

Motivational interviewing in obesity reduction

Zastosowanie dialogu motywującego w praktyce redukcji otyłości

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Abstract

Motivational interviewing (MI) is a clinical, person-centred way of talking about change based on cooperation and aimed at strengthening a person, enhancing their motivation, and commitment to change. The phenomenon of the type of communication lies in its interdisciplinary character and effective application in health promoting education. The purpose of the article is to present the method of MI and possibilities of using it in the practice of obesity reduction on the basis of literature review reports on MI in health promotion delivered in the databases of, among others, PubMed and Scholar Google. The numerous research findings prove that MI is an effective intervention, which activates and supports people in the process of change due to bolstering their self-awareness, self-efficacy, and motivation, which, consequently, favours the effort made to achieve or maintain health. The potential of the approach in health promotion relies on the vast array of its application.

Streszczenie

Dialog motywujący (DM) to kliniczny styl rozmawiania o zmianie, skoncentrowany na osobie, oparty na współpracy i służący umocnieniu osoby, jej własnej motywacji i zobowiązania do zmiany. Fenomen tego rodzaju komunikacji polega na jej interdyscyplinarnym charakterze i efektywnym wykorzystaniu w edukacji prozdrowotnej. Celem tego artykułu jest przedstawienie metody DM oraz sposobu jej wykorzystania w praktyce redukcji otyłości na podstawie przeglądu wyników badań w bazie PubMed, Google Scholar na temat DM w obszarze promocji zdrowia. Wyniki licznych badań dowodzą, że DM jest skuteczną interwencją aktywizującą i wspierającą ludzi w zmianie poprzez zwiększenie samoświadomości i sprawczości, a tym samym wzmocnienie motywacji, co w konsekwencji sprzyja podjęciu wysiłku w celu osiągnięcia lub utrzymania zdrowia. Potencjał tego podejścia w promocji zdrowia polega na szerokim zastosowaniu.

Introduction

Motivational interviewing (MI) is a type of communication based on cooperation, oriented towards achievement of a specific outcome and particularly focused on change talk. It is aimed at strengthening the individual motivation in order to attain a concrete outcome by evoking a person's own reasons for change and evaluating them in the atmosphere of acceptance and care [1]. The expected life change can concern a variety of functioning areas; thus, MI discourse has been used to introduce new behaviour, change life-style, sustain some behaviour, activities, or services, or improve therapy regimen adherence. Change talk plays a pivotal role in life, so the manner of conducting it is particularly important; it may motivate or discourage an individual to take steps intended for their

evolution. Motivational interviewing constitutes an alternative to a directing style that is characterised by instructions and advice. In contrast, MI depends on a special talk arrangement to facilitate a person to become aware of their willingness to change and also to think positively, having great faith in themselves that they will be able to achieve it with reliance on their own resources, values, and interests [1, 2].

The genesis of MI dates back to 1982 when William Miller attempted to describe his practice used in the treatment of addicts. Gradually, the method aroused increasing interest and has become the subject of numerous research projects, due to which the processes, results, and psycholinguistics of change have become known. Miller and Rollnick claim that over 25,000 articles and 200 randomised controlled

trials on MI have been published [1]. Empirically, the effectiveness of the method has been proven in therapy of the addicted, including the behaviourally addicted, psychotherapy, social work, resocialisation, medicine, education, and many other fields [3]. The authors of MI admit that they have taught therapists of many different areas how to utilise the method, for example in the practice of general practitioners, in the treatment of renal diseases, diabetes mellitus, cognitive rehabilitation, rehabilitation of patients with heart failure, physiotherapy, dental care, psychotherapy and speech therapy, promotion of public health, and even in fitness training [2].

The aim of the article is to present the method of MI and its application in the practice of obesity reduction achieved by diet modification and/or increase in physical activity.

Material and methods

A non-systematic literature review on MI in health promotion and assessment of the MI method application in obesity reduction have been carried out. To gain access to articles on the subject published in the years 1997–2015 with particular attention paid to the last five years, the data review was performed in the databases of PubMed and Google Scholar as well as the publishing platform databases as follows: Elsevier, Borgis, Oxford Journals, BioMed Central, BMJ, Wiley Online Library, APAPsycNET, Springer Link, and JMIR Publications.

A total of 54 articles were collected, although 25 articles have been included in the work because they were consistent with the aforementioned topic in the literature provided in the sources. The latest publications have been pinpointed in order to demonstrate different forms of MI application and outcomes of the interventions; others have been mentioned to indicate considerable interest in the method.

Development of the issue

The analysis of the material collected was conducted and the depiction was provided in accordance with the objective of the article in order to show the application of MI to achieve a decrease in weight due to diet modification and/or increase in physical activity.

The nature of the motivational interviewing method

According to Mrozowska and Przenzak, listening to an interlocution conducted in the atmosphere of MI, one can have the impression that it is nothing but a light and supporting conversation. However, it is a particular style of communication, which is characterised by precisely determined principles, processes, and methods [4]. The principles of MI include: expressing empathy,

supporting self-efficacy, developing discrepancy, rolling with resistance.

Reflective listening and reflecting are the key skills for the MI principle of empathetic reaction. Enhancing the sense of effectiveness and self-efficacy leads to an increase in readiness to use the person's own resources by emphasising the advantages, analysing previous success, and paying attention to some circumstances which have favoured the achievement of positive results and some factors which have hindered the attainment of good results. Developing the discrepancy between the current situation or state and the situation the person would like to find themselves in means working on ambivalence. Analysis of arguments for and against the change and then a talk about benefits resulting from the change implementation strengthen motivation. In the nature of MI, resistance is the result of ambivalence in relation to change, so work on the discrepancy between something that is found and something that is going to happen results in decreased resistance [5].

The most recent conception of the MI authors is largely focused on the atmosphere that is a hidden perspective, a mental and emotional attitude with which the interview is practised. This unique atmosphere encompasses some elements that are interconnected, and they are as follows: partnership, acceptance, compassion, evocation [1].

The relationship based on cooperation is the most essential part in the first component. This collaboration is possible if the person conducting MI is a companion, not an expert. The unquestionable expert is the person who is to institute the change in their life since the person knows her/himself and her/his life best. Therefore, encouraging, convincing, counselling, repairing, correcting, and commanding do not occur in MI. The partner-like character of MI shows great respect for the other person and so is aimed at evoking motivation in the person and their own resources necessary for the change.

Acceptance involves four factors, namely unconditional value, accurate empathy, self-efficacy support, and affirmation. Recognising the absolute worth of the other person/client/patient means accepting the person as they are and abandoning judgement. Expressing empathy is nothing but showing an interest and approaching understanding of the person as well as looking at the world through the person's eyes. Imposing one's point of view on the person is not a part of MI. Supporting self-efficacy or autonomy is giving the person freedom and letting her/him take their decisions independently. Boosting one's confidence involves searching for and then relying on the person's strengths and resources. All the aforementioned components of acceptance in MI are felt by the person conducting the interview and are expressed in their behaviour.

Another element of MI is a compassionate attitude, having good intentions, care of health and psycho-physical condition, as well as focusing on the person's needs. The MI philosophy is also affected by evocation, which is the last given component. It relies on setting the goals, values, reasons, and ideas of change introduction. Therefore, deficits are not involved and they are even deliberately omitted in the approach.

The first experience of MI originates from work with the addicted, and at the time it was concentrated on preparing them for change in a wide range of problem areas. The conclusions drawn from this work amplified the authors' knowledge on MI and resulted in familiarisation with the following four processes typical of MI: engaging, focusing, evoking, and planning. The processes follow one another and can permeate and cover one another or repeat. Engaging is a process in which the two sides establish contact and a working relationship or build a rapport. It constitutes a condition of what happens next. Mrozowska and Przenzak claim that "if there is no engagement, it is not possible to move forwards, and one can even move backwards when resistance is strengthened." [6]. Focusing is a process of developing and maintaining the determined direction in change talk. The goal or goals of change can be connected with implementing new behaviour, which has to be specified more precisely. Evoking refers to finding motivation for change by expressing the arguments for change as well as reinforcing belief and supporting self-efficacy. Rowicka views the process as creating circumstances for the development of potential, which can lead to identification of beliefs within the discussed topic and a quest for solutions [5]. Planning takes place when a person is ready for change, which is recognised by thinking and talking about when and how change is to be instituted as well as formulating a concrete plan of action.

The basic skills of communication are most significant in MI since they are person-oriented. They are determined by the acronym OARS, which comprises: open questions (O), affirmation (A), reflective listening (R), summarising (S) [1].

The literature reports show the effectiveness of combining MI with tools characteristic of co-active coaching (CALC) [7–10]. There are many different definitions of coaching; for instance, it is referred to as accompanying change. According to Thorpe and Clifford, coaching is "assistance provided to a given person in enhancement and improvement of action through consideration of the way he/she applies a substantial skill or knowledge" [11]. In the opinion of co-authors of coactive coaching, namely L. Whitworth, and H. and K. Kimsey-House, coaching effectively enables people to find the answer to bothersome questions, supports them on the path they choose, and encourages them to make important choices that af-

fect their lives, while the term co-active applies the nature of the coaching relationship where the coach and a coachee are active co-workers [12].

The description of MI is based on the process of arousing effective motivation. Through powerful motivation, a person can succeed. The term motivation is derived from the Latin verb *movere* and means "set something in motion" or "move to action". "The function of motivation is to steer the person's actions in such a way as to achieve a specific goal. The motivational process is based on action organisation, engagement, and energy investment to make realisation of the intension possible" [13]. "Motivating someone to change is one of the most difficult tasks in helping those people who are involved in various destructive behaviours. Irrespective of whether it is alcohol abuse, cigarette smoking, taking illicit drugs, binge eating, gambling, or non-adherence to medical instructions, it is not easy to make a person entangled in such behaviour take the decision of changing it." [14]. A person can take some steps to change, if the change is crucial, profitable, requires self-efficacy, and knowledge of coping, which, as some scientific reports show, is feasible owing to the principles, tools, processes, and especially the atmosphere of MI. According to Lizis-Młodożeniec if a person feels that the actions of a person conducting MI interfere with respect to their autonomy and are directed to persuading them to take specific options, the phenomenon of reactance is observed, namely a person starts to protect their right to choose by maintaining the alternative – in fact a lack of change [15].

Motivational interviewing application in obesity reduction – review of research results

Recently, overweight and obesity have become among the most serious human problems that result from complex psychological, biological, or social mechanisms [16, 17]. According to the WHO, since 1980 obesity has doubled worldwide, in 2014 a total of 39% of adults were overweight while 13% suffered from obesity [18]. This condition is also linked to low physical activity. The WHO declares that over 80% of the adult population in the world is insufficiently active; therefore, by the year 2025 the WHO member states plan to increase physical activity by 10% [19].

The European Association for the Study of Obesity suggests using five key propositions in the care of obese patients. The principles of the communication are based on the style of MI to fight against obesity and sedentary lifestyle [20]. The literature is abundant with evidence of applying the MI method in health promotion. In the UK a year of intervention carried out by Simpson *et al.* in 170 adults (18–70 years old) with body mass index (BMI) ≥ 30 kg/m² was effective. The participants of the intensive group received six face-to-face and nine telephone sessions of MI, the less intensive

group had two direct and two telephone MI sessions, while the control group was provided solely with a brochure of practical advice on a healthy lifestyle. The first group achieved a mean loss of BMI 1 kg/m² lower than the control group with 95% confidence interval CI -2.2 kg/m² to 0.2 kg/m² and the average difference in loss of weight was 2.8 kg with 95% CI -6.1 kg to 0.5 kg. The obtained results suggest that intensive intervention with MI would support long-term weight loss [21].

In Canada, due to 18 sessions of MI given in the period of 6 months, a total of eight obese women aged 35–55 years old achieved waist circumference loss and weight loss directly after the intervention and 6-month follow-up. For instance, the lowest weight loss after 6 months was roughly 1.5 kg from 90 kg, and the highest was approximately 17 kg from 132 kg. At 6-month follow-up, there was a continuation of weight loss which ranged from 0.27 kg to about 4 kg in 3 women. The results were satisfactory and in some cases even surprising because some women were on concomitant disease drug therapy, which contributed to weight gain, but despite that they lost weight and modified their diets. The results of numerous measurement tests confirmed that application of MI had a positive influence on participants' quality of life, self-esteem and self-efficacy, functional health status, and nutrition and contributed to moderate physical activity increase [9, 10].

Pearson *et al.* researched the effectiveness of MI on a group of 78 obese students at the age of 18–24 years old for 12 weeks in the CHANGE project [7, 8]. One group was given 12 30- or 45-minute telephone-based sessions of personalised MI with the use of tools typical of co-active coaching and carried out by 16 certified coaches from Canada and the USA. The other group had twelve telephone 30- or 45-minute lessons based on the validated LEARN program (10th edition), which contained information on lifestyle, exercise, attitudes, relationships, and nutrition and were read by students. The results prove the effectiveness of both MI and the LEARN program. The two groups benefited from participation as they gained the ability to take self-reliant actions on a similar level. A greater loss of caloric intake was noted in the MI group ($M = -662.76$) in comparison to the LEARN group ($M = -105.5$). Although the LEARN group obtained higher weight loss (-3.52 kg), compared to the MI group (-1.13 kg) between baseline and week 12, the MI group achieved much more, namely better self-understanding and self-responsibility. Both of the approaches are worth applying, although it is MI that is superior owing to greater self-awareness and self-efficacy.

In the 3-month study with the use of MI, Barnes *et al.* included a website www.Livestrong.com to facilitate the process of monitoring [22]. The intervention involved 89 overweight or obese people (BMI ≥ 25 , ≤ 55) and some of them had eating disorders.

The participants were randomly assigned to three groups: MIC received five 20–40-minute MI sessions including two on the phone; the other group, called NPC, had five psychoeducation sessions on nutrition, and the third group, UC, was provided with only the usual care. Additionally, the MIC and NPC groups were given the usual care, and access to the website and the aforementioned LEARN manual as it was also used by Pearson *et al.* [7, 8]. Weight loss was maintained at 3-month follow-up, and about 25% of the participants receiving MI sessions and psychoeducation attained at least 5% weight loss. The general weight loss was substantial in the NPC group. The research demonstrated a high level of satisfaction in the groups with MI and psychoeducation. Threefold (at the start, in the course and at the end of the study) application of standardised protocols, for example the Autonomous Motivation (AM) subscale of the Treatment Self-Regulation Questionnaire, indicated that the participants were highly motivated even at the beginning of the survey (mean 6.6–6.7 on the AM subscale with the maximum of 7). Therefore, the obtained results in the group with MI were not outstanding. In such a situation the authors of MI do not recommend motivational interviewing, but they suggest moving on to the stage of planning and introducing change, and consciously omitting the stage of evoking. They explain that by the fact that MI is mainly designed to help people overcome ambivalence and reinforce motivation to change [1].

The innovative project by Allicock *et al.* in the Veterans Health Administration showed successful application of MI in health promotion and weight loss where 56 veterans had participated in a short MI training in order to be able to conduct MI for other veterans for 6 months [23]. The MI was effective and gave a lot of satisfaction of cooperation to both of the parties. Many other researchers, among others Harland *et al.*, McDoniel *et al.*, and Smith *et al.*, proved that MI is effective in weight reduction, while Walpole *et al.* showed that even 10–18-year-old participants succeeded in losing weight and strengthening their self-efficacy by means of MI [24–27].

Meta-analyses and reviews of research into MI demonstrated that it is an effective method in the practice of weight reduction and physical activity promotion [28–34]. The potential of the approach relies on motivation activation in people, thus the groups receiving MI were characterised by higher attendance to sessions/meetings and better self-awareness, even if the decrease in weight was not considerable.

There are decidedly fewer studies of MI application mainly focused on an increase in physical activity; however, the existing ones also illustrate a positive impact of the MI method. Pirlot *et al.* proved the effectiveness of MI in healthy lifestyle promotion (diet modification and chiefly regular exercise) inves-

tigating a group of 202 firefighters in the PHLAME program (Promoting Healthy Lifestyles: Alternative Models' Effects) [35]. Similarly, Hillsdon *et al.* and Hardcastle *et al.* demonstrated that MI is successful in interventions aimed at physical activity increase [36, 37]. The research by Karnes *et al.*, which proved MI effectiveness, included 23 obese or overweight American adults who took part in four 15-minute weekly Internet sessions [38]. During the sessions they answered several questions on the screen, which were not individually suited to them but automated. After each session, they received emails to thank them for their participation and reflect their answers as well as to support them in their individual decisions about lifestyle change. Physical activity, which was measured threefold (before and after the survey and at one-month follow-up) by means of the International Physical Activity Questionnaire (IPAQ) and daily self-reports of the number of steps checked with pedometers, showed a considerable increase in physical activity from an average 5252.99 steps daily at the start of the study to 6425.05 after the sessions. Total weekly energy expenditure rose from 1918.33 of Metabolic Equivalent MET at baseline to 3457.12 METS at 1-month follow-up, while moderate weekly energy expenditure of 218.00 went up to 1091.00 also 1 month after the interventions. Moreover, the measurement of psychological variables such as readiness, willingness, and perceived ability to engage in physical activity indicated a substantial increase, which contributed to physical activity improvement, greater enjoyment, and endorsement of exercise. The above results prove the potential of the MI method for the practice of obesity and low physical activity problems.

On account of high costs of MI sessions performed in a traditional way in Holland, Friederichs *et al.* applied an avatar – a virtual person conducting MI sessions [39]. As many as 958 adults aged 18–70 years old with mean moderate physical activity were interviewed in three groups. The first one had MI sessions with the avatar, the second received interventions of the same content as the first one in the form of a text without an avatar, and the third one – a control group – had no intervention. The participants of the first two groups answered open and multiple choice questions appearing on the screen, and between the questions they were provided with feedback summarising or reflecting their replies. A month after the intervention 500 participants (162 in the avatar group, 146 in the text group and 192 in the control group) had the following results with the mean moderate physical activity of 30 min of activity daily for 4.4 days per week: the avatar group mean was 4.6, the text group 4.7, and the control group 4.0. Although substantial differences were not found between the intervention of MI in the first and second group, the participants of the first two groups considerably increased the number of

days per week during which they were physically active for at least 30 min, from 4.44 to 4.63. Even though the results of the study promoting physical activity showed improvement, no vast differences were found in the effectiveness of the methods. Probably the automated character of the MI intervention could not evoke more intensive changes.

Postulates for the practice of obesity problems in contemporary communities

According to the Society of Behavioural Medicine, “the interdisciplinary field of behavioural medicine refers to the ongoing research, clinical care, that seeks to prevent and treat barriers to physical health through the understanding of the biopsychosocial and behavioural health underpinnings of health, wellness, and illness.” [40]. The MI is an example of such interdisciplinary care because it can be carried out by therapists, tutors/teachers, trainers, carers, clinicians, or nurses while recipients can be persons, clients, patients, pupils/students, supervisors, consumers, criminals, residents [1] who actively participate in the conversation, and thereby in the process of change. Healthcare largely deals with chronic diseases in which patients' behaviour and lifestyles determine their future health, quality of life, and longevity. More and more frequently there is a necessity to search for effective methods of management with people endangered by some diseases of which risk factors accumulate, for instance obesity, low physical activity, substance abuse, and others. Therefore, doctors, dentists, nurses, dietitians, and health educators take regular talks about change of their behaviour and lifestyle [2].

The literature reports show that MI can be applied in many different behavioural problems restricted to merely one session or expanding the intervention to several sessions. Such sessions can be the preliminary to other therapies (e.g. hospital treatment), integrated with other therapies (e.g. cognitive behavioural therapy), or remain an independent intervention [30].

In Poland, “MI is a more and more frequently used tool in healthcare in many different fields of medicine that deal with chronic somatic disease treatment such as renal failure, diabetes mellitus, and cardiovascular diseases; it also appears in haematology, and is developing in health promotion, psychiatry, though mainly in addiction psychotherapy” [41]. Thus, it is worth pondering over the usefulness of MI in systematic work with obese patients as primary care so as to increase the possibility of changing many unfavourable habits typical of a contemporary lifestyle. Numerous evidence demonstrates that the more influences from different areas, the better the outcomes and the wider the range of activities that can be attained in the practice of obesity reduction and promotion of active lifestyle.

Conclusions

The MI application is a justified intervention in health promotion. It affects people in a positive way and enhances their willingness and readiness for change, self-awareness, self-actualisation, self-efficacy, and satisfaction, which is translated into better quality of life.

Diet modification and introduction or an increase in physical activity contribute to obesity reduction, which is feasible due to activation of motivation for change of behaviour into a pro-health one due to MI.

Conflict of interest

The authors declare no conflict of interest.

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