

Ms #10/091 –

Reviewer Comments:

Reviewer #2: This is an excellent manuscript that clearly illustrates the utility of Latent Transition Analysis for nursing research. The authors provide an overview of LTA procedure and the key applications for nursing research. Then the authors use an excellent exemplar from nursing research (an RCT of attitudinal barriers to pain management in adults with cancer) to illustrate the key concepts and utility of this data analysis method to test models of change over time in categorical variables. However, because the data used for the exemplar were drawn from an RCT, the authors should include a statement about human subjects protection and IRB approval for the RCT. This is the only change that I recommend.

Reviewer #3: The authors present an example analysis in order to introduce the Nursing Research community to Latent Transition Analysis (LTA), a statistical approach for the analysis of change over time specifically designed to categorical outcome measures.

This type of research information is relevant for the audience of Nursing Research, both for researchers as well as for clinicians implicated in research activities. Categorical data are very common in the clinical setting.

Therefore, analysis tools that can deal with such data are extremely useful, especially when dealing with patient file information (often recorded by clinicians, not researchers). Therefore, this approach to analysis has great potential in the clinical nursing setting for utilization of otherwise difficult to analyze data (the authors may want to use part of this information to maximize their statements about the relevance of the technique in this field).

Conceptual Comments

As in previous publications that deal with a methodological topic, it is difficult to structure a manuscript in such a way that the scientific domain content itself is appreciated (in this case, the cancer patient-relevant findings) while the methodological aspect is highlighted (in this case, the use of LTA).

Having faced this problem myself in the past, my choice has been to give the readers credit for their methodological and analytical understanding and to focus on the relevant findings more than on the methodological approach.

Having said that, what the authors decided is to structure their paper towards the methodological focus, but this approach should truly dominate the paper throughout.

I suggest to add specific information within the methodology and results section that can guide/teach the readers about how to perform such an analysis themselves or where to obtain additional information on each step of

the process. For example, are there specific challenges in coding the data? Which level of statistical expertise is required? Provide additional sources on how to learn how to conduct this analysis type. The syntax supplements are extremely useful in this context.

The authors should include a clear statement about IRB approval.

In the discussion/limitation section, the authors really only address one limitation (sample requirements), followed by the advantage of distribution requirements. It is unlikely that TLA only has one limitation and has probably more than one advantage. Given that the discussion is generally too short, this is a great place for additional information about this technique and its use. The section could be renamed into "Pros and Cons of LTA" and contain additional information about dis/advantages.

The discussion should also contain explicit statements about how LTA can provide information about effect size (i.e. in the context of odds ratios).

The headings in the results section should reflect the 4 research questions listed on page 5. This will facilitate clarity when reading.

The authors state that "LTA has been largely absent" in the field of nursing research. The authors should acknowledge previous utilization in this field by other authors (i.e. Gebhardt, Dusseldorp, & Maes, 1999). In addition, a quick on-line search (Google Scholar) resulted in several conference abstracts that used LTA in nursing-related domains. It is worthwhile to investigate whether any of these abstracts have meanwhile been published or are citable as conference abstracts.

Minor changes:

P.2 L.6, remove comma after studies

P. 12 L. 4 to 8. The last three sentences all begin with the same phrase "Latent transition analysis". Two of these repetitions should be avoided.

Gebhardt, W. A., Dusseldorp, E., & Maes, S. (1999). Measuring transitions through stages of exercise: application of latent transition analysis. *Percept Mot Skills*, 88(3 Pt 2), 1097-1106.

CHECKLIST FOR STYLE

TITLE PAGE -- Provide the complete mailing address of the corresponding author.

REFERENCES -- Please verify the publication date for Bergman & Magnusson ('97 or '98?).

Provide legends for the supplemental digital content (SDC) at the end of the manuscript and insert the SDC citations in text (see author guidelines at <http://edmgr.ovid.com/nres/accounts/ifaauth.htm#GeneralInformation> for specific details).