TB or Not TB? That is the question!

Treat Tuberculosis Do Not Further Your Prognosis.

I. Introduction

a. Approximately 10 million people contract and 1.5 million people dying from TB each year

b. Trials evaluating digital adherence for tuberculosis in low- and middle-income countries are urgently needed to help improve morbidity rate as well as treatment outcomes.

c. A digital medication event reminder and monitor (MERM) device-observed self-administered therapy is compared with the standard in person directly observed therapy (DOT).

d. Randomized/Controlled Study Results of 114 Participants

I. Gender

1. Female: 40 (35.1)
2. Male: 74 (64.9)

II. HIV

1. Positive: 17 (15.0)
   a. Detected (HIV Active): 5 (26.7)
   b. Undetected (HIV Suppressed): 12 (73.3)
2. Negative: 96 (85.0)

III. TB Treatment

1. Developed: 102 (89.5)
2. Reactivated: 12 (10.5)

IV. Healthcare Facilities

1. Public: 10 (8.8)
2. Private: 21 (18.4)

V. Residency Status

1. Temporary: 22 (19.3)
2. Permanent: 92 (80.7)
   a. Lives Alone: 14 (12.3)
   b. Lives with Family: 84 (73.7)
   c. Lives with Friends: 7 (6.1)
   d. Homeless: 6 (5.3)
   e. Other: 3 (2.6)

VI. Smoking per day

1. Never: 94 (82.5)
2. 1-5: 19 (16.7)
3. 6-10: 1 (0.9)

II. Purpose

a. “The purpose of this trial was to determine whether a digital Medication Event Reminder and Monitor device, along with adherence to self-administration, improves the treatment outcomes in patients with tuberculosis compared to the standard in-person directly observed therapy” (Manyazewal T; Woldeamanuel Y; Holland DP; Fekadu A; Marconi VC, 2022).

III. Method

a. This is an attention-controlled, effectiveness- implementation type 2 hybrid randomized controlled trial.
b. This study was split and randomly assigned to the intervention group or control group.
c. Participants were from ten healthcare facilities in Addis Ababa, Ethiopia.
    i. Total number of 114 Participants
d. Inclusion
    i. Adults 18 years or older
    ii. New or previously treated for bacteriologically confirmed drug-sensitive pulmonary TB
    iii. Able to start the standard 6-month first-line anti-TB medication from the outpatient setting
e. Developmental Phase
    i. Objective was to test the use of a digital medication event reminder and monitor device-observed self-administered therapy
    ii. Explores medication adherence and treatment outcomes compared with the standard in-person DOT for one of the low-income countries with the highest burden of TB.
f. Exploratory Phase
    i. The data was from a baseline patient information questionnaire, adherence self-report questionnaire, clinical measurement tools and adverse treatment outcome monitoring tool
    ii. Data was collected between June 2020 and June 2021

IV. Results

a. 10.5% were retreatment cases and had completed their previous treatment,
b. 15% had HIV Infection, of whom 70.6% were on Antiretroviral Therapy.
c. The Smear Microscopy Test determined 38.1% were graded 3+ and 35.7% 2+.
d. 5.3% were homeless
e. 63.2% lived in a house with a single bedroom
f. 17.5% smoked cigarettes.
g. 52.6% requested to take home some doses

h. 93% were tested for Urine Isoniazid Colorimetric
i. 97% tested positive, indicating that the drug was taken within the 24 to 30 hours prior to the urine test.
j. 11.4% had at least one negative result
k. 99.1% were negative with smear microscopy and were transitioned into the four-month continuation phase, while one 1% remained
l. 5.6% from both arms reported they often forget to take their TB medication
m. 18.5% participants overall felt stressed about meeting their TB treatment schedule
n. 63.2% live in a house with a single bedroom, and 5.3% were homeless
o. 15% who were co-infected with HIV was higher than the national and global prevalence of 8%
p. 10.5% of participants were relapsed

V. Conclusion

a. The eligible patients that were assigned to the MERM and self-administration therapy showed more adherence to their treatment than the patients with the standard in-person directly observed therapy. New trials are necessary to determine whether this result was due to the reminder or the fact that they did not need to go to an appointment every time a dose is administered. We recommend provider's to offer this version of treatment in their office based on the results of this trial.
b. There was a significant association between the urine isoniazid test results and treatment adherence
c. Patients in the intervention arm were less likely to have a negative isoniazid urine test.

Reference

Manyazewal, T., Woldeamanuel, Y., Holland, D. P., Fekadu, A., & Marconi, V. C. (2022). Effectiveness of a digital medication event reminder and monitor device for patients with tuberculosis (SELFTB): A multicenter randomized controlled trial. *BMC Medicine, 20*(310), 15-16. https://doi.org/10.1186/s12916-022-02521-y.

Phase I- Submit to EBP Poster-phase 1 dropbox in Edvance360 by 2200 on 2/4/24:	**Yes (2)**	**No (0)**
Poster title	2	
(1) multiple choice question and answer that reflects a key point from the article	2	
Copy of the full article with answer to multiple choice question highlighted in yellow	2	
Reference listed in APA format (7th edition)	1	
Phase II- Submit to EBP Poster-phase 2 dropbox in Edvance360 by 0800 on 2/26/24:	**Yes (2)**	**No (0)**
Proper use of outline format		

Introduction	Clear message, relevant to nursing, factual, sufficient in detail, attention getting	1	
	Information summarized from the background or introduction section of the article	1	
	Includes why this topic is important and/or statistics related to the problem	2	
Purpose	Clear, concise statement	2	
	Includes the goal of the research study	2	
Methods	Clear, factual, sufficient in detail to explain how the research was completed	2	
	Includes the type of research design	2	
	Includes the number of participants and a description of the demographics	1	
Results	Clear and factual representation of data	2	
	Includes description of statistically significant findings	2	
	Sufficient in detail; may include tables or charts	2	
Conclusion	Clear message, relevant to nursing	2	
	Factual summary of key points	2	
	Includes implications or recommendations for nursing practice	2	

Please see comments/edits in red above. Your introduction needs a little work mainly because you say one sentence then go right into statistics. I only took off 1 point for this, and once it is corrected, I will add the other point back. Look at this as if you have not read the article, does your introduction summarize what the article is about? It just needs a little more data.

I mentioned before you have a lot of statistics in the introduction that may not fit on your slides when this is transferred over to a PowerPoint format, but you can list the generalized topics.
I also took one point off due to you not listing the exact number of participants as required in the rubric. Upon fixing this, again I will add the other point back to your score.

Your results section has a LOT of numbers. Are all of these relevant to the study and what the results were? If yes, that is fine, if not, what can you take out? It is a lot of numbers and can be visually overwhelming to look at.

Just a note that you will need to clearly state the answer to your multiple-choice question in your PowerPoint when it is created. This is not a requirement for Phase II, so no points were deducted, but please be aware it will need to be in the next phase.

I corrected your score for Phase I and included that in the rubric above.

I would like you to fix my recommendations BEFORE you move onto Phase III, so please email a modified version in a word document ASAP so I can ensure it is adequate prior to moving on.