*REVIEW ARTICLE*

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# Patient activation and engagement in patient-health care provider communication for improving patient's health – a scoping review

## Aktywizowanie i angażowanie pacjentów w komunikację z pracownikami ochrony zdrowia na rzecz poprawy zdrowia pacjentów: przegląd literatury

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## Abstract

**Introduction and Objective** Effective collaboration between healthcare professionals (HCPs) and their patients (pts) is linked to the engagement of pts in their behavioural changes which, in turn, can be enhanced by HCPs through the application of the Transtheoretical Model (TTM) and Motivational Interviewing (MI). The aim of the review is to present the TTM and MI models for the introduction of preventive measures in the lives of pts.

**Review Methods.** The scoping review is based on the literature published in English between 2014–2024 in PubMed, Mendeley and Google Scholar. The inclusion criteria were pts' commitment in the implementation of changes, along with their readiness expressed during an appointment or consultation with HCPs.

**Brief description of the state of knowledge.** Pts' self-care, including their adherence to HCPs' instructions, is of great significance in healthcare. Raising the awareness of pts plays a crucial role in their engagement in health promotion. The style of communication different from such authoritative commands as MI and TTM, as well as guidelines for HCPs, would enhance all the endeavours undertaken to date by HCPs.

**Summary.** The research analysis revealed that the TTM and MI effectively influence the process of eliminating negative behaviours, even in the prevention of depression and other major conditions. Long-term effects of changes implemented are more frequently achieved by pts with whom these models have been applied. The involvement of pts is essential in helping them to obtain the benefits of therapy.

### Key words

prevention, patient, motivation, commitment, transtheoretical model of change

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## Streszczenie

**Wprowadzenie i cel pracy.** Skuteczna współpraca pomiędzy pracownikami ochrony zdrowia a pacjentami może zaistnieć dzięki uczestnictwu pacjentów w procesie podejmowania decyzji. Pracownicy ochrony zdrowia mogą zaangażować pacjentów w zmianę ich zachowań zdrowotnych, stosując Transteoretyczny Model Zmiany (TTMZ) oraz Dialog Motywujący (DM), bazujące na świadomości pacjentów. Celem pracy jest przedstawienie TTMZ i DM odzwierciedlających gotowość pacjentów do wprowadzenia działań profilaktycznych w ich życiu.

**Metody przeglądu.** Przegląd literatury oparto na publikacjach w języku angielskim z lat 2014–2024 dostępnych w bazach danych PubMed, Mendeley i Google Scholar. Kryteriami włączenia do przeglądu były aktywne zaangażowanie pacjentów w proces wdrażania zmian i gotowość na zmianę wyrażona podczas wizyty lub konsultacji.

**Opis stanu wiedzy.** Troska pacjentów o ich zdrowie wraz z przestrzeganiem zaleceń pracowników ochrony zdrowia mają kluczowe znaczenie w opiece zdrowotnej. Podnoszenie świadomości i motywacji pacjentów odgrywa istotną rolę w wdrożeniu ich w promocję zdrowia. Styl komunikacji, wypracowany dzięki DM i TTMZ, inny niż autorytarne wydawanie poleceń wraz z wytycznymi dla pracowników ochrony zdrowia mogą wzmocnić dotychczasowe działania w zakresie promocji zdrowego trybu życia.

**Podsumowanie** Analiza badań wykazała, że TTMZ oraz DM skutecznie wpływają na proces eliminacji negatywnych zachowań u pacjentów, a nawet są pomocne w zapobieganiu rozwoju depresji i innych poważnych schorzeń. Długoterminowe efekty wprowadzonych zmian częściej są obserwowane u pacjentów, u których zastosowano te modele. Świadome zaangażowanie pacjentów w zmianę swoich zachowań zdrowotnych jest kluczowe i bardziej skuteczne niż tradycyjny model przekazywania zaleceń.

### Słowa kluczowe

pacjent, profilaktyka, motywacja, zaangażowanie, transteoretyczny model zmiany

## INTRODUCTION AND OBJECTIVE

The development of civilisation, intensive urbanization, environmental degradation, and progressive industrialisation has resulted in an increase in unfavourable habits leading to the development of civilization diseases [1, 2]. Unhealthy habits encompass low levels of physical activity, tobacco smoking, disregard of hygiene, constant hurry, stress, consumption of highly processed food, and irregularities in eating habits [3, 4]. Therefore, there is a need for appropriate and effective communication with patients (pts) to facilitate the introduction of healthy behaviours provided by guidelines. The patient-centred approach characterises such involved and open communication [5, 6]. Pt engagement involves their active participation in their healthcare decisions, understanding their conditions, and collaborating with healthcare professionals (HCPs) to develop personalized care strategies. This pro-active involvement fosters ownership, empowering pts to make lifestyle changes, adhere to treatment, and communicate effectively, which leads to better health outcomes [7]. Unfortunately, the impact of pts' motivation and encouragement to change their lifestyles is frequently underestimated. When only dry facts about the effects of harmful behaviours are transmitted, pts lose their motivation, with result that the desired results cannot be achieved. Regardless of their awareness of the aberrant behaviours, pts are still unwilling to alter them [8]. Barriers to pt engagement, such as limited health literacy, socio-economic challenges, and mistrust of the healthcare system, can prevent pts from fully participating in their care. Addressing these challenges involves using clear, simple language, offering accessible healthcare services, and building trust through empathetic, culturally sensitive care. Empowering pts with education and fostering open communication can assist in overcoming these barriers and enhance overall engagement [9]. The motivation and involvement of pts seem to be crucial from the very beginning of therapy. While HCPs are believed to create a therapeutic alliance by raising pts' health literacy, setting reasonable targets, encouraging problem-solving techniques, personalizing the rehabilitation programme, presenting success stories, employing persuasive strategies, offering support and encouragement, as well as offering emotional support, and the skilfull management of symptoms [10]. Pt engagement is the foundation of effective healthcare, and tailoring strategies to meet the unique needs of individuals can significantly improve outcomes.

Key factors, such as cultural differences, technological advancements, and national healthcare policies, shape the way pts interact with HCPs and make decisions about their care. Cultural perspectives, e.g. the distinction between collectivist and individualistic societies, influence pts' preferences and adherence to treatment plans. The rise of digital health tools, including AI-driven patient engagement platforms, has transformed communication between pts and HCPs, offering more personalized and accessible care. At the same time, national healthcare policies play a crucial role in shaping the prioritization of pt engagement, which translates into greater responsibility for health behaviours.

The aim of this review is to present the scope of literature on the effectiveness of patient-centred communication, encompassing the trans-theoretical model of change (TTM) and Motivational Interviewing (MI) in the implementation of preventive therapeutic actions, based on a review of publications in English from the last 10 years.

## DESCRIPTION OF THE STATE OF KNOWLEDGE

**TTM and MI.** Change is a process that involves transitioning from one state to another, and the scope of change may vary. The purpose of change may be to modify behaviour, develop a new and positive habit or eliminate a current negative habit. Change is a significant aspect of life and can involve the challenging experience of abandoning ingrained habits. On the other hand, it can be perceived as a satisfying, uplifting experience leading to a new, healthier life, improvement, and the pursuit for a better self [11].

*Stages of TTM.* According to Prochaska and DiClemente (1992), the process of change described by the TTM is specially designed to determine the ability of a person to undertake the process of change in order to develop a healthier habit. Furthermore, it enables HCPs to adjust their way of speaking to pts' needs. The TTM consists of six stages: pre-contemplation, contemplation, preparation, action, maintenance, and termination. Awareness of the particular stages can be utilized to assess the mechanisms a pt undergoes in the process of change [12, 13] (Fig. 1).

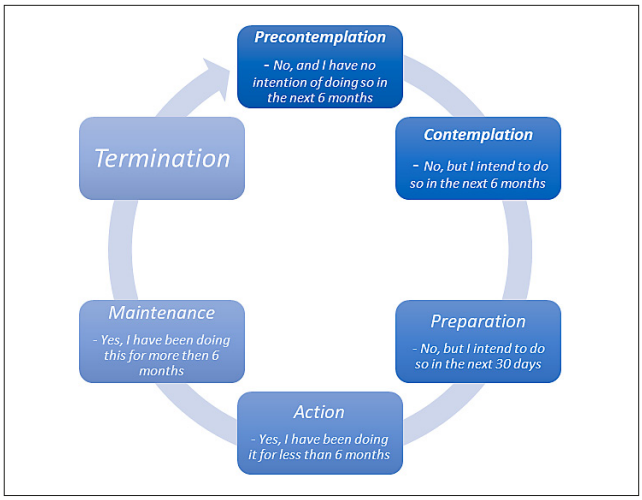


**Figure 1.** Stages of change according to TTM

In the pre-contemplation stage, a pt expresses no desire to change and does not intend to implement it in the next six months. During the contemplation stage, the pt recognizes the need for change and understands its significance for health, initiating the search for information. This stage occurs when the individual intends to make a change within the next six months. The third stage, called preparation, focuses on detailed planning and slow implementation of theoretical knowledge acquired during the contemplation stage. The pt is ready to start practicing a new habit or cease a harmful practice within the next 30 days. The fourth, action stage is the most intense, because the implementation of the plan occurs here, and the pt changes behaviour and starts to live according to the new rules. At this stage, the plan is modified, avoidance of trigger situations occurs, along with attention distraction, or search for alternatives. The pt has made the changes and maintains them for between one and six months. The next stage is maintenance, in other words, consolidation and perseverance. The individual continues the new habits and tries not to return to their old behaviours. A significant effort and commitment are still required. The changes are

maintained for more than six months. The final stage of the TTM is termination. After a sustained, gradual change, the pt does not feel the temptation to return to old behaviours, and the new behaviours do not constitute a great effort – they become a new habit [14]. Importantly, at any stage of the process a person may relapse back into a previous stage.

*Use of MI.* Another method of working with pts is MI, which is a specific communication style primarily based on participant cooperation. MI is goal-oriented and strengthens a person's motivation and commitment to change when conducted in an atmosphere of acceptance, understanding, and compassion [15, 16]. MI, initially applied in the therapy of alcohol addicts by William R. Miller, the author of the method, is used in various fields, such as public health, health care, health education, rehabilitation, and dentistry [17, 18].

MI correctly applied by HCPs, based on knowledge of its principles and awareness of the benefits it brings, increases the internal motivation of pts to change, promotes new behaviours, and reinforces the desire to modify lifestyle or follow the therapy recommendations [16, 17]. Since the interview aligns with the interests and values of the pts, it aids the development of positive thinking. Understanding the purpose and importance of change is crucial in healthcare, facilitating communication between pts and HCPs. Improved communication leads both to better adherence to therapy, and enhances the implementation and persevering with resolutions after the therapy has ended [16, 17, 19].

*Phases of MI.* A crucial element of MI is highlighting the gap between the current situation and the desired situation. At the initial stage, pts are indifferent, and weigh the advantages and disadvantages adopting new behaviours. Then, MI aims to resolve individuals' ambivalence. The next stage focuses on engaging them in a conversation as a process of self-motivation leading to the formulation of a plan of action [17, 19].

*Key to good MI.* Open questions, affirmation, reflective listening, and summary (OARS) are essential for achieving this objective of the interview. The first of these elements raises the awareness of pts to their own responsibility for the attempt to change. In turn, the focus of the affirmation stage is to highlight the value of future goals, and to motivate pts to overcome current challenges. Reflective listening and summaries play a vital role in facilitating change. They require the healthcare professional's involvement in active listening to provide the pt with motivating feedback [20].

## REVIEW METHODS

In order to assess the current state of knowledge about the process of behavioural changes, a review of literature in English from 2014–2024 was conducted. The main inclusion criteria for articles were active pt participation in the change process, along with emphasis on motivation and willingness of pts to change their lifestyle.

*Sources and search strategies.* The tools used to search for suitable papers included: PubMed, Mendelay and Google Scholar. The search results were filtered to narrow down the scope of the searched items to the last 10 years. The key search terms included: 'trans-theoretical model', and 'motivational interviewing'. A further references analysis allowed the selection of gathered articles. Figure 2 depicts the research process by which 10 publications were ultimately selected for the review based on content and time frame.

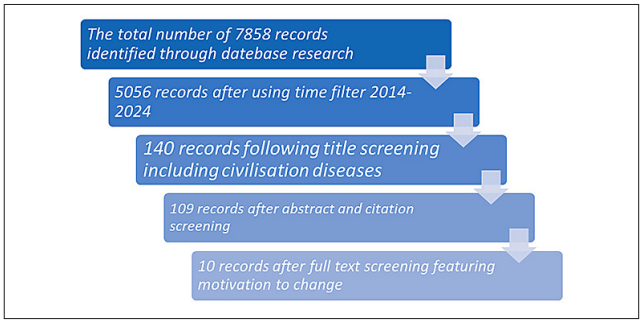


**Figure 2.** Selection process

*Criteria for inclusion/exclusion and review.* The qualification criteria for articles included pt-HCP communication, importance of motivation in the change process, and pts' willingness to change unfavourable behaviours.

When analysing the abstracts, both the key word context and assessment of the relation of the content of the entire article in the light of potential benefits to the present article, were taken into consideration. In particular, the terms 'trans-theoretical model of change' and 'motivational interviewing' were of the uttermost importance. After applying the above search strategy, the review and analysis of the selected ten articles were performed.

## RESULTS

The selected publications demonstrate the use of the TTM and MI in health promotion, namely, dealing with addiction, shaping eating habits and obesity reduction, along with increasing the physical activity level (PAL) and dealing with such major issues as depression and cardiovascular diseases (CVDs).

**Addiction.** Braciszewski et al. (2017) demonstrated in the first part of a three-part project examining the utility of a card sorting technique in preventive interventions via text messages to young individuals using addictive substances. The study involved 41 young adults with a history of foster care. They participated in groups developing the iHeLP application which included a 20-minute screening test and a brief MI-based intervention to prevent alcohol and drug abuse. The text messages were tailored to the individual's stage of change based on the TTM. The subjects received 18 cards with a selected text message on each. In the next step, subjects sorted the messages into good and bad, based on the content and stage of the change. Based on the obtained results, the creators of iHeLP concluded that traditional approaches to young substance-abusing pts in prevention messages, show very low efficacy. Therefore, the iHeLP application using both MI and TTM models, proved to be the best solution since they complement each other, especially at the initial stages of readiness for change [21]. The integration of MI and TTM through the iHeLP application effectively personalizes interventions, enhancing their relevance and

impact for young adults, particularly those with a history of foster care, ultimately improving the likelihood of successful behaviour change.

Another application, specially tailored by Kazemi et al. (2018), integrated MI and TTM to cope with heavy episodic alcohol drinking in college students. The app referred to as REMIT (Reductions through Ecological Momentary/ Motivational Intervention /Transtheoretical), was developed to enable behaviour change and constitutes a compelling and innovative example of digital interventions. The app encompassed five phases: 1) understanding the users, 2) determining target behaviour, 3) relying on behavioural theory, (4) creating delivery strategies, and 5) developing the REMIT prototype. REMIT utilizes assessments informed by the Ecological Momentary Interventions (EMI) and components of MI and TTM to guide administration of nine modules designed to engage the participants (N=26) in reducing alcohol use and related problems. For over two weeks, the REMIT users could self-monitor their alcohol consumption and develop strategies to change drinking behaviours using the Virtual Coach, automated text messages, interactive gaming mechanisms (gamification), drink consumption tracking, and Blood Alcohol Concentration (BAC) calculators [22]. The REMIT app is an impressive and forward-thinking approach, effectively combining modern technology with proven behavioural theories to offer a personalized, engaging, and practical solution for college students struggling with alcohol abuse.

Comprehension of unexpressed needs hidden by addiction to smoking was significant in the study by Charkazi et al. (2019) in which the impact of the TTM and MI on the smoking cessation process could not be unequivocally assessed. The total of 387 male Iranian pts were divided into three groups, based on their initial reasons for smoking: 1) social smoking (e.g., during events, parties, casual meetings), 2) smoking because of negative emotions (e.g., in a stressful situation, after receiving bad news) and 3) addiction smoking by force of habit. Subsequently, meetings were conducted according to the principles of MI and the TTM. Interestingly, these models brought the greatest effects in groups 1 and 2, where the majority of the pts, based on the TTM hypothesis, moved from the pre-contemplation to the preparation stage. However, no changes in the TTM stages were noticed in the addicted pts (Group 3). As the study progressed, the addicted individuals shifted in the direction of quitting. In conclusion, smoking cessation requires pts' reconsideration of their reason for smoking first, and only then should they be encouraged to stop smoking completely [23].

**Shaping eating habits and reducing obesity.** Research by Woo and Park (2020) on obese paediatric pts emphasizes that early-stage TTM pts need interventions focused on raising awareness and discussing the pros and cons of new behaviours to enhance motivation for change. They indicated that most children lacked understanding of the need for healthier habits, indicating they were in the pre-contemplation stage. On the other hand, many preventive programmes are focused on the stages of action and maintenance. The authors emphasized three principles in the treatment process: a reliable assessment of the pt's stage, creating a realistic plan, and designing appropriate action based on TTM. Furthermore, the study underpins the component establishing the relationship with a pt based on the interpersonal skills of the HCP, i.e., empathy and willingness to cooperate with the pt. Active listening skills and the capability to convey motivational messages are equally significant since the main goal of MI is to support the autonomy of the pt. Therefore, attempts to directly persuade the pt to change should be avoided.

A meta-analysis on the impact of MI yielded varying results, with certain studies demonstrating the effectiveness of MI intervention in reducing BMI compared to mere recommendations, while three other studies showed no impact on BMI. What is more, MI interventions addressing children have shown lifestyle improvements. The studied changes included: screen time reduction, reduction in the consumption of snacks and carbonated drinks, and general lower calorie consumption. Notably, the American Academy of Pediatrics recommends MI for obesity treatment. Moreover, the TTM model should also be used to ensure appropriate HCP messages and stimulate pt motivation [24].

Consideration should be given to the lower effectiveness of MI in some groups of children. During childhood, parents or school canteens are responsible for the choice of food consumed. For this reason, the application of MI and TTM with caregivers responsible for children's food choices and preparation should be reflected. Only after such an intervention would it be possible to assess more accurately the effectiveness of combatting obesity in children.

Early-stage interventions in paediatric obesity and the combination of TTM and MI to motivate meaningful behaviour change, play a critical role in behavioural change. It is essential to understand the importance of empathy, realistic planning, and the involvement of caregivers in fostering healthier habits in children.

**PAL increase.** The potential of using TTM and MI in prevention was highlighted by Pudkasam et al. (2018) in their literature review of 2007–2018 focusing on breast cancer pts. Half of them were observed to have experienced mood changes, disturbances in social contacts, decreased intimacy with partners, while requiring a special type of motivation for physical activity. The positive impact of physical activity on women's health was not well known among the respondents. The study found that 32% of the pts without MI strengthening motivational intervention were unwilling to adopt healthier habits within 12 months. However, pts motivated by nurses through regular MI and lymphoedema prevention, advanced from the preparation and action stages to the action and maintenance stages of the TTM. At the same time, they showed an increase in their PAL and self-efficacy [25].

**Depressive episodes.** The research by Xiaoyun Li et al. (2020) evaluated the impact of MI and TTM on 110 pts diagnosed with depression and ischemic heart disease. They constituted inpatients of three hospitals in Changsha, China, who were randomly divided into intervention and control groups (n = 55 in each group). The depression diagnosis was made based on the Hamilton Depression Scale (HRSD) and a depression perception questionnaire, which both provided the basis for the identification of the stage of change according to the TTM. Additionally, the benefits and barriers noticed by the pts in the process of change, and the sense of individual effectiveness were assessed. Each subject in the intervention group was given two 20-minute MI and three 30-minute sessions of TTM-based intervention. Positive changes were

observed in depression levels and specific stages of change. Furthermore, the level of perceived benefits from the process of change and the sense of self-efficacy both increased, while the perception of barriers in managing depression decreased. Therefore, the study confirmed the high effectiveness of MI and TTM in treating depression in inpatients diagnosed with ischemic heart disease [26].

On the other hand, Hoy et al. (2016) reviewed the literature examining the effectiveness of MI along with the TTM during a HCP's conversation with pts having suicidal tendencies. The authors concluded that both models are under-utilized in suicide prevention and preventive interventions, despite their high potential to improve outcomes for people at risk of suicide [27]. The combination of MI and TTM has proven to be highly effective in improving depression levels and self-efficacy in pts with ischemic heart disease, offering a promising treatment strategy. This approach significantly enhances pt outcomes by addressing both psychological and behavioural factors in a personalized manner.

## DISCUSSION

The application of the TTM and MI is of great importance, which is discussed in numerous publications. Winter et al. (2016) and other researchers highlighted their significance in supporting pts in overcoming addiction, adopting healthier eating habits, weight loss, and improving their PAL, as well as disease prevention (treatment of hypertension, lipid disorders and lowering blood glucose levels), and general health improvement [28]. Overall, the integration of MI and TTM leads to improved pt outcomes, including higher rates of behaviour change, better health management, and greater satisfaction with care. These models help pts feel supported, understood, and empowered throughout their health journey, thus increasing the likelihood of achieving lasting health improvements.

Along with the aforementioned studies by Braciszewski et al. (2017) and Charkazi et al. (2019) on the effectiveness of the TTM and MI in decreasing and eliminating addictions, Kumar et al. (2022) also demonstrated their positive effects when combating tobacco usage, and in particular their efficiency in the prevention of lung cancer. Kumar et al. (2022) showed the favourable impact of the TTM and MI in seven out of the 12 studies (58.3%) [29]. Additionally, TTM and MI have shown effectiveness in the study by Dupont et al. (2015) where Moti-4 intervention aimed at treating addiction to cannabis in vulnerable adolescents. TTM and MI were two of the 12 steps included in the intervention with effectiveness measured by the average amount spent on cannabis weekly by the subjects. A significant decrease from EUR 17.77 to EUR 11.95 in the post-intervention period confirmed the potential of these methods [30]. The total of 14 studies incorporated into the review by Mercado et al. (2023) indicated MI effectiveness in the decline in alcohol consumption in terms of changes in attitudes, beliefs, motivation, and behaviour, as well as positive results for acceptability, usability, and user experience [31]. Incorporating MI and TTM into healthcare strategies creates an environment in which pts are empowered to take control of their health, leading to lasting improvements and a higher quality of life (QoL). By addressing both the emotional and behavioural components of health change, this integrated approach increases the likelihood that pts will successfully adopt and maintain healthier behaviours, ultimately resulting in more positive and sustained health outcomes.

Apart from Woo & Park, other researchers have also studied the impact of TTM and MI on eating habits. According to Padilla-Moseley et al. (2023), the recognition of a high-salt diet as a factor increasing the possibility of CVD in Latin American and Caribbean pts was an important achievement, since their consumption was commonly more than double the recommended amount of salt is common there [32]. In turn, the study by Gur et al. (2020) conducted among students showed that fruit and vegetable consumption rose from an initial level of 58.5% to 76.4% in post-test, finally reaching 77.2% in the follow-up test. The campaign effectively encouraged teenagers to adopt regular consumption of fruit and vegetables [33]. As previously mentioned, TTM and MI enabled improvement in PAL. However, Zhu et al. (2024) indicated the total of 97 randomised controlled trials with 105 comparisons showed that MI interventions outperformed comparators in terms of reduction in sedentary time, increases in total physical activity, as well as moderate to vigorous physical activity (MVPA). MI used to promote adult total physical activity proved to be low, and was extremely low for MVPA and inactive time. Furthermore, over time, effectiveness declined, and after a year, there was no longer any evidence that MI increased PAL [34].

Preventive measures were assessed in the study by Pourebrahim-Alamdari et al. (2022) on cancer prevention in which TTM and MI were utilized. Face-to-face as well as phone-based MI interventions demonstrated significant potential. Among women who received face-to-face MI interventions, 32% underwent preventive cervical cancer examination, while 22% had a Pap smear test carried out after phone-based MI interventions. In contrast, only 4% of women in the control group without any intervention underwent cytology [35]. Together, MI and TTM create a dynamic and holistic approach to health behaviour change that fosters stronger, more trusting relationships between HCPs and pts. When pts feel heard, understood, and supported, their trust in their HCPs deepens, and they are more likely to stay engaged in the process. This enhanced relationship increases pt satisfaction with care and encourages greater adherence to treatment plans and lifestyle recommendations.

Pt engagement strategies must also account for cultural differences in health beliefs and communication styles. For instance, collectivist cultures may prefer family-based decision-making, whereas individualistic cultures prioritize autonomy. Tailoring MI and TTM strategies to these differences can enhance pts' adherence [36]. A study conducted by Istiqlal et al. validated Indonesian versions of the Self-Construal Scale (SCS) and the BIS/BAS scales to measure cultural values and motivation focus. It explored the cultural shift in Indonesia from traditional collectivism to global individualism, which may contribute to the rising prevalence of depression. The results showed that independent cultural values and certain motivational systems were associated with depression. This shift towards individualism may be influencing mental health, highlighting the importance of considering cultural factors in treatment. These findings suggest that understanding the social and cultural context can guide more effective interventions for depression [37].

Digital health tools, such as AI-driven pt engagement platforms, have revolutionized pt-HCP communication [38].

Pt outcomes in ophthalmology, particularly in glaucoma, are influenced by medication adherence and pt participation, which can be improved through MI. However, barriers, such as short visit durations and billing issues, limit the ability of clinicians to use MI effectively in-office. Large Language Models (LLMs) offer a potential solution by providing AI-driven chatbot MI to enhance adherence, with benefits such as scalability and accessibility, although challenges related to accuracy, safety, and privacy remain [39].

National healthcare policies influence the extent to which pt engagement is prioritized. For example, countries with universal healthcare models often have structured pt education programmes [40], e.g. the Polish Mammography Programme provides women with access to breast cancer screening through free mammograms, educational workshops, and informational resources, ensuring that all women, regardless of their socio-economic status, can participate and receive vital information about breast health and early detection. Meanwhile, privatized systems may rely mostly on pt self-motivation. In the USA, private insurers like Blue Cross and Aetna offer 'Wellness Programs' that encourage pts to engage in health improvement activities [41, 42]. However, these programmes are typically more accessible to those with employer-sponsored insurance or the ability to pay with cash. Therefore, the integration of pt engagement frameworks into policy recommendations is crucial for ensuring equitable access to motivational strategies.

## SUMMARY

Both TTM and MI find diverse applications in various fields and specialties. The combination of MI and TTM fosters stronger relationships between HCPs and pts, increasing pt engagement, adherence, and satisfaction with care. This is essential, as MI serves as an invaluable tool for HCPs who incorporate TTM into their practice. By aligning their communication and interventions with the stages of change in TTM, HCPs significantly increase the chances of successful health behaviour change in their pts. However, it is important to emphasize that the effectiveness of these strategies can vary depending on individual circumstances and the specific behaviours being addressed. It is also absolutely critical to factor-in cultural, technological, and policy considerations when designing pt engagement strategies. Cultural differences deeply affect decision-making, while AI-driven platforms significantly enhance communication and accessibility. Healthcare policies, whether in universal or privatized systems, have a profound impact on the accessibility of pt education and motivational programmes, underscoring the need for a highly tailored and inclusive approach. These factors cannot be overlooked if true improvement and engagement of the pt are to be achieved.

### Disclosure statement

The authors report there are no competing interests to declare.

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