

KATARZYNA SZCZEKALA<sup>1</sup>, KATARZYNA KANADYS<sup>2</sup>, KRZYSZTOF WIKTOR<sup>3</sup>, HENRYK WIKTOR<sup>2</sup>

## Significance of motivational interviewing in public health

### Abstract

Motivational interviewing (MI) is a specific style of communication based on collaboration, aimed at achieving a goal and focused on change talk. This is conducted in an atmosphere of comprehension, acceptance and compassion, being intended to strengthen inner motivation and commitment to attain goals by the search for, and assessment of, the individual's reasons for change. Change talk may refer to new behaviours, lifestyles or the introduction of treatment adherence. Therefore, it can be a part of health care provider – patient communication. The application of MI contributes to an increase in patients' concordance and compliance as well as rightness of the therapy prescribed because it heightens an individual's awareness and eagerness to change and triggers positive thinking, being focused on resources and values. The aim of this article is to familiarise the MI character and present some interesting examples characterised by a diversity of ideas in the overall vision of public health concentrated on health promotion. A non-systematic literature review of the years 2003-2018 on the use of MI in health promotion in PubMed provided evidence of great interest in MI in such contexts as body weight reduction, an increase in physical activity, or coping with risk behaviours e.g. addictions. The aforementioned problems are a major cause of non-communicable diseases. The application of MI results in health behaviour improvement along with increased self-esteem and self-efficacy, inner motivation and willingness to change habits.

**Keywords:** motivational interviewing, public health, obesity, physical activity, addiction, risk behaviours.

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### INTRODUCTION

Motivational interviewing (MI) is a style of communication based on collaboration, aimed at achieving a goal and focused on change talk. This discourse is intended to strengthen inner motivation and commitment to attain the goal by the search for an individual's reasons for change and then their assessment. It is conducted in the atmosphere of comprehension, acceptance and compassion [1].

Change talk is of great significance in different contexts in our lives; it is used to introduce new behaviours, change lifestyles or adhere treatment. Therefore, this way of communication plays an important role in health professional – patient communication since it increases patients' concordance and compliance as well as rightness of the therapy prescribed. In contrast to traditional instructions and advice, MI is oriented to heightening an awareness of the individual's willingness to change and evoking positive thinking relying on resources, values and interests [1-4].

The aim of the work is familiarisation of the MI character and presentation of the vast array of its application in public health. Due to non-systematic literature review of the years 2003-2018 on the use of MI in health promotion, some interesting examples characterised by a diversity of ideas, presumably

worth trying out, have been chosen to show the wide spectrum of MI use and its effectiveness.

### Characteristics of MI

On listening to an interlocution in the atmosphere of MI, one can think that it is light, casual or spontaneous. However, it is structured, based on certain rules, and undergoes certain processes [5-6]. Both mental and emotional attitudes to an interlocutor are important, and they include such elements as partnership with compassion, acceptance and evocation of goals, values, causes and ideas of change introduction, avoiding deficits and a negative approach [1]. Acceptance is understood as seeing the speaker as a valuable person, free from judgement but with empathy (looking at the person's life through his or her own eyes), supporting autonomy and bolstering confidence via relying on strengths and resources.

Rules of MI consist in expressing empathy; supporting the individual's value and self-efficacy by focusing on advantages; developing discrepancy between the current situation and the one the person would like to be in; and rolling with resistance that results from ambivalence towards the change [7].

According to Miller and Rollnick [1], the authors of MI, a person is able to transcend ambivalence and make a decision about a change when his or her sustain language shifts towards change talk, namely when arguments against change are

<sup>1</sup> Department of Foreign Languages, I Faculty of Medicine with Dentistry Division, Medical University of Lublin, Poland

<sup>2</sup> Department of Obstetrics, Gynaecology and Obstetric-Gynaecological Nursing, Faculty of Health Sciences, Medical University of Lublin, Poland

<sup>3</sup> Diagnostic Techniques Unit, Faculty of Health Sciences, Medical University of Lublin, Poland

replaced with auto-motivating assertions. It is feasible when four key processes occur which can follow, permeate, cover or coincide with one another and recur. The initial process involves engaging, the second – focusing (setting a goal). Then, evoking, i.e. bringing out motivation to change, by giving arguments for change, reinforcing belief and supporting self-efficacy. Planning constitutes the last process and takes place when the person formulates a concrete plan.

Some person-oriented communication skills are recommended to evoke change talk, for instance a tool referred to as OARS which consists of asking Open questions, using Affirmation, Reflective listening and lastly Summarising [1]. Open questions refer to a conversationalist's willingness, skills, reasons and needs for change as well as to his or her commitment. These are essential as they encourage a person to come to awareness of him/herself and necessity for change. Affirmation shows a person that he/she is effective and directs his/her attention from problems or difficulties to goals; from his/her weaknesses to strengths. Reflective listening and summarising require active listening skills from the person conducting MI as well as his/her abilities to paraphrase, synthesise and select the best contents.

### MI in public health

The definition of public health is as follows “the art and science of preventing disease, prolonging life and promoting health through the organized efforts of society” [8]. It is aimed at promoting greater health and well-being in a sustainable way. In order to achieve the aforementioned aim, the public health approach involves working with other sectors to address the wider determinants of health, and with health professionals [9]. In observing the challenges of public health, what is brought to the forefront, is the necessity of disseminating knowledge about pro-health behaviours to prevent non-communicable diseases [10]. Health improvement frequently depends on the introduction of new behaviours. In literature, there is abundant evidence of MI application in health promotion. Below there are some examples of MI usage that have been presented in overweight/obesity reduction, improvement of physical activity level (PAL), addiction and risk behaviour decline.

### MI in overweight and obesity

Overweight and obesity result from considerable weight gain caused by excessive consumption of food, i.e. calories. According to the WHO, obesity has trebled in the world since 1975. In 2016, 39% of adults were overweight and 13% of these obese, which is troubling because overweight and obesity are major risk factors for noncommunicable chronic diseases. Moreover, they contribute to 10-13% of premature deaths (approximately 1 million deaths annually) [11]. Literature review shows MI effectiveness in reducing body weight.

A Welsh and English 12-month randomised controlled trial (RCT) encompassed 170 adults (18-70 years old) with BMI  $\geq 30$  kg/m<sup>2</sup>. After 6 direct and 9 telephone MI sessions in an intensive group, there was a mean BMI decline of 1 kg/m<sup>2</sup> in comparison with a control group (0.2 kg/m<sup>2</sup>). A similar difference was found in body weight loss, mean difference of 2.8 kg compared with 0.5 kg. The results suggest that MI intervention can facilitate long-term weight loss [12].

A Canadian qualitative research study on 8 females aged 35-55 years old with BMI  $\geq 30$  kg/m<sup>2</sup> provided interesting

results. After 6 months, due to 18 MI, there was a decrease in waist circumference and body weight directly after the interventions, and after a subsequent 6 months, the highest weight loss was about 17 kg from 132 kg and the lowest one was around 1.5 kg from 90 kg. Moreover, other advantages were found: an increase in self-esteem and self-efficacy, moderate growth of physical activity level (PAL) as well as substantial diet improvement (two three-day records of food intake). This proves that MI is highly effective for individuals who deal with life factors and stressors that impede weight loss [13]. Similar findings were received by Pearson et al. (2013) as the MI group revealed better self-understanding and responsibility for themselves, which explains the incredible phenomenon of MI [14].

RCT on three groups of 150 obese (BMI 29-35 kg/m<sup>2</sup>) Iranian females also indicated MI effectiveness. One of two groups with MI (5 MI group sessions with a psychologist and 4 sessions on diet and exercising) had additional goal and deadline establishment, and obtained a higher anthropometric status in a 2-month follow-up (the control group showed weight loss only directly after the sessions) [15]. Another Iranian single-blind RCT on 100 obese (BMI 25-35 kg/m<sup>2</sup>) women showed high MI effectiveness after five sessions delivered for a 7-10-participant group with the provision of pamphlets on overweight and obesity as well as advantages of diet change. This led to significant BMI decrease 2 and 6 months after the intervention. MI superiority is affirmed by its more durable effects of weight loss and effective promotion of self-efficacy [16]. Both studies provided positive results in group MI sessions in health centres.

The systematic review of 1994-2014 included 24 RCTs and shaped MI effectiveness in body weight reduction this way: 54.2% of the participants had weight loss by at least 5% in comparison with the initial weight and 37.5% reported substantial weight loss [17]. Furthermore, MI turned out to be a useful method for obese pregnant women in Denmark [18]. MI was proved to be an effective technique of behaviour change, diet improvement and PAL increase with long-term ( $\geq 12$  months) effect of change adherence in systematic review of 48 RCTs [19]. Another systematic review of 33 RCTs on health behaviour change, namely a diet change, increase in PAL and decrease in alcohol consumption revealed a positive effect in around 50% of those researched [20].

The results of the aforementioned research conducted with the application of standardised psychometric tools and body weight measurement showed that MI is effective since it boosts self-awareness and motivation, which translates into undertaking trials of body weight loss irrespective of stressors.

### MI in physical activity

Physical activity (PA) is of great significance for health. However, the WHO reports that 1 in 5 individuals and 4 in 5 teenagers present inactivity. Regular exercise plays a key role in the prevention and treatment of noncommunicable chronic diseases. Adults are recommended to have at least 30 minutes of PA a day. The research carried out in Denmark and Great Britain show that regular and moderate PA can extend lifespan as long as 3-5 years [21].

Following four 15-minute sessions of automated MI, 23 adult Americans, most of whom were overweight or obese (96%), achieved a considerable increase in PA from an average of 5252.99 steps daily prior to the study to 6425.05 after

the sessions. Total weekly energy expenditure increased from 1918.33 metabolic equivalent of task (MET) before the study to 3457.12 MET a month after the intervention. A considerable growth of variables i.e. readiness, willingness and perceived ability to change contributed to PA improvement. Such positive results of the study prove MI's effectiveness in health promotion [22]. Automated MI provided better outcomes than the use of an avatar (a virtual person created for the conducting of MI sessions) in research on 958 Dutch adults (females: 60.4%) aged 18-70 years old with moderate PAL of at least 30-minute movement daily on average 4.2 days weekly. A month after the intervention, the mean moderate PA was 4.4 days weekly with at least 30-minute movement per day; a group communicating with an avatar reached mean 4.6 while another group working with a text 4.7 and the control group 4.0. The participants of the first two groups increased their PAL from 4.44 to 4.63 days weekly with at least 30 minutes of exercising. Although some improvement was noted, no greater differences were found between MI intervention in the first two groups, probably automated MI could not cause more impressive changes [23].

Positive effects were achieved in 70 Iranian women of child-bearing age who were provided with four 90-minute group sessions of MI to promote PA. The first group was given educational sessions with MI and pamphlets on PA significance while the other group received only educational sessions. Following a 4-month period after the intervention, the group with MI showed an increase in PAL, internal motivation, perceived competences, autonomy and satisfaction [24]. MI turned out to be helpful in the study of 80 females and males aged 40-65 years old in Australia who took part in a 4-month intervention aimed at introducing new habits of PA in order to fight against sedentary lifestyle. Apart from 20-min MI sessions, the participants were provided with weekly text messages from the research authors so as to reinforce some of the features of MI such as goal establishment, behaviour monitoring, feedback and goal evaluation. The participants received points depending on their involvement in the process: 1 point for their daily 30-minute activity and 30-minute reduction of sedentary lifestyle. The aim was to increase PA by 150 minutes and decrease sedentary lifestyle by 150 minutes a week. The participants were additionally awarded with some souvenirs and vouchers, and after the 4-month intervention they could win a prize. In the participants' eyes, the component of MI was of great significance and the only one that received no negative assessment [25].

Both inactivity and excessive PA can be a cause of health problems. Critical literature review on compulsive exercising indicates the need for MI application as an effective approach to overcoming this addiction. The aim of MI is to accept the need for change and the reinforcement of motivation in behavioural addictions. This problem is concomitant with other conditions or addictions (e.g. to alcohol, nicotine, drugs, sex, work, Internet) and typical attitudes like perfectionism, narcissism, neuroticism. Consequences of the addiction are subsequent health problems such as trauma, pain, anxiety, depression and social disturbances [26].

### **MI in addictions and risk behaviours**

The term addiction refers to a health disorder, a psychological condition or a both psychological and physical condition requiring a psychoactive chemical agent that needs to be taken regularly or occasionally to avoid unpleasant symptoms [27].

Rowicka (2015) [7] describes the difference between behavioural addiction and addiction to a psychoactive substance. The former is usually a component of normal behaviour, the latter requires taking of an agent. Despite this difference, biochemical changes including those at the neurotransmitters level are similar. Another difference concerns abstinence. In the case of addiction to psychoactive substances, treatment is based on total exclusion. As far as behavioural addictions are concerned, total abstinence is almost impossible.

The literature review of 28 RCT of 1997-2014 showed MI effectiveness in comparison with standard treatment for smoking cessation where the participants were provided with 1-6 sessions of MI lasting 10-60 minutes. The results are interesting: General Practitioners (GPs) were more effective than nurses and psychologists; single and shorter sessions (< 20 mins) were more fruitful; both telephone and face-to-face sessions were effective [28].

In Switzerland, three 30-minute MI interventions were applied in RCT on 325 individuals addicted to nicotine and cannabis. Self-assessment and personalised normative feedback were chosen for the first group, MI for the second group and psychoeducation for the third group. All three of the groups achieved a considerable increase in motivation for smoking cessation directly after the interventions and a slight decline after the subsequent 8 weeks. MI was not more effective than other methods probably because of its fully-automated character restricted to 3 or 4 tasks [29]. The research hypothesis was challenging because abstinence from one of the substances (e.g. nicotine) could result in greater demand for the other substance (e.g. cannabis) as compensation. Simultaneous abstinence from two addictive agents is an enormous challenge or difficulty. Miller (2015) claims that among all psychoactive substances, nicotine is the most harmful for the addicted and smoking is associated with high costs of healthcare, high morbidity and mortality [4]. The results of the aforementioned study on individuals addicted to both nicotine and cannabis were not satisfying because MI lacked essential characteristics that are emphasised by the MI authors.

Other high-risk behaviours such as alcohol or drug abuse, or risky sexual behaviour lead to many health problems. Some literature reports show that MI can be applied to different behavioural problems restricted to one session or extending intervention to several sessions. Such sessions can be the introduction to other therapies (e.g. hospital treatment), integrated with other therapies (e.g. with cognitive behavioural one), or constitute an independent intervention [30].

An American project Choices was completed by 143 females who participated in four MI sessions and one counselling session on family planning. Follow-up after 6 months indicated that 68.5% of the women reduced the amount of alcohol consumed, 23.1% used effective contraception, 12.6% had no risk of alcohol-exposed pregnancy and 32.9% both reduced alcohol consumption and used effective contraception [31]. Another clinical trial on 228 females aged 18-24 years old with risk of alcohol-exposed pregnancy showed the effectiveness of one MI session. In the group with MI, 25% of the women did not drink alcohol compared with 15% from the control group (follow-up after one month). A total of 64% of the women with MI used safe contraception in comparison with 48% in the control group. The risk of unplanned alcohol-exposed pregnancy did not occur in 74% of the women who

received MI session and 54% in the control group. The results are satisfactory, though short-term [32].

Many research studies confirm the efficacy of brief MI treatment in risk behaviours e.g. only one session or 6 weekly ones or four 50-minute ones [33]. In the case of individuals taking methadone, one MI session before therapy decreased the drop-out rate from 49% to 30%. Moreover, participation in one MI session resulted in greater engagement in the therapy process and after completion of three-month therapy, 64% of the participants maintained abstinence [34].

It is extremely interesting that MI has turned out to be effective in difficult work with addicted patients.

## CONCLUSIONS

MI is a person-oriented clinical style of communication about change which is based on collaboration and aimed at reinforcement of the person, their motivation, and their commitment to change. MI is successfully applied in healthcare because it results in health improvement by prevention and effective treatment. Health promotion, the overall vision of public health, is of great importance. Abundant research of MI is evidence of vast interest in this communication. The aforementioned studies have been mentioned to make MI better-known and to show the wide diversity of researchers' ideas for achievement and maintenance of health.

## REFERENCES

- Miller WR, Rollnick S. Dialog motywujący Jak pomóc ludziom w zmianie. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego; 2014.
- Miller WR, Rollnick S. Motivational interviewing: Preparing people to change addictive behavior. New York: Guilford Press; 1991.
- Rollnick S, Miller W, Butler C. Wywiad motywujący w opiece zdrowotnej. Warszawa: Wydawnictwo Szkoły Wyższej Psychologii Społecznej „Academica”; 2010.
- Jaraczewska JM, Adamczyk-Zientara M. Dialog Motywujący Praca z osobami uzależnionymi behawioralnie. Warszawa: Ministerstwo Zdrowia. Eneteia; 2015.
- Mrozowska O, Przenzak A. Dialog motywujący – budowanie mostu do zmiany cz. 1. Terapia uzależnienia i współuzależnienia. 2013;(2):15-16.
- Mrozowska O, Przenzak A. Dialog motywujący – budowanie mostu do zmiany cz. 2. Terapia uzależnienia i współuzależnienia. 2013;(3):19-23.
- Rowicka M. Uzależnienia behawioralne. Terapia i profilaktyka. Warszawa: Krajowe Biuro do spraw Przeciwdziałania Narkomani. Fundacja Praesterno; 2015.
- Acheson D. Independent inquiry into inequalities in health report. The Stationery Office; 1988. Available from: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/265503/ih.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/265503/ih.pdf) (access 19.07.2018).
- <http://www.euro.who.int/en/health-topics/Health-systems/public-health-services/public-health-services> (access 19.07.2018).
- Koplan JP, Fleming DW. Current and future public health challenges JAMA. 2000;284(13):1696-8. doi:10.1001/jama.284.13.1696.
- <http://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight> (access 19.07.2018).
- Simpson SA, McNamara R, Shaw C, et al. A feasibility randomized controlled trial of a motivational interviewing-based interventions for weight loss maintenance in adults. Health Technol Assess. 2015;(50):v-vi, xix-xxv, 1-378.
- Newnham-Kanas C, Irwin JD, Morrow D, Battram D. The quantitative assessment of motivational interviewing using co-active life coaching skills as an intervention for adults struggling with obesity. Int Coach Psychol Rev. 2011;(2):211-28.
- Pearson ES, Irwin JD, Morrow D. The CHANGE Program: Methodology for comparing interactive co-active coaching with a prescriptive lifestyle treatment for obesity. IJEBM. 2013;11(1):69-84.
- Mirkarimi K, Mostafavi F, Eshghinia S, et al. Effect of motivational interviewing on a weight loss program based on the protection motivation theory. IRMJ. 2015;17(6). DOI:10.5812/ircmj.23492v2
- Mirkarimi K, Kabir MJ, Honarvar MR, et al. Effect of motivational interviewing on weight efficacy lifestyle among women with overweight and obesity: A randomized controlled trial. IJMS. 2017; 42(2):187-93. doi: 10.1111/obr.12264
- Barnes RD, Ivezaj V. A systematic review of MI for weight loss among adults in primary care. Obesity Rev. 2015;16:304-18.
- Lindhardt CL, Rubak S, Mogensen O, et al. Healthcare professionals experience with motivational interviewing in their encounter with obese pregnant women. Midwifery. 2015;31(7):678-84.
- Samdal GB, Eide GE, Barth T, et al. Effective behaviour change techniques for physical activity and healthy eating in overweight and obese adults; systematic review and meta-regression analyses. IJBNPA. 2017;14:42. DOI 10.1186/s12966-017-0494-y.
- Morton K, Beauchamp M, Prothero A, et al. The effectiveness of motivational interviewing for health behaviour change in primary care settings: a systematic review. Health Psychol Rev. 2015;9(2):205-23. doi:10.1080/17437199.2014.882006.
- <http://www.who.int/news-room/detail/04-06-2018-who-launches-global-action-plan-on-physical-activity> (access: 19.07.2018).
- Karnes SL, Meyer BB, Berger LM, Brondino MJ. Changes in physical activity and psychological variables following a web-based motivational interviewing intervention: Pilot study. JMIR Res Protoc. 2015;4(4):e129.
- Friederichs S, Bolman C, Oenema A, et al. Motivational interviewing in a web-based physical activity intervention with an avatar: Randomized controlled trial. J Med Internet Res. 2014;16(2). e48.
- Mahmoodabad SSM, Tonekaboni NR, Farmanbar R, et al. The effect of motivational interviewing-based intervention using self-determination theory on promotion of physical activity among women in reproductive age: A randomized clinical trial. Electron Physician. 2017;9(5):4461-72.
- Ball K, Hunter RF, Maple JL, et al. Can an incentive-based intervention increase physical activity and reduce sitting among adults? The ACHIEVE (Active Choices Incentive) feasibility study. IJBNPA. 2017;14:35. doi 10.1186/s12966-017-0490-2.
- Lichtenstein MB, Hinze CJ, Emborg B, et al. Compulsive exercise: links, risks and challenges faced. Psychol Res Behav Manag. 2017;30;10:85-95. doi: 10.2147/PRBM.S113093.
- <https://encyklopedia.pwn.pl> (access: 19.07.2018)
- Lindson-Hawley N, Thompson TP, Begh R. Motivational interviewing for smoking cessation. Cochrane Database Syst Rev. 2015 Mar 2(3):CD006936. doi: 10.1002/14651858
- Becker J, Haug S, Sullivan R, Schaub MP. Effectiveness of different web-based interventions to prepare co-smokers of cigarettes and cannabis for double cessation: A three-arm randomized controlled trial. J Med Internet Res. 2014;16(12):e27.
- Lundahl B, Moleni T, Burke BL, et al. MI in medical care settings: A systematic review and meta-analysis of randomized controlled trials. Patient Educ Couns. 2013;93:157-68.
- Ingersoll K, Floyd L, Sobell M, et al. Reducing the risk of alcohol-exposed pregnancies: A study of a motivational intervention in community settings. Pediatrics. 2003;111(5):Pt 2:1131-5.
- Ingersoll KS, Ceperich SD, Nettleman MD, et al. Reducing alcohol-exposed pregnancy risk in college women: Initial outcomes of a clinical trial of a motivational intervention. J Subst Abuse Treat. 2005;29(3):173-80.
- Choi SW, Shin YH, Kim DJ, et al. Treatment modalities for patients with gambling disorder. Ann Gen Psychiatry. 2017;16:23. <https://doi.org/10.1186/s12991-017-0146-2>.
- Barański C. Dialog motywujący w pracy z grupami osób podejmujących zachowania ryzykowne. Motivational Interviewing in groupwork on risk behaviours. Psychoterapia. 2016;3(178):37-52.

### Corresponding author

Katarzyna Szczekala  
Department of Foreign Languages, Medical University of Lublin  
4 Jaczewskiego St., 20-090 Lublin, Poland  
tel: 696 411 197  
E-mail: [kasiasz12@wp.pl](mailto:kasiasz12@wp.pl)