

Reviewer Comments:

Reviewer #2: Thank you for submitting this useful and well presented paper to Nursing Research. The paper presented an 'intervention fidelity framework for technology based behavioral interventions' which could be used by researchers to investigate technology use in healthcare and potentially (following empirical verification) by practitioners to help patients/clients better adhere to therapeutic technology. I trust that the following will help you to develop your work:

Problem statement- this is presented in the form of 3 paper objectives in the abstract and introduction sections of the paper. These are clear and provide a clear guide to the structure of the paper. The topic is relevant, given the increased use of technology in healthcare and the need to evaluate all healthcare interventions.

Background literature- The literature presented defines the topic, the relevance of the topic and previous related work. Some restructuring of the content of the introduction and review sections would be helpful. Currently, the introduction section is brief. It would be helpful to move some material from the subsequent parts of the script to the introduction so that the introduction presents a clear, basic definition of 'fidelity of technology'(a starting point for readers new to the subject) and explanation of the relevance of the topic to nursing/ healthcare/research worldwide (to engage a wide audience). It would be helpful to explain the relevance of topic to 'health technology assessment' and not just for complex intervention research.

Research design/method/data analysis- This paper does not have a clearly defined research design or data analysis section. It is unclear how the paper draws on research conventions and how objective 1 and 2 are intended to relate to each other. I think there are three possibilities (i) that a literature review, emphasising discourses, has been undertaken and this is only a background to a proposed 'fidelity framework' (if this is the case, is the proposed framework 'TAM' applied to healthcare?) (ii) a literature review, emphasising discourses, been undertaken that emphasises the discourses in previous work, in order to identify the elements needed in a theoretical framework (then, this should be explicitly stated and the links between different literature sources and the proposed framework should be more clearly presented) (iii) a discourse analysis been undertaken in order to develop framework (in which case qualitative research conventions regarding approach etc, are required).

Results 'intervention fidelity framework' section- a framework is presented with a very helpful diagram. Yet, this section should review each element of the framework and the elements are related to each other (some of this is presented earlier in the text). P11 it states that 'adoption' and 'enactment' are not part of information fidelity, so it is unclear why they have been included in the framework. This section should clearly state that the 'delivery' element is the role of the person initiating the intervention and that other elements of the process focus on the person/patient who will use the intervention. I am uncertain why 'technology acceptance' occurs after 'receipt', it perhaps intervenes earlier and more widely than this, i.e. on whether intervention is received (or not) through to enactment. Furthermore, there needs to be discussion on how the proposed framework (as

a whole) compares with existing 'non-technology' or generic fidelity frameworks (eg with Carroll et al 2007), somewhere in this paper. Limitations of the framework and its derivation should also be discussed.

'Exemplar' section- The outline of how the framework can be applied to pocket PATH was very helpful and clarified what the different elements of the framework meant. I was uncertain; however, if this section was a research proposal or a hypothetical example- this should be clarified. I also do not know if this section contains a report of previous psychometric testing or if there is presentation of new psychometric information found through exploratory empirical research. (If latter is the case, then empirical conventions and standards for writing up evaluations of psychometric scales should be included in this section).

This text has a high standard of writing and expression, a few sentences were difficult to understand - e.g. page 10, sentence that runs from line 10-13. Furthermore, p6 line 2-5, could be contested; pharmacotherapy adherence is more complex than dose delivery.

Reviewer #3: The complexity of the concept "fidelity of technology behavioral intervention" is clearly defined early in the paper, but loses focus once the author begins to address the evaluation components. The confusion may stem from the author's point concerning the need to customize, thus can fidelity actually occur in all studies, using the same definition and method?

While the author includes the importance of the human dimension and individuality, it is almost in a challenging manner. For a behavioral intervention to be meaningful, alternative and individuality is crucial. We are not all one in the same.

The theoretical model needs to be tested and better explained before application.

Much time is spent on defining and refuting prior technology fidelity, with less than a page focused on the exemplar. It is not clear how the technology was evaluated and there is little focus on the evaluation method. The article could be strengthened by decreasing the ongoing argument early in the paper and focusing additional time on technology fidelity testing.

Definitions and Measures in Table 1 are very good; however, more time needs to be spent in the article discussing these findings.

Many of the references are outdated and extend longer than the customary 5 years for a journal article of this caliber.

CHECKLIST FOR STYLE

TITLE PAGE -- Supply professional title and credentials for each author.

ABSTRACT -- Provide a Discussion in the abstract.

REFERENCES –

The following reference is not cited in the text: Carroll 2000

Please check the spelling for Dillon or Fillon in the Morris reference/citation.

Use only 4 citations per point, p. 4