Different traditional Chinese medicine constitution is associated with dietary and lifestyle behaviors among adults in Taiwan

Min-Fen Hsu, RN, MSa,b, Pei-Ling Tang, RN, PhDc,d,e, Tzu-Cheng Pan, BSf, Kuang-Chieh Hsueh, MDg,*

Abstract
The World Health Organization states prevention of chronic diseases should be based on good lifestyle behaviors and healthy diets as they can reduce the risk of chronic diseases by 80%. The theory of traditional Chinese medicine constitution (TCMC) emphasizes the congenital differences of TCMC stem from the genes of parents, while acquired differences in TCMC are caused by factors as living environments, lifestyle behaviors, and dietary habits. From the perspective of preventive medicine, this study explores the correlation between dietary habits and lifestyle behaviors as potential risk factors for different types of TCMC—balanced constitution, Yang deficiency, Yin deficiency, and Phlegm stasis. Research data were collected from 2760 subjects aged 30 to 70 years participating in a survey conducted by Taiwan Biobank in 2012 to 2017. The survey included basic demographic characteristics, lifestyle behaviors, and dietary habits along with a Body Constitution Questionnaire. Compared to men, women were 3 to 4 times more likely to develop Yang-deficiency, Yin-deficiency, and Phlegm stasis. Variables that affected TCMC were smoking, midnight snack consumption, consumption of gravy-soaked or lard-soaked rice/noodles, deep-fried soybean products, bread spread, pickled vegetables as side dishes for the main course of a meal, and the dietary habit of vegetables or fruits instead of high-fat desserts. Poor dietary habits and lifestyle behaviors are the cause of unbalanced TCMCs. Understanding the specific TCMC of individual can provide useful information and predictions to maintain physical health and achieve early disease prevention to meet the goal of preventive medicine.

Abbreviations: AOR = adjusted odds ratio, BCQ = Body Constitution Questionnaire, BMI = body mass index, TCM = traditional Chinese medicine, TCMC = traditional Chinese medicine constitution, TWB = Taiwan Biobank.

Keywords: behavior, chronic disease, dietary habits, lifestyle, traditional Chinese medicine

1. Introduction
Dietary habits and lifestyle behaviors are key factors influencing health. The Western pattern diet and refined foods are positively correlated with an elevated incidence of chronic disease including cardiovascular disease, colon cancer, diabetes, obesity, and metabolic syndrome,[1,2] and chronic diseases accounted for 71% of global deaths in 2015.[3] For chronic diseases, the rise in prevalence at a young age is not a sign of aging but rather results from poor lifestyles such as smoking, lack of exercise, obesity, alcoholism, or poor dietary habits such as reduced consumption of vegetables, fruits, nuts, whole grains, beans, fish, and low-sodium foods.[2] The World Health Organization stated that the good lifestyles and healthy diets can reduce the risk of developing chronic diseases by 80%.[4]

Traditional Chinese medicine (TCM) is a commonly used complementary and alternative medicine that has proven effective for chronic disease prevention and treatment.[5] The theory of TCM constitution (TCMC) is a branch of TCM emphasizing that congenital differences in TCMC stem from the genes of the parents, while acquired differences in TCMC are caused by factors such as living environments, lifestyle behaviors, and dietary habits.[6] According to the TCMC theory originated in the Yellow Emperor’s Canon of Medicine dated 2000 body constitution, which elaborates on the theoretical basis of TCM and explains the basic principles of TCM using the theory of Yin and Yang and the 5-element theory.[7,8] The TCMC theory states that the circulation of qi maintains the physiological functions of the body, the body balance is maintained through the complementary relationship between Yin and Yang, diseases result

This work was supported by the Kaohsiung Veterans General Hospital, Taiwan (ROC) (grant numbers KSVGH111-D01-3).
The authors have no conflicts of interest to disclose.
The datasets generated during and/or analyzed during the current study are not publicly available, but are available from the corresponding author on reasonable request.

* Correspondence: Kuang-Chieh Hsueh, Department of Family Medicine, Kaohsiung Veterans General Hospital, 386, Dazhong 1st Road, Kaohsiung City 81362, Taiwan (ROC) (e-mail: kchsueh@gmail.com).

Copyright © 2022 the Author(s). Published by Wolters Kluwer Health, Inc. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial License 4.0 (CCBY-NC), where it is permissible to download, share, remix, transform, and buildup the work provided it is properly cited. The work cannot be used commercially without permission from the journal.

How to cite this article: Hsu M-F, Tang P-L, Pan T-C, Hsueh K-C. Different traditional Chinese medicine constitution is associated with dietary and lifestyle behaviors among adults in Taiwan. Medicine 2022;101:39(e30692).
Received: 24 January 2022 / Received in final form: 22 August 2022 / Accepted: 23 August 2022
http://dx.doi.org/10.1097/MD.0000000000030692
from Yin-Yang imbalance and interruption of qi.[6] The TCMC scale developed by Taiwanese researchers enables the systematic classification of constitution into 4 types (Yin deficiency, Yang deficiency, Phlegm stasis, and balanced constitution), with different constitutions exerting different influences on physiological characteristics, disease susceptibility, and disease progression.[6] Body Constitution Questionnaire (BCQ), an effective and useful tool, has been developed for evaluation of the composition of Yin deficiency, Yang deficiency, and Phlegm stasis.[9–13]

The TCM theory advocates that a healthy lifestyle should be based on a good understanding of TCMC and that the TCM theory should be used to correct misconceptions about health and lifestyle behaviors.[14] TCMC is a relative variable in the life process and a key influencing factor of diseases.[15] Individual-specific recommendations for improving lifestyle behaviors to maintain and improve physical health should be made by using the combination of 5-element and Yin-Yang theories with a focus on maintaining the internal balance of the body based on individual-specific TCMC, cold-heat pattern, and emotion.[16,17] The TCMC theory states that only a balanced constitution represents a healthy body state, unbalanced body states that may be highly susceptible to some diseases.[18]

To date, TCM still fails to have a clear definition of composite, and the treatment mechanisms are ambiguous, leading to questioning, criticism, and challenge.[8] Thus, high-quality studies are needed to confirm the close correlation between TCMC and chronic diseases. This study aimed to clarify the correlation between dietary habits and lifestyle behaviors as potential risk factors according to different body constitution types (balanced constitution, Yang deficiency, Yin deficiency, and Phlegm stasis).

2. Methods

2.1. Data source and sample

This was a cross-sectional study design. Between 2012 and 2017, we collected from 2760 subjects who participated in a survey conducted by Taiwan Biobank (TWB). After excluding subjects with a body mass index (BMI) below 18.5 kg/m^2 and those failing to provide relevant information. They were frequency-matched at a ratio of 1:1 by age, gender, and BMI. The TWB aims to build a nationwide research database that integrates genomic/epigenomic profiles, lifestyle patterns, dietary habits, environmental exposure history, and long-term health outcomes of 300,000 residents of Taiwan.[19,20] Data were obtained from the TWB, a national biobank accessible to researchers that contains health information collected from Taiwan residents aged 30 to 70 years between 2008 and 2017. Clinical studies with TWB carried out in Taiwan have shown encouraging results, and it has been widely used in studies involving chronic diseases.[21–24]

2.2. Measurements

The survey contents comprised basic demographic characteristics and lifestyle behaviors (alcohol consumption, cigarette smoking, betel nut consumption, exercise habits, tea or coffee drinking, vegetarian diets, midnight snack consumption, and dietary supplement use). Dietary habit information was collected using the questionnaire designed for the Nutrition and Health Survey in Taiwan,[25] which comprised 17 questions about the dietary status within the last month. Each question was constructed using appropriate frequency and intensity scale descriptors and scored on a 5-point Likert scale with answer choices of “like this,” “mostly like this,” “fifty-fifty,” “mostly not like this,” and “not like this at all.” The subjects were also administered a TCMC survey.

This study adopted the BCQ, developed by a TCMC and syndrome research team in Taiwan.[9–13] The BCQ was used to measure the psychological and physiological states of deviations in body constitution in each patient during the past month. The BCQ comprised 44 questions about 3 constitution types: Yang deficiency, Yin deficiency, and Phlegm stasis, with each question constructed using appropriate frequency and intensity scale descriptors and scored on a 5-point Likert scale. If the total score of a subject satisfied the identification criterion of a constitution, the subject was considered to have that constitution. That is, the 19 Yang deficiency questions scored ≥ 31 points means Yang deficiency and the 19 Yin deficiency questions scored ≥ 29.5 points means Yin deficiency; the 16 Phlegm stasis questions scored ≥ 27 points means Phlegm stasis. The final score of each constitution type was calculated by summing the scores of all items of each subscale, with a higher score implying a greater deviation from the constitution balance. Yang deficiency, Yin deficiency, and Phlegm stasis are unbalanced constitutions[8–13]; if the total score of a subject failed to meet any of the criteria, the subject was considered not to have a single type of TCMC and to instead have a balanced constitution. The Cronbach α coefficients and intra-group correlation coefficients for Yang deficiency, Yin deficiency, and Phlegm stasis were 0.88 and 0.91,[9,10] 0.85 and 0.91,[11,12] and 0.88 and 0.91,[13] respectively.

2.3. Ethical consideration

Recruitment of individuals in the TWB project was performed in accordance with relevant regulations and guidelines, and the present study was approved by the Institutional Review Board of Kaohsiung Veterans General Hospital in Taiwan (VGHKS18-CT6-03).

2.4. Statistical analysis

Data analyses were performed using IBM SPSS Statistics (version 22.0, Inc, Chicago, IL) software. The variables analyzed in the study included TCMC (Yang deficiency, Yin deficiency, Phlegm stasis, or balanced constitution), age, sex, marital status, living alone or not, education level, and BMI, as well as lifestyle behaviors including alcohol consumption, cigarette smoking, betel nut consumption, exercise habits, tea drinking, coffee drinking, vegetarian diet, midnight snack consumption, and dietary supplement use. Dietary habits were classified into 3 frequency categories: “rare,” “occasional,” and “frequent” consumption. Stepwise regression analysis was performed to explore the effects of dietary habits and lifestyle behaviors on TCMC. P < .05 indicated statistical significance.

3. Results

This study enrolled total of 2760 subjects aged 30 to 70 years (means 48.69 ± 10.07), including 740 (26.8%), 499 (18.1%) 584 (21.2%), and 360 (13.0%) with balanced constitution, Yang deficiency, Yin deficiency, and Phlegm stasis, respectively. Females accounted for 51.6% of the study population, more than half were married (82.4%), most not lived alone (94.7%), and more than half were married (82.4%), most not lived alone (94.7%), and more than half were married (82.4%). Of the subjects with balanced constitution, 54.2% is male and 83.9% is married, subjects not living alone accounted for 94.8% and 60.8% above college education, 49.9% with BMI 18.5 to 24.0 kg/m^2, with more than 50% of subjects above 24. Of the subjects with balanced constitution, 54.2% is male and 83.9% is married, subjects not living alone accounted for 94.8% and 60.8% above college education, 49.9% with BMI 18.5 to 24.0 kg/m^2 (Table 1). Regarding lifestyle behaviors, subjects with balanced constitutions responded “No” alcohol consumption (91.7%), cigarette smoking (72.8%), betel nut consumption (95.0%), tea drinking (59.4%), coffee drinking (68.9%), vegetarian diet (90.4%), and midnight snack consumption (73.4%). Additionally, 52.3% and 55.1% of subjects reported no exercise habits and dietary supplement use (Table 2). Table 3 shows that after adjusting for age, BMI, sex, lifestyle behavior, and dietary habits, stepwise logistic regression revealed that the odds of developing Yang deficiency or Phlegm...
stasis varied by a factor of 0.983 (P < .001) and 0.985 (P = .005) per year of age, indicating that the younger was more likely to develop Yang deficiency or Phlegm stasis. The odds of developing Yang deficiency varied by a factor of 0.949 (P = .0007) per year of age, indicating that the younger was more likely to develop Yang deficiency than those who rarely did. Subjects who occasionally or frequently ate gravy-soaked or lard-soaked rice/noodles, bread spread, occasionally ate at least 2 kinds of vegetables, occasionally or frequently ate low-sodium products were more likely to develop Phlegm stasis than those who rarely did.

4. Discussion

This study explored the relationship between basic demographic characteristics, lifestyle behaviors, and dietary habits of subjects and their TCMC. After adjusting for age, BMI, sex, lifestyle habits, supplements, and dietary habits, the analysis revealed that dietary habits and lifestyle behaviors were predictors of TCMC. Factors with significant negative effects on the occurrence of balanced constitution were positively correlated with the occurrence of Yang deficiency, Yin deficiency, and Phlegm stasis.

At present, the most widely used instruments for classification of constitution types include, among others, the Constitution in Chinese Medicine Questionnaire, which was developed in Mainland China,[26] and the BCQ, which was developed in Taiwan.[9–13] Although Mainland China is very similar to Taiwan, the lifestyle, language, and culture are different.[27] Compare to Constitution in Chinese Medicine Questionnaire, this questionnaire is easily administered and its reliability and validity have been established in quite a few studies.[12,28,29] The analysis revealed younger age to be associated with an increased likelihood of developing Yang deficiency or Phlegm stasis, a finding similar to those of a Hong Kong-based study by Sun et al.[30] that age is a preventive factor for Yin deficiency, Phlegm stasis, qi deficiency, and Wetness-heat constitution. This may be attributed to the fact that Yang and qi gradually decline with age; moreover, the older the age, the less likely individuals are to engage in heavy work and face various work-related pressures, thereby alleviating qi and Yin deficiency. Heli et al.[31] investigated the health status of young people with different TCMC types, reporting that under the pressure of heavy work and economic conditions, more and more young people have

### Table 1

| Characteristics | Total (n = 2760) | Normal constitution | Unbalanced constitution types |
|-----------------|----------------|---------------------|-------------------------------|
|                 | (n = 2020) | (n = 740) | Balanced | (n = 2261) | (n = 499) | Yin deficiency | (n = 2176) | (n = 584) | Phlegm stasis | (n = 2400) | (n = 360) |
| Age (yr), mean ± SD | 48.69 ± 10.072 | 47.28 ± 9.37 | 49.42 ± 9.00 | 49.47 ± 9.052 | 46.22 ± 9.17 | 49.06 ± 9.07 | 47.67 ± 9.376 | 49.20 ± 9.12 | 46.35 ± 9.12 |
| Sex | | | | | | | | | |
| Female | 1423 (51.6) | 497 (67.2) | 925 (45.8) | 1075 (47.5) | 151 (20.3) | 1028 (47.2) | 395 (67.6) | 1160 (48.3) | 26.3 (73.1) |
| Male | 1337 (48.4) | 243 (32.8) | 1094 (54.2) | 1186 (52.5) | 348 (46.7) | 1148 (52.8) | 189 (32.4) | 1240 (51.7) | 97 (26.9) |
| Marital status | | | | | | | | | |
| Single | 484 (17.6) | 159 (21.5) | 325 (16.1) | 364 (16.1) | 120 (24.1) | 364 (16.8) | 120 (20.6) | 396 (16.5) | 88 (24.5) |
| Married | 2272 (82.4) | 580 (78.5) | 1692 (83.9) | 1894 (83.9) | 378 (75.9) | 1809 (83.2) | 463 (79.4) | 2001 (83.5) | 271 (75.5) |
| Living alone | | | | | | | | | |
| Yes | 2614 (94.7) | 699 (94.5) | 1915 (94.8) | 2146 (94.9) | 468 (93.8) | 2062 (94.8) | 552 (94.5) | 2273 (94.7) | 341 (94.7) |
| No | 146 (5.3) | 41 (5.5) | 105 (5.2) | 115 (5.1) | 31 (6.2) | 114 (5.2) | 32 (5.5) | 127 (5.3) | 19 (5.3) |
| Education level | | | | | | | | | |
| Elementary and junior high school (vocational) | 842 (30.5) | 236 (31.9) | 606 (30.0) | 679 (30.0) | 163 (32.7) | 652 (30.0) | 190 (32.6) | 716 (29.8) | 126 (35.1) |
| College or above* | 1654 (59.9) | 426 (57.6) | 1228 (60.8) | 1363 (60.4) | 291 (58.4) | 1324 (60.9) | 330 (56.6) | 1458 (60.8) | 196 (54.6) |
| BMI (kg/m2), mean ± SD | 24.02 ± 2.60 | 23.90 ± 2.67 | 24.06 ± 2.57 | 24.087 ± 2.57 | 23.70 ± 2.71 | 24.02 ± 2.59 | 24.02 ± 2.62 | 24.00 ± 2.59 | 24.11 ± 2.67 |
| 18.5–24.0 | 1308 (50.7) | 376 (50.8) | 1022 (60.6) | 1129 (49.9) | 269 (53.9) | 1110 (51.0) | 288 (49.3) | 1222 (50.9) | 176 (48.9) |
| 24.1–27.0 | 970 (35.1) | 264 (35.7) | 706 (35.0) | 802 (35.5) | 168 (33.7) | 755 (34.7) | 215 (36.8) | 842 (35.1) | 128 (35.6) |
| 27.1–30.0 | 392 (14.2) | 100 (13.5) | 292 (14.5) | 330 (14.6) | 62 (12.4) | 311 (14.3) | 81 (13.9) | 336 (14.0) | 56 (15.6) |

BMI = body mass index, n = number, SD = standard deviation, TCMC = traditional Chinese medicine constitution.

*BMI of college or above, college or post-graduate education.
suboptimal health status, meaning they are in a borderline state between healthy and diseased states. Heli et al\[31\] also reported that 31.19% of men have a balanced constitution, compared to 31.12% of women. Lee et al\[32\] also showed a higher proportion of unbalanced constitutions in women than in men. These reports are consistent with the finding of this study that female subjects were 3 to 4 times more likely to develop unbalanced constitutions compared to male subjects, which may be attributed to the physiological characteristics and personalities of women.\[33\]

Regarding lifestyle behaviors, data analysis revealed that subjects with Yang deficiency had a low BMI on average and that those who did not have an exercise habit had Phlegm stasis. The most obvious features of individuals with Yang deficiency are feeling cold, low subcutaneous fat, and low BMI.\[30,34\] In addition, most of the subjects who did not have an exercise habit exhibited Phlegm stasis, a finding consistent with the notion in TCM theory that exercise can facilitate the flow of qi to eliminate qi deficiency and prevent Phlegm stasis. The present study revealed the significant impact of dietary habits on different TCMC types; that is, subjects with balanced constitutions had healthier dietary habits, while subjects with Yang deficiency, Yin deficiency, and Phlegm stasis frequently ate deep-fried products, bread spread, pickled products, stir-fried dishes, and low-sodium products with rare consumption of vegetables or fruits to replace high-fat desserts. Similarly, Jiang et al\[39\] also reported a negative effect of dietary habits on the development of TCMC types, including a higher prevalence of dietary habits with a negative impact on TCMC in subjects with unbalanced constitutions compared to those with balanced constitutions.

### Table 2
Theory of TCMC and participant lifestyle characteristics.

| Characteristics                  | Total (n = 2760) | Normal constitution | Unbalanced constitution types |
|----------------------------------|------------------|---------------------|-------------------------------|
|                                  | No (n = 2020)    | Yes (n = 740)       | Balanced                      |
| Alcohol consumption              |                  |                     | No (n = 2261)                 |
| No                               | 1221 (44.3)      | 2628 (95.2)         | 798 (28.9)                    |
| Yes                              | 2491 (90.3)      | 132 (4.8)           | 129 (4.8)                     |
| Cigarette smoking                |                  |                     | Yes (n = 2400)                |
| No                               | 1669 (60.5)      | 109 (3.9)           | 1158 (43.2)                   |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 116 (4.8)                     |
| Tea drinking                     |                  |                     | No (n = 2176)                 |
| No                               | 1251 (45.3)      | 879 (31.8)          | 1487 (53.0)                   |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 150 (5.3)                     |
| Coffee drinking                  |                  |                     | Yes (n = 360)                 |
| No                               | 1059 (37.4)      | 723 (26.2)          | 585 (20.9)                    |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 120 (4.4)                     |
| Betel nut consumption            |                  |                     | No (n = 584)                  |
| No                               | 1251 (45.3)      | 879 (31.8)          | 1487 (53.0)                   |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 150 (5.3)                     |
| Exercise                         |                  |                     | Yes (n = 2400)                |
| No                               | 1251 (45.3)      | 879 (31.8)          | 1487 (53.0)                   |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 150 (5.3)                     |
| Vegetarian diet                  |                  |                     | No (n = 2176)                 |
| No                               | 1251 (45.3)      | 879 (31.8)          | 1487 (53.0)                   |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 150 (5.3)                     |
| Midnight snack consumption       |                  |                     | Yes (n = 360)                 |
| No                               | 1251 (45.3)      | 879 (31.8)          | 1487 (53.0)                   |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 150 (5.3)                     |
| Dietary supplement consumption   |                  |                     | No (n = 2176)                 |
| No                               | 1251 (45.3)      | 879 (31.8)          | 1487 (53.0)                   |
| Yes                              | 2628 (95.2)      | 132 (4.8)           | 150 (5.3)                     |

n = number; TCMC = traditional Chinese medicine constitution.
correlation between the occurrence of a balanced constitution and individuals who liked meat products and disliked vegetables show a negative correlation.

As shown above, individual differences, lifestyle behaviors, and dietary habits all affect TCMC and serve as important factors to alleviate Yang deficiency, Yin deficiency, and Phlegm stasis.[40] Selecting an appropriate treatment or recuperation method is key to maintaining a balanced constitution. However, this study had several limitations. For example, the survey of tea drinking habits focused on whether tea leaves or tea ingredients were contained in the drinks (excluding flower tea) but did not collect information about individual preferences for tea types; secondly, specific occupational and disease data were not collected, which may have affected the objectivity of the results. The current findings of this study, however, confirm the effects of dietary habits and lifestyle behaviors on TCMC.

5. Conclusions
Factors such as dietary habits and lifestyle behaviors can cause individual differences in TCMC. Understanding the influencing factors of TCMC for a given individual will provide useful information to maintain balanced constitution and health. Such understanding plays an indispensable role in health promotion and treatment of preventive medicine.

Acknowledgments
This research has been conducted using the Taiwan Biobank resource. We thank all the participants and investigators of the Taiwan Biobank and the Editage Company Ltd. for their technical and English editing services.
Author contributions
Conceptualization: Min-Fen Hsu, Pei-Ling Tang.
Formal analysis: Kuang-Chieh Hsueh, Tzu-Cheng Pan.
Supervision: Pei-Ling Tang, Kuang-Chieh Hsueh.

Writing – original draft: Min-Fen Hsu, Pei-Ling Tang, Kuang-Chieh Hsueh.

Writing – review & editing: Min-Fen Hsu, Pei-Ling Tang, Tzu-Cheng Pan, Kuang-Chieh Hsueh.

References
[1] Aboul-Enein BH, Bernstein J, Neary AC. Dietary transition and obesity in selected Arabicspeaking countries: a review of the current evidence. East Mediterr Health J. 2017;23:763–70.
[2] Locke A, Schneideran J, Zick SM. Diets for health: goals and guidelines. Am Fam Physician. 2018;97:721–8.
[3] Wang H, Naghavi M, Allen C, et al. Global, regional, and national life expectancy, all-cause mortality, and cause-specific mortality for 249 causes of death, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015. Lancet. 2016;388:1459–544.
[4] World Health Organization, WHO. Integrated chronic disease prevention and control. Available at: https://www.who.int/chp/about/integrated_cd/en/. Accessed December 26, 2022.
[5] Bahall M. Complementary and alternative medicine usage among cardiac patients: a descriptive study. BMC Complement Altern Med. 2015;15:100.
[6] Sun Y, Zhao Y, Xue SA, et al. The theory development of traditional Chinese medicine constitution: a review. J Tradit Chin Med Sci. 2018;5:16–28.
[7] Cavalieri S, Rotoli M. Huangdi Neijing: a classic book of traditional Chinese medicine. Recenti Prog Med. 1997;88:541–6.
[8] Qiu J. Traditional medicine: a culture in the balance. Nature. 2007;448:126–8.
[9] Chen LL, Lin JS, Lin JD, et al. BCQ+: a body constitution questionnaire to assess Yang-Xu. Part II: evaluation of reliability and validity. Forsch Komplementmed. 2012;19:234–41.
[10] Su YC, Chen LL, Lin JD, et al. BCQ+: a body constitution questionnaire to assess Yang-Xu. Part I: establishment of a provisional version through a Delphi process. Forsch Komplementmed. 2008;15:327–34.
[11] Lin JD, Chen LL, Lin JS, et al. BCQ+: a body constitution questionnaire to assess Yin-Xu. Part I: establishment of a provisional version through a Delphi process. Forsch Komplementmed. 2012;19:234–41.
[12] Lin JS, Chen LL, Lin JD, et al. BCQ+: a Body Constitution Questionnaire to assess Yin-Xu. Part II: evaluation of reliability and validity. Forsch Komplementmed. 2012;19:285–92.
[13] Lin JD, Lin JS, Chen LL, et al. BCQ+: a Body Constitution Questionnaire to assess Stasis in traditional Chinese medicine. Eur J Integr Med. 2012;4:e379–91.
[14] Evans M, Paterson C, Wye L, et al. Lifestyle and self-care advice within different body constitution in type 2 diabetes patients: Taichung Diabetic body constitution study. Evid Based Complement Altern Med. 2015:2015:603048.
[15] Heli L, Li Z, Qi-qiang C, et al. Physical and mental health conditions of young college students with different Traditional Chinese Medicine constitutions in Zhejiang Province of China. J Tradit Chin Med. 2015;35:703–8.
[16] Morañino OM, Adebowale AS, Obembe TA, et al. Association between household environmental conditions and nutritional status of women of childbearing age in Nigeria. PLoS One. 2020;15:e0243356.
[17] Li M, Mo S, Li Y, et al. A study of traditional Chinese medicine body constitution associated with overweight, obesity, and underweight. Evid Based Complement Altern Med. 2017:2017:7361896.
[18] Yao H, Mo S, Wang J, et al. Genome-wide DNA methylation profiles of phlegm-dampness constitution. Cell Physiol Biochem. 2018;45:1999–2008.
[19] Yu X, Sun S, Guo Y, et al. Citri Reticulatae Pericarpium (Chenpi): botany, ethnopharmacology, phytochemistry, and pharmacology of a frequently used traditional Chinese medicine. J Ethnopharmacol. 2018;220:265–82.
[20] Chang SM, Chen CH. Effects of an intervention with drinking chamomile tea on sleep quality and depression in sleep disturbed postnatal women: a randomized controlled trial. J Adv Nurs. 2016;72:306–15.
[21] Zhu Y, Wang Q, Dai Z, et al. Case-control study on the associations between lifestyle-behavioral. J Tradit Chin Med. 2014;34:286–92.
[22] Jiang QY, Li J, Zheng L, et al. Constitution of traditional Chinese medicine and related factors in women of childbearing age. JCM. 2018;81:358–65.
[23] Li Y, Li XH, Huang X, et al. Individualized prevention against hypertension based on Traditional Chinese Medicine Constitution Theory: a large community-based retrospective, STROBE-compliant study among Chinese population. Medicine. 2017;96.