Background

At the time this research was completed, Dr. Hincapie was a PhD Candidate at California Northstate University, College of Pharmacy, Rancho Cordova, CA, USA.

Methods

This study used a cross-sectional telephone-based questionnaire designed to elicit reasons for medication non-adherence in patients receiving MTM services. Patients were eligible to participate if they were identified as non-adherent for an antihypertensive, antidiabetic, or antilipidemic agent. Non-adherence was determined to be less than 80% of Prescribed Days Covered (PDC).

Purpose sampling was used to select 125 subjects.

Exclusion criteria: age less than 18 years old.

Data were collected between September 2012 and February 2013.

Two pharmacy students completing their Advanced Pharmacy Practice Experiences (APPE) in the MMC were in charge of conducting the survey interviews after the ordinary MTM consultations.

Results

- 124 patients participated in the survey.
- The patient mean age was 69.8 (standard deviation 9.9) years.
- 80% of participants were female, over two thirds (70%) were married, 40% completed high school, and two thirds were retired or not working.

Table 1: Response pattern on medication beliefs items

<table>
<thead>
<tr>
<th>Item</th>
<th>SD (%)</th>
<th>D (%)</th>
<th>A (%)</th>
<th>SA (%)</th>
<th>Item measures (SD)</th>
<th>MNSQ Init</th>
<th>MNSQ Outlt</th>
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<tr>
<td>I do not worry about the future problems of my medicines</td>
<td>20</td>
<td>31</td>
<td>50</td>
<td>20</td>
<td>0.123</td>
<td>0.97</td>
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<td>I worry about taking medicines</td>
<td>43</td>
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<td>25</td>
<td>12</td>
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<td>I can live without my medicines</td>
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Methods Continued

- The participation on the telephone survey was voluntary. The duration of the survey was approximately 15 minutes.

- The questionnaire included 19 items pertaining to medication use and 4 demographic items.
- 5 of the 19 items measured non-adherence beliefs. Those questions were Rasch analyzed for this evaluation.
- Items measuring medications beliefs were adapted from previous surveys.
- Summary statistics were calculated for each one of the items in the questionnaire.
- Data were entered and analyzed using STATA 12.

- Rasch analyses were conducted using WINSTEPS version 3.71.0.

Table 2: Patients' reasons for non-adherence

Patient had medicines prescribed but did not get them 16% (n=35)
Patient had medicines prescribed. Get it but did not use it. 16% (n=35)
Patient had medicines prescribed. Started using but dropped it 18% (n=35)

- Patient thought the medicine was not necessary for the condition (n=2)
- Patient took the medicine and it gave her problems (n=6)
- Patient took the medicine and it gave her problems (n=6)
- Patient thought the medicine was to costly (n=9)
- Patient didn't feel better on it (n=4)
- Patient had medicines prescribed. But didn't need medicine (n=4)
- Patient didn't feel better on it (n=4)
- Physician switched the medication (n=2)
- Patient thought the medicine was not necessary for the condition (n=2)
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Results Continued

- 19% of respondents received their medications by mail.
- Most of the alerts were associated to antihypertensive agents (40%, n=50), followed by anti-hyperlipidemics (25%, n=32), and anti-diabetic medications (19%, n=23).
- 48% indicated either not getting, not using, or stopping a prescribed medication (Table 2); only 4% of responses related to the alert triggering medications.
- The most common reason cited for medication non-adherence was side effects.
- The response categories for medication belief items were collapsed to 4 categories to achieve acceptable Rasch model fit as Figure 1.

Final Rasch model included data from 121 patient questionnaires with non-extreme scores.

Mean medication beliefs' score was 0.16 logits.

None of the items fell out the acceptable Rasch model fit criteria (Table 1).

Person reliability was 0.48.

Discussion

- Items in the medication beliefs' scale did not appropriately discriminate patients (most reliable).
- I do not worry about the future problems of my medicines' was the most difficult item possibly due to negative wording.
- Most participants reported positive beliefs about medications and did not report adherence issues related to the triggering medications. These results are inconsistent with the organizations' claims data, revealing a potential educational opportunity for MTM providers.
- Participant responses indicated that negative medication beliefs did not play a role in their non-adherence.
- Results should be interpreted in light of the study's limitations: selection bias could have occurred, as patients who agreed to participate in the survey were self-selected rather than a random sample of eligible spaces. Recall bias might also have affected findings.

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Legend for category measures: SD=Standard deviation, D=Disagree, A=Agree, S=Strongly agree, MNSQ=Mean square residuals

Figure 1: Predicted mean scores for medication adherence

Legend for horizontal axis: MMean, SD=Standard deviation, T=Two standard deviations, L=Logits

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