



Motivational interviewing in paediatric residency

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There is little formal instruction of MI in paediatric training programmes

SUMMARY

Background: Motivational interviewing (MI) is a collaborative, evidence-based, person-centred counselling style for addressing ambivalence about behaviour change. Despite its proven effectiveness, there is little formal instruction of MI in paediatric training programmes. **Methods:** Second-year paediatric residents participated in a 4-hour MI workshop, followed by a 1-hour small group review course and hands-on supervision during their Adolescent Medicine rotation. After the MI workshop, and again after their refresher course, we assessed residents' attitudes and skill with written and online surveys, as well

as with a modified Helpful Responses Questionnaire (HRQ). **Results:** Results revealed a statistically significant improvement in residents' confidence in eliciting health behaviour change [t -score(59) = 3.76, $p = 0.008$]. HRQ scores for all three clinical scenarios improved significantly following the workshop ($p < 0.000$). Residents most valued the interactive components of the workshop and review course, particularly the practice exercises, videos/video vignettes, feedback and coaching. **Discussion:** A standardised MI curriculum for paediatric residency training improved residents' confidence in eliciting

health behaviour change and use of empathic, reflective language. The curriculum is both feasible and widely accepted by residents, with opportunities for residents to practise MI under supervision during resident training. In conclusion, providing a 4-hour MI workshop for paediatric residents, with reinforcement through a review course and clinical opportunities to practise MI under supervision, improved confidence in eliciting health behaviour change and the use of MI-consistent language. This innovative and time-sensitive effort could serve as a future model for MI training for paediatric residents.

INTRODUCTION

Motivational interviewing (MI) is a collaborative, evidence-based, patient-centred counselling style for addressing ambivalence about behaviour change, exploring patient-elicited reasons for change within an atmosphere of acceptance and compassion (Figure 1).¹ Motivational Interviewing is an effective tool in health behaviour change, with durable effects over time.² In paediatric medicine, a large meta-analysis found MI to be effective for health behaviour change counselling across multiple domains.³ Despite the proven effectiveness of MI in paediatric health care settings, there is little formal instruction

in MI within paediatric residency programmes.³ The literature regarding optimal MI teaching strategies has also been lacking.^{4,5} The MI training in paediatric residency reported to date has been offered to small groups of eager residents or in the context of a specific health behaviour.⁶

This pilot study represents the first published report of longitudinal MI education provided to all residents at a paediatric residency programme. We hypothesised that providing paediatric residents with a learner-centred, evidence-based longitudinal MI curriculum would enhance their attitudes and skills in behaviour change counselling.

METHODS

Design

An MI curriculum was implemented from August 2012 until January 2014, with two consecutive groups of second-year paediatric residents at the Children's Hospital of Pittsburgh of University of Pittsburgh Medical Center (UPMC). The residents have no formal teaching of MI in any other aspect of their training. Residents partook in a shared 4-hour MI workshop followed by an MI review course during their rotation in adolescent medicine (Figure 2). A multidisciplinary advisory group of faculty members guided the study, including four members of the Motivational Interviewing Network of Trainers (MINT).

A large meta-analysis found MI to be effective for health behaviour change counselling across multiple domains

Basics of Motivational Interviewing

- A collaborative, goal-oriented style of communication with particular attention to the language of change.
- Designed to strengthen personal motivation for and commitment to a specific goal by eliciting and exploring a patient's own reasons for change
- Engage the patient in an atmosphere of acceptance and compassion
- MI often moves through four processes that are fluid and build on one another to facilitate movement towards a shared goal
- Several MI-consistent techniques are practised throughout patient-provider interaction to foster the spirit of MI (i.e. the foundational concepts of MI)

- **The Spirit of MI encompasses:**
 - **Collaboration** with the patient
 - Supporting patient **autonomy**
 - **Evoking** reasons for change from the patient
 - **Accepting** the patient's current state without judgment
 - Working together with the patient **compassionately** without a set agenda

- **Four Processes:**
 - **Engaging:** Establish strong rapport with the patient and getting to understand the patient's experience
 - **Focusing:** Collaboratively establishing a set of shared goals and a focus for the discussion
 - **Evoking:** Eliciting from the patient the reasons for change, strengthening those reasons and building a narrative supporting change with the patient
 - **Planning:** Once the patient has shown a commitment to change, the conversation moves towards active, joined planning to facilitate that change

- **OARS:**
 - **O**pen-ended questions
 - **A**ffirmations
 - **R**eflective listening
 - **S**ummary statements

Figure 1. Basics of Motivational Interviewing-Spirit, Processes and OARS skills

Three rounds of role-play were conducted to allow each resident an opportunity to practise each role

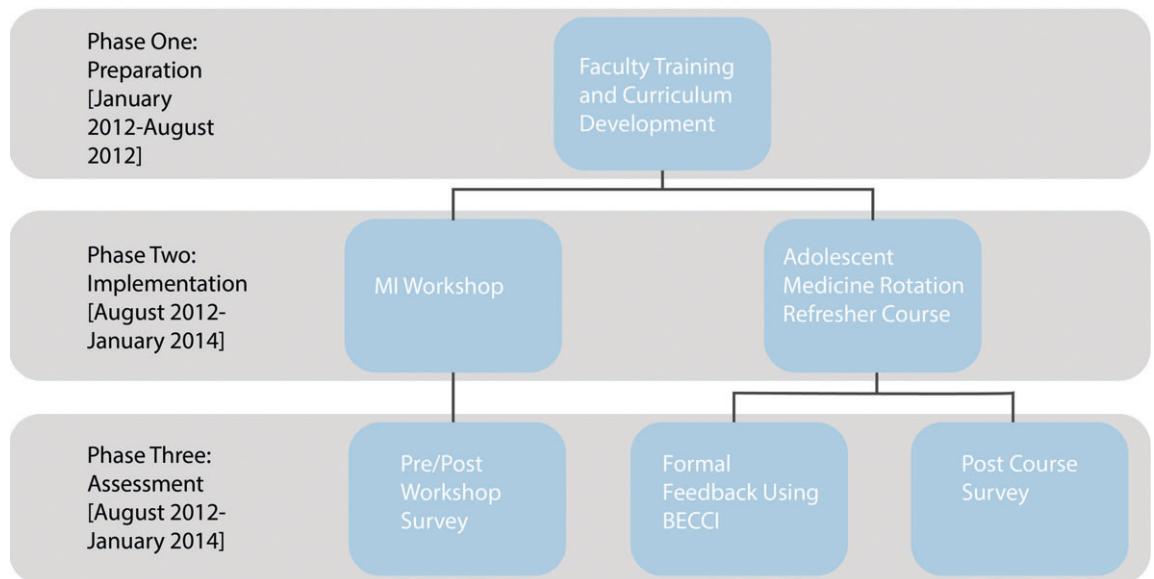


Figure 2. Outline of design and implementation of motivational interviewing curriculum

The study was approved by the Quality Improvement Committee at the Children’s Hospital of Pittsburgh of UPMC, and was granted a minimal risk exemption by the University of Pittsburgh Institutional Review Board.

Educational components

MI workshop

Residents were given a folder including a two-sided MI pocket guide covering MI spirit, processes and microskills, as well as two groundbreaking MI articles.^{7,8} The workshop involved a didactic component, reviewing MI spirit, principles, processes and microskills. The didactic component included videos demonstrating MI-adherent and non-adherent language, as well as group exercises practising OARS skills (**O**pen-ended questions, **A**ffirmations, **R**eflections and **S**ummaries).

Following the didactic portion, residents observed a live 15-minute MI interview conducted by a MINT faculty member with a simulated patient. Residents then engaged in role-plays in groups of three, with one resident acting as interviewer, another as patient and another providing feedback

using the Behaviour Change Counselling Index (BECCI), a 12-item validated tool measuring health care providers’ counselling on behaviour change.⁹ Three rounds of role-play were conducted to allow each resident an opportunity to practise each role. No standardised patients were used in the workshop.¹⁰ The three case scenarios used were adolescent asthma and tobacco use, childhood obesity, and adolescent marijuana use (case scenarios available upon request).

Adolescent medicine MI review course

Residents each received a 1-hour, case-based, small group MI review course during their 4-week rotation in adolescent medicine, led by a member of the advisory group or a senior Triple Board fellow. In addition, faculty members in adolescent medicine received monthly MI training provided by MINT faculty members.

Assessment

MI workshop survey

The survey was distributed in print form prior to and after the workshop. It included five-point Likert measures of residents’

attitudes regarding the importance of behaviour change counselling, familiarity with MI, comfort in providing health behaviour change counselling and confidence in eliciting health behaviour change. As a measure of resident MI skill, we included a modified, abbreviated Helpful Responses Questionnaire (HRQ) with three paediatric clinical scenarios.¹¹ The post workshop survey included two additional items measuring the value of the workshop and the pocket guide.

Adolescent Medicine Rotation Online MI Course Survey

An online survey was provided to residents who participated in the review course during their rotation in adolescent medicine. The survey included five-point Likert measures of the likelihood of using MI in future practice, the value of components of the MI curriculum, as well as resident-reported frequency of MI use. Residents provided free-response feedback on the strengths and weaknesses of the curriculum. The survey was administered within 3 weeks of the review course, and responses were collected within 4 weeks of the review course, or no more than 1 week after the dissemination of the survey.

Residents showed significant improvements in the use of empathic, reflective language

Case Scenario 1:
Please write in 1-2 sentences how you would respond to the following situation:

Patient's caretaker states:
"My little Susie is overweight. She eats whatever she wants and never exercises. The other day, I made her veggies and grilled chicken, but all she will eat is pizza."

Response:

Case Scenario 2:
Please write in 1-2 sentences how you would respond to the following situation:

Adolescent in Endocrine clinic states:
"I was just diagnosed with diabetes like 3 months ago. I check my sugars sometimes and for a while they were really good. I think I don't have diabetes and even if I did, I think I'll be fine eating what I want. I'm too busy to check sugars and need to spend more time trying to make the soccer team, rather than track all this stuff."

Response:

Case Scenario 3:
Please write in 1-2 sentences how you would respond to the following situation:

Adolescent male states the following in your primary care clinic:
"Yeah, I have a girlfriend. We do have sex and I wear a condom some of the time. A few months back I found out I had Chlamydia and it scared me. I didn't want to tell my girlfriend, but I don't want to use a condom all the time either. I know she is faithful and I hate how it feels when we are together."

Response:

Figure 3. Modified Helpful Response Questionnaire paediatric case scenarios

Helpful response questionnaire (HRQ)

The HRQ is a brief, free-response questionnaire with six standardised case scenarios administered to groups or individuals to evaluate responses based on the quality of reflective, empathic language.¹¹ In this study, the HRQ was shortened to three cases, and adapted to provide paediatric cases (Figure 3).

Statistical analysis

Descriptive statistics were used to characterise the data. We used a one-sided, unpaired Student's *t*-test to compare pre- and post-intervention data, as the survey data were de-identified and pooled without direct before-and-after participant comparison. $p < 0.05$ was considered statistically significant. Analyses were performed using SPSS 20.0.

RESULTS

A total of 64 residents (91%) participated in the study. Residents who did not participate were either on vacation, sick leave or had night clinical coverage duties. Of these 64 residents, 60 (94%) completed the MI workshop written survey with 53, 53 and 51 residents providing responses to the modified HRQ scenarios 1, 2 and 3, respectively.

Following the workshop, there were statistically significant improvements in resident-reported confidence in eliciting health behaviour change and familiarity with MI (Table 1). Residents rated the value of the MI workshop and pocket guide on a five-point Likert scale, with 5 being 'highly valuable'. The mean score for the workshop was 3.77 (SD 0.93); the mean score for the pocket guide was 3.38 (SD 0.97).

Residents showed statistically significant improvements in the use of empathic, reflective language on the modified HRQ across all clinical scenarios (Table 1).

In addition, 20 of 47 residents (43%) completed the adolescent medicine MI review course survey. Sixty-five per cent of residents indicated a 'very high' or 'high' likelihood of using MI in future practice. Residents reported an increased use of MI in their clinical practice in the week following the MI review course, compared with the week prior to the course (Figure 4). Fifty per cent of residents rated the time spent learning MI as sufficient and 35 per cent requested more time learning MI. The overall curriculum was rated as 'good' or 'very good' by 75 per cent of residents.

The MMI workshop resulted in significant improvement in resident confidence in health behaviour change counselling

Table 1. Motivational interviewing (MI) workshop survey results

| Residents' attitudes on MI and behaviour change counselling | | | |
|---|--------------------------|---------------------------|---------------------------|
| | Pre-workshop (n = 64) | Post-workshop (n = 60) | One-tail score |
| On a scale of 1–5 (1 being not important and 5 being highly important), how important is it for you to learn skills that could improve healthy behaviour change in your patients? | 4.69 (SD 0.50) | 4.48 (SD 0.68) | $t(59) = -2.33, p = 0.03$ |
| On a scale of 1–5 (1 being not comfortable and 5 being highly comfortable), how comfortable are you in counselling your patients in behaviour change? | 3.45 (SD 0.65) | 3.55 (SD 0.59) | $t(59) = 1.40, p = 0.17$ |
| On a scale of 1–5 (1 being not confident and 5 being highly confident), how confident are you in your ability to elicit healthy behaviour changes in your patients? | 2.98 (SD 0.75) | 3.29 (SD 0.64) | $t(59) = 3.76, p = 0.008$ |
| On a scale of 1–5 (1 being not familiar and 5 being highly familiar), how familiar are you with motivational interviewing? | 3.13 (SD 0.93) | 3.78 (SD 0.76) | $t(59) = 6.67, p = 0.000$ |
| Resident modified HRQ scores | | | |
| | Pre-Workshop | Post-Workshop | One-tail t-score |
| Case 1 (obesity; n = 53) | 1.78 (SD 0.96) | 2.57 (SD 1.45) | $t(52) = 3.95, p = 0.000$ |
| Case 2 (diabetes; n = 53) | 1.93 (SD 0.99) | 2.92 (SD 1.34) | $t(52) = 5.43, p = 0.000$ |
| Case 3 (high-risk sexual behaviour; n = 51) | 1.69 (SD 0.84) | 2.65 (SD 1.43) | $t(50) = 4.77, p = 0.000$ |

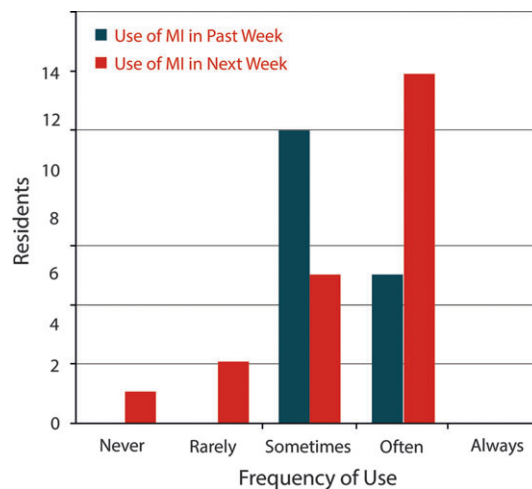


Figure 4. Reported use of motivational interviewing (MI) before and after the MI refresher course for adolescent medicine

Free-text feedback included requests for more interactive exercises, coaching and opportunities to observe faculty members modelling MI. Overall, videotaped vignettes were the highest valued component of the curriculum, followed by practise exercises and feedback (Figure 5).

DISCUSSION

In this study, offering a 4-hour MI workshop supplemented by a review course, and clinical opportunities for practice and feedback, resulted in a statistically significant improvement in resident confidence in health behaviour change counselling and

an improved use of empathic, reflective language based on a modified HRQ. Residents most valued the interactive components of the training curriculum. The majority of residents rate the training as 'good' or 'very good', and indicated a high likelihood of using MI in future practice. Eighty-five per cent of residents felt that the training was sufficient or wanted more training than was offered.

The curriculum was unique as it was provided to all paediatric residents, rather than a subset of eager residents, and was not focused on one particular health behaviour. The curriculum is highly interactive, with multiple teaching modalities, supporting a recent Cochrane review highlighting the key components of medical education.¹² The curriculum was feasible and quickly adopted, both important considerations in a busy academic paediatric training programme

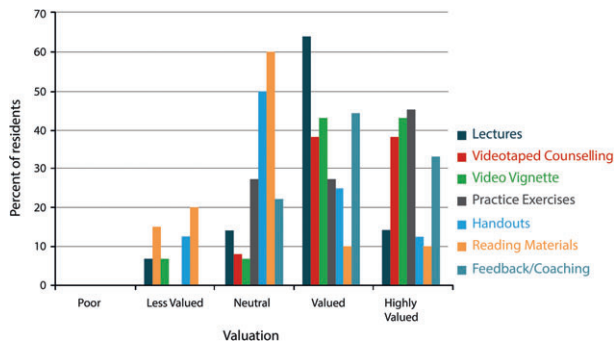


Figure 5. Residents' evaluation of components of the longitudinal motivational interviewing curriculum

with multiple competing interests for residents' time.

This study has limitations. Survey data were not paired, limiting the ability to analyse individual participant improvements over time. It is unclear whether a 1-year curriculum would result in the sustained use of skills, as previous studies indicate skills tend to decline over time without regular training or supervision. Future studies should evaluate residents' skills and attitudes through more rigorous measures, including direct observation of skills and measures of changes in clinical outcomes related to patient-resident interactions. Furthermore, dose-dependent responses to training, supervision and feedback would be important to explore further. Our study used a modified HRQ to evaluate the use of MI-consistent language, but this modified paediatric HRQ has yet to be validated. This study also does not provide any standardised, observed measures of MI-adherent language.

Despite these limitations, this study suggests that a brief MI workshop, supported with opportunities for instruction,

practise and supervision results in improved confidence in counselling patients on health behaviour change, and the use of patient-centred, empathic language. This study demonstrates that a longitudinal MI curriculum, provided to all paediatric residents, is both feasible and well received. Based on feedback, we would revise our curriculum to include more interactive learning, including the use of video, role-play and coaching. In our experience, this model of MI education can be adapted to other specialties by adjusting the model to the specifics of a given residency programme, resident-elicited preferences, and the key clinical aspects of a given specialty. Overall, the curriculum fits well with the spirit of the ACGME guidelines for residency training and shows promise as a model of MI education in paediatric residency training, as well as other specialties.

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**This model of
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Ethical approval: The study was approved by the Children's Hospital of Pittsburgh of UPMC Quality Improvement Committee, and granted a minimal risk exemption by the University of Pittsburgh Institutional Review Board.

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