Title: Impact of motivational interviewing on technician-completed medication synchronization enrollment

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Incentive Grant Category: Residents and their Preceptors

ABSTRACT:
Objectives: This study aimed to explore the expansion of technician roles in a community pharmacy setting by training technicians how to use motivational interviewing (MI) and observing its effects on medication synchronization enrollment.

Methods: Pharmacies from one regional division of a retail pharmacy chain that a) had similar weekly prescription volume, b) were operationally functional, and c) met 25-75% of company-set year-to-date medication synchronization enrollment goal were included in this pilot prospective cohort comparison study. Pharmacies were randomized to receive or not to receive MI training. Technicians in the intervention arm received MI skills training which consisted of a 15-minute self-guided presentation, followed by an hour-long active learning class. Medication synchronization enrollment data from November 30th, 2020, to February 20th, 2020, was analyzed to determine the difference in technician performance between the two groups. The primary outcome was to compare medication synchronization enrollment rates between intervention and control stores. The secondary outcome was to measure technician comfort using MI and their perception of the effectiveness of the training via a post-survey administered only to trained technicians. Data was collected from the retail chain's benchmarking system and was analyzed in Microsoft Excel.

Results: Seven pharmacies that met the inclusion criteria were randomized to receive (n=4) or not to receive (n=3) MI training. Of the technicians surveyed (n=15), eighty percent of technicians had at least five years of experience as a pharmacy technician. Fifty-three percent reported being unfamiliar with the term "motivational interviewing", and 46% reported being uncomfortable with enrolling patients into medication synchronization. Within the intervention group, there was a reduction in net and average monthly medication synchronization enrollment rates from baseline. Reduction in average monthly enrollments was statistically significant, p=0.0308. This study also showed an overall decline in monthly enrollment rates in both trained and non-trained stores, however, there was a greater decline in trained stores. The difference between groups over the three-month period was not statistically significant, p-value=0.328. In the post-study survey, administered only to trained technicians (n=9), 66% of technicians found that MI was useful for other aspects of pharmacy workflow and 83% of technicians felt they received adequate training on MI and that this skill can help in strengthening rapport with patients.

Conclusion: Technicians with MI training did not impact medication synchronization enrollment rates compared to technicians without training. Those who received training felt that using this skill can help improve rapport with patients as well as other aspects of pharmacy workflow. Two limitations include small sample size and short duration. Many pharmacy staff were also directly or indirectly impacted by COVID-19, therefore, medication synchronization enrollment at these pharmacies may have been disproportionately affected. Additional studies are required to further determine the true impact MI-trained technicians may have on medication synchronization enrollment in an outpatient pharmacy setting.

Introduction:

The profession of pharmacy is rapidly evolving to expand the scope of practice for pharmacists as well as pharmacy technicians. As a result, pharmacist-provided clinical services have gained support from many health organizations and are now being more sought after by patients.[1,2] These have been positive changes for the advancement of pharmacists, however, advancing our practice requires the expansion of pharmacy technician roles as well.

Extending pharmacy technician roles will ultimately allow both pharmacists and technicians to practice at the top of their license and increase patient access to clinical services.[3] Findings from University of Pittsburgh School of Pharmacy reported that pharmacists spend only about 21% of their time performing patient care services not associated with dispensing prescriptions. Seventy-five percent of pharmacists reported a desire for pharmacy technician assistance with scheduling, billing, and patient correspondence, however, only 20% of technicians reported doing these tasks. Thus, there is a need for technicians to take on administrative duties and clinical support roles to serve as pharmacist extenders. This shift in time- and resource-intensive responsibilities can redistribute pharmacists' time to further optimize patient care as evidenced by studies observing specifically trained pharmacy technicians functioning as pharmacist extenders in anticoagulation clinics, tech-check-tech programs, and even administering vaccinations.[3,4]

Medication synchronization services are designed to help improve the long-standing issue of poor medication adherence. Studies have shown medication adherence is 2-6 times higher in patients enrolled in a medication synchronization program compared to those who are not.[5,6] While this service is offered at most community pharmacies, not all eligible patients are successfully enrolled. Pharmacy technicians understand the benefit such a program can have on patient outcomes, however, they also report a lack of sufficient time in daily workflow as a barrier to successfully enroll patients.[7,8]

Motivational interviewing is another tool that has been employed by pharmacists to impact patient behavior and improve medication adherence. While pharmacist use of this skill has been well documented, there have been limited reports of pharmacy technicians receiving MI training to enhance their skillset. Pharmacy technicians are often the main point of contact for patients. This puts technicians in an opportune position to positively impact patient health outcomes by creating opportunities for patients to engage in individualized discussions about their health.[9] Thus, equipping pharmacy technicians with MI skills may not only increase uptake of medication synchronization services, but can potentially lead to a positive impact on medication adherence as well. The purpose of this study was to explore methods to expand pharmacy technician responsibilities by observing the impact MI-trained technicians have on medication synchronization enrollment in a community pharmacy setting.

Objectives:

The primary objective of this study was to determine the impact of MI-trained pharmacy technicians on medication synchronization enrollment by measuring a) the difference in performance between stores with and without MI-training, and b) the change in enrollment rates before and after intervention in stores that received MI-training.

The secondary objective was to determine the success of MI training by administering a pre- and post-survey assessing technician a) comfort using these skills to engage with patients in a discussion about medication adherence, and b) perception of effectiveness of MI training in their workflow.

Methods:

Study Design:

This was a pilot prospective cohort comparison study. Pharmacies were selected from one regional division of a retail pharmacy chain. Selected stores had similar baseline characteristics with a) similar weekly prescription volume, b) were operationally functional with dispensing workflow, but had room to improve the quality of clinical services, and c) were at 25-75% year-to-date medication synchronization enrollment goal set by the company. Stores that did not meet these three criteria were excluded from the study. These stores were then randomized to receive or not to receive MI training. Technicians in intervention stores received MI training between November 16th to November 25th, 2020. After all stores in the intervention arm received MI training, medication synchronization enrollment was observed over a twelve-week period.

Surveys:
Pre- and post-surveys were administered to technicians involved in the study. All technicians took the pre-survey to determine demographics and baseline knowledge. However, only technicians who received MI training were administered a post-survey. The post-survey aimed to measure comfort using MI and their perception the training they received. Technicians were asked to respond to questions on a four-point Likert scale.

MI Training:
The MI training that pharmacy technicians received was developed by the primary investigator. Teachings were based on principles found in the book *Motivational Interviewing for Health Care Professionals: A Sensible Approach* by Bruce Berger and William Villaume. Pharmacy technicians from intervention stores received MI skills training in two parts. Part one was a 15-minute self-guided presentation which provided an introduction to MI, definitions and background information. This was followed by part two, which was an hour-long active learning session, conducted either in person or via an online meeting to reinforce the material and to provide scenarios to practice using MI in the context of medication synchronization enrollment. After each training module, technicians completed an online knowledge assessment to determine the efficacy of the training and ensure understanding of the material.

Data Collection and Analysis:
Data, including total year-to-date medication synchronization enrollment and average monthly enrollment rates, was collected from November 30th, 2020, to February 20th, 2021, and analyzed using paired and independent t-tests in Microsoft Excel. Data was collected from the retail chain's benchmarking system.

Results:
Eight pharmacies that met the inclusion criteria were randomized to receive (n=4) or not to receive (n=4) MI training. However, after reviewing data extracted after the intervention, it was found that one store did not meet the eligibility criteria and was thus excluded from the analysis, leaving three stores that did not receive MI training instead of the originally intended four stores. At baseline, 80% of the fifteen technicians surveyed had at least five years of experience as a pharmacy technician (figure 1A). Fifty-three percent reported being unfamiliar with the term "motivational interviewing", and 46% reported being uncomfortable with enrolling patients into medication synchronization (figure 1B).
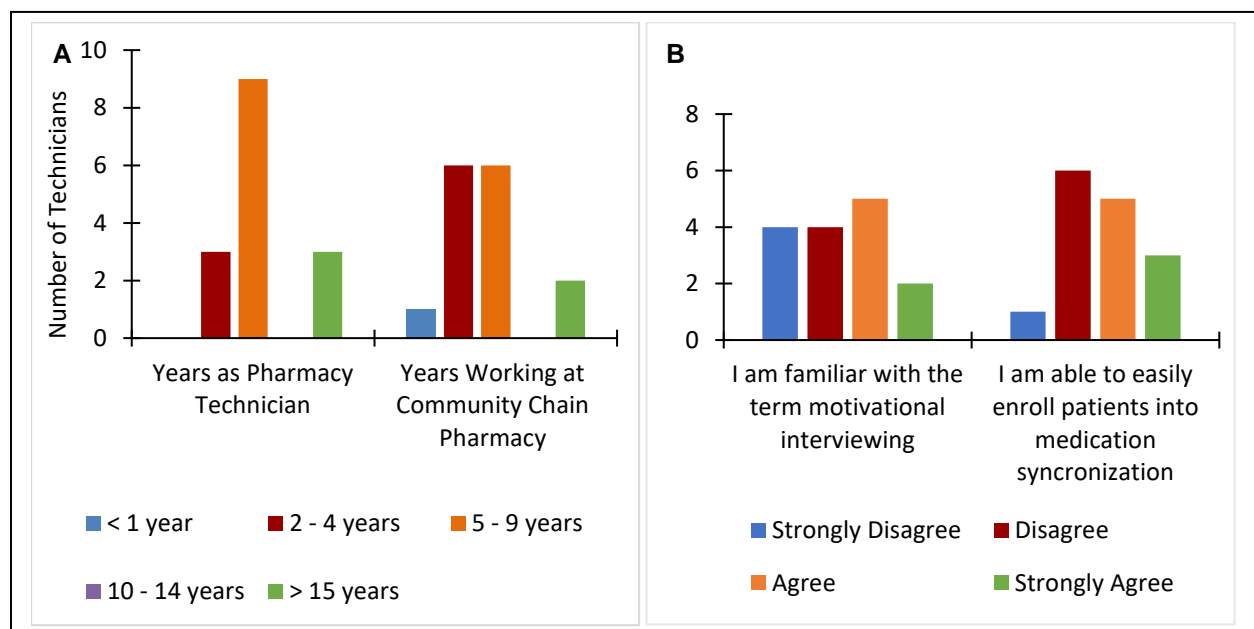

Figure 1: Professional background of technicians included in study (panel A), and baseline knowledge of MI and self-perceived competency on medication synchronization enrollment (panel B).

Nine technicians across four pharmacies were trained on MI. The first knowledge assessment, which measured technician understanding of general concepts and importance of MI, had an average score of 88.9 percent. The second knowledge assessment, which measured their ability to apply MI skills based off of the live training, had an average score of 75 percent (table 1).

Assessment	Average Score – Percent Correct
First Assessment: Background information (n=9)	88.9%
Second Assessment: Application of MI (n=8)	75%

Table 1: Average technician performance of two knowledge assessments given after each training module.

When comparing enrollment data from baseline within the intervention group, there was a decrease in both net medication synchronization enrollments (figure 2A) and the average monthly enrollment rate (figure 2B). This decrease in the average monthly enrollment rate from baseline was statistically significant, p-value=0.0308, (figure 2B). This study also showed an overall decline in monthly enrollment rates in both trained and non-trained stores over the three-month observation period; however, there was a greater decline in trained stores (figure 2C). This finding, however, was not statistically significant, p-value=0.328.
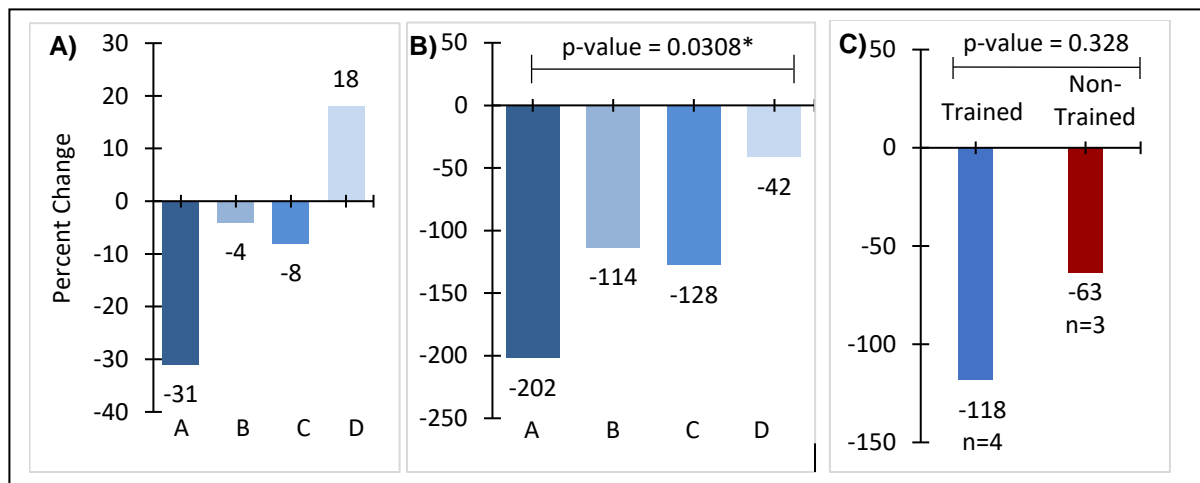
Figure 2: Difference in net enrollments (%) in intervention stores from baseline (panel A), change in average monthly enrollment rates (%) after intervention in intervention stores (panel B), and average monthly enrollment rates (%) in trained and non-trained stores (panel C).

In the post-study survey that was administered to MI-trained technicians, 66% of respondents found that MI was useful in pharmacy workflow in areas other than medication synchronization, and 83% felt they received adequate training on MI and that this skill can help to strengthen rapport with patients (table 2).

Comfort	% Agree
Using MI has made it easier to enroll patients in medication synchronization.	66
MI has made my job easier in aspects other than medication synchronization.	66
MI integrates easily into workflow.	50
Perception	
I have received adequate training on MI.	83
MI can help improve my relationship with patients.	83
The training I received increased my knowledge and skills of MI.	80

Table 2: Responses to the post-study survey that was administered to trained technicians (n=6) measuring comfort using MI and perception on their use of MI.

Discussion:

The evolving practice of pharmacy has allowed for an expansion of pharmacist-provided clinical services.[1,2] However, developing and implementing effective methods to help address patient-care issues is a time-intensive process, especially when considering integration into current dispensing-focused community pharmacy models. Many studies have demonstrated pharmacy technicians' success in assisting with patient-care functions and the positive impact it has on pharmacy practice and clinical services.[4,10] Documented pharmacy support tasks completed by technicians include collecting relevant medical and medication histories, screening patients and triaging care to pharmacists as appropriate, administering immunizations, and enrolling patients into medication synchronization programs.[4, 7, 11] Such tasks afford pharmacists more time to focus on providing clinical services and caring for more complex patients, amongst other clinical duties.[4] Thus, it is pertinent to elevate technician as well as pharmacist responsibilities as the profession advances.

Studies have demonstrated pharmacists' ability to successfully use MI during patient interactions,[5,6,9] however, there is limited literature documenting technician training or use of this skill and its impact on pharmacy practice. This study aimed to address that gap by observing the impact MI-trained technicians have on medication synchronization enrollment and further explore potential ways to expand their roles in the community retail setting.

Post-survey results from this study suggest that the MI training was well-received by technicians. They felt the training was adequate, increased their knowledge, and believed it is a useful tool to develop relationships with patients. However, medication synchronization enrollment data did not show that MI training improved technician-completed medication synchronization enrollment rates as the medication synchronization enrollments decreased in the stores whose technicians underwent MI training. The trend of reduced monthly enrollment rate, however, was consistent in both trained and non-trained stores.

A major limitation of this study is the interruption of pharmacy workflow due to the COVID-19 pandemic. Staffing issues secondary to COVID-19-related incidents may have disproportionately affected pharmacies included in this study. In addition, implementation of COVID-related clinical services, such as testing and vaccinations, may have reduced technicians' ability to focus on using MI to enroll patients in medication synchronization, and therefore this project was of secondary importance in workflow. Another limitation is small sample size as this study was not powered to detect change between trained and non-trained stores.

High scores on the first knowledge assessment demonstrated that technicians understood what MI is after the self-guided portion of the training. However, they may have had difficulty implementing its use in pharmacy practice as seen by the lower scores on the second knowledge assessment, decrease in enrollment at the end of the study, and lack of comfort with using MI as seen in the post-survey data. Motivational Interviewing is a skill that is typically improved through repetitive use over time. The three-month observation period in this study may not have been a suitable time frame for technicians to learn and master this skill.

Conclusion:

While this study demonstrated a statistically significant reduction in successful medication synchronization enrollment in MI trained technicians, there was no statistically significant difference in performance between trained and non-trained techs. Negative results may suggest that the three-month time frame was inadequate for technicians to learn and feel fully comfortable using MI effectively. Despite this, this study demonstrated that technician's knowledge of MI increased, and they felt that using this skill helped to improve their relationships with patients. Additional studies would be required to better determine the effectiveness of this skill when used by pharmacy technicians and its impact on expanding technician roles in the community pharmacy setting.

Training technicians to perform tasks such as the ones discussed in this study can potentially help to improve issues such as medication adherence. Leveraging technician roles to provide clinical support promotes the advancement of pharmacy practice but is an area that still needs to be further explored. Adjustments in the allocation of technician and pharmacist responsibilities in the community setting will ultimately afford pharmacists more time to focus on providing quality patient care services, improving health outcomes, and increasing accessibility to healthcare.[4]

Supplementary Appendix

Appendix A: Pre- and post-study survey questions

Table 1: Pre-study survey administered to all technicians in both trained and non-trained stores

Answer the questions to the best of your ability. Select your response on a scale of 1-4, 1 indicating you strongly disagree, 4 indicating you strongly agree.

1. I have practiced as a pharmacy technician for:					
	< 1 year	2-4 years	5-9 years	>10 years	> 15 years
2. I have worked at Kroger/Ralphs as a pharmacy technician for:					
	< 1 year	2-4 years	5-9 years	>10 years	> 15 years
3. I am familiar with the term motivational interviewing.				1 2 3	4
4. I have been able to easily enroll patients in medication synchronization.				1 2 3	4

Table 2: Post-study survey administered to trained techs

Answer the questions to the best of your ability. Select your response on a scale of 1-4, 1 indicating you strongly disagree, 4 indicating you strongly agree.

1. Using motivational interviewing has made enrolling patients in med sync easier.	1 2 3 4
2. Using motivational interviewing has made my job easier in many aspects, not just Med Sync.	1 2 3 4
3. I believe motivational interviewing integrates easily into my workflow.	1 2 3 4
4. I have received adequate training on motivational interviewing to help me improve medication synchronization enrollment.	1 2 3 4
5. Using motivational interviewing can help me improve my relationship with patients.	1 2 3 4
6. The training I received increased my knowledge and skills of motivational interviewing.	1 2 3 4

Appendix B: Knowledge assessment questions

Knowledge Assessment 1: measured understanding of the importance of Med Sync and MI
1. What are some of the reasons why patients resist our recommendations?
   a. They are uninformed or have inaccurate information
   b. They may not be ready to make changes
   c. They are not ready to make changes
   d. All of the above
2. What is motivational interviewing?
   a. A method an interviewee can use during their job interviews to ensure success
   b. A patient-centered approach to communication that increases likelihood of patients implementing behavioral changes
   c. A technique talk-show hosts used to interview their guests
   d. A way to motivate patients
3. What is the importance of using motivational interviewing in a pharmacy setting?
   a. Empowering patients to make their own health decisions
   b. Decreasing patient satisfaction
   c. Producing better health outcomes
   d. A and C
4. Why is it important to build relationships with patients?
   a. Increases patients' trust in the pharmacy team
   b. Patients more likely to accept recommendations regarding medications
   c. Promotes collaborative spirit
   d. All of the above

Knowledge Assessment 2: Measured knowledge of MI skills based on trainings provided
1. The purpose of using motivational interviewing in our pharmacies is to:
   a. Increase the amount of time we spend talking to patients
   b. Improve quality of care
   c. Improve patient's medication adherence
   d. A and B
2. Omitted from analysis – What are the 6 steps to build strong relationships with patients using motivational interviewing?
   a. Free response: 1) explore and reflect patients' sense making, 2) reframe, 3) ask permission to provide new information, 4) provide new information, 5) ask patient what he/she thinks, 6) summarize next steps
3. What is a phrase you can use to reflect what patients say?
   a. "I think this service will be helpful for you because … "
   b. "Would you like to talk about what has helped you in the past?"
   c. "It's important to you that …"
   d. "Ultimately, you're the one in control of your health."
4. What are some tools that can help to strengthen relationships with patients?
   a. Genuineness, active listening, and asking permission
   b. Multi-tasking, respect, and genuineness
   c. Judging, forcing, and using 'but" phrases
   d. Rushing interactions, ignoring patients, and asking open-ended questions
5. How might you respond to this interaction:

> **Mrs. Garcia:** Hello. I'd like to pick up my medications:
> **Technician:** Hi, I'd be happy to help. I noticed you're on 5 medications and return to the pharmacy pretty often. Would you like to enroll in MedSync so you'll only need to pick up all of your medications once a month?
> **Mrs. Garcia:** No, I can do it myself.

   a. Because you would like to manage your medications yourself, you are not interested in using MedSync. May I share reasons why this service may be helpful to you?

      b.   Well, MedSync is a really helpful service because you don't have to come to the pharmacy every week, so you may benefit from using it.

      c.   Okay. Please let me know next time if you're interested.

      d.   Your loss

6. What techniques would be helpful to use in the conversation above?
   a. Judging and multi-tasking
   b. **Reframing and asking permission**
   c. Disrespect and transparency
   d. None of the above

7. What are reasons why you will need a pharmacist to come talk with the patient?
   a. Discussing a patient's medication regimen
   b. Explaining the reasons for the phone calls in the MedSync process
   c. Talk about medical conditions.
   d. **A and C**

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