An evaluation of the impact of training Honduran health care providers in interpersonal communication

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Abstract

Objective. To evaluate the impact of interpersonal communication (IPC) training on practice and patient satisfaction and to determine the acceptability of this training to providers in a developing country.

Design. The study used a pre–post design with treatment and control groups. Data collection methods included interaction analysis of audio-taped clinical encounters, patient exit interviews, and a self-administered questionnaire for health providers.

Study participants. Interaction analysis was based on an experimental group of 24 doctors and a control group of eight (with multiple observations for each provider). Exit interviews were carried out with 220 pre-test patients and 218 post-test patients. All 87 health providers who received training responded to the self-administered questionnaire.

Intervention. A brief in-service training programme on interpersonal communications was presented in three half-day sessions; these focused on overall socio-emotional communication, problem solving skills and counselling.

Main outcome measures and results. The IPC intervention was associated with more communication by trained providers (mean scores of 136.6 versus 94.4; $P=0.0001$), more positive talk (15.93 versus 7.99; $P=0.001$), less negative talk (0.11 versus 0.59; $P=0.018$), more emotional talk (15.7 versus 5.5; $P=0.021$), and more medical counselling (17.3 versus 11.3; $P=0.026$). Patients responded by communicating more (mean scores of 113.8 versus 79.6; $P=0.011$) and disclosing more medical information (54.7 versus 41.7; $P=0.002$). Patient satisfaction ratings were higher for providers who had received the training and providers reported training to be relevant and useful.

Conclusions. Further validation of IPC skills and simplification of assessment methods are needed if IPC is to be an area for routine monitoring and quality improvement.

Keywords: counselling, health communication, history taking, interpersonal communication, medical advice, patient–provider relationship

Over the past 30 years substantial investments have been made to enhance access to basic health services in developing countries. More recently international agencies have stressed the importance of ensuring the quality of these services [1, 2]. However, in spite of broad awareness of the importance of quality care, there have been relatively few studies that assess service quality [3], and fewer still that rigorously study the quality of interpersonal communication [4,5]. The quality of care research that has been done shows that health counselling and provider–client communication are consistently weak across countries, regions, and health services, and even when providers know what messages to communicate, they do not communicate them effectively [3].

Experience in the developed world has shown that providers can improve their interpersonal skills, leading to better health outcomes. Patient satisfaction, recall of information, compliance with therapeutic regimens and appointment keeping, as well as improvements in physiological markers such as blood pressure and blood glucose levels and functional status measures have all been linked to provider–client communication [6–8].

The research described here is part of a multi-country

research effort by the United States Agency for International Development's Quality Assurance Project. Researchers set out to explore whether the documented benefits of interpersonal communication (IPC) training could be replicated in developing countries. They selected countries where research would be feasible in terms of cost, logistics, language, and local interest in the topic. IPC training and subsequent evaluation was carried out in Honduras, Trinidad and Tobago, and Egypt [4]. In Trinidad researchers assessed the impact of an 8-hour continuing medical education programme on physician practice. The study documented increased use of target skills by trained doctors, including increased use of facilitative communication, open-ended questions, emotional talk, and more closed-ended questions. Also, patients of trained doctors talked more, gave more information and reported higher levels of satisfaction than their counterparts who saw doctors who had not received the IPC training [9]. In Egypt IPC training was also assessed. In this case researchers tested a simplified observation instrument, in an effort to develop a methodology that would be more feasible in developing country settings. Because the inter-coder reliability of the experimental instrument ranged from –0.10% to 0.55%, it was not possible to draw any conclusions about the impact of the training on practice [4].

The Honduras study investigates the impact of a brief in-service training programme on interpersonal communication skills of health care providers in ambulatory care settings in Honduras. This effort had three objectives: (i) to evaluate whether training could improve IPC practice as evidenced by audio-tapes of actual practice; (ii) to determine the impact of IPC training and the associated changes in practice with patient satisfaction; (iii) to determine whether the format and content of the training would be deemed relevant and acceptable by health providers in a developing country.

Methods and selection of research subjects

The study used a pre–post design with a treatment group and a control group. IPC performance was evaluated using interaction analysis of audio-taped clinical encounters. Patient perspectives were evaluated through exit interviews. Health provider perspectives about the relevance and utility of training were evaluated through a self-administered questionnaire followed by a participatory discussion.

Sampling methods

Assessment of IPC performance through audio-tapes of clinical encounters

Fifty-eight health providers from the Ministry of Health and the Social Security Institute were identified as eligible to participate in the component of the study which assessed IPC practice through audio-taping of clinical encounters. All providers were from one administrative health region, which includes the Metropolitan area of Tegucigalpa,

Honduras' capital, and all provided ambulatory care as part of their routine responsibilities. Nine providers could not participate in the study because of scheduling problems or, in a few cases, refusal. Of the remaining 49 providers, 30 were general practitioners, 13 were paediatricians, and six were nurses.

Conditions for selecting a patient visit for audio-taping were: (i) that this visit was the first consultation during the illness episode (follow-up visits were excluded); (ii) patients were seeking care for one of four pre-selected conditions (diarrhoea or acute respiratory infection in children, and hypertension or diabetes in adults). For each provider who participated in the study, up to five encounters which met the above criteria were studied in the pre-test and post-test, resulting in a total sample of 225 pre-test audio-tapes (100 experimental and 125 control) and 221 post-test tapes (97 experimental and 124 control). The pre-test measurement was made during the week immediately before the IPC training, and the post-test was carried out during the week immediately following training.

While data was collected on 49 providers, it was necessary to drop 17 providers (six nurses and 11 doctors) from the analysis. While researchers initially planned to include nurses in the study, they were subsequently dropped because their numbers were too few to permit analysis as a subgroup, and researchers wanted to ensure that the experimental and control groups were as comparable as possible. The 11 doctors were dropped because both pre- and post-data about their performance were not available due to field conditions that made it impossible to transcribe and code all of the audio-tapes. The resultant analysis of the audio-tapes was based on a sample which included an experimental group of 24 providers and a control group of eight providers, with multiple observations (up to five encounters) for each provider.

Assessment of patient satisfaction

An exit survey was conducted with patients for each encounter. A small number of patients whose medical encounters were audio-taped were unable or unwilling to respond to the exit interview. The resultant sample sizes were $n = 220$ (of 225 patients) for the pre-test, and $n = 218$ (of 221 patients) for the post-test. Patient satisfaction information about encounters which were excluded from the audio-tape analysis were, nonetheless, included in this sample.

Evaluation of training and training content

Overall 87 health care providers received IPC training as part of this effort, including the experimental group, the control group after completion of the study, and an additional group of government health personnel who were selected to help replicate IPC training at a later time. Seventy-nine of the 87 trainees responded to self-administered evaluation questionnaires upon completion of the training course. Seven weeks after training 18 members of the experimental group responded to the survey again and participated in an evaluative discussion.

Measures

Audiotapes

Changes in provider IPC practices were measured by analysing audio-tapes of clinical encounters, and comparing the performance of the trained and non-trained doctors. Audiotapes of the medical visit were coded by two Honduran coders using the Roter Interaction Analysis System in Spanish (RIAS) [10]. The coders were blind to the training status of the physicians. The system codes each phrase or complete thought in the visit, by either the patient or physician, in one of 34 mutually exclusive and exhaustive categories. Coding was done from transcripts. In addition, coders rated the emotional tone of the visits (with regard to anger, anxiety, dominance, friendliness, and interest) on a 6-point scale after listening to the entire audio-tape. As in several other non-United States studies applying RIAS, the coding system demonstrated adequate inter-coder reliability [11,12]. Reliability coefficients, based on a random sample of 19 transcripts (5%), averaged 0.83 for provider communication categories and 0.76 for patient communication categories.

Patient exit interviews

A 16-item patient satisfaction scale was administered to patients immediately following their medical visit. These exit interviews focused on specific measures of patient satisfaction and patient perceptions about overall rapport and communication with the provider. Patient opinions were measured using a two-step Likert-type scale which allowed the responses to be analysed over a 5-point scale ranging from -2 to $+2$. Respondents were first asked to answer 'yes', 'no', or 'no opinion' to a question about each parameter, such as, 'Was the doctor (attentive, respectful, kind, etc.)?' If 'yes', the respondent was asked if they were 'very' or 'somewhat' attentive. If 'no', they were asked if they were 'somewhat' or 'not at all' attentive. In this way a 5-point scale (very positive, somewhat positive, no opinion, somewhat negative, very negative) was created for a patient group which had difficulty responding to other types of 5-point scales during the pretest of the instrument.

Physicians self-administered course evaluation

A self-administered questionnaire for providers included seven closed-ended questions which asked participants to rate course methods on a scale of 1–10. It also included six open-ended questions asking providers to identify what they liked most and least about the course, and asking them to identify which aspects of the course were most and least useful. Seven weeks after the first IPC training the perspectives of providers of the experimental group were evaluated again using a second self-administered questionnaire which asked an open-ended question about what they liked about the course, and then asked them to rate the frequency with which they used each IPC skill in their daily work on a scale of 1 (never) to 5 (always). Finally, they were asked whether they used the job aid (IPC pocket guide) always, sometimes, or never, and to list the reasons for use.

Intervention: IPC training

The objective of IPC training was to enable health providers to use IPC skills to improve patient satisfaction, compliance and health outcomes. The training model and strategies were loosely based on a successful randomized clinical trial of IPC skills with physicians in the USA [8], as well as training materials that had been used previously to enhance IPC in developing countries [4]. Each IPC training was conducted in three half-day sessions for no more than 20 participants. The course focused on communication methods rather than messages. The skills were grouped into three areas: overall socio-emotional communication (nine behaviours); problem solving skills (seven behaviours); and counselling (11 behaviours). A summary of these skills is given in Table 1.

Participatory methods were essential to the effective delivery of the training. The training methods used included: (i) participatory plenary sessions that allowed participants to 'discover' the new skills for themselves; (ii) brief presentations about specific communication skills that included concrete examples of 'dos' and 'don'ts'; (iii) dynamic role plays; (iv) videotapes on non-verbal communication and counselling skills; (v) analysis of transcripts of local patient–provider encounters that had been taped and transcribed in local clinics prior to the training course; (vi) mental rehearsal techniques which allowed participants to experiment with the new skills and to determine how they could adapt them for their own use; (vii) analysis of participants' own audio-tapes of patient encounters (participants were invited to tape encounters from their own practice before the second course sessions; audio-tapes could then be analysed and critiqued by peers, and specific feedback and suggestions were discussed about how to improve); (viii) a job aid (pocket guide) developed by the research team to help the participants practice the skills, and serve as a reference for later use. Each IPC behaviour listed in Table 1 was presented, discussed and practised during the training.

From the outset the research team was concerned about adapting and applying the IPC skills in a culturally appropriate way. The team and the Ministry of Health wanted to assure that technology transfer took place as a result of Honduran collaboration in the study. To address both of these concerns, local trainers reviewed training materials before they were used. Overall, they approved of the course 'as is' but suggested changes related to translation and simplification of terms. To support these goals further, the training manual had a self-instructional design that could be used by a trainer with minimal experience. Also, nine local trainers participated in a two-day training-of-trainers session, and assisted with the delivery of the course.

Results

The performance of the 24 trained physicians and eight control group physicians was assessed based on an aggregated file in which the physician is the unit of analysis and the physician score is derived from an average of all of his/her

Table 1 Summary of IPC skills

Overall socio-emotional communication	Diagnostic/problem solving skills	Counselling skills
Welcome patient/ frame encounter	Listen attentively	Explore client's beliefs
Use appropriate non-verbal communication	Encourage dialogue	Correct facts
	Avoid interruptions	Use appropriate vocabulary
	Resist immediate diagnosis/treatment	Present information in blocks
Solicit feelings	Probe	Check patient understanding
Show positive regard	Ask about causes	Recommend behavioural change
Give legitimation		Repeat and summarize
Show empathy		Motivate patient
Reflect patient's emotions		Check on acceptability and feasibility of treatment
Reassure patient		Confirm return visit
		Ask for questions

Table 2 Comparison of communication practices by trained and untrained providers[1]

Communication behaviour	Trained ($n=24$)	Untrained ($n=8$)	F	P
Mean total talk	136.6	94.4	12.4	0.001
Positive talk	15.93	7.99	13.2	0.001
Negative talk	0.11	0.59	6.3	0.018
Emotional talk	15.7	5.5	6.0	0.021
Social talk	3.6	4.3	0.4	0.525
Procedural talk	19.7	11.2	5.1	0.032
Paraphrase	7.3	4.7	2.2	0.148
Asks patient opinion	0.8	0.03	2.8	0.104
Asks if patient understands	9.1	3.7	5.6	0.025
Closed questions	18.1	16.1	0.2	0.634
Open questions	9.9	7.4	3.0	0.092
Information giving/counselling				
Medical information	18.9	14.7	1.9	0.182
Therapeutic information	3.0	2.6	0.6	0.465
Life-style information	0.7	1.4	1.8	0.188
Socio-emotional information	0.5	0.1	1.9	0.177
Medical counselling	17.3	11.3	5.5	0.026
Socio-emotional counselling	0.93	0.95	0.04	0.833

[1] This table compares trained and untrained providers, reporting the average number of statements per encounter for each type of communication. Analysis was conducted using ANOVA with pre-test as covariate and physician as unit of analysis.

patients. In all data in Tables 2 and 3, ANCOVA analyses were performed with post-training scores in categories of doctor and patient talk treated as the dependent variable, pre-training scores treated as covariates, and training status as the independent variable.

Changes in communication practices and patient satisfaction

Comparison of communication practices by trained and untrained providers

While untrained providers averaged a total of 94.4 statements or utterances per encounter, trained providers communicated more, averaging 136.6 ($P=0.001$) (Table 2). Positive talk by the provider (affirming statements of agreement or approval) was 15.93 for the trained group and 7.99 for untrained providers ($P=0.001$); at the same time criticism and negative talk was less common in trained providers (0.11 versus 0.59; $P=0.018$). Trained providers also used three times more emotional talk, expressing caring, concern and empathy more frequently (15.7 versus 5.5; , $P=0.021$). Statements relating to procedures and instructions were higher for trained providers (19.7 versus 11.2; $P=0.032$), and they were also more likely to ask the patient if he or she understood instructions (9.1 versus 3.7; $P=0.025$). Medical counselling, defined as communication that aims to change patient behaviour or

Table 3 Comparison of communication behaviours by patients of trained and untrained providers[1]

Communication behaviour	Trained (*n*=24)	Untrained (*n*=8)	*F*	*P*
Mean total talk	113.8	79.6	7.3	0.011
Positive talk	17.8	11.6	5.3	0.029
Negative talk	0.3	0.6	0.4	0.53
Emotional talk	3.4	2.7	0.59	0.447
Social talk	2.9	2.8	0.04	0.833
Paraphrase	2.5	1.4	3.2	0.082
Questions	2.8	2.3	1.5	0.23
Information giving				
Medical information	54.7	41.7	11.5	0.002
Life-style information	6.5	7.3	0.02	0.889
Therapeutic information	1.9	2.1	0.01	0.978

[1] This table compares patients of trained and untrained providers, reporting the mean number of statements per encounter for each type of communication. Analysis was conducted using ANOVA with pre-test as covariate.

attitude to enhance compliance with treatment, arguably the most important communication the patient, was more frequent in encounters of trained providers (17.3 versus 11.3; $P=0.026$).

Social talk appeared to be unaffected by the training. Changes in question asking behaviour was also small, although trained providers asked more open-ended questions than untrained providers at a level of marginal significance (9.9 versus 7.4; $P=0.09$). Finally, while trained providers gave more medical counselling, they were not more likely to give more information about medical issues, the therapy chosen, lifestyle issues, or socio-emotional counselling.

Comparison of communication behaviours of patients of trained and untrained providers

Improvements in provider communication resulted in a change in patient communication also (Table 3). Patients of trained providers spoke more overall (113.8 versus 79.6; $P=0.011$), used more positive talk (17.8 versus 11.6; $P=0.029$), and perhaps most importantly, gave more medical information (54.7 versus 41.7; $P=0.002$). There was no significant difference in negative talk, emotional talk, social talk, paraphrasing, question asking, or the disclosure of information about lifestyle or therapy.

Patient satisfaction

Patient satisfaction rates are reported in four categories: global satisfaction; positive behaviours (including concern, kindness, attentiveness, understanding, and whether the provider gave the patient opportunities to talk); negative behaviours (scolding, preoccupied/busy, arrogant, and whether the patient had issues or concerns that he or she was not able to discuss); and informative behaviours (clarity, encouragement, support, emphasis on compliance with treatment, attention to impact of illness on daily life) (Table 4). Trained providers received significantly higher ratings in two categories, global satisfaction ($P=0.01$) and informative behaviours ($P=0.045$). As is true in most satisfaction studies scores are positively skewed, and responses have a smaller magnitude of variation. However, these small differences are statistically significant. Regarding patient perceptions of positive and negative behaviours for trained versus untrained providers, there was no significant difference.

Provider perspectives

On average, 79 provider respondents rated nearly all training components above 9 (on a 1–10 scale), indicating that providers found the training content useful for and relevant to their work. When asked about what could be done to improve the course, the most frequent responses were: (i) practice skills with real patients; (ii) use more educational videos; (iii) spend more time practising skills; (iv) develop more examples of care in urban settings; (v) provide follow-up support.

In response to an open-ended question about which skills were most useful and relevant for their work, 53% of the trainees stated that all the skills were 'most useful'. Among the skills identified by four or more providers as useful were overall socio-emotional communication, counselling techniques, problem-solving skills, skills for encouraging dialogue, and use of open-ended questions.

In a follow-up questionnaire administered to the experimental group ($n=18$ in attendance) 7 weeks after the course, the health providers trained remained very positive about the training. When asked why they liked the course over seven of the 18 respondents listed the following reasons: (i) it improves my relationship with patients; (ii) it helps to organize my listening skills; (iii) it emphasizes the human aspect of the work; (iv) it helps me to deal better with clients. Other responses included improved organization, better non-verbal communication, improved counselling, more patient disclosure of information, and a better understanding of the client's point of view.

When asked to assess the frequency with which they use IPC skills in daily work on a scale of 1–5, most behaviours fell in the range 4.2–4.4. Welcoming the patient, using effective non-verbal communication, and using appropriate vocabulary

Table 4 Patient satisfaction

Satisfaction measure	Patients of trained doctors (*n* = 220)	Patients of untrained doctors (*n* = 218)	*F*	*P*
Global satisfaction	3.60	3.27	7.6	0.01
Informative behaviours	18.1	15.5	4.4	0.045
Positive behaviours	19.2	19.5	0.1	0.75
Negative behaviours	2.67	2.85	0.1	0.7

[1] This table compares composite satisfaction scores in four categories based on a comparison of exit interview data from patients of trained and untrained providers. Analysis was conducted using ANOVA with pre-test as covariate.

were nearly always used according to provider self-reporting. Less frequent but still common practices (scoring 3.5–3.9) were repeating what the patient said to elicit more information, avoiding interruptions, and making concrete behavioural recommendations.

When asked about their use of the IPC pocket guide, 13 providers reported that they always used it, five that they sometimes used it; none reported never using the guide. Users said that it helped them to remember and improve skills, to apply skills, to get better organized during the encounter, to get more information to the patient, and to provide better care.

Conclusions

Overall, the IPC intervention resulted in more communication by trained providers, and more extensive use of practices that enhance the effectiveness of communication. Further, patients responded to these improvements in communication skills by communicating more and disclosing more medical information. Finally, patient satisfaction ratings were higher for providers who had received the training, and patients perceived more informative behaviours in these providers.

This study did not intend to establish a one-to-one correspondence among IPC skills emphasized in training, specific measures of IPC performance, and parameters of patient satisfaction. Rather, its aim was to train providers to use a cluster of IPC skills that work together to reinforce each other, and to measure the overall impact of these skills on provider performance and patient satisfaction.

IPC improvements on the part of providers tended to be related to skills that are included, at least in a cursory way, in traditional medical education. Increases in overall communication, procedural explanations, positive talk, and medical counselling, as well as decreases in negative talk are examples of this. These improvements may have been easier to achieve because providers had basic skills that they could learn to exploit more fully and because they were familiar to providers and were not controversial within the clinical paradigm.

Some IPC behaviours did not change in spite of training efforts. For example, the training encouraged providers to use more open-ended questions, ask about patient opinions, and to discuss relevant socio-emotional issues and lifestyle. While open-ended questioning (*P* = 0.092) and asking about patient opinions (*P* = 0.104) were marginally significant, indicating that providers experimented with these new behaviours, they were not adopted fully. This may be due to providers' hesitancy to contradict the paradigm of their medical training, which is based on technical expertise and authority, and an algorithmic approach to identify discrete symptoms and causes. Doctors may not have been convinced of the value of the more narrative style in which the patient gives opinions and information in his or her own way. During training, some doctors expressed concern that the patient would talk at length if given the opportunity. However, the use of open medical questions was marginally more prevalent among trained doctors (9.9 versus 7.4; *P* = 0.092) suggesting that trained doctors may have experimented with open-ended medical questions as a result of the training.

Although changes in provider practice led to some improvements in patient communication, such as more overall communication and more disclosure of medical information, it resulted in no change in question asking, disclosure of life-style information, or discussion of the patients' therapy. When given more of an opportunity to talk, patients focused on their medical condition and did not digress to less relevant topics, as some of their doctors feared they might. However, there are times when such life-style and social information can be very important in determining the diagnosis and the best course of treatment. This study suggests that a more direct intervention with patients would be needed if the goal of IPC efforts was to increase patient participation in the encounter more dramatically. For example, in addition to teaching doctors to be receptive listeners, it might be necessary to raise awareness among patients about their right to participate in decisions about their health and the importance of asking questions so that they understand what they need to know to safeguard their health.

Patient overall satisfaction and perceptions about the information they received from their doctors also improved as a result of the IPC training intervention. Although satisfaction improvements were not documented across the board, the

improvements that were realized could result in enhanced rapport and better compliance with treatment and follow-up appointments.

In addition to these statistically significant results and conclusions about communication, the study also provided a number of insights about how programmes to improve IPC might be developed. It showed that IPC training is effective and feasible, and that local staff can be trained to conduct the course. It was frequently mentioned by trainees and trainers alike that IPC skills should be included in the formal professional training received by all health providers, and that in-service training should be made available. Further, providers and researchers alike felt that IPC training supports other efforts to improve quality of care by enhancing the quality of information upon which to base diagnosis and treatment, and by enabling providers to more effectively delivery of counselling messages. The study also showed that providers are receptive to receiving IPC training, find the content relevant, and are willing to put the new skills into practice.

While the above conclusions suggest that the quality of medical care in developing countries can be significantly enhanced by improving the IPC skills of providers, a number of cautionary comments must be made. First, the proposed IPC skills and behaviours must be studied and validated further. In order to do this the study design, instruments, and methods must be simplified to make developing country research feasible, and the impact of the communication intervention over time must be studied to determine how well new skills and practices are sustained.

Finally, and perhaps most importantly, methods for IPC assessment and improvement must be developed further so that they may become part of routine monitoring and quality improvement in health care facilities. The design of practical job aids and assessment tools, and the implementation of simple, efficient methods of providing ongoing in service support are essential if the health benefits of improved patient–provider communication are to be fully realized.

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