The prevalence of HTM users increased with numbers of self-reported co-morbidities (p<0.001). (Supplementary Figure S2).

Legend- P 23

Figure S1. Prevalence of self-reported conditions among herb and traditional medication (HTM) users compared to non-users. Shaded bars represent HTM users; white bars represent Non-users. * denotes p<0.05.

Figure S2. Prevalence of herb and traditional medication users by numbers of self-reported non-communicable disease conditions.

Figures

Figures 1 and figure 2 has been deleted

Supplementary Figure S1 and supplementary figure 2 added

2. The participants were from a work company, and the male workers are the most. Therefore, this study has limitation and bias in the first place.

Response:
We agree with the reviewer that these facts may lead to bias and had acknowledged this in the discussion. We have modified the discussion slightly to clarify this point more clearly.

Discussion- P14

‘Finally, while our findings should be generally applicable to the Thai community, our studied subjects had a higher proportion of males and consisted of a worker population that may differ slightly from the Thai population as a whole. Although EGAT employees come from all regions of Thailand and cover a wide-range of demographic backgrounds, the socio-economic status of EGAT employees is probably better than some of the most severely economically disadvantaged Thais, and the study did not include the severely ill or disabled subjects excluded from employment. [10] Nonetheless, the prevalence of CVD risk factors found in our study subjects are comparable to those found in nationally representative surveys. [38]

3. There is no discussion about alcohol consumption or obesity related to HTM usage in this paper.

Response:

This has been added.

Discussion P10

‘Obesity is often associated with multiple risk factors for CVD and predisposes to many chronic diseases. Given high toxicities or lack efficacy of Western medications on the treatment of obesity, there has been considerable interests in the use of HTM to assist weight loss or prevent long term consequences of obesity. [20] Our study also showed that current alcohol intake was associated with HTM use. This is similar to results from the US, where drinkers were more likely to have used HTM, compared to lifetime teetotalers. [21].The relationship between alcohol and HTM use is complex, as many factors in life could influence both the use of HTM and alcohol consumption such as partner strain, pain and mental disorders such as major depression and panic disorders. ‘

4. Why the authors chose the term of non-communicable diseases, but not chronic conditions, in this study, and finally, just picked up DM, HT, cancer, CKD or liver disease without giving definition to the term of NCD.

Response:
We agree with the reviewer. To minimize confusing definitions, we have changed our paper title and topic using the term ‘chronic diseases’ rather than non-communicable diseases. We have made changes throughout the text. (see highlighted text)

Title
Herbal or traditional medicine consumption in a Thai worker population: pattern of use and therapeutic control in chronic diseases.

Running title: Herbs and chronic diseases in Thais

NCD changed to chronic disease /chronic conditions in different places.

Abstract P3

Background P4-P5

Methods P6

Discussion P 13

5. The authors use herbal and traditional medicine in this study, then, looks like the participants were buying those HTM by themselves, without physicians prescription. In fact, for those garlic or turmeric, they are healthy food in many countries rather as medicine. I wonder the regulations in Thailand, whether there are traditional doctors to prescribe herbal or traditional medicine or not?

Response:

The Thai FDA classified herbal medicinal products into four categories, namely:

1. Traditional drugs. These are traditional Thai or Chinese medicine based on traditional knowledge that have been passed on from generation to generation.

2. Modified traditional drugs. These are traditional medicines of which the indication, therapeutic claims, dosage and administration are based on traditional knowledge as in the first group but the dosage forms have been modified into modern dosage forms, e.g. capsules or tablets.

3. Modern herbal medicines or Phytopharmaceuticals.
These are herbal medicinal products that are composed of standardized active plant materials in the form of semi-purified compounds derived from scientific research.

4. New drugs. These are new drugs from herbs developed through complete drug development process and are in the form of purified isolated active substances of which the chemical structures were identified as new chemical entities

According to this classification, most of Thai traditional medicines and herbal medicines fall into the first three categories of herbal medicinal products. Regarding Thai regulations, herbs can be used in form of food and drug. But foods and drugs are different in regulation by Thai law. Both of them may have similar ingredients, dosage forms, and packages. Sometimes it is hard for the consumer to distinguish between food and drug, especially the borderline herbal products. Under the Thai FDA regulations, these products are categorized by the purposes for which the products are intended whether it is used for treatment or health promotion. For example, turmeric can be both food and drug depending on the dose (daily dose of drug is normally higher than food).

HTM are more often obtained over the counter through both regulated and unlicenced channels although licensed traditional doctors can prescribe HTM often alongside Western medicine in healthcare facilities.

The following has been added in the discussion on p 13:

‘ In Thailand, HTM is available mostly as traditional drugs or formulations, modified traditional drugs in modern dosage forms, e.g. capsules or tablets or as phytopharmaceuticals, which are composed of standardized active plant materials in the form of semi-purified compounds. In practice, the consumers do not differentiate between the different types of preparations or dosage and culinary herbs taken in higher quantities are often included as HTM. Mixed botanical preparations was listed by many HTM users. Typically, these preparations contain a wide-spectrum of herbs and the contents are not known by the consumers as the labelling of all ingredients are not legally enforced. Indeed, the majority of users were not able to list the HTM, they consumed. Although we did not determine the sources of HTM in this study, other studies in diabetic [19] and CKD patients [18] showed that although a proportion of HTM are prescribed by licensed traditional medicine practitioners, most HTM use in Thailand is self-prescribed with folk remedy shops, direct sale, markets or family being the commonest sources. Under these circumstances which may be unregulated, the subjects often do not know the types of HTM they consumed.
6. I cannot agree on page 12, from line 29 to 4. The CKD in Taiwan was not attributed to the use of aristolochic acid, but to the usage of NSAIDs and self-buying herbal medicines.

Response:
We have made changes to the text as follows

Discussion P 12

HTM especially the use of aristolochic acid in Chinese traditional medicine use has been shown to be associated with CKD [5].

7. To do the hypothesis as the HTM use is associated with improved therapeutic control of CVD risk factors, I suggest the author to ask the participants about their attitude or expectation for buying these healthy food and to check whether there are evidences to think about prevention of diseases, even non-communicable, or communicable ones, by those herb and traditional medicines.

Response:
We have defined our aims of the study more clearly. We explored the relationship between HTM use and therapeutic control only. We do not have data on attitude or expectation for buying these healthy food. As such we cannot fully test the hypothesis that HTM use leads to better control. We have rephrased the aim in the background and acknowledged the points made by the reviewer in the limitations.

Background P 5

The main aims of this study were to examine the prevalence and factors associated with HTM use in a Thai worker population. In addition, we will explore the relationship between HTM use and therapeutic control of CVD risk factors, and also document the most common types of HTM used in various chronic diseases.

Discussion P 13

There are several limitations of the study. This was a cross-sectional analysis, and causal relationship between HTM use and disease status or therapeutic control cannot be established. Data was not available on the dose or duration of HTM use, which would be important in defining HTM exposure. In addition, we did not have data on the reason or expectations of
subjects for using HTM. Therefore, our study probably reflects the HTM prevalence and consumption behavior rather than the effects of specific HTM on CVD control.