

REVIEW / DERLEME

The Effect of Motivational Interviewing on Vaccine Hesitancy: A Systematic Review Based on the 2010-2025 Literature

Motivasyonel Görüşmenin Aşı Tereddüdüne Etkisi: 2010–2025 Literatürüne Dayalı Sistemik Derleme

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Abstract: This systematic review aims to evaluate the effectiveness of motivational interviewing (MI) in reducing vaccine hesitancy. Studies published between 2010 and 2025 were searched in PubMed, Scopus, Web of Science, and CINAHL databases. Inclusion criteria were defined as English or Turkish publications reporting MI-based interventions and outcomes related to vaccine hesitancy/acceptance. Following the PRISMA 2020 statement, 23 studies were included in the review after removing duplicates from 312 records. The included studies were examined in five main groups: (1) delivery room/parent interventions, (2) primary care practices, (3) pharmacy practices, (4) healthcare worker training, and (5) mixed-context studies. MI interviews conducted in delivery room and pharmacy settings resulted in a significant increase in vaccine acceptance and intention. Although primary care practices improved patient-physician communication, their effectiveness remained limited. Healthcare worker training improved communication skills, but the reduction in vaccine hesitancy was generally limited. Motivational interviewing is a promising method for reducing vaccine hesitancy. Short-term interviews, especially at direct points of contact such as delivery rooms and pharmacies, yield positive results. However, randomized controlled and multicenter studies conducted in different contexts are needed to clarify long-term effects.

Keywords: Motivational interviewing, vaccine hesitancy, vaccine acceptance, primary care, systematic review

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Öz

Amaç: Bu sistematik derleme, motivasyonel görüşmenin (MI) aşı tereddüdünü azaltmadaki etkinliğini değerlendirmeyi amaçlamaktadır. PubMed, Scopus, Web of Science ve CINAHL veri tabanlarında 2010–2025 yılları arasında yayımlanan çalışmalar taranmıştır. Dahil etme ölçütleri MI temelli müdahaleler ve aşı tereddüdü/kabulüne ilişkin sonuçları rapor eden İngilizce veya Türkçe yayınlar olarak belirlenmiştir. PRISMA 2020 bildirim doğrultusunda yürütülen değerlendirmede 312 kayıttan yinelenenler çıkarıldıktan sonra 23 çalışma derlemeye dahil edilmiştir. Dahil edilen çalışmalar beş ana grupta incelenmiştir: (1) doğumhane/ebeveyn müdahaleleri, (2) birinci basamak uygulamaları, (3) eczane uygulamaları, (4) sağlık çalışanı eğitimleri ve (5) karma bağlamli çalışmalar. Doğumhane ve eczane ortamlarında yapılan MI görüşmeleri, aşı kabulü ve niyetinde anlamlı artış sağlamıştır. Birinci basamak uygulamaları hasta-hekim iletişimini geliştirse de etkinlik sınırlı kalmıştır. Sağlık çalışanı eğitimleri iletişim becerilerini artırmış, ancak aşı tereddüdünde azalma genellikle sınırlı düzeyde gözlenmiştir. Motivasyonel görüşme, aşı tereddüdünün azaltılmasında umut verici bir yöntemdir. Özellikle doğumhane ve eczane gibi doğrudan temas noktalarında kısa süreli görüşmeler olumlu sonuçlar vermektedir. Bununla birlikte, uzun dönem etkilerin netleşmesi için farklı bağlamlarda yürütülecek randomize kontrollü ve çok merkezli araştırmalara ihtiyaç vardır.

Anahtar Kelimeler: Motivasyonel görüşme, aşı tereddüdü, aşı kabulü, birinci basamak, sistematik derleme

INTRODUCTION

Vaccines are one of the most effective interventions in controlling infectious diseases and protecting public health. However, in recent years, the concept of “vaccine hesitancy” has been identified by the World Health Organization as a global health threat. Vaccine hesitancy refers to a tendency to delay or refuse vaccination despite its availability; this weakens community immunity and increases the risk of outbreaks (1,2).

Motivational interviewing (MI) is an evidence-based counseling approach that aims to increase an individual’s internal motivation for behavior change (3). In recent years, it has also been used to reduce vaccine hesitancy and increase vaccine acceptance (4–6).

MATERIAL AND METHODS

This review study was planned to evaluate the effectiveness of motivational interviewing (MI) in reducing vaccine hesitancy, conducted based on systematic review methodology, and reported in accordance with the PRISMA 2020 statement. The study covers literature published between 2010 and 2025. The literature search was conducted in PubMed, Scopus, Web of Science, and CINAHL databases.

Databases were selected based on their content scope. PubMed is the most comprehensive and standard database for the biomedical field (7). Scopus was preferred due to its multidisciplinary structure and broad coverage (8). Web of Science is important because it includes high-impact journals and citation indexes (7). CINAHL is a fundamental source, particularly for studies in nursing, public health, and health

services (9).

The PRISMA 2020 statement was considered to ensure compliance with international standards in reporting the study (10).

Key words used: “motivational interviewing” AND (vaccine OR immunization) AND (hesitancy OR acceptance OR uptake). Inclusion criteria were interventions involving MI, outcomes related to vaccine hesitancy/acceptance, and publications in English/Turkish. Exclusion criteria were editorial articles, commentaries without data, and educational programs not involving MI. A total of 312 records were identified in the literature search (PubMed n=120, Scopus n=95, Web of Science n=62, CINAHL

n=35). After removing 54 duplicate records, 258 records were reviewed at the title and abstract level. As a result of this review, a total of 183 records were excluded: those not relevant to the topic (n=120), those that were only editorial or opinion articles (n=42), and those that were conference abstracts without data (n=21). Of the 75 studies included in the full-text evaluation, 52 did not meet the inclusion criteria. The reasons for exclusion were classified as follows: lack of motivational interviewing (n=28), lack of appropriate outcome measures for vaccine hesitancy or acceptance (n=14), duplication with previously included studies (n=6), and methodological deficiencies or inadequate reporting (n=4) (Figure 1.).

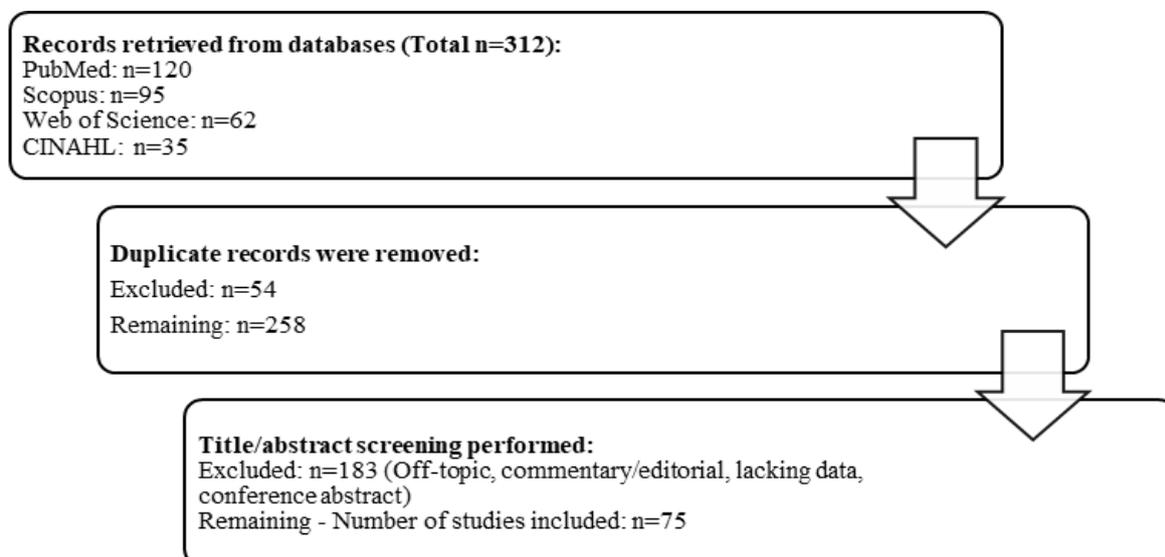


Figure 1. PRISMA Flow Diagram (2010-2025 Literature Review)

After all evaluation stages, 23 studies were included in the review. All results from the 23 included studies were addressed in the review, and prominent studies such as high-level evidence, randomized controlled trials, field tests, and national/multicenter applications are summarized in detail in Table 1.

The PRISMA 2020 statement was considered to ensure compliance with international standards for systematic review methods in reporting study (10).

Title and abstract screening and full-text appropriateness assessments were carried out independently by two researchers. Differences of opinion that emerged during the evaluation process were resolved by reaching a consensus

between the researchers. Data extraction from the studies included was carried out independently by two researchers using a predetermined standardized data extraction form. The extracted data were compared, and inconsistencies were resolved through joint evaluation.

This study is a systematic review and was conducted using only previously published and publicly available data. As this study did not collect individual patient data and did not involve intervention, ethics committee approval was not required.

Table 1. Prominent studies examining the effectiveness of motivational interviewing in vaccine hesitancy (2010–2025)

Author / Year	Research Objective	Analysis Method	Data Collection Method	Results
Gagneur, 2020 (Canada, public health perspective)	To examine the role of motivational interviewing (MI) in reducing vaccine hesitancy and its applicability to healthcare workers	Review and field application examples	Literature review + PromoVac field experiences	It has been emphasized that the MI approach strengthens vaccine commitment in parents, improves communication skills in health professionals, and is a feasible, evidence-based tool in public health programs.
Lundahl et al., 2013 (USA, meta-analysis of RCTs in the medical field)	Evaluating the effect of motivational interviewing on behavior change in medical care settings	Systematic review and meta-analysis (randomized controlled trials)	Analysis of 72 RCTs + health behaviors (vaccination, smoking, nutrition, treatment adherence)	The application of MI has been shown to bring about positive changes in general health behaviors, particularly significantly increasing client participation and treatment adherence rates.
Dubé et al., 2015 (Canada, literature review)	To define the concept of vaccine hesitancy, its causes, and its effects on public health	Review	Literature analysis + conceptual framework assessment	It was emphasized that vaccine hesitancy is a multidimensional phenomenon; trust, perception, and access factors at the individual, societal, and system levels are influential.
Chen et al., 2024 (USA, pharmacists)	Evaluating the contribution of the MI-based MOTIVE tool to vaccine uptake in pharmacies	Quasi-experimental intervention design	MI consultation in pharmacies, survey recording	Following the intervention, patients' vaccine acceptance rate and pharmacists' counseling self-efficacy significantly increased.
Fasce et al., 2025 (Romania, GP-patient)	Evaluating the effect of empathic refutation and motivational interviewing (MI) techniques on vaccine hesitancy	Field test, comparative analysis	Empathic persuasion + MI-based counseling intervention	Post-intervention, patients' vaccine confidence and acceptance rates increased significantly, and a marked decrease in vaccine refusal reasons was observed.
Yekdeş et al., 2022 (Turkey, Family Health Center employees)	Evaluating the effect of MI-based educational intervention on knowledge and attitudes regarding immunization and vaccine hesitancy.	Pre-test - post-test intervention (quasi-experimental) design	Training sessions + surveys	After the training, the level of knowledge about immunization, communication skills, and self-efficacy against vaccine hesitancy cases increased significantly.
Garrison et al., 2023 (France, family medicine residents)	Evaluating the effect of MI training on vaccine counseling self-efficacy.	Randomized controlled design	Training program + Pro-VC-Be scale	A significant increase in self-efficacy and confidence in vaccination counseling was observed.

RESULTS

A total of 23 studies were included in the review. These studies were examined in five main groups: 1-Delivery room/parent interventions, 2-Primary care practices, 3-Pharmacy practices, 4-Healthcare worker training, 5-Mixed-method studies.

1. Delivery Room/Parent Interventions

The PromoVac/PromoVaQ programs developed in Canada consist of brief motivational interviews with parents after birth. These initiatives have reported a decrease in parents' vaccine hesitancy scores and an increase in vaccination intent (4). In a field study conducted in Canada, the vaccination coverage rate of children whose parents

received MI-based counseling increased significantly compared to the control group (11). Another study from Canada reported that MI consultations improved parents' knowledge and positive attitudes (12).

2. Primary Care Applications

In a field test conducted in Romania, family physicians trained in MI or empathic-refuting interview (ERI) techniques conducted interviews with hesitant patients. The group that received MI had a higher rate of vaccine appointment booking, while the ERI group showed more pronounced positive attitude changes (6). Numerous randomized controlled trials and meta-analyses conducted in primary care have demonstrated the feasibility of using MI in patient-physician consultations (13,14).

3. Pharmacy Applications

In a study conducted by Chen and colleagues in the US, pharmacists received MI training and provided counseling using a tool called MOTIVE. After a total of 362 consultations, 35.4% of participants were vaccinated, 26% stated they planned to get vaccinated, 25% said they were open to considering it, and 13.5% said they were not interested (5).

4. Healthcare Worker Training

In a semi-experimental (pre-test–post-test) intervention study conducted in Turkey, the effect of an immunization and vaccine hesitancy-focused training program provided to family health workers was evaluated. It was observed that participants' knowledge level, communication skills, and self-efficacy regarding vaccine hesitancy cases significantly increased after the training (15). In a randomized controlled trial conducted with family medicine residents in France, the effect of a motivational interviewing-based training program on vaccine counseling self-efficacy was evaluated. In the study, which included a total of 208 participants, the Pro-VC-Be scale was used to assess the group that received training, and a significant increase in self-efficacy and confidence levels was observed (16).

5. Mixed-Context Studies

Some studies have evaluated the application of motivational interviewing in the context of COVID-19 and HPV vaccines. These studies reported an increase in vaccine intention and positive attitudes following MI sessions. However, data on the impact on long-term vaccination rates are limited (17,18).

All the studies included are discussed in the results section. However, the objectives, methods, and key results of selected studies with high levels of evidence that directly target vaccine hesitancy are summarized in Table 1.

DISCUSSION

This systematic review evaluated the role of motivational interviewing (MI) in reducing vaccine hesitancy by examining 23 studies published between 2010 and 2025. The results show that MI can be applied in different contexts and has positive effects, particularly in short-term outcomes.

Delivery room and parental interventions

Delivery room-based studies, particularly the PromoVac/PromoVaQ programs, increased parental confidence in vaccination and led to a significant increase in vaccination intent (4). Supporting our study, another randomized controlled trial also reported that MI-treated parents had higher vaccination rates for their children compared to the control group (19). Another study conducted in Canada showed that MI sessions improved parents' knowledge and positive attitudes (12). These results, consistent with our review, suggest that brief, structured MI sessions with parents in the early stages of life can be effective.

Primary care applications

In primary care, MI has facilitated patient-physician communication and increased vaccination appointment-taking behavior (6). Parallel to our study, Lemaître and colleagues' (11) systematic review also reported that MI positively influenced parents' decision-making processes regarding vaccination. However, methodological heterogeneity is prominent in both our study and previous reviews, limiting the generalizability of the results. While motivational interviews conducted in delivery room and pharmacy settings showed stronger effects, this effect was limited in primary care settings. The current literature is insufficient in explaining the reasons for this difference. Furthermore, the small number of studies conducted in primary care settings and the fact that they are mostly quasi-experimental or conducted with small samples weaken the reliability of the results (6,15). In contrast, studies conducted in delivery room and pharmacy settings have been carried out with

stronger methodological designs and have more clearly demonstrated the short-term effects of MI (4,5). This situation indicates the need for more comprehensive, long-term, and multicenter studies to evaluate the effectiveness of MI in primary care settings.

Pharmacy practices and other healthcare professionals

Pharmacy-based studies, particularly the work of Chen et al., have supported the role of pharmacists in MI-based counseling and contributed to the vaccination of a significant proportion of participants (5). This finding demonstrates that MI can be effectively implemented not only by physicians but also by different healthcare professionals.

Healthcare worker training

MI-based training programs for healthcare workers have improved communication skills and perceptions of self-efficacy (15,16). However, these studies did not measure vaccine hesitancy directly using scales, but rather presented results based on indirect outcomes. Therefore, the effect of improved communication skills on vaccine hesitancy has not been clearly established; only a possible contribution has been suggested.

Overall assessment and limitations

The results are consistent with the 3C model (confidence, comfort, carelessness) recommended by the World Health Organization (1). Like our study, MI appears to be an approach that particularly strengthens the “confidence” dimension. Furthermore, meta-analyses of health behaviors have also demonstrated that MI is effective in changing attitudes and behaviors (13,14,20). This prior evidence supports the results of our review, suggesting that MI may be effective not only for vaccine-specific behaviors but also for general health behaviors.

The strengths of this review include its inclusion of studies from different countries and levels of healthcare services and its systematic examination of the period

2010–2025. However, its limitations should also be considered. Most of the included studies focused on short-term outcomes and provided limited data on the effect on long-term vaccination rates. Furthermore, heterogeneity in measurement tools, the inclusion of only English and Turkish publications, and the exclusion of grey literature limit the generalizability of the results. The limited number of studies from Turkey highlights the need for further research to assess the effectiveness of MI in the local context.

CONCLUSION

Motivational interviewing is seen to be an effective means for dealing with vaccine hesitance. In accordance with previous reviews and meta-analyses conducted on this topic, this analysis also reveals that this method is successful for impacting healthcare behavior. The analysis found that interventions with a shorter duration, which took place at direct points of interaction like maternity hospitals and pharmacies, showed a positive outcome for modifying attitudes and intentions with regards to immunization. Motivational interventions implemented for professionals working at these health facilities promoted their ability to communicate more effectively; Nonetheless, their direct influence to diminish vaccine hesitance is restricted to some extent. Randomized controlled trials are needed to clarify further the actual long-term result of these interventions.

The results suggest that motivational interviewing can influence one of the key components of vaccine hesitancy by strengthening the trust dimension. However, the current evidence is mostly based on short-term outcomes, and its impact on long-term vaccination rates is unclear. Therefore, randomized controlled and multicenter studies conducted in different contexts are needed.

In conclusion, training physicians, nurses,

and pharmacists working in primary health care on motivational interviewing and integrating this approach into routine health care can make important contributions to combating vaccine hesitancy.

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The authors have no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript.

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