

Factors Influencing Perceived Multidisciplinary Team Meeting Effectiveness in Teams Addressing Work-Related Respiratory Diseases: A Qualitative Study

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Background: Multidisciplinary teamwork is crucial for addressing complex health issues, including work-related respiratory diseases. In this context, perceived effectiveness of the multidisciplinary team meeting (MDTM) is critical to team viability and functioning. However, research on what makes members of multidisciplinary teams addressing work-related diseases perceive their MDTM as effective is still lacking in the literature. Therefore, for these teams, this study explored team-level and team-member-level factors perceived to shape MDTM effectiveness, and clarifies how these factors manifest across MDTM-phases.

Methods: A qualitative study combining semi-structured interviews and MDTM-observations was conducted. Participants were members of Dutch multidisciplinary teams addressing work-related respiratory diseases. Interviews focused on team functioning (team factors) and individual team member characteristics (team member factors). Data were analyzed using reflexive thematic analysis and organized across MDTM-phases identified through observations.

Results: Eight MDTM team members were interviewed and two team meetings were observed. Twelve themes perceived to influence MDTM-effectiveness were identified. For the pre-MDTM phase, team preparation, social safety and openness, and guided online participation (team factors), and anticipated benefits of participating in the MDTM (team member factor), were preconditions for perceived team effectiveness. For the patient discussion phase, patient case accuracy, expertise, constructive information flow, guidance for inclusion, and decision clarity (team factors), and respect (team member factor), were found important factors for perceived team effectiveness. For the post-MDTM phase, team reflections on positive MDTM output (team factor) and individual team member reflections on benefits of participation in the MDTM (team member factor) were perceived to motivate and therefore to contribute to MDTM-effectiveness.

Conclusion: Team-level factors, and team-member-level factors, perceived to influence MDTM -effectiveness in multidisciplinary teams addressing work-related respiratory diseases have successfully been retrieved and identified. The findings suggest that both team organization and individual team member features contribute to how MDTMs are experienced and valued, and the study insights present multidisciplinary teams addressing work-related respiratory diseases insights and ways for optimizing their MDTM-practices.

Keywords: work-related respiratory diseases, multidisciplinary teamwork, multidisciplinary team meeting, pulmonology, occupational medicine, multidisciplinary team effectiveness

Introduction

Respiratory diseases are among the most common work-related health problems and contribute substantially to morbidity and mortality worldwide.^{1–4} Respiratory diseases may originate from a large variety of occupational exposures.^{1–4} For instance, asthma can be caused and/or prolonged by exposure to allergens or toxic fumes at the workplace (eg, cleaning work, work in the factory), while lung cancer can result from exposure to carcinogens during hazardous work activities such as welding or coal mining. The diagnosis and treatment of work-related respiratory diseases tends to be complex,^{1,2} as it requires knowledge and expertise from the field of pulmonology as well as the fields of occupational medicine and occupational hygiene.⁵ To integrate these complementary domains of expertise, pulmonologists, occupational physicians, and occupational hygienists in the Netherlands have established multidisciplinary teams to support the diagnosis and management of work-related respiratory diseases.^{6,7}

This collaboration between pulmonologists and occupational health professionals, who typically work outside the hospital setting, is relatively novel and emerged partly in response to country-based model calculations suggesting a relatively higher incidence of serious work-related respiratory diseases. The collaboration initiative is also quite unique, on the one hand because it bridges the strict separation between curative and occupational healthcare in the Netherlands, and on the other hand because it still is unfunded within the regular health system and operates on volunteer effort of medical and occupational health professionals and/or with funding from third-party providers. Multidisciplinary teams addressing work-related respiratory diseases include at least a pulmonologist, an occupational physician, and an occupational hygienist, strive to have more than only one of each type of professional within the team, and often have additional relevant professionals as permanent or temporary members within the team (eg, analysts, medical residents, etc).

Because multidisciplinary collaboration is essential in care for patients with complex health issues,^{8–11} researchers study and address the factors that may influence the effectiveness of the multidisciplinary team meeting (MDTM) of multidisciplinary teams.^{12–15} During the MDTM, the team members meet, jointly review, and discuss, patient cases for diagnosis and patient management (eg, treatment recommendations, referral). MDTM-effectiveness of hospital setting multidisciplinary teams, that have team members with different professions within a single medical domain, is widely studied. Studies for instance have been conducted on MDTM-effectiveness of hospital-based oncology multidisciplinary teams that include team members such as oncologists, oncology surgeons, oncology nurses, radiation oncologists, and oncology pathologists.^{14–16} Yet, to date much less is known about MDTM-effectiveness of teams that integrate expertise across distinct domains, such as curative and occupational health care, while such knowledge is particularly relevant for managing work-related respiratory diseases.⁵ MDTM-effectiveness may be more difficult to achieve and uphold for multidisciplinary teams whose team members have different professions and are from different medical backgrounds, such as is the case for multidisciplinary teams that involve collaborating pulmonologists and occupational physicians working towards more optimal diagnosis and treatment of work-related respiratory diseases. Larger differences between multidisciplinary team members may hinder communications, mutual understanding, and joint decision-making, making both team processes and team member characteristics particularly important. Moreover, without insight into the factors that contribute to effective MDTMs, it remains difficult to optimize collaboration, support the implementation of new teams, and develop practical guidance for existing teams. Identifying these factors may therefore help multidisciplinary teams strengthen collaboration, improve MDTM functioning, and support the long-term delivery of integrated care for patients with work-related respiratory diseases. This is in line with the notion that effectiveness of health collaborations not only is determined by team level factors (ie, features and characteristics of the multidisciplinary team), but also by team member factors (eg, the participation experiences of team members, team member motivations, etc).¹⁷ Likewise, relevant research shows that organizational factors, but also personal factors, influence quality of communications between different types of health professionals cooperating in a health setting.¹⁸

Multidisciplinary teams dedicated to the management of work-related respiratory diseases are still relatively new to the literature, and are relatively vulnerable to efficiency issues because they include team members from different professions and transmutal medical domains. Therefore, it is important to understand which team approaches and collaborative characteristics of team members are perceived as contributing to perceived MDTM-effectiveness within

these teams. Accordingly, the aim of the current study was to explore team-level and team-member-level factors perceived by MDTM- participants as contributing to MDTM effectiveness in multidisciplinary teams addressing work-related respiratory diseases, and to examine how these factors manifest across different phases of the MDTM process.

Materials and Methods

Design, Setting, Participants, and Procedure

The study had a qualitative design and was conducted in the Netherlands in 2025. It involved a) semi-structured interviews with key members of existing Dutch multidisciplinary teams addressing respiratory work-related diseases, aimed at identifying team- and team member level factors influencing perceived MDTM-effectiveness, and b) observations of two MDTMs to identify MDTM-phases and situate efficiency-factors during the MDTM. Key members of the four established and functional regional Dutch multidisciplinary teams addressing respiratory diseases were identified by the research team through the professional network. Persons being either a pulmonologist, occupational physician, or occupational hygienist, with active participation in a Dutch multidisciplinary team that addresses work-related respiratory diseases, but that are not the chair of the team, were of key interest for an interview (inclusion). From each team, actively functioning in 2025 with multidisciplinary team meetings on a regular basis, two team members were directly invited for an individual interview via Email by the first author (EB). Given the very limited number of established multidisciplinary teams addressing work-related respiratory diseases in the Netherlands, and thus a very small population of team members, and the exploratory aim of identifying major recurring themes, the inclusion of two key participants per team was considered appropriate to obtain sufficient information for the study objectives.¹⁹ Professionals from the four different teams were individually invited and interviewed. From the first, second and third team, an occupational physician and an occupational hygienist were invited for an individual interview, while the pulmonologists were retrieved from the fourth team for an interview. The occupational physician and occupational hygienist of the first team also held an expert position in the fourth team (dual team members). Thus, eight key team members were invited for an interview, and this group included three occupational physicians, two pulmonologists, and three occupational hygienists. After agreeing to participate, an interview was scheduled. Prior to each interview, participants received an information letter describing the study objectives and procedure, and an informed consent form. Written informed consent was obtained prior to participation. For this study, the participants were presented, and signed, the standard informed consent developed by, and for the current study reviewed and approved by, the institution's METC. The informed consent covered participation in the study, data collection, and the use of the data for research purposes, including the anonymous reporting and publication of study findings. Interviews lasting approximately 45 to 60 minutes were conducted either in person or online according to the participant's preference. Online interviewees participated individually from their private home or work office, participants that were interviewed in person were visited and individually interviewed in their private work office. At the start of each interview, participants were reminded of the study aim, anonymity, and confidentiality of their responses. They were informed that individual teams would not be evaluated and would not be made identifiable in reporting. Because the interview topics focused on professional experiences with multidisciplinary team meetings, the interview topics were not anticipated to evoke substantial discomfort. During the interview, in instances where participants appeared hesitant or uncomfortable when asked to elaborate on a response, the interviewer moved on to the next topic or question. The interviews were held in Dutch, as online platforms MSTeams and Kaltura were used for the few digital interviewer-interviewee interviews (one-on-one, no person split needed), and the first round of interviews yielded a rich set of data and follow-up interviews thus were not required. After interview completion, the interviewed participants received financial compensation for their time investment. The compensation was intended to reimburse participants for the time spent participating in the interview and was not contingent upon the content of their responses. The amount was modest and considered unlikely to influence the voluntary decision to participate. Hereafter, the first author (EB) attended and observed one regular session of the MDTM of two ($n = 2$) of the four established and functional Dutch multidisciplinary teams addressing work-related respiratory diseases. Only if the first two observations would reveal conflicting findings regarding the structure and phases of the MDTM during analysis, additional observations would be conducted. Prior to the observation, all members of the multidisciplinary team received an information

letter and provided informed consent. The observations of the multidisciplinary team meetings were conducted in the team meeting rooms of these multidisciplinary teams within the respective university hospital settings.

Materials

The semi-structured interview used a fixed topic guide (see [Supplementary Material: Supplementary Material 1 Figure S1](#)). Researcher EB conducted the interviews. This researcher had no prior interactions with any of the interviewed participants. The first part focused on the “team member factors” and generally explored the idiosyncratic positive and negative experiences of participants during MDTMs, followed by targeted questions on items such as quality of interactions and their relevance for continued team participation. The second part of the interview focused on “team factors”. This part started with general reflections on factors of team functioning, and was followed by specific topics such as team composition, leadership, team governance, and logistics. The interview concluded with questions inviting open suggestions for promoting sustained team participation and engagement in MDTMs. For the observations, researcher EB attended two regular MDTMs and made field notes about the sequence and key phases of the meetings. Researcher EB had no prior interactions with any of the observed multidisciplinary teams.

Analysis

The interview data were audio-recorded and transcribed verbatim by researcher EB. Reflexive thematic analysis^{20,21} with MAXQDA²² was hereafter applied for analysis of the interview data by researchers EB and NZ, and both researchers had prior experience with reflexive thematic analysis. The interview transcripts were coded independently by researchers EB and NZ. Coding decisions, emerging interpretations, and theme development were discussed iteratively throughout the analysis process until consensus was reached. An initial coding structure was developed and refined during regular discussions between the researchers. The use of independent coding, iterative comparison of interpretations, and consensus-based theme development contributed to the trustworthiness of the analysis. Although the interview guide was informed by prior literature and study objectives, coding and theme development were guided by participants’ accounts and emerging patterns in the data rather than a predefined analytical framework, and the analysis thus had an overall inductive approach. Themes were identified based on recurring patterns and conceptual relevance across interviews. The resulting first-order themes captured patterns that were consistently and meaningfully expressed by participants.²³ Although the analysis also identified less frequently occurring observations, the reporting focused on themes that were supported by multiple participants and considered most relevant to the study aim. For the MDTM observations, if data saturation would not occur after the first two observations, for example due to conflicting information, then additional observations would have been conducted. In making the field notes during the MDTM’s, a linear time-based open observation approach was used, whereby all MDTM process events from the start until the end of the meeting were noted on paper by researcher EB. For each observed process event, field notes were made regarding the nature of the event and its timing within the MDTM. Immediately following each observation, the field notes were revisited by researcher EB and summarized into an observation report. After the observations, the observed MDTM process phases were discussed and finalized within the research team and used as higher-order categories to organize and report the identified themes. Thus, the observations were not analyzed as a separate dataset, but were used to provide a process-oriented framework for reporting how interview-derived themes manifested across different phases of the MDTM. This structure enabled a phase-by-phase presentation of *perceived* MDTM- effectiveness themes, reflecting the dynamics of multidisciplinary collaboration throughout the meeting. For the reporting, the study used and applied the Standard for Reporting Qualitative Research (see [Supplementary Material: Supplementary Material 2](#)).²⁴

Results

Participants and Observed MDTMs

All professionals first approached for an interview had accepted the invitation, and with this the number of participants for an interview that was aimed for was secured. The included pulmonologists were both employed by a hospital and were both working in a hospital-setting (ie, one of these pulmonologists worked in an academic hospital, the other

worked in a non-academic hospital), the occupational physicians were either self-employed or employed by an occupational health service agency, and the latter also was the case for the occupational hygienists included in the study (of which one had a part-time contract of employment at a hospital as well). The two pulmonologists were female and had 2 and 6 years of professional experience, and this number of years of MDTM experience since graduation. The three occupational physicians included two males and one female, with 3 to 32 years of professional experience and 1.5 to 9 years of MDTM- experience. The three occupational hygienists included two males and one female, with 6 to 30+ years of professional experience and 1.5 to 15 years of MDTM experience. Furthermore, the multidisciplinary team meeting of two teams was observed ($n = 2$). The first observed team had respectively seven participating team members (one pulmonologist, one occupational physician, three occupational hygienists, a pulmonary function analyst, a pulmonary function analyst assistant; and one intern medical resident) and all attended in person. The second observed multidisciplinary team had respectively six participating team members (three pulmonologists, one occupational physician, one occupational hygienist, and one occupational dermatologist). It was a hybrid MDTM, meaning that four team members were attending in person and two others participated online. The first observed MDTM had a duration of one hour, involved the discussion of six patient cases, and patient cases were presented by different professionals (eg, pulmonologists assisted by occupational hygienist, lung function analyst assistant). The second observed MDTM had a duration of one hour, and involved the discussion of six patient cases, which were all presented by the pulmonologists. The first two observations showed a highly comparable MDTM structure and sequence of process phases and did not reveal conflicting information relevant to the study aim. Therefore, additional observations were not considered likely to provide substantially new insights regarding the organization and phases of the MDTM process and were left out.

Themes and Multidisciplinary Team Meeting Phases

The reflexive thematic analysis yielded twelve first-order themes. The MDTM-observations revealed three main phases in an MDTM for work-related respiratory diseases. Figure 1 shows their overview.

The pre-MDTM phase involved all experiences and actions of team members before and during the opening (“upstart”) of the MDTM-meeting, such as preparation of a patient case. The subsequent patient case discussion phase involved three consecutive stages per patient case discussed, namely a) patient case presentation, b) joint discussion and deliberation among team members, and c) joint patient case finalization (decision-making about treatment or any further actions, for instance tests for more accurate diagnosis). The post-MDTM phase involved the ending (“closing”) of the MDTM and all potential final reflections and experiences of team members.

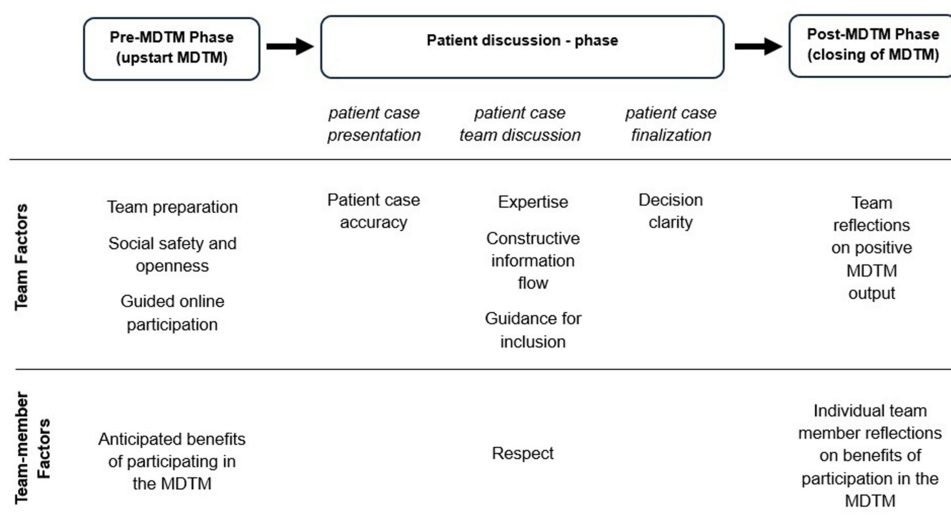


Figure 1 MDTM-phases and factors influencing perceived MDTM-effectiveness in multidisciplinary teams addressing work-related respiratory diseases. The rows labelled “team factors” and “team-member factors” include the perceived effectiveness-themes on those levels. The boxed elements include the MDTM-phases, are ordered in time (start, middle, end) and illustrated with arrows to depict the MDTM-process over time, and have placed under them the perceived effectiveness factors that they cover.

Pre-MDTM Phase (Upstart MDTM)

Regarding the team level, participants indicated that opportunities for pre-MDTM preparation, as well as active preparation by team members themselves, contributed to overall MDTM readiness. Consequently, “team preparation” emerged as a key factor related to perceived multidisciplinary team effectiveness. When asked about team effectiveness, participants for instance illustratively remarked:

Beforehand I receive the cases, so I can prepare. If it is prepared, it works well – Occupational hygienist

Good preparation by the chair – Occupational hygienist

Furthermore, regarding the team level, participants emphasized social safety and openness as an overall precondition for perceived multidisciplinary team effectiveness. A MDTM-climate of social safety and openness brings a positive start of the MDTM for the team as a whole. Therefore, the factor of “social safety and openness” was considered important for perceived multidisciplinary team effectiveness. Illustratively participants for instance pointed out:

There has to be social safety so that it is accepted if you would ask questions. (.) and so that people will answer normally.– Occupational physician

They are all very pleasant to work with, and I don't mind burdening them with lack of knowledge. That is a plus. I think that is the most important thing. The contact often is pleasant, yes. An open atmosphere, yes. – Pulmonologist

Another team-level factor identified by participants was online MDTM-participation, which elicited mixed perceptions. While opportunities for online participation were seen to greatly reduce barriers for participation (eg, time constraints, location difficulties), difficulties to speak up and share thoughts and feelings of isolation were also reported as drawbacks. Overall, the suggestion was made that if drawbacks of online participation could be addressed, guided online participation could enhance team effectiveness. This factor was labelled “guided online participation”. Regarding this factor, participants for instance illustratively indicated:

It makes it easier to participate, I find that I can do it anyway, it is fine, I will just log in. – Pulmonologist

You can attend more often, but an online meeting is different from an in-person meeting. Multidisciplinary meetings usually are held via [online video-call platform], and then hands go up, and by then you'll see five or more [team members], and you won't say much yourself. – Occupational physician

Regarding the team member level, the pre-MDTM factor that participants clearly pointed to was perceived anticipated benefit of participation in the MDTM. Overall, participants suggested that when team members pre-MDTM expected the MDTM to be worthwhile, either for themselves (eg, because it increases learning) and/or for others (eg, for patients), they are more motivated to participate in, and contribute to, the MDTM. Therefore, the team member factor of “anticipated benefits of participating in the MDTM” was considered to contribute to perceived team effectiveness. Illustrative statements of participants for instance were:

You naturally want some kind of, how shall I put it, intellectual challenge. And then there, working at a university medical center, a university, that's an intrinsic motivator, so to speak. And I enjoy that. – Occupational physician

I continue to participate because I want to feel like it adds value to the whole. I need to feel like I have something to contribute, that I'm making a useful contribution. I also believe it's worthwhile because I get something out of it. How the clinic views these kinds of cases, what they think about them, and what questions they have about them. – Occupational physician

Patient Discussion Phase: Patient Case Presentation

For the MDTM-moment of patient case presentation during the patient discussion phase, only one team level aspect was pointed out by participants. They emphasized that a structured and standardized case presentation that involves clarity, completeness (patient information is complete as much as possible), and a well-defined question for the team, enhances

team focus and thus perceived effectiveness. This factor was thus labelled “patient case accuracy” and illustrative example statements of participants for instance were:

When presenting a patient, there must be a good question and a goal, and that goal must be made known to the multidisciplinary team during the meeting. Because then the group knows: This is what we need to consider. That contributes to efficiency. – Pulmonologist

So, of course, the person submitting a case needs to think carefully beforehand about the likely issue, what information the others in the group may need to contribute and think along about, and what question needs to be answered. The submitter needs to consider this beforehand. – Occupational physician

Patient Discussion Phase: Patient Case Team Discussion

Participants suggested three clear team-level factors that may influence perceived team effectiveness in the phase where the team jointly discusses the patient case. These were respectively a) presence and constructive participation of key team members during the MDTM (“expertise”), b) a lively group discussion with open exchange of thoughts and ideas wherein team members all make an actual effort to help each other understand each other and to actually listen to each other (“Constructive information flow”), and c) facilitative guidance ensuring that all team members have the opportunity to speak up, contribute, and feel heard (“guidance for inclusion”). Overall, these team level factors were pointed out by participants as contributing to perceived team effectiveness in the patient case team discussion – phase. Illustrative participant statements for “expertise” for instance were:

I think a good meeting is when the different disciplines are present and all contribute from their own areas of expertise. – Occupational hygienist

And it is best, by the way, when all professional disciplines are present, that is an important precondition – Occupational hygienist

A participant statement illustrative of “Constructive information flow” for instance was:

What I find very positive is that everything, including medical information, is shared with me. – Occupational hygienist

Further, a participant statement illustrating “Guidance for inclusion” for instance was:

The chairperson keeps a close eye on things. If I raise my hand, at some point he will say, ‘Hey, you would like to say something.’ Everyone is given full opportunity to have their say. – Occupational hygienist

At the team member level, participants pointed out that having interpersonal respect (eg, being polite to each other) and respect for the team process (eg, not taking too much time to not hinder team progress) is an individual team member characteristic that was mentioned as critical for team effectiveness. Accordingly, this team member level factor was labelled “respect” and a participant statement illustrative of this theme for instance was:

I can find it quite annoying when someone hijacks the meeting and turns it into a monologue. If there is a chairperson, I think that the chairperson should be recognized and respected. So if the chairperson says, ‘Okay, we’ll move on,’ then I think that hijacking person should do so. – Pulmonologist

Patient Discussion Phase: Patient Case Finalization

During the patient case finalization phase, the participants emphasized that it is imperative that each discussion of a patient case will be finalized with a clear, temporary or definite, joint decision and conclusion. This joint conclusion may be unanimous or not unanimous, but reaching a clear decision and conclusion is critical for the understanding, direction, and closure, of the team as a whole. This team level factor was thus labelled as “decision clarity”. Participant statements illustrative of this theme for instance were:

Very often you talk for a long time, but no decisions are made. Decisions have to be made concrete, otherwise you will have the same conversation again in two weeks. – Occupational physician

Joint decision-making, we discuss the next steps together. I think that's a good thing. – Occupational hygienist

Post-MDTM Phase (Closing of MDTM)

With respect to the post-MDTM phase, participants pointed to one team level factor and to one team member level factor relevant for their participation motivation as an indicator of perceived team effectiveness. The team level factor concerned *team reflections* on tangible and positive output of the MDTM as a whole. Such reflections, for instance, involved the team actively reflecting at the end of the MDTM on positive and helpful outcomes of the MDTM for the professionals presenting patient cases and on how the MDTM contributed to better care for patients. This suggests that the more actively the team reflects on positive MDTM outcomes at the team level, the more team members may perceive the MDTM as effective; accordingly, this factor was labeled “team reflections on positive MDTM output.”. A participant statement illustrative of this theme for instance was:

If at some point someone is satisfied with given advice, that's always a real boost for everyone. – Occupational physician

At the team member level, participants indicated that their reflections on individual benefit contribute to their sustained engagement and participation. Team members who reflected upon the MDTM as a personally rewarding experience (eg, because participation in the MDTM was interesting, fun, and/or increased their learning) were more likely to be motivated to continue their team membership and participation in the MDTM. Accordingly, this team member-level factor was labeled “individual team member reflections on benefits of participation in the MDTM”. Participant statements illustrative of this factor for instance were:

That is what makes my job enjoyable. I learn and grow by being exposed to so many patient cases. – Pulmonologist

You gain depth, you step outside that consulting room, and you get a completely different perspective on things. And that's what makes it so enjoyable for me, yes. – Occupational physician

Discussion

Multidisciplinary collaboration is essential in care for patients with complex health issues, and this is why multidisciplinary teams are implemented and active in many different fields in medicine. Yet, multidisciplinary collaboration tends to evoke efficiency issues, and therefore it is critical to study and address the factors that may influence the perceived effectiveness of multidisciplinary teams. In this context, the current study explored and identified team factors, and team member factors, that have a role in perceived MDTM-effectiveness of multidisciplinary teams addressing work-related respiratory diseases. It should be noted that the identified themes may represent different types of factors, including conditions, processes, reflections, etc., associated with MDTM participation. The current study was not designed to establish causal relationships between these factors, but rather to explore how participants perceived them as relevant to MDTM-effectiveness across different phases of the MDTM process.

Interpretation of Findings

Team level factors identified in the current study, such as for instance “patient case accuracy” when presenting the patient case to the multidisciplinary team and “expertise”, have previously been found relevant to the perceived effectiveness of multidisciplinary teams, such as for instance multidisciplinary teams addressing cancer that only involve professionals in oncology.^{14,16} The current study corroborates that these team level factors also are relevant to perceived MDTM-effectiveness of multidisciplinary teams addressing work-related diseases. Furthermore, in line with the broader literature on effectiveness of MDTMs, the current study introduced “team reflections on positive MDTM output” as a team level factor important for perceived MDTM-effectiveness of multidisciplinary teams addressing work-related respiratory diseases. This “perception of team members that the MDTM led to positive results” still warrants more attention from

researchers studying perceived MDTM-effectiveness of other types of multidisciplinary teams. The current study also underscores the relevance of “constructive information flow”. While different types of multidisciplinary teams may benefit from a lively group discussion with free flow of thoughts and ideas, and team members making an effort to actually listen to each other, the aspect of team members all making an actual effort to help each other understand each other is specifically critical for the multidisciplinary team addressing respiratory work-related diseases involving team members from largely different disciplines and fields (ie, pulmonologists, occupational physicians, occupational hygienists). Research of Tortorella et al supports the notion that pulmonologists and occupational physicians have their own approach to, and methods for, helping patients,²⁵ and thus team members’ actual efforts to understand each other is key to mutual understanding and joint decision-making. Furthermore, in line with previous work,¹⁶ the team-level factor of “social safety and openness” of the current study encompasses sociability and inclusion as team-level ingredients important for perceived multidisciplinary team effectiveness, but social safety concerns have less been pointed out by such previous work focusing on multidisciplinary teams with team members from the same field. Social safety concerns, as an aspect of “Social safety and openness” may be of greater importance for multidisciplinary teams with team members from largely different disciplines and fields, such as multidisciplinary teams addressing respiratory work-related diseases. Further, in line with the broader literature on effectiveness of MDTMs, the current study showed that regular team reflections that the MDTM is worthwhile, and team member’s individual reflections that participation in the MDTM is rewarding, instill participation motivation in multidisciplinary team members, and therefore make multidisciplinary team members perceive the MDTM as more effective. Findings in other settings, such as acute healthcare, corroborate that benefit expectations and received benefits instill motivation, and therefore are important to motivation of health professionals to contribute to the multidisciplinary team.²⁶ Furthermore, in line with previous work,¹¹ the current study showed that “respect” is important for perceived team effectiveness. In the current study, “Respect” was found an individual characteristic that multidisciplinary team members may bring with them to, and display during, the MDTM. “Respect” may play on the team level, for instance when team norms prescribe mutual respect and are shared and internalized, but in the current study “respect” most clearly emerged on the team member level. This represents a new insight for the research literature, and calls for additional research on the role of respect for perceived MDTM-effectiveness. The insights of the current study are specifically helpful for supporting multidisciplinary teams addressing work-related respiratory diseases, but also are of interest for other types of multidisciplinary teams composed of professionals from different disciplines, fields, and clinical backgrounds. These teams are recommended to a) take notion of the identified team factors, and team member factors, critical for perceived MDTM-effectiveness (Figure 1), b) evaluate whether the team has any need for improvements, and if so, c) make appropriate team changes. Team discussion about the effectiveness-factors (Figure 1), for instance, may help in determining any areas for improvement within the team. Should any improvements be necessary, the team may also discuss specific ways for making desired improvements. These may involve actions for improving the way of working within the team and thus strengthening the overall team approach (eg, making a protocol for presenting patient cases to improve “patient case accuracy”; making time during the MDTM to celebrate team successes for “positive team output reflections”), and/or targeting team members (eg, rewarding positive team member behaviors, such as “Respect”, with compliments). Several of the identified factors also have direct practical implications for the organization of MDTMs. For example, team preparation may be supported through the timely distribution of case information prior to meetings, team guidance for inclusion may be facilitated through active chairing practices that encourage contributions from all professional groups, and team decision clarity may be enhanced by explicitly summarizing agreed actions and responsibilities at the end of each case discussion. Furthermore, to strengthen perceived MDTM-effectiveness amongst multidisciplinary team members, teams for instance are recommended to regularly *reflect* upon their successes and to celebrate these, and chairs of teams are advised to regularly help team members remind, and thus *reflect* upon, the personal and individual benefits of participating in the multidisciplinary team and its MDTM. Such reflections were perceived as contributing to perceived MDTM-effectiveness by the study participants. In addition, the findings regarding guided online participation suggest that hybrid and virtual MDTMs require active facilitation to ensure that remotely attending team members remain engaged in discussions and decision-making.

Limitations

Even though this study provides important and novel insights into cross-domain multidisciplinary team effectiveness, several limitations should be acknowledged. First, as a qualitative interview study, this study offers rich, contextualized understanding but does not allow conclusions regarding causality. Accordingly, while team-level factors and team-member factors were identified that have a role in perceived multidisciplinary team effectiveness, the relative contribution of each factor to team effectiveness remains unclear. In this context, it should also be pointed out that the current study did not take modifiers into account. Modifiers, such as team member seniority or difficulties in organizing an MDTM across medical and occupational health disciplines, may influence the relative contribution of specific team factors and/or team member factors to perceived MDTM-effectiveness. Thus, the current study represents an important first step in a new direction, and future researchers may now use the obtained insights to conduct quantitative or mixed-method research on relative contributions of the identified team-level and team-member factors to perceived multidisciplinary team effectiveness. Although the sample was considered adequate for identifying major recurring themes within the available multidisciplinary teams, a larger and more diverse sample may have yielded additional perspectives and further enhanced the transferability of the findings. To date, multidisciplinary teams addressing respiratory work-related diseases still are relatively scarce in the Netherlands, and therefore it was not feasible to achieve a larger set of teams to retrieve participants from for the current study. Accordingly, for now the findings may best be considered exploratory, and interpreted with appropriate caution. The current qualitative study aimed to generate an in-depth understanding of factors that MDTM participants perceive as important for MDTM effectiveness, and future research is needed to further examine, refine, and validate the identified factors across a broader range of multidisciplinary teams and healthcare contexts. This, however, also points to another issue. While practitioners in other countries have indicated to also have adopted multidisciplinary teamwork for addressing respiratory work-related diseases,⁵ such teamwork may also still be scarce in other countries. In the literature, an overview is missing of how widespread multidisciplinary teamwork is for addressing work-related respiratory diseases. The current study thus may lack impact until multidisciplinary teamwork for addressing work-related respiratory diseases will become more widespread in healthcare. At the same time, the current study meets the call for more research in this area,⁵ and may encourage health practitioners and institutions to consider implementing multidisciplinary teams for addressing work-related respiratory diseases. Furthermore, only “thick themes” were fully interpreted and reported, and it cannot be ruled out that interpretation and reporting of thinner themes, meaning themes with few(er) codes, would have added further information value. Yet, in the current study the focus on (only) thick themes contributed clarity, and strengthens the credibility of the research findings. The latter is the case because the reported thick themes involved coded statements from multiple participants, and thus are themes that were broadly reflected upon, and clearly pointed out by, the (small group of) research participants. Finally, the fact that only functional teams were included in the analysis of the current study, which were all residing within an academic hospital setting, may make that the current study provided a rather limited perspective on effectiveness factors of MDTM’s of multidisciplinary teams addressing work-related respiratory diseases. Indeed, more may have been learned in case the study for instance also would have included former team members of the functional team who once deliberately discontinued their team membership, or if the study would have included former members of any discontinued teams on work-related respiratory diseases. For now, it may be concluded that the current study provided insights about factors that may keep existing functional teams up and running in the perspective of their current members, and that the current study encourages additional future research on the topic of perceived MDTM-effectiveness of these teams.

Directions for New Research

There is more research to be conducted on cross-domain multidisciplinary teams addressing respiratory work-related diseases. For instance, there is a need for insights on the contribution of this type of multidisciplinary teams to patient outcomes (eg, patient satisfaction, length of treatment) but also outcomes for the participating team members (eg, self-perceived efficacy or professional growth) and stakeholders such as hospitals, occupational health services, and policy makers (eg, benefit-cost ratio; BCR). Furthermore, the current study examined team factors, and team member factors, that influence perceived MDTM-

effectiveness during the MDTM, but did not address contextual factors that may also have a role in MDTM-effectiveness, such as for instance team financial stability. Stable funding for the activities of the multidisciplinary team is critical for retention of team members, and preventing unrest and cooperation issues within the team. Accordingly, we recommend future researchers to examine contextual factors that may have a role in perceived MDTM-effectiveness, beyond team factors and team member factors. Further, there is a growing need for insights on virtual MDTMs, and specifically strategies maximizing their benefits and overcoming their drawbacks, as is also increasingly recognized in other areas of research on MDTM's within curative care. The current study showed benefits and drawbacks of online participation in an MDTM for team members of the multidisciplinary team addressing work-related respiratory diseases, a next step is to examine practical strategies for optimizing use of the virtual MDTM. Finally, although substantial evidence already exists on team-level factors of MDTMs, researchers are encouraged to further focus on team member or participant perspectives (team member level factors: eg, emotions, cognitions) that may determine their willingness to effectively (continue to) contribute to the multidisciplinary team.

Conclusion

What happens in the upstart of the MDTM (pre-MDTM phase), during the MDTM (patient discussion phase), and in the closing of the MDTM (post-MDTM phase), on the level of the team as a whole but also on the level of the individual team member, matters for the perceived MDTM-effectiveness of multidisciplinary teams addressing respiratory work-related diseases. Beyond this, the current study is among the first to focus on multidisciplinary teams in the realm of work-related respiratory diseases and their MDTM's. Overall, the study showed that for the members of these teams, the team organization, and the quality of team member interactions, are central to perceived effectiveness of the MDTM. The practical study insights may help multidisciplinary teams with members from largely different professional backgrounds in improving and upholding perceived MDTM-effectiveness within the team, while the study insights also have general information value for multidisciplinary teams looking for best practices and may further inspire academic researchers studying the functioning of multidisciplinary teams and their MDTMs.

Abbreviation

MDTM, multidisciplinary team meeting.

Data Sharing Statement

The dataset used and analyzed for the current study is available from the corresponding author on reasonable request.

Ethics Approval and Informed Consent

Ethics approval and consent to participate: The study was conducted according to the principles of the Declaration of Helsinki and in accordance with the Medical Research Involving Human Subjects Act (WMO). A non-WMO declaration was obtained from the Medical Ethics Committee of the Amsterdam University Medical Center (Amsterdam UMC). That is, the Medical Ethics Committee of the Amsterdam UMC reviewed the study (reference number: 2025.0191) and concluded that a comprehensive evaluation was not required, since this study was not subject to the Medical Research Involving Human Subjects Act. Participants provided written informed consent after receiving an information letter with detailed explanation of the study's purpose, procedures, and their rights, including confidentiality and the voluntary nature of participation. All procedures complied with the institutional guidelines of the Amsterdam UMC and adhered to European data protection and privacy regulations (GDPR).

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

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