Managed Health Network Research Plan

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PROJECT SUMMARY

Managed Health Network (MHN) offers (among other things) group behavioral health plans for mental health services and substance use disorder treatment. I am choosing the MHM mobile website "Find a Provider" workflow experience because I have experienced it as a member when I had to find mental health care for a loved one. From that experience, I believe it could benefit from a **single sample correlational usability research study** and subsequent design recommendations. If you or a loved one are in crisis, you may feel overcome with emotion, your heart may be racing, and you may be breathing fast. With these emotional and physiological responses in mind, the process of finding a mental health care provider needs to be simple and easy to navigate.

RESEARCH GOALS

QUESTIONS

1. *Are users able to complete the "Find a Provider" mobile workflow successfully?*
2. *Is the "Find a Provider" mobile workflow a positive experience for the user?*
3. *Is there a relationship between the website design's lack of responsiveness on a mobile device and the lack of positive experience a user has with the workflow?*
4. *Is there a relationship between lack of positive experience and lack of successful workflow completion?*

In order for the business to meet its goals, health plan members need to be

able to access their benefits and find appropriate providers easily, which requires successfully completing the “Find a Provider” workflow. In other words, MHN **users need to be able to use the MHN mobile website to effectively, efficiently, and satisfactorily achieve their goal of finding a behavioral healthcare provider**. Keeping in mind the behavioral health focus of the website, providing an experience that is positive should correlate positively with successfully completing the workflow.

The goals of this **summative usability testing** research project are to:

A. Evaluate how many users can successfully complete the “Find a Provider" workflow
B. Evaluate users’ perception of their success
C. Evaluate how many interactions users have with the workflow interface
D. Evaluate how frequently users express the workflow as a positive experience
E. Evaluate how users rate the ease of the workflow
F. Evaluate the relationship between website responsiveness and ease of workflow
G. Evaluate the relationship between a positive experience and successful workflow completion

HYPOTHESES

- ➔ **H1:** Users are not able to complete the “Find a Provider” workflow successfully.
- ➔ **H2:** The “Find a Provider” workflow is not a positive experience for users.
- ➔ **H3:** The website design’s lack of responsiveness on a mobile device is positively correlated with the lack of positive experience a user has with the workflow.
- ➔ **H4:** Lack of positive experience and lack of workflow completion success will be positively correlated.

Hypothesized Problems Users Will Encounter

1. MHN web design violates Gestalt principles and cognitive biases best practices
2. MHN web design is not responsive on mobile device

Metrics

1. "Find a Provider" workflow successful completion by users
    a. Metric: **Issues-based rating** [0-Success, 1-Success with Uncertainty, 3-Success with Errors, 4-Technical Fail, 5- Fail]
    b. Metric: **Efficiency** [compare ideal # of times (14) they should click/touch/interact versus actually click/touch/interact with a page]
    c. Metric: **Perception** of successful task completion [7-point Likert]
2. "Find a Provider" workflow positive experience for users
    a. Metric: **Predicted Ease** Score [7-point Likert]
    b. Metric: **SEQ** (Single Ease Question) [7-point Likert]
    c. Metric: **Behavioral/Physiological** [Frequency of negative/frustrated/confused facial and verbal expressions captured via video recording]

DATA

The bulk of the data collected will be **quantitative**, however I will also collect some **qualitative** data.

PARTICIPANTS

Individuals age 18+

SCREENER

I will screen participants prior to bringing them into the lab with a short questionnaire.

QUESTIONNAIRE

- Have you ever had to seek medical or mental health care for a loved one or close friend in an urgent situation?
- Have you ever had to seek medical or mental health care for yourself in an urgent situation?

SAMPLING

Because this is my final project for Interaction Design & Usability Testing class, I will be using convenience sampling and recruiting from friends, family, and classmates.

SAMPLE SIZE CALCULATION

	$$$$	$$
HYPOTHESIS 1	Adjusted Wald Confidence Interval: Confidence Level = 95% $\widehat{p}$ = .50 Critical Difference = 10% Estimated *n* = 93 Confidence Interval: Confidence Level = 95% Critical Difference = 2.4 Estimated *n* = TBD **Actual Obtained n = 5**	Adjusted Wald Confidence Interval: Confidence Level = 95% $\widehat{p}$ = .50 Critical Difference = 25% Estimated *n* = 12 Confidence Interval: Confidence Level = 95% Critical Difference = 4.0 Estimated *n* = TBD **Actual Obtained n = 5**
HYPOTHESIS 2	Confidence Interval: Confidence Level = 95% Critical Difference = 2.4 Estimated *n* = TBD	Confidence Interval: Confidence Level = 95% Critical Difference = 4.0 Estimated *n* = TBD
HYPOTHESIS 4	Difference of two means:	Difference of two means:

	Estimated *n* = TBD	Estimated *n* = TBD

Seeing as I have not previously conducted a study for the efficiency metric as a benchmark against which to test, I do not know the expected proportion of users who will meet my efficiency metric. Therefore, I designated that proportion to equal .05 (essentially a coin toss).

Due to the mental health and substance use treatment center focus of this workflow, I want to increase my confidence that I will not commit a Type I Error, and therefore set my alpha equal to .05 ($z = 1.96$).

Again, due to the mental health and substance use treatment center focus of this workflow, I think it is important to detect a small difference between expected and observed outcomes, therefore I set the **ideal critical difference value to 10%**. Noting the large sample size required to detect this difference and the increase in cost, I also calculated a sample for a **make it work critical difference value of 25%**.

My calculations can be found here.

DESIGN & PROCEDURES

HYPOTHESIS 1

Users are not able to complete the “Find a Provider” workflow successfully.

DESIGN

Correlational, single sample

TASK DESCRIPTION

Unmoderated prototype test of MHN mobile “Find a Provider” workflow with concurrent think aloud.

HYPOTHESIS 2

The “Find a Provider” workflow is not a positive experience for the user.

DESIGN

Correlational, single sample

TASK DESCRIPTION

Unmoderated prototype test of MHN mobile “Find a Provider” workflow with concurrent think aloud.

HYPOTHESIS 3

The website design’s lack of responsiveness on a mobile device is correlated with the lack of positive experience a user has with the workflow.

DESIGN

Correlational, single sample

TASK DESCRIPTION

Unmoderated prototype test of MHN mobile “Find a Provider” workflow with concurrent think aloud.

HYPOTHESIS 4

Lack of positive experience and lack of workflow completion success will be correlated.

DESIGN

Correlational, single sample

TASK DESCRIPTION

Unmoderated prototype test of MHN mobile “Find a Provider” workflow with concurrent think aloud.

GENERAL PROCEDURES

INTRODUCTION

The introduction script with verbal agreements can be found here.
The NDA can be found here.
The informed consent form with time commitment can be found here.

During the introduction I will give the participant a letter-sized envelope with a fake MHN membership card inside. I will not tell the participant what is in the envelope, only that it will be required to perform the necessary tasks and they will be told when to use it at the appropriate time. The goal is to try and simulate a real-world scenario in which a MHN user will need to retrieve their membership card from their wallet or purse when trying to complete the "Find a Provider" workflow on the mobile website.

PRE-TASK QUESTIONS

Item 1: "Overall, how difficult or easy do you expect this task to be?" [7-point Likert scale, very difficult–very easy]

SETTING UP THE TASK

Like I said, I'd like you to "think aloud" as much as possible. By that I mean that I'd like you to speak your thoughts as you move through the task. The website we are testing offers behavioral health plans for mental health services and substance use disorder treatment. The pages you will be testing are designed to help the health plan members find a provider for themselves or a loved one.

Try to remember a time when you had to seek medical or mental health care for a loved one or close friend in an urgent situation. Start here on this page of the website and think aloud as you find a provider for them.

POST-TASK QUESTIONS

Item 1: “Overall, how unsuccessful or successful do you think you were at completing this task?” [7-point Likert scale, very unsuccessful–very successful]

Item 2: “Overall, how difficult or easy did you find this task?” [7-point Likert scale, extremely difficult–extremely easy]

DEBRIEF

Debrief resources can be found here.

ANALYSIS

- **Issues-based metric:**
  Adjusted Wald proportion analysis 95% CI
- **Efficiency metric:**
  Interaction frequency, proportion analysis 95% CI
- **Perceived Success metric:**
  Mean score, proportion analysis 95% CI
- **Predicted Ease & SEQ metrics:**
  Mean difference paired samples t-test
- **Behavioral/Physiological metric:**
  Frequency, proportion analysis 95% CI
- **Website Responsiveness <-> Ease metrics:**
  Pearson’s r correlation test
- **Success <-> Positive Experience metrics:**
  Pearson’s r correlation test

DELIVERABLES

- Interactive Prototype
- Detailed Findings Report
- Summary Presentation & Slide Deck

TIMELINE

Milestone	Status	Due Date	Notes
Create Test Plan	Completed	10/28/2022	
Create Prototype	Completed	11/04/2022	I created a prototype in order to learn new skills in Figma. Ultimately, I used the live mobile website for testing in order to simulate as close to a real-world experience as possible.
Collect Data	Completed	11/18/2022	
Submit Report	Completed	12/02/2022	
Present Findings	Completed	12/09/2022	

BUDGET

Item	Expense	Notes
30-min Remote Unmoderated Live Mobile Website Usability Test with Concurrent Think Aloud & Analysis of Data for 13 Participants	$15k - $35k	Source: measuringu.com
30-min Unmoderated Live Mobile Website Usability Test with Concurrent Think Aloud &	$0	

Item	Expense	Notes
Analysis of Data for 5 Convenience Sample Participants		