

Letter to the Editor

## Authors' Reply: Concerns on Generalizability

Hsueh-Wen Chung<sup>1</sup>, MS; Chen-Jei Tai<sup>2,3</sup>, MD, PhD; Polun Chang<sup>4</sup>, PhD; Wen-Lin Su<sup>5,6</sup>, MD, PhD; Li-Yin Chien<sup>7</sup>, MPH, ScD

<sup>1</sup>Department of Nursing, College of Nursing, National Yang Ming Chiao Tung University, Taipei City, Taiwan

<sup>2</sup>Department of Obstetrics and Gynecology, School of Medicine, College of Medicine, Taipei Medical University, Taipei City, Taiwan

<sup>3</sup>Tai's Traditional Chinese Medicine Clinic, Taipei City, Taiwan

<sup>4</sup>Institute of Biomedical Informatics, National Yang Ming Chiao Tung University, Taipei City, Taiwan

<sup>5</sup>Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, New Taipei City, Taiwan

<sup>6</sup>School of Medicine, Tzu Chi University, Hualien, Taiwan

<sup>7</sup>Institute of Community Health Care, College of Nursing, National Yang Ming Chiao Tung University, Taipei City, Taiwan

**Corresponding Author:**

Li-Yin Chien, MPH, ScD

Institute of Community Health Care

College of Nursing

National Yang Ming Chiao Tung University

No. 155, Section 2, Li-Nong Street

Beitou District

Taipei City, 112304

Taiwan

Phone: 1 886 2 2826 71

Fax: 1 886 2 2823 8614

Email: [lychien@nycu.edu.tw](mailto:lychien@nycu.edu.tw)

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**KEYWORDS**

mHealth app; mobile health; mHealth; app; prediabetes; traditional Chinese medicine; TCM; health-related quality of life; body constitution; meridian energy

We appreciate the thoughtful comments by Lin [1] on our study [2]. We have mentioned that the limitations of our study include a small sample size and a short follow-up period. We also suggested that future studies should be conducted with a larger sample size and a longer follow-up period.

The first comment raised was regarding the use of a randomized controlled trial (RCT) design without incorporating propensity score (PS) matching. Kuss et al [3] indicated that PS cannot take into account factors that are unknown or were not measured and, therefore, is more suitable for observational studies. An RCT is the only design that can ensure equal distributions of unknown confounding factors, and it enables the making of causal statements on treatment effects. Although in recent years a few studies have suggested the use of PS in RCTs [4], we are still uncertain about its appropriateness for RCTs. Future studies may attempt to investigate its use in RCTs. Nonetheless, following your suggestion, we tried regression adjustment with PS. The results appeared to be similar to those we presented in the paper.

The second comment suggests that we provide descriptive data for both between- and within-group comparisons. In addition, in cases where population characteristics are unknown, the Wilcoxon rank-sum test could have been considered for analysis. In our paper, we presented data for between- and within-group comparisons in Multimedia Appendix 5. We checked the distribution of the outcome variables including yang-deficiency, yin-deficiency, phlegm-stasis body constitution, body energy, and physical and mental component scores; the distribution approximated a normal distribution in our study. According to the central limit theorem, when the sample size of each group is greater than 30, it is reasonable to assume that the distribution of the sample means approaches normality [5].

The third point raised pertains to the absence of a prespecified subgroup analysis in our study. Owing to the predetermined objectives, hypothesis, and statistical analysis methodology at the initial stages of the study, coupled with the limitation of a small sample size, we did not incorporate a prespecified subgroup analysis. It is suggested that future studies, with an

increase in sample size, may consider carrying out such an analysis.

Once again, we appreciate this opportunity to clarify our study. Such dialogues enable the identification and discussion of more aspects of this important issue.

### Conflicts of Interest

None declared.

### Multimedia Appendix 1

Comparison of the primary and secondary outcomes among the TCM mHealth app, ordinary mHealth app, and control groups (N=121).

[\[PDF File \(Adobe PDF File\), 159 KB-Multimedia Appendix 1\]](#)

### References

1. Lin Y. Comment: concerns on generalizability. JMIR Mhealth Uhealth. 2023 [doi: [10.2196/50280](https://doi.org/10.2196/50280)]
2. Chung H, Tai C, Chang P, Su W, Chien L. The effectiveness of a traditional Chinese medicine-based mobile health app for individuals with prediabetes: randomized controlled trial. JMIR Mhealth Uhealth. Jun 20, 2023;11:e41099. [[FREE Full text](#)] [doi: [10.2196/41099](https://doi.org/10.2196/41099)] [Medline: [37338977](https://pubmed.ncbi.nlm.nih.gov/37338977/)]
3. Kuss O, Blettner M, Börgermann J. Propensity score: an alternative method of analyzing treatment effects. Dtsch Arztebl Int. Sep 05, 2016;113(35-36):597-603. [[FREE Full text](#)] [doi: [10.3238/arztebl.2016.0597](https://doi.org/10.3238/arztebl.2016.0597)] [Medline: [27658473](https://pubmed.ncbi.nlm.nih.gov/27658473/)]
4. Loux T, Huang Y. The uses of propensity scores in randomized controlled trials. Observational Studies. 2023;9(1):77-85. [doi: [10.1353/obs.2023.0007](https://doi.org/10.1353/obs.2023.0007)]
5. Kwak SG, Kim JH. Central limit theorem: the cornerstone of modern statistics. Korean J Anesthesiol. Apr 2017;70(2):144-156. [[FREE Full text](#)] [doi: [10.4097/kjae.2017.70.2.144](https://doi.org/10.4097/kjae.2017.70.2.144)] [Medline: [28367284](https://pubmed.ncbi.nlm.nih.gov/28367284/)]

### Abbreviations

**PS:** propensity score

**RCT:** randomized controlled trial

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