REVIEW ARTICLE

Motivational Interviewing as a Tool for Behavior Change: Implications for Public Health Dentistry

Avinash Bhat[1], Gururaghavendran Rajesh[2], Vikrant R Mohanty[3], Ramya Shenoy[4], Mithun Pai[5]

Abstract

Aim: The purpose of this review was to comprehensively explore various aspects of motivational interviewing, its principles, goals, steps, and relevance to tobacco cessation.

Background: Tobacco use is one of the major public health issues all over the world due to the mortality and morbidity associated with it. Counseling is an important tool in helping the patients quit tobacco. Traditional counseling assumes that the counselor is an expert and the patient is a passive recipient. Person/client-centered approach marks a paradigm shift in these processes. It identifies that client as an expert about his/her problems and the counselor is a facilitator. Motivational interviewing (MI) employs counseling skills, such as, asking open-ended questions, affirmation, reflecting and summarizing, known by the acronym OARS. The strategic goals of MI are to increase self-esteem, self-efficacy, and dissonance.

Review results: Literature search was performed with the aid of Endnote software, which was followed by systematically arranging the retrieved articles in a harmonized manner.

Conclusion: The number of studies employing MI in the field of public health dentistry was found to be sparse, with a majority of them focusing on tobacco cessation. Motivational interviewing appears to be a promising tool in bringing about the change in behavior of clients. By placing the onus on the client himself/herself in bringing about behavior change, MI transforms the role of the counselor from an expert to a facilitator. Motivational interviewing can be used to bring about long-term and sustained changes in lifestyle of individuals, thereby contributing to the better health of populations.

Clinical significance: Motivational interviewing can be implemented among patients who are aware of their condition and want to change, but are ambivalent. As a public health dentist, MI can be effectively used in tobacco cessation, alcohol abuse, lifestyle modification, dental anxiety, proper brushing technique, and healthy choices.

Keywords: Behavior change, Counseling, Motivational interviewing, Tobacco cessation.

World Journal of Dentistry (2020): 10.5005/jp-journals-10015-1726

Introduction

Motivational interviewing (MI) is a novel technique used in health science that combines relationship building principles and therapeutics to address various health problems. It involves cognitive behavioral strategies targeting different stages of change in the patient.[1,2] It is more of patient-oriented technique wherein interviewer is a keen listener and enhances the hidden intrinsic motivation desired for change in the patient by exploring and solving client's ambivalence.[3]

The technique of MI is now being increasingly employed by various investigators to address health problems other than addiction, such as, diet, lifestyle changes, anxiety, and depression, etc. Various systematic reviews and meta-analysis have proven the efficacy of MI in substance abuse cases over long period of time. A majority of caregivers keen on aiding their clients change their behaviors think that merely providing the necessary knowledge is adequate. All the advice provided by the counselors to their clients is rooted in the good intentions that the former have for the latter. While counseling clients for weight-related issues, counselors tell their clients to adopt healthy eating practices and to exercise often. Those who are indulging in substance abuse are counseled to evade those circumstances, which will initiate craving behavior.

Nevertheless, experienced counselors are aware of the fact that counseling does not necessarily lead to change in the behavior of their clients. Merely enhancing the knowledge of the clients will not lead to any sustained long-term changes in behavior in the presence of low motivation levels. The drive to implement the knowledge gained in counseling sessions is often conspicuous by its absence in clients.

One can therefore realize that one of the crucial elements of behavior change mechanisms is the motivation that the clients possess. One of the important aspects that influence the clients' levels of motivation is the way the counselor interacts with them. Counselor's behavior can trigger nonconfirmation to the suggested changes in behavior.[4–6] One of the cornerstones of MI

[1,2,4,5]Department of Public Health Dentistry, Manipal College of Dental Sciences, Mangaluru, Manipal Academy of Higher Education, Manipal, Karnataka, India

[3]Department of Public Health Dentistry, Maulana Azad Institute of Dental Sciences (Govt. of NCT Delhi), MAMC Campus, New Delhi, India

Corresponding Author: Gururaghavendran Rajesh, Department of Public Health Dentistry, Manipal College of Dental Sciences, Mangaluru, Manipal Academy of Higher Education, Manipal, Karnataka, India, Phone: +91-824-2428716, e-mail: drrajeshgrao@gmail.com

How to cite this article: Bhat A, Rajesh G, Mohanty VR, *et al.* Motivational Interviewing as a Tool for Behavior Change: Implications for Public Health Dentistry. World J Dent 2020;11(3):241–246.

Source of support: Nil

Conflict of interest: None

is the emphasis on regarding the clients as experts on their own behavior and suggested behavior changes. This greatly enhances the working relationship between the counselor and the client and also increases the client's motivation levels for behavior change.

A patient's willingness for adopt behavior change is influenced by two main aspects: perceived significance and self-efficacy. Perceived significance of the proposed behavior change is how important does the client feel is the new behavior being proposed. How important does the patient feel is quitting tobacco or quitting alcohol or exercising daily. Self-efficacy is the patient's level of confidence about successfully making and adopting to the change, which is a central component of motivation and has direct effect on treatment outcome.[7] In MI, counselors augment the patient's perceived self-efficacy to overcome the hurdles and adopt to behavior change.[8]

Client when comes to a stage where he says he will be 'able' to change, then this "able" part of his change talk is a familiar terrain for many counselors. They then focus on enhancing their client's self-efficacy and aid them in adopting various coping mechanisms that will lead to the desired behavior change. Job becomes tough in MI when the client is not ready for the change. Frequently, counselors tend to assume that their patients are already motivated enough to bring about behavior change.[9]

In dentistry, MI can be used in tobacco cessation counseling to correct the faulty oral hygiene techniques, use of right materials for maintenance of oral hygiene, diet counseling, and many more. Motivation plays the key factor to bring about any desired change in the individual and this technique is thus very useful. The basic guiding principle of MI is to enhance the patient's confidence to adapt and overcome the hurdles to achieve success. The present paper attempts to outline the fundamental aspects of MI and its potential use in dentistry.

Origins of Motivational Interviewing

Motivational interviewing is always influenced by client-centered psychotherapy. The first contribution is its focus on accepting the client's capability in arriving at the best possible resolution for his problems by himself. The counselor has to demonstrate positive attitude toward the same.[10] The second major influence of patient-centered approach is reflective listening. This is central toward the counselor–client relationship in which the counselor displays empathy for client's issues. Third influence is strong empirical focus.

Miller WR has played a central role in the development of techniques of MI. Miller is a clinical psychologist, who is working as an Emeritus Distinguished Professor of Psychology and Psychiatry at the University of New Mexico in Albuquerque, USA. Miller and Stephen Rollnick are considered to be pioneers of MI. Miller had initially worked as an intern at the Wood VA treatment program, during which Dr Robert Hall was his supervisor. Miller was given a then recently published article on controlled drinking, which stimulated his interest in addiction behaviors. He started listening to the clients and his keen listening made patients feel good.[11] Millers internship eventually spurred a lifeline interest in studying addiction.

Hjellestad Clinic

During his sabbatical in 1982, Miller decided to spend his time at the Hjellestad clinic, which is situated in Norway. He started to interact and work with a group of postgraduate psychologists. While attending a routine weekly meeting, he discovered that MI is different from cognitive behavior therapy by the series of practice, which was considered to be the turning point toward the conventional MI practice then.[10]

In 1988, Stephen Rollnick brings out a video tape demonstration related to MI, which stressed on patient incongruity. The next year, Miller interacted with Rollnick, who was working on a research project in Australia. Rollnick had employed MI technique by himself and he had observed the importance of patients' incongruity, termed as 'client's ambivalence'. He had employed this concept in his training programs, as he was keen on "putting things simply".[10] Miller and Rollnick published the first edition of the book titled "Motivational interviewing: preparing people to change addictive behaviors" in 1991. The second and third editions of MI: preparing people to change was published in 2002 and 2013, respectively.

Principles of Motivational Interviewing

Any change in the behavior of an individual is met with fear and resistance within the patient. Similarly, quitting habits and bringing changes in lifestyle create an element of fear and self-doubt. MI techniques help the client to do away with this ambivalence and act actively by boosting his own intrinsic motivation and achieving the desired beneficial health state. Miller came up with four key principles to deal with motivational interviewing, which are emphasis on labeling, individual responsibility, internal attribution, and cognitive dissonance. These principles can be applied to various health issues, such as, tobacco use, alcohol consumption, dietary practices, exercising regularly, bushing twice daily, and regular visit to the dentist, etc.

Emphasis on Labeling

In traditional methods of therapy, to admit the problem was considered to be the prerequisite before any counseling for the change. Great importance was given for the client to accept socially and get labeled with the condition first. For instance, all tobacco cessation counseling sessions had to start with the premise that the client has to be labeled as a problematic smoker. Therefore, traditional methods made the client believe or accept or acknowledge to be labeled with the particular condition.

This way does not help all the clients to get self-motivated to achieve what they are intending to achieve. There is no proof to indicate that self-labeling will lead to better clinical results.[12] Miller observed that there was no denial among patients who did not respond to therapy or those who experienced relapses. The main cause of this is the unfound supposition that until and unless a client does not accept the label, he/she cannot be treated for the same. This supposition has found to be faulty in clinical practice.

If we consider alcohol therapy as an example, counseling sessions have to be founded on labeling the client as an alcoholic. But we are all aware that many people are occasional drinkers or social drinkers. Alcohol consumption has many shades of gray and is not entirely black and white. Treatment regimen of drinkers who are not considered as addicted and early treatment modalities made compulsory by legal authorities or employers have made some pertinent observations. Clients who did not considered themselves to be "alcoholic" and hence did not accept labeling were still successful in quitting the habit. A traditional way of labeling is hence not necessary in MI technique. Rather addressing the problems associated with the habit or disease plays an important role.[13]

Individual Responsibility

If you treat your client in the way he is at the present situation, he will continue with the same habit. If we treat him the way he wants to be, he will definitely change according the way he wants to be by the positive attitude of yours by inculcating the confidence in him. MI rather bestows all the accountability on the patient itself, who will then arrive at specific decisions. This will include details about what his problem is and what he needs to do for the same by the best of his knowledge and benefits.

For tobacco users, the clients themselves have to identify what the problem is, if they feel or think that they have a problem in the first place. They will also have to outline what they have to do to the best of their knowledge and benefits to address the problem of tobacco use that they may have identified themselves. Similarly, individuals who have issues with their weight have to first identify what their problems related to weight is. It may be inability to perform physical activities related to work, inability to socialize, and inability to climb the stairs at workplace or at home. The problem need not just be about looking good or looking acceptable. The clients themselves will outline the strategies to address these problems. It may be diet, exercise, lifestyle modifications, and avoiding stress. Counselor is like a bank with perspectives, knowledge, and alternatives from where the client uses his expertise to improve on himself, but never the counselors' role to make up the client to face the reality. The decision not to change is made by client itself.

This freedom of choice given for the client to choose his action is maintained throughout without being interfered by the counselor's imposition. MI strives to offer adequate support and facilitate arriving at decisions for behavior change which was not considered to be easy. It is the client who arrives at the decision by himself, instead of passively complying with the decision arrived at by the therapist.[14]

Internal Attribution

In MI, the onus for the clients' change or bringing about the desired change in him is placed on the client. This is termed as an "internal" attribution. If this onus is placed on aspects that are not in the control of the client, it is then known as "external" attribution.[15] Aspects of external attribution include chance, conditions, illness, or other factors. Evidence has indicated that changes that are considered to be internal are more sustained.

For instance, the choice to refrain from drinking alcohol, the choice to exercise regularly, and the choice to avoid anxiety are made by the client. Similarly, the decision to smoke less cigarettes or to totally stay away from smoking has to be arrived at by the client himself. If the client feels that he/she is the one on whom the onus for change is, then it will be more long-lasting. On the contrary, if the change is attributed to external factors, such as, chance, circumstance, a drug, the intervention of the counselor, or any external factors, the client may perceive that he was not responsible for this change. This might lead to changes that do not last long.

Internal attribution is highly related to individual responsibility. The choice to smoke or not to is made by the client, and therefore, the onus for this behavior is on the client. This is considered to be true even among clients who "lose control" and slip into smoking. The choice of starting to smoke is frequently considered to be the same as the choice of continuing to smoke after starting it. There is no evidence to indicate that the client forgoes control over smoking after he starts it.

The act of continuation of the habit of smoking is essentially based on possibilities, which in turn are dependent on many factors. Continuation of habit cannot therefore be considered to be certain. Individuals who are labeled as smokers are observed to smoke more frequently and also smoke greater quantity than those who are not labeled. Craving observed in smokers has also been studied extensively. There is little empirical support for craving to be physiologic response when an individual indulges in this behavior without being aware of it.[16] Even if the individuals experience discomfort when they do not smoke, these individuals can arrive at the decision of stopping after little amounts of smoking.

MI considers smoking or any such behavior as a matter of an individual's choice. Individuals decide to smoke or not to smoke based on the effect that cigarette has on him/her. This is not dependent on the act of labeling or demanding to quit. The onus is on the individual, who is fully adept at arriving at decisions pertaining to appropriate actions. One can therefore observe that the onus for such actions and decisions cannot be and should not be placed on others.[13]

Cognitive Dissonance

Cognitive dissonance is the fourth principle of motivational interviewing. Theory of social psychology postulates inconsistency, which brings about change in the individual. When an individual acknowledges that smoking can be harmful to his health and he also reports smoking regularly, this creates what is known as disagreement or conflicting thoughts in him. This is known as cognitive dissonance. Thus, person believes that it is the high time to bring about the change in his way of life, adopt to the better lifestyles, and search for advice and alternative, better does to get better. When person raises above the denial attitude, consistency can be achieved. If the person is so self-regardless then only, he will be reckless and continue to do the harmful things.

Dissonance can also be decreased by modifications in smoking, making it more compliant with optimistic self-concept. This will not cause any difficulties or harm to the client. Modifications which are constructive include staying away from the habit totally, termed abstinence or partially. Individuals can reduce the quantity and frequency of smoking so that it does not cause any problems to himself/herself.

One of the first job of counselors is to generate dissonance in their clients, but not by methods that are traditionally employed by therapists. The next job of the counselor is to ensure that this dissonance leads to change in the behavior of the client. The counselor ensures that this will not lead to denial by the client, wherein the client alters his belief systems. This should also not result in decrease in self-esteem and self-efficacy of the client. It has been observed that conventional counseling strategies are more confrontive, and they lead to denial, with the client reducing this dissonance by compensating it congnitively.[17]

Strategic Goals of Motivational Interviewing

Once, when the client's direction of motivation is positive and toward behavioral change, application of these goals has to be kept in mind:

Increase Self-esteem

This lays heavy importance on personal choice, decision–making, and strong urge for change (motivation). Clients are made to realize that it is an individual's choice and decision to smoke or consume alcohol or eat healthy food or exercise. He/she is made aware that the onus of healthy choices and decision is on himself/herself. This builds to the self-esteem of the clients. One of the critical aspects of MI is that the therapist must refrain from labeling the clients. The counselors should not address their clients as an alcoholic or a smoker or an addict or obese or a lazy individual. The core philosophy of MI is about respecting the patient, both explicitly and implicitly, and the therapists strives toward improving self-esteem.[13]

Increase Self-efficacy

The extent to which an individual perceives that he has the ability to deal with problematic situations effectively and efficiently is known as self-efficacy.[7,18] One can consider the case of smoking and its impact on individuals. MI relies heavily on its focus on enhancing an individuals' self-efficacy, right to choose and freedom to make decisions by the clients, and internal attribution. Very often in traditional counseling setup, the client is seen as a passive and often helpless individual due to his use of tobacco or alcohol or other personal problem situations. In MI, the client is viewed as being fully capable of directing the course of therapy and as an individual who has the right to make his own choices and decisions. The onus is therefore on the client and not on the counselor in MI.[13]

Increase Dissonance

One of the important tasks in MI is to enhance the dissonance between the behavior of the client and his/her system of beliefs. The therapist has to bear in mind that this has to be achieved without harming the self-esteem and self-efficacy of the client. The therapist has to create an atmosphere that is conducive toward enhancing the client's self-esteem and self-efficacy. In such a controlled and affirmative environment, the dissonance created can be considered to be therapeutic and not detrimental.[3,13] The long-term impacts of smoking or drinking alcohol or not visiting a dentist regularly or not exercising should be raised by the counselor. The clients will then outline the long-term impacts by themselves, which will lead to cognitive dissonance.

The therapist has to then direct the dissonance created toward change in the behavior of the client. The therapist also has to ensure that once the dissonance is created, it should lead to modifications in the smoking behavior of the client and not altering the belief systems of the client. Making provisions for dissonance creation without providing avenues for change in behavior patterns of the client may not lead to sustained results in the client. On the contrary, it can prove to be detrimental to the interests of the client.

Relevance of Motivational Interviewing

MI is best suited for patients who are aware of their condition and want to change. It is also particularly relevant for patients who are willing to bring about the change but are in a confused state, i.e., they are ambivalent. It can also be applied for patients who are internally motivated and are willing to change. Such patients indulge in what is known as "change talk", i.e., they are vocal about their intention to bring about this change. One has to bear in mind that MI has to be implemented among patients who do not have any underlying physical or mental conditions.

Steps of Motivational Interviewing[19]

One can consider the example of tobacco use among clients to outline the steps in MI. It involves eight steps:

Open to Listening

A readiness to adopt a client/person-centered approach is an important cornerstone in implementing MI. Patients are not to be viewed from a deficit perspective, such as, lack of knowledge, skills, and patient being in denial, etc. Spending some time eliciting their own wisdom is a critical prerequisite in conducting MI.[20] The client's perspectives on the reasons for smoking or inability to quit tobacco use should be elicited.

OARS—Client-centered Counseling Skills[19]

Acronym OARS stands for

O—Asking open-ended questions: it allows the patients to express their ambivalent thoughts and their basic motivational level to cope with the issue. What does the client think are the reasons for smoking or why is he unable to give up the habit is an open-ended question. The client will then share his perspectives about the health problem at hand.

A—Affirmation: it is fostering the positive mental attitude. This comprises of statements by the counselor or even actions and gestures that identify the client's strength. The clients' attempts toward positive behavior change are identified and encouraged, which will enhance self-esteem. The counselor can appreciate the client for taking time to meet the counselor and for taking conscious steps to quit smoking.

R—Reflecting: after keen listening, the interviewer asks back the key point stated by the client to rethink and frame a positive outlook toward the issue. The counselor repeats or substitutes or paraphrases the words or feelings of the clients. When the client says the he/she wants to quit smoking, the counselor says that quitting smoking is important to the client.

S—Summarizing: very important element to summarize the conversation to sustain and head the interview in the right direction and help the patient to get out of confusions. This patient-centered counseling is the key to successful MI. The client then restates the issue of the client starting with "This is what you have told me so far…" or "Let us see if I have understood your issue correctly…"

Recognizing and Reinforcing Change Talk

A key to success in MI is the evoking of client's inherent internal motivation for the behavior change. An appropriately implemented counseling sessions employing MI will lead to the client himself who will argue for change, and this is where emphasizing on changed talk is very important. The counselor has to only concentrate on identification of the change talk and reinforce it as it happens normally during the conversation. If this does not happen, the counselor will then be missing the key clue of willingness to change. The counselor can ask the client his reasons, desire, ability, and need to stop smoking. This will elicit a change talk in the client. There may be previous instances when the client abstained from smoking. Enquiring about that episode might lead to change talk in the client.

Eliciting and Strengthening Change Talk

Though motivational interview's intention is instructive, the counselor is cautious as to refrain from suggesting behavior change openly, unless client presents the reasons for change. Counselors first learn how to elicit and reinforce change talk. Intentionally

eliciting change talk instead of passively waiting for the client to stumble upon it is an important skill in MI. The clients are asked to elicit the worst-case scenarios of continuing to smoke. On the contrary, they can also be asked to speak about what would happen in the best-case scenarios, if they are successful in quitting smoking. This further elicits and strengthens change talk in the clients.

Rolling with Resistance

When the client exhibits resistance to change, the counselor has to react in a very different manner. In MI technique, resistance to change is viewed as a component in the interpersonal sphere. MI suggests that the counselor should not object to the clients' viewpoints explicitly, but should respect and receive it and go with it. This is known as flowing with resistance in MI by employing listening strategies that are reflective in nature.

Avoiding argument is key to successfully implementing MI. Arguing when the opposition to change reinforces negative behavior, so it is better to rollover the talk of opposition to change kind of behavior. Best way to bring about this is double-sided reflection, which reflects the dark side of their behavior, which they have earlier stated during their conversation. When the client says that the counselor cannot understand his problems with smoking or cannot help him quit smoking, this indicates resistance. The counselor then has to express genuine empathy about the client's smoking issues, enhance self-esteem and self-efficacy, enhance discrepancy, and bring about change talk in the client.

Developing a Change Plan

This happens only when the client expresses their strong desire to bring about the positive change in them. When client expresses strong desire to change, then the counselor asks what is next and this makes the client explain the detailed plan of how he is going to bring about the change within. Setting a quit date, assisting the client in quitting the habit by providing nicotine replacement therapy (NRTs), and arranging the follow-up may be included in the change plan.

Consolidating Client's Commitment

Here, the language of the client will change to "I WILL…" kind of statements rather than "I COULD" type of change talk. Once the client gives a commitment to a quit date from which he/she will refrain from tobacco use, counselor ensure practical ways of attaining the same. This will ensure what the client has to do to bring about sustained change.

Switching between MI to Other Counseling Techniques

MI was done just to do away and help the client through motivational obstacles to change. It helps client to move from precontemplation and contemplation through preparation and on to action. MI lends itself well to be implemented with other counseling strategies for tobacco cessation.

Application of Motivational Interviewing in Dentistry

MI has been employed mainly for the behavioral aspects of various disorders. It has been employed in management of alcoholism, drug abuse, weight loss, compliance in asthma and diabetes treatment regimen, and smoking cessation. Investigators have revealed that MI is an effective management strategy for drug and alcohol abuse,[2,21,22] lifestyle factors, such as, exercise and food intake,[23] weight loss,[24] management of diabetes,[25] compliance with medication,[26] and oral health.[27] Gao et al. have reported varied success of MI in improving oral health parameters.[27] Various systematic reviews have been published on the impact of MI on tobacco cessation. They have reported that MI has modest positive effect on tobacco cessation.[28–30]

As a practising dentist, we come across people having various addiction problems like tobacco smoking or chewing or both, alcoholism, improper brushing techniques and wrong use of dentifrices, and problems related to lifestyle, such as, high sugar intake. Patients share their problems associated with their fear in dental procedures and their difficulties in coping up with the treatment duration or the procedure itself. Some patients suffering from diabetes and hypertension even seek advice toward the measures to control their salt and sugar cravings. The patients, more often than not, will be aware of the ill effects of their habits on their health and also on the conditions they are suffering.

A dentist can get himself trained attending a good MI technique training from the skillful workshop or recognized courses. Adequate skills and knowledge to conduct MI can be acquired to address the issues of needy patients and help them get motivated to quit the habits, and to bring about the lifestyle modification to get a better health and lifestyle.

Public health dentists involved in screening and treatment programs can identify and help the patients who are trying to bring about positive change in their lives. He or she can identify such patients, recall them to the counseling center, and get a one on one client-centered motivational interviewing done. Usually MI has to be done in a skillfully and trained way adhering to the fundamental principles and strategies of MI. Such sessions need one or two sittings of about 20–30 minutes. Such MIs can bring about a big difference in patients attempt to bring about positive change and reinforcement toward a better lifestyle and habits to lead a healthy life.

Summary and Conclusion

MI has emerged as one of the promising techniques for changing the behavior of the client. There is a growing inclination toward person/client-centerd approaches among clients themselves, counselors and therapists, and among researchers. It is in this context that MI can serve as a critical tool in behavior change among clients. This alters the client–counselor relationship from an expert–patient one to partnership. Depending upon the client's level of readiness to adopt behavior change, therapy can be tailor-made for the clients. It also serves as an effective tool in handling clients who are averse to change or unsure about change.

Thus, in field of dentistry, MI can be viewed as a potentially useful tool for positively shaping oral health behavior. As a public health dentist, MI can be effectively used in tobacco cessation programs, reducing alcohol abuse, lifestyle modification, countering dental anxiety, administering proper brushing technique, and opting for healthy choices. MI can be used to inculcating healthy lifestyle and better heath by patient itself by bringing about the motivation, and thus, the changes brought about in patient are sustained for longer durations.

Public Health Significance

Most of the health problems faced by the communities involve changing harmful behavior, such as, tobacco use. MI can be

implemented among patients who are aware of their condition and want to change. It is also particularly relevant for patients who are willing to bring about the change but are in a confused state, i.e., they are ambivalent. It can also be applied for patients who are internally motivated and are willing to change. As a public health dentist, MI can be effectively used in tobacco cessation programs, reducing alcohol abuse, lifestyle modification, countering dental anxiety, administering proper brushing technique, and opting for healthy choices.

References

1. Rogers CR. Client Centered Therapy: Its Current Practice, Implications, and Theory. Boston: Houghton Mifflin; 1951.
2. Burke BL, Arkowitz H, Menchola M. The efficacy of motivational interviewing: a meta-analysis of controlled clinical trials. J Con Clin Psyh 2003;71(5):843–861. DOI: 10.1037/0022-006X.71.5.843.
3. Miller WR, Rollnick S. Motivational interviewing: Helping people change. 3rd edn., UK: Guilford press; 2012.
4. Beutler LE, Harwood TM. What is and can be attributed to the therapeutic relationship? J Contemp Psychother 2002;32(1):25–33. DOI: 10.1023/A:1015579111666.
5. Miller WR, Benefield RG, Tonigan JS. Enhancing motivation for change in problem drinking: a controlled comparison of two therapist styles. J Consult Clin Psychol 1993;61(3):455–461. DOI: 10.1037/0022-006X.61.3.455.
6. Patterson GR, Forgatch MS. Therapist behavior as a determinant for client noncompliance: a paradox for the behavior modifier. J Consult Clin Psychol 1985;53(6):846–851. DOI: 10.1037/0022-006X.53.6.846.
7. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. Psychol Rev 1977;84(2):191–215. DOI: 10.1037/0033-295X.84.2.191.
8. Miller WR, Rollnick S. Talking oneself into change: motivational interviewing, stages of change, and therapeutic process. J Cogn Psychother 2004;18(4):299–308. DOI: 10.1891/jcop.18.4.299.64003.
9. Rollnick S, Miller WR. What is motivational interviewing? Behav Cogn Psychother 1995;23(4):325–334. DOI: 10.1017/S135246580001643X.
10. Rogers CR. Growing old-or older and growing. J Humanist Psychol 1980;20(4):5–16. DOI: 10.1177/002216788002000403.
11. Moyers TB, Miller WR, Hendrickson SM. How does motivational interviewing work? Therapist interpersonal skill predicts client involvement within motivational interviewing sessions. J Consult Clin Psychol 2005;73(4):590–598. DOI: 10.1037/0022-006X.73.4.590.
12. Polich JM. Epidemiology of alcohol abuse in military and civilian populations. Am J Public Health 1981;71(10):1125–1132. DOI: 10.2105/AJPH.71.10.1125.
13. Miller WR. Motivational interviewing with problem drinkers. Behav Cogn Psychother 1983;11(2):147–172. DOI: 10.1017/S0141347300006583.
14. Hettema J, Steele J, Miller WR. Motivational interviewing. Annu Rev Clin Psychol 2005;1:91–111. DOI: 10.1146/annurev.clinpsy.1.102803.143833.
15. Treasure J. Motivational interviewing. Adv Psychiat Treat 2004;10(5):331–337. DOI: 10.1192/apt.10.5.331.
16. Rankin H, Hodgson R, Stockwell T. The concept of craving and its measurement. Behav Res Ther 1979;17(4):389–396. DOI: 10.1016/0005-7967(79)90010-X.
17. Deci EL, Ryan RM. Self-determination theory in health care and its relations to motivational interviewing: a few comments. Int J Behav Nutr Phy 2012;9(1):24–30. DOI: 10.1186/1479-5868-9-24.
18. Bandura A. Self-efficacy mechanism in human agency. Am Psychol 1982;37(2):122–147. DOI: 10.1037/0003-066X.37.2.122.
19. Miller WR, Moyers TB. Eight stages in learning motivational interviewing. J Teach Addict 2006;5(1):3–17. DOI: 10.1300/J188v05n01_02.
20. Moyers TB, Rollnick S. A motivational interviewing perspective on resistance in psychotherapy. J Clin Psychol 2002;58(2):185–193. DOI: 10.1002/jclp.1142.
21. Knight KM, McGowan L, Dickens C, et al. A systematic review of motivational interviewing in physical health care settings. Br J Health Psychol 2006;11(2):319–332. DOI: 10.1348/135910705X52516.
22. Rubak S, Sandbaek A, Lauritzen T, et al. Motivational interviewing: a systematic review and meta-analysis. Br J Gen Pract 2005;55(513):305–312.
23. Martins Renata K, McNeil Daniel W. Review of motivational interviewing in promoting health behaviors. Clin Psychol Rev 2009;29(4):283–293. DOI: 10.1016/j.cpr.2009.02.001.
24. Armstrong MJ, Mottershead TA, Ronksley PE, et al. Motivational interviewing to improve weight loss in overweight and/or obese patients: a systematic review and meta-analysis of randomized controlled trials. Obes Rev 2011;12(9):709–723. DOI: 10.1111/j.1467-789X.2011.00892.x.
25. Dan S, Tu-Zhen X, Qiu-Hua S. Effect of motivational interviewing on self-management in patients with type II diabetes mellitus: a meta-analysis. Int JNurs Sci 2014;1(3):291–297.
26. Teeter BS, Kavookjian J. Telephone-based motivational interviewing for medication adherence: a systematic review. Transl Behav Med 2014;4(4):372–381. DOI: 10.1007/s13142-014-0270-3.
27. Gao X, Lo EC, Kot SC, et al. Motivational interviewing in improving oral health: a systematic review of randomized controlled trials. J Periodontol 2014;85(3):426–437. DOI: 10.1902/jop.2013.130205.
28. Heckman Carolyn J, Egleston Brian L, Hofmann Makary T. Efficacy of motivational interviewing for smoking cessation: a systematic review and meta-analysis. Tob Control 2010;19(5):410–416. DOI: 10.1136/tc.2009.033175.
39. Hettema JE, Hendricks PS. Motivational interviewing for smoking cessation: a meta-analytic review. J Consulting Clin Psycho 2010;78(6):868–884. DOI: 10.1037/a0021498.
30. Lindson-Hawley N, Thompson TP, Begh R. Motivational interviewing for smoking cessation. Cochrane Database Syst Rev 2015(3):CD006936. DOI: 10.1002/14651858.CD006936.pub3.