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Development of a comprehensive communication skills curriculum bases on intervention mapping in response to an urgent need for community health workers' education reform: A study protocol

Hashem Heshmati, Elham Shakibazadeh, Sara Mortaz Hejri¹,
Abbas Rahimi Foroushani², Roya Sadeghi

Abstract:

BACKGROUND: Communication skills are one of the most important competencies required for community health workers (CHWs); however, there is no systematic evidence-based communication training course for them. In this study, we aim to develop a comprehensive communication skills curriculum for CHWs based on the intervention mapping (IM) approach.

MATERIALS AND METHODS: We used the IM approach to develop a systematic evidence-based communication skills curriculum for CHWs. First, we will determine the required competencies (by a literature search, a qualitative study, and a Delphi study), and then, we will develop a questionnaire for need assessment, and finally, we will implement the course and evaluate its efficacy by conducting a randomized controlled trial. This study was designed according to the steps of IM.

CONCLUSION: This protocol reports an example of developing a training course using IM. This course could be applied for similar health workers across the world, as well as the CHWs.

Keywords:

Community Health Workers, Communication skills, intervention mapping

Departments of Health
Education and Promotion
and ²Epidemiology and
Biostatistics, School of
Public Health, Tehran
University of Medical
Sciences, ¹Department of
Medical Education, Tehran
University of Medical
Sciences, Tehran, Iran

Address for correspondence:

Dr. Roya Sadeghi,
Department of Health
Education and Promotion,
School of Public Health,
Tehran University of
Medical Sciences, Tehran,
Iran.
E-mail: Sadeghir@tums.
ac.ir

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Introduction

Community health workers (CHWs) are “paraprofessional or lay individuals with in-depth understanding of the community culture and language who have received standard job related training of a shorter duration than health professionals whose primary goal is to provide culturally appropriate health services to community.”^[1] It is conservatively estimated that there are more than 5 million CHWs globally. The evidence demonstrates that CHWs are considered as an essential constituent in

population-based programs and can be effective in improving public health and health outcomes in all countries.^[2] We assume that, due to the large number of CHWs as well as their essential role in improving global health, empowering and strengthening them can create a great revolution in global health.

Communication might consider as the central part of every interpersonal conversation in health care, and evidence has shown that there is an association between good communication, and satisfaction of

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patients as well as their compliance and health/medical outcomes.^[3,4] Likewise, given the roles and responsibilities of CHWs, communication skills are one of the most important competencies of this group.^[5,6] Although communication skills training has been reinforced in most curricula all over the world, many implementation problems have been faced, such as lack of coherent framework, time limitations to training communication skills, lack of integration in the curriculum, as well as lack of adequate contextualization. Formal training and teaching strategies have not been systematically defined for communication skills.^[3] Various studies have revealed that communication training for clinicians is not adequately effective to improve patient satisfaction with care or reduce pain and disability in settings such as primary care and rehabilitation.^[7] Various studies^[8-10] have addressed assessment, teaching, and training communication skills for CHWs, showing that it is necessary to provide opportunity for health workers to update their knowledge and improve their communication skills on a continuous basis and that communication skills training is both enjoyable and decreases perceived aggression and distress and increases general mental well-being. Communication skills training also leads to desirable outcomes for CHWs and their clients.

Therefore, the available evidence is contradictory with no evidence-based teaching course found in relation to teaching communication skills to CHWs.

Intervention mapping (IM) is an evidence-based and systematic approach to applying available empirical evidence and reviewing the theories of change.^[11] Although IM has been developed for planning, implementation, and evaluation of health promotion programs, this approach can also be used to develop other interventions such as curriculum development, training, and education programs as well as to explain behavioral intention^[12-19] and to develop communication skills training programs;^[20-23] however, IM has not yet been used for the development of communication skills training program for CHWs. Therefore, given the importance of this issue and lack of evidence-based communication skills courses for CHWs, this study was conducted with the aim of developing a comprehensive communication skills curriculum for CHWs based on IM approach.

Materials and Methods

IM consists of six fundamental steps and each step comprises several tasks. The product of each step is created through the completion of the tasks in that step and the product is the guide for the subsequent step. The completion of the six steps is considered as a

blueprint for designing, implementing, and evaluating an intervention based on theoretical, empirical, and practical information. The steps of the IM protocol are as follows: (a) conducting a needs assessment or problem analysis; (b) creating the matrices of change objectives based on the determinants of behavior and environmental conditions; (c) selecting theory-based intervention methods and practical strategies; (d) translating methods and strategies into an organized program; (e) planning for adoption, implementation, and sustainability of the program; and (f) generating an evaluation plan.^[11] The study consists of two phases: Phase 1 consisting of three substudies based on the step 1 of IM and Phase 2 consisting of a sub-study based on the steps 2–6 of IM [Figure 1]. The methodological details of IM are shown and described below.

Phase 1

Step 1: Conducting a needs assessment or problem analysis

In step 1, we will first establish a planning group that includes stakeholders of the program. Then, we will assess the educational needs of CHWs, but because there are no updated necessary competencies for CHWs, we will conduct a modified Delphi study (sub-study 1) to identify health education competencies including communication skills needed for CHWs.

To prepare a primary list of competencies to develop the Delphi questionnaire, we will perform a comprehensive literature search as well as will conduct a qualitative study. The data obtained from the literature search and the qualitative study will be used to develop a Delphi questionnaire. Then, a three-phase Delphi study will be done to achieve consensus on competencies (the details of the above studies have been described in the following part) (sub-study 1). Afterward, we will develop a questionnaire (and assess its psychometric properties) (sub-study 2) for needs assessment with respect to communication skills. Next, for needs assessment, a questionnaire study (sub-study 3) will be conducted. For this purpose, 205 CHWs will be selected using a stratified sampling method and administering the questionnaire. Finally, the desired program outcome of the communication skills training course will be determined.

Literature search

A literature research will be done in databases such as Google Scholar, Scopus, and ScienceDirect using keywords such as “Competencies,” “Health Education,” “Health Educators,” and “Community Health Workers.” Studies will be selected based on their titles and abstracts and full text in the first and second round, and then, an initial list of the selected studies will be developed. The inclusion criteria will be as follows: having been published in the English/Persian language focusing on

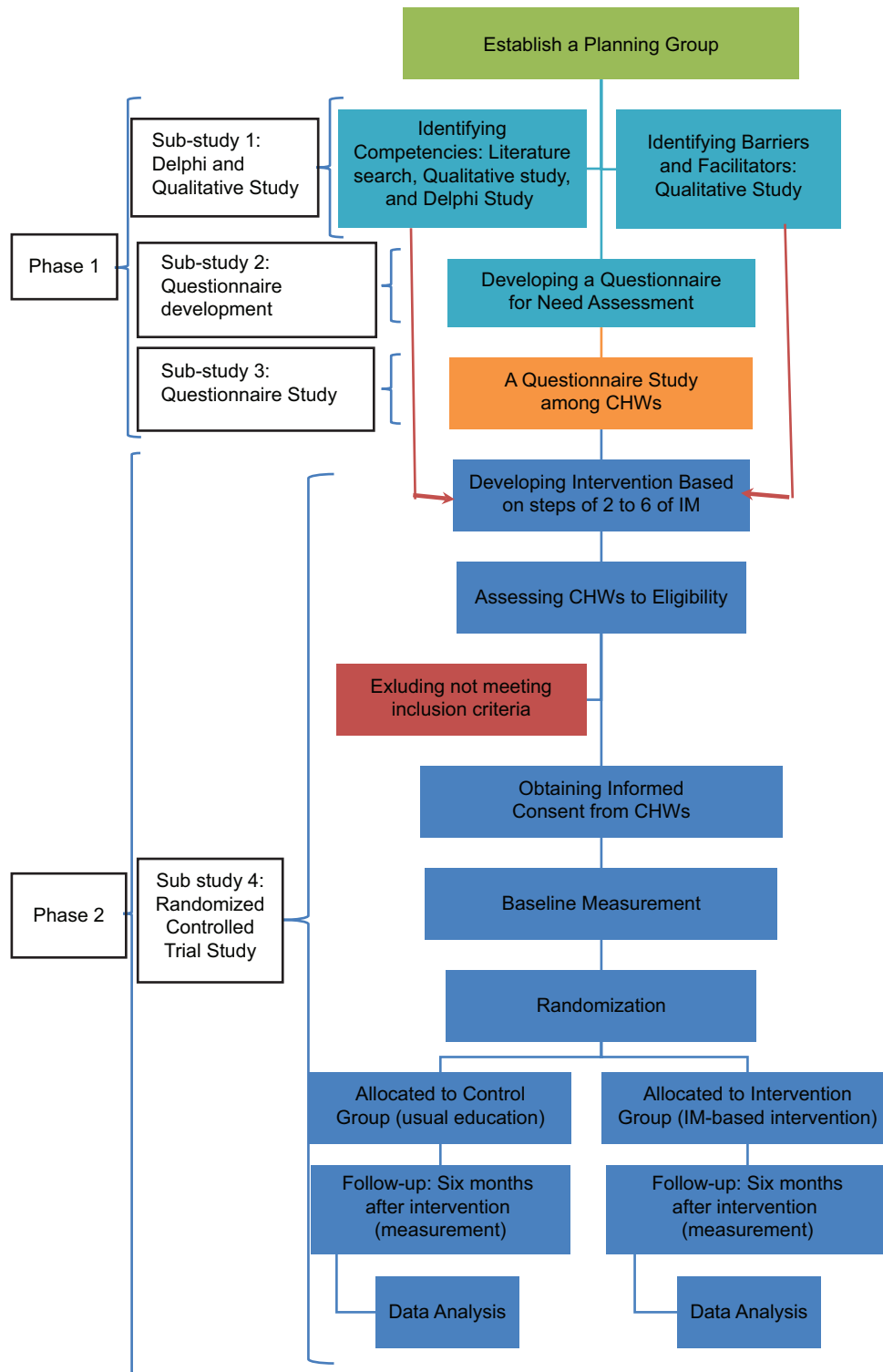


Figure 1: Study flowchart

health education competencies. The exclusion criteria will be as follows: lack of available full text and lack of fulfilling the requirements of the current study.

Qualitative study

This qualitative study will be done using a conventional content analysis approach to prepare a primary list of

health education competencies for CHWs. By means of purposive sampling, a number of eligible health education and promotion experts and health experts from different levels of Iran's health system as well as a number of eligible physicians will be enrolled in the study. Data will be collected through semi-structured interviews. CHWs will be selected by using purposive

sampling to participate in five-member focus group discussions for finding barriers and facilitators of health education and communication in the health system and addressing them in the study. Data will be collected and analyzed until data saturation will be achieved. For the trustworthiness of data, certain criteria such as credibility, dependability, confirmability, and transferability will be considered.

Delphi study

The data (the primary list of health education competencies for CHWs) from the literature search and the qualitative study will be used to develop a Delphi questionnaire. Then, a three-round Delphi study will be done with 15 health education and promotion faculties and 15 health education experts in different levels of Iran's health system for the achievement of consensus on competencies. Seventy percent will be considered as a consensus criterion.

Phase 2

Step 2: Creating the matrices of change objectives based on the determinants of behavioral and environmental conditions

According to the step 1's results, the step 2 of IM will be developed to provide the basis of the intervention through specifying who and what will change as a result of the intervention. In this step, the determinants of communication behaviors will be specified through a literature search. Expected changes in behavior and environment, performance objectives, and change objectives will be formulated through focus group discussions between all authors and stakeholders. It should be mentioned that change objectives are created by combining performance objectives and behavioral determinants.^[11]

Step 3: Selecting theory-based intervention methods and practical strategies

On the basis of step 2's results, the step 3 of IM will be developed. In this step, the planning group will identify theory-based methods and practical strategies for effective changes in the determinants of the communication behaviors of CHWs. Theory-based methods and practical strategies will be determined through a comprehensive literature search to find appropriate models/theories for teaching communication skills. Finally, we will create a matrix including behavioral determinants, theory-based methods, and practical application through focus group discussions with the engagement of the planning group.

Step 4: Translating methods and strategies into an organized program

In this step, the consultation will be done with the planning group including CHWs, and then, the program scope, sequence, theme, and materials list of communication skills course will be determined.

Evidence for developing program content and protocol will also be gathered. If the planning group assumes it as necessary, various individuals, institutes, organizations, and associations may be invited to cooperate with the study. To this end, the program's primary objectives and content will be sent to them, and then, appropriate actions will be done under the supervision of researchers. In addition, available materials will be reviewed for making appropriate changes according to the context of the program and the participants. Afterward, the primary materials of the program will be developed and its pretest will be done with a number of CHWs for potential necessary amendments, and finally, the final materials of the program will be provided to the planning group for review and approval. It should be mentioned, during the development of the contents of a communication skill training course, its potential strengths and weaknesses will be discussed and evaluated by the planning group and relevant experts.

Step 5: Planning for adoption, implementation, and sustainability of the program

In this step, adopters and implementers of the program will be identified through discussion and brainstorming among the planning groups. Then, the performance objectives of adoption, implementation, and sustainability of the program will be specified. The determinants of the performance objectives will be specified through focus group discussions among health education and promotion experts, and then, a matrix of change objectives will be created by combining performance objectives and behavioral determinants. Then, relevant methods and strategies for them will be selected and appropriate intervention (s) for application of the program will be designed by planning group including CHWs.

Step 6: Generating an evaluation plan

For evaluation of the study, a randomized controlled trial (RCT) design will be implemented as follows:

Design

An RCT will be conducted with the participation of CHWs. CHWs will be assigned into two groups: (a) systematic evidence-based intervention group and (b) control group.

Setting

All CHWs will be recruited from the health system of Torbat Heydariyeh Township (Northeastern Iran).

Eligibility

Inclusion criteria include (a) CHWs working in Torbat Heydariyeh Township and (b) providing informed consent to participate in the study.

Exclusion criteria include (a) CHWs' who are lack of volunteering to participate in the final examination; (b) lack of attending more than two sessions of communication skills training; (c) being retired within <8 months; (d) lack of access to Internet in the workplace; and (e) being on a long-term leave of absence.

Sample size

The sample size was calculated by the formula below:

$$n = \frac{\left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta} \right)^2}{d^2} = \frac{(1.96 + 0.84)^2}{(0.38)^2} = \frac{7.84}{0.14} = 56$$

$$\sigma = \frac{100 - 0}{6} = 16.7$$

$$d = \frac{\mu_2 - \mu_1}{\sigma\sqrt{2}} = \frac{9}{16.7 \times 1.41} = \frac{9}{23.54} = 0.38$$

$$Z_{1-\frac{\alpha}{2}} = 1.96$$

$$Z_{1-\beta} = 0.84$$

Hence, according to the above formula, 56 samples have been estimated for each group (intervention and control groups), considering dropout rate and response rate, and for increasing power of the study, 20% was added to the sample size, and finally, 68 samples have been estimated for each group.

Measurements and procedures

All participants will be assessed at baseline and 6 months after the completion of the intervention. Questionnaires will be developed based on the competencies and behavioral determinants drawn in the previous steps of IM.

Randomization and blinding

All eligible CHWs will be requested to complete the informed written consent form to participate in the study, and after the baseline measurements, they will be divided into the intervention and control groups. The statistician will be blind to the interventions.

Intervention and implementation

For designing and developing intervention, all findings of the previous steps of IM will be taken into account so that the details of the intervention will be developed during the completion of the previous steps of IM.

Statistical analysis

Data will be analyzed by SPSS software version 16. The normal distribution of the data will be assessed using the Shapiro–Wilk test and the Kolmogorov–Smirnov test. Independent *t*-test, paired *t*-test, ANOVA, and multiple

regressions will also be used. Chi-square test will be used for categorical variables. $P < 0.05$ will be considered as the significance level.

Ethical considerations

This article was derived from a PhD thesis on health education and promotion (IR.TUMS.SPH.REC.1397.030), supported and funded by Tehran University of Medical Sciences. All the participants should provide informed consent to participate in the study before enrollment.

Discussion

There is an urgent need for developing and evaluating an evidence-based comprehensive communication skills course for all health workers. Although the importance of communication skills has been intensified because of the epidemiological transition and increased prevalence of the chronic disease, there are certain challenges including lack of a comprehensive, evidence-based and systematic framework for teaching and assessment of communication skills for CHWs. This novel protocol has the potential to create a fundamental reform in teaching and assessment of communication skills for CHWs and to improve health/patient education as well as health/patient care.

This protocol has certain strengths: (a) competencies of CHWs related to health education and communication will be drawn from in-depth interviews with both faculty members of the health education and promotion and health experts in different levels of Iran's health system, besides a comprehensive literature search; the facilitators and barriers of health education and communication in primary health care will be drawn from focus group discussions with CHWs so that it seems that the final list of competencies and training course will be both realistic and effective; (b) the proposed study was designed with the cooperation of health education/promotion experts and medical education experts so that both sciences (health education/promotion and medical education) will be taken into account in implementing it; and (c) IM is a systematic approach, and therefore, the reproducibility of this course will be acceptable and serve as a practical guide for stakeholders and decision-makers to develop similar courses for all CHWs across the world.

The proposed study on teaching communication skills to CHWs through IM will also provide useful insight into the role of health education and promotion models/theories in medical education for teaching various subjects to students and health workers. Both health education and medical education sciences incorporate numerous principles and theories/models for similar goals including promotion of knowledge, attitude, behavior, skills, motivation, self-efficacy, and empowerment. It

seems that the application of the principles and theories/models of health education in medical education will create fundamental reform in medical education, and consequently a great improvement in the quality of medical and health services, finally leading to the promotion of health across the globe. Besides, using principles, theories, and models of medical education in health education will lead to fundamental reforms in health education and great improvement in public health all over the world. Future research should be performed with regard to health education theories/models in medical education and vice versa.

This study has three potential limitations: (a) because of the novelty of the study, available evidence will be inadequate; (b) designing and implementation of the study will be extremely time-consuming; however, the time spent is considered as an investment and seems to be worthwhile; and (c) because of time limitations, evaluation plan will be only based on the questionnaire; therefore, we recommend that future studies be done using other methods such as direct observation, videotape, and client satisfaction along with the questionnaire.

Implications

CHWs play a vital role in increasing the coverage of health-care services^[1] across the world, with communication being an essential constituent of every interpersonal meeting in health care.^[3] Given the similarity of the nature of health care globally, it can be used in many countries for developing a communication skill training course; however, contextual differences among different countries should be taken into account in developing the course. As well, this evidence-based communication skills training course can be used for other health workers but should first be tailored to them. This study will provide standard assessment tools for the assessment of communication skills in CHWs.

Conclusion

This protocol reports an example of developing a training course for CHWs using IM. This course may be relevant for CHWs and similar health workers all over the world. This course can be used to train health staff, especially CHWs.

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Conflicts of interest

There are no conflicts of interest.

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