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CHAPTER 5

Using Talking Mats to support conversations with people who are communication vulnerable: a scoping review

Stans S,
Dalemans R,
de Witte L,
Beurskens A.

Submitted

Abstract

Background

Talking Mats™ is a framework developed to support communication with communication vulnerable people.

Objective

The objective was twofold: to provide an overview of the objectives, target groups and settings for which Talking Mats has been used (Part 1), and an overview of empirical scientific knowledge on the use of Talking Mats (Part 2).

Methods

In this scoping review scientific and grey literature was searched in PubMed, Cinahl, Psycinfo, Google, and Google Scholar. Articles that described characteristics of Talking Mats or its use were included. For Part 2, additional selection criteria were applied to focus on empirical scientific knowledge.

Results

The search yielded 73 publications in Part 1, 12 of which were included in Part 2. Talking Mats was used for functional objectives (e.g. goal setting) and to improve communication and involvement. Part 2 showed that Talking Mats had positive influences on technical communication, effectiveness of conversations, and involvement and decision making in conversations. However, the level of research evidence is limited.

Conclusions

Talking Mats can be used to support conversations between professionals and communication vulnerable people. More research is needed to study the views of people who are communication vulnerable and to study the effects of Talking Mats.

Introduction

Effective communication is essential in healthcare.^{1,2} However, conversations between communication vulnerable people and professionals are problematic, and the communicative difficulties of communication vulnerable people lead to major challenges in achieving self-advocacy and participation in healthcare decision making.^{3,4} Different definitions of communication vulnerable people have been proposed in the literature.^{5,6} We define them as those who struggle to communicate in a particular environment due to a medical condition. They experience difficulties in expressing their needs and/or in understanding information. Communication may be their primary disability, or their communication issues may be secondary to another disability. Limitations in any of the several areas of functioning can lead to someone being classified as communication vulnerable; for example, those with sensory, emotional, physical and cognitive difficulties.⁷

Augmentative and alternative communication (AAC) tools can enable communication vulnerable people to express themselves and understand others, supporting self-advocacy. Such tools can also support professionals in understanding clients and enabling a partnership. This paper uses the broad definition of AAC by Clarke and Bloch,⁸ which incorporates different forms of AAC: formal communication aid systems (e.g. voice output communication aids), conventional semiotic systems (e.g. handwriting), as well as unaided resources (e.g. gesture) and commonplace objects (e.g. maps or letters).

Talking Mats is an AAC tool that cannot be classed under a specific type of AAC, but seems to have the potential to support a wide range of communication vulnerable people. Talking Mats is a visual framework, which has been developed in the United Kingdom. Its main features are that it visualises views (feelings, opinions) and choices in a conversation, and structures the conversation.⁹ The process of using Talking Mats is as follows (see figure 5.1):

1. Central topic symbol: The two persons having the conversation decide on a topic they want to talk about and place a symbol representing this topic at the bottom of the mat (for example, “activities you want to learn”).
2. Option symbols: A set of option symbols related to the central topic is available (for example, “cooking”, “gardening”, and “biking”). The professional/caregiver presents option symbols one by one to the person who is communication vulnerable asking them how they feel or think about this option.
3. Top scale symbols: The top scale symbols indicate the person’s feeling or opinion (for example, “positive”, “don’t know”, and “negative”). The communication vulnerable person can indicate their feelings or opinions about each option by placing the option symbol under the top scale. The professional/caregiver then asks questions to confirm this placement. The person who is communication vulnerable is always meant to be in control by indicating the placement of the symbols through verbal cues, pointing, or eye movement.¹⁰
4. Visual summary: The professional/caregiver recapitulates the discussion and asks for more confirmation regarding the feelings/opinions expressed by the person. The mat presents a visual summary of the conversation (the mats are often photographed at the end of the conversation to preserve the content of the conversation).¹¹

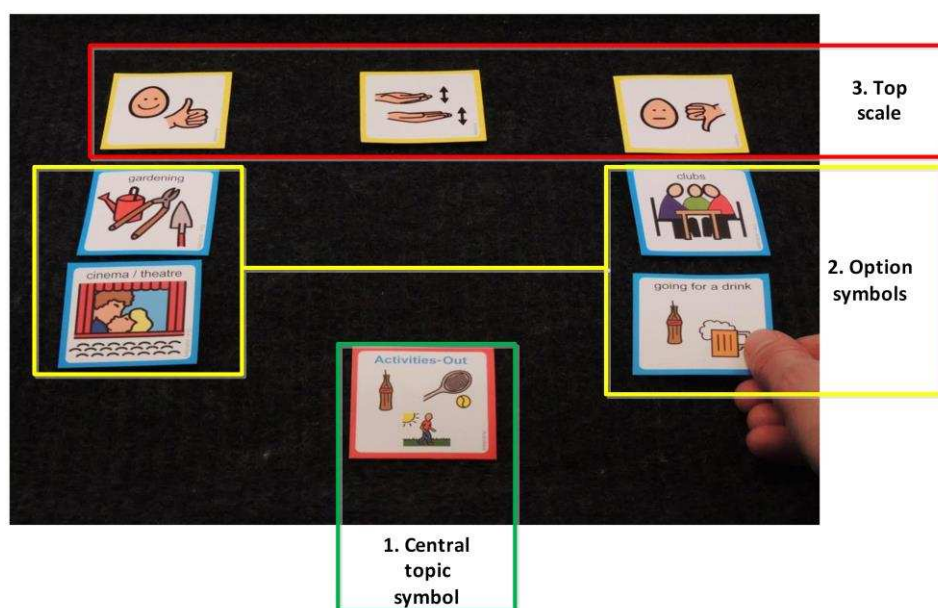


Figure 5.1. Example of a completed Talking Mats. The materials used originate from Talking Mats Limited organisation.

Talking Mats has been variously characterised as a low-technology tool,¹² a visual framework,¹³ a procedure,⁹ a technique,¹⁴ a resource,¹⁵ or a method.¹⁶ It has been used with different target groups, including people with dementia but also children. The literature is also inconsistent about the objectives for which one should use Talking Mats, for example for a casual conversation or for therapy goal setting.¹⁷⁻¹⁹ Furthermore, there is no review available about the evidence for the effects of Talking Mats on different target groups. While Talking Mats seems to be used widely in the UK, an overview of its objectives, the target groups and settings for which it can be used, and its effectiveness is lacking.

Talking Mats is a different form of AAC than conventional AAC tools, as it both uses visualisation and provides a structure for a conversation. Studying the characteristics and use of Talking Mats and evidence for its effectiveness is therefore valuable for both research into AAC and for professionals and clients in healthcare. An overview of such knowledge about Talking Mats is needed to provide healthcare professionals with information about whether, when, and how they can use Talking Mats. The purpose of this scoping review is twofold: to provide an overview of the objectives, settings, and target groups in which Talking Mats has been used (Part 1), and an overview of the empirical scientific knowledge about the use of Talking Mats (Part 2).

Method

This review was guided by the methodological framework for scoping reviews by Arksey and O'Malley.²⁰ Scoping reviews are suitable for studying the current state of knowledge on a topic, in order to comprehensively and systematically map the relevant literature, and identify key concepts and gaps in research²¹. The present literature review included two parts:

Part 1: An overview of the objectives, settings and target groups for which Talking Mats has been used, for which we included peer reviewed and grey literature.

Part 2: An overview of empirical scientific knowledge about the use of Talking Mats within the objectives identified in Part 1. For this part, only peer-reviewed scientific literature was included.

The methods used in this scoping review are described below according to the stages of the Arksey and O'Malley framework, making a distinction between Parts 1 and 2.

Identifying relevant studies

A combination of search methods was used, including (a) the scientific databases PubMed, Cinahl, and Psychinfo, (b) the electronic search engine Google (including Google Scholar), (c) a publication list on the "Talking Mats Limited" website (the organisation that developed Talking Mats).²² The search term "Talking Mats" was used, restricted to title and abstract in the scientific databases, and as a free text word combination in Google (and Google Scholar). The search was restricted to materials published in English, Dutch, and German (the foreign languages with which the researchers are familiar) and published between 1998 and 2016 (Talking Mats appeared in the literature for the first time in 1998). The search using Google and Google Scholar was continued until saturation (no new articles after 100 hits). Duplicates were immediately ignored. The search was used for both Part 1 and Part 2, and was completed in December 2016.

Study Selection

During the study selection for Part 1, one researcher (SS) identified publications in which Talking Mats was mentioned in the title or abstract. The selected articles were then read and screened independently at full-text level by two researchers (SS and RD). Full-text articles were included if characteristics of Talking Mats were described, and/or if Talking Mats was used as an intervention in a study. Articles were excluded at full-text level if Talking Mats was merely mentioned, without being described, used, or studied. Due to the broad scope of Part 1, we imposed no restrictions on research type during the selection phases. After the inclusion of full texts, the researchers screened the reference lists of the selected articles for additional relevant publications. When necessary, two other researchers (AB & LD) were involved in the consensus process during the selection.

To focus specifically on scientific literature in Part 2, additional selection criteria were applied to the full-text publications included in Part 1.

These selection criteria were: publication in a peer-reviewed journal, empirical study, and evaluation of the use of Talking Mats described in the study aims. The researchers used no restriction for research type, as scoping reviews are suitable for studying broad topics, and the inclusion of information in scoping reviews is not limited by the methodological quality of the research.^{20,21} Two researchers (SS, RD) independently performed the selection process, and differences of opinion were discussed until consensus was reached. When necessary, two other researchers (AB and LD) were involved in the consensus process.

Charting the data and collating, summarising and reporting the results

For part 1, one researcher (SS) charted the data by reading and extracting descriptive data (i.e. year, author, country, target group, setting). Thereafter, an analysis focussing on the objectives of Talking Mats was performed by two researchers (SS, RD), following the principles of conventional content analysis.²³ First, text related to the objectives of the use of Talking Mats was highlighted in the publications. Second, these text fragments were given codes describing the type of objective they described. Third, these codes were arranged in overarching themes relating to the objectives of Talking Mats.

For part 2, we extracted from each publication the author, year, country, aim of the study, participants and setting, target population and settings, objectives of Talking Mats, methods, and results. The results of the studies were then described, linked to the objectives of Talking Mats identified in Part 1.

Furthermore, an overview was made of quality-related elements that had (+) or had not (-) been included in the publications. To achieve this for the quantitative studies, we used a list based on a quality measure for scoping reviews developed by Bastawrous and colleagues²⁴. For the qualitative studies, we used a list based on the Critical Appraisal Skills Programme's (CASP) tool.²⁵ For mixed methods studies, both lists were used. One researcher (SS) applied these lists, and checked unclear cases with a second researcher (RD).

Results

Seventy-three articles were included in Part 1. After the additional selection criteria had been applied, 12 publications were included in Part 2. See figure 5.2 for a detailed summary of the abstract, full text, and inclusion numbers.

About Talking Mats

Talking Mats is a commercially available tool. It was originally developed by a group of speech and language pathology researchers to support people with cerebral palsy in the UK.²⁶ Based on positive experiences, it has since also been used in research and practice for many different target groups.^{27,28} The literature indicates that Talking Mats provides a structure in which topics/options are broken down into small units or chunks. Such a structure can enable a person to consider topics or options in relation to each other, focusing solely on the essential words/topics. This could also reduce cognitive load, help people process concepts more easily, reduce distractibility, and reduce memory demands.^{3,9,18,29} Talking Mats can be applied to discuss a specific topic, and is intended to be a supplement to a person's individual communication skills and strategies.¹⁸

Talking Mats has been described as a flexible communication framework, which should be used as a dynamic process that changes and reflects the person's opinions at a specific time.³⁰ According to published descriptions, Talking Mats does not replace verbal, non-verbal, or other AAC-supported communication, but aims to support these communication modes in conversations by using a picture-based framework.¹⁶ The literature indicates that Talking Mats can encourage a person to use different channels for communication: auditory (talking about views), as well as tactile (placing symbols on a mat) and visual (symbols for the theme, the options, and choices).²⁹ The main feature of Talking Mats is that it visualises views (feelings, opinions) and choices in a conversation, also described as "building a picture of your views".⁹ A visual summary of the choices made as a result of the conversation is then displayed on the mat.¹¹

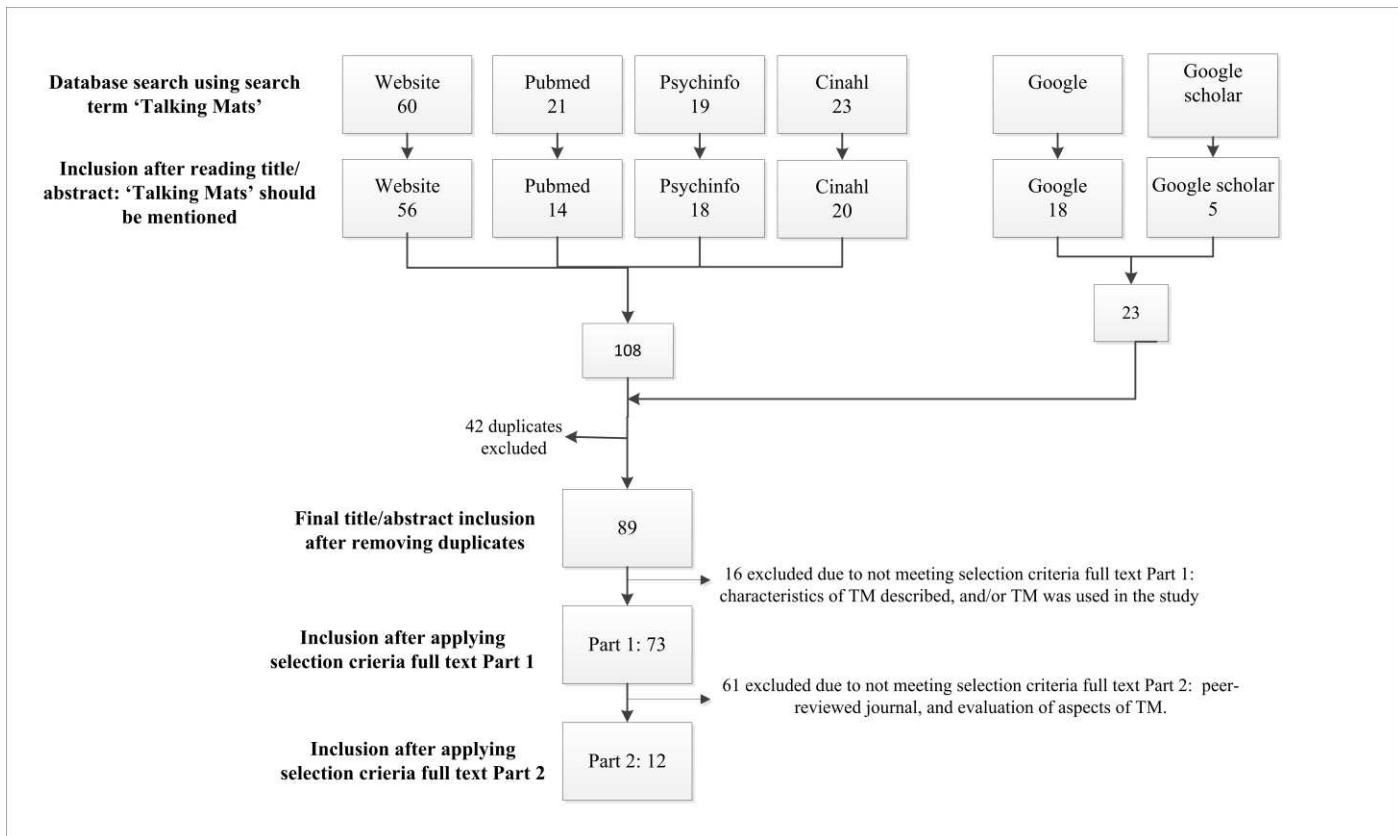


Figure 5.2 Number of studies included in the review during each phase.

Part 1: Overview of the objectives, settings and target groups for which Talking Mats has been used

Part 1 included publications from several countries: the UK (62 publications), Sweden (four publications), South Africa (four publications), Norway (1 publication), Malta (1 publication), and the Netherlands (1 publication). Included were peer-reviewed journal articles, research reports, book chapters, website reports, and conference abstracts. The objectives for which Talking Mats has been used, as well as an overview of settings and target groups are described below. A full overview of the details of the included articles can be found in table 5.1.

Objectives

Three main themes emerged regarding the objectives of using Talking Mats: facilitating communication, facilitating involvement, and functional use. Figure 5.3 provides an overview of these themes and subthemes.

Objectives of Talking Mats: themes						
Facilitating Communication	Facilitating expression		Facilitating interaction		Facilitating thinking and understanding	
	Being involved					
Functional use of Talking Mats	Goal setting	Activity choices	Research & projects	Diagnostic process	Social processes	Conflicts and differences of opinions

Figure 5.3 Visual presentation of the results of the thematic analysis of the objectives of Talking Mats.

Facilitating communication

Within the theme of “facilitating communication”, the following subthemes were identified: facilitating expression, facilitating interaction, and facilitating thinking and understanding by structuring conversations into small units.^{3,16,31} The subtheme of facilitating expression included expressing opinions, thoughts, or feelings.^{3,16,31}

Facilitating involvement

The “facilitating involvement” theme included facilitating involvement in interactions with individuals or groups, and facilitating involvement in decision-making.^{30,32,33}

Functional use of Talking Mats

Six subthemes were identified with regard to “functional use of Talking Mats”:

- Goal setting: enabling people to identify, set, and review their own goals³⁴.
- Enabling people to make activity choices,^{27,35} including exploring which activities people want to do on a daily basis.^{27,35}
- Supporting people’s participation in research and projects.^{36,37} For example, Talking Mats could support the process of obtaining consent for research. Talking Mats could also support an interview procedure or project meeting, or make standard questionnaire items accessible to communication vulnerable people.^{36,37}
- Facilitating a diagnostic process.³⁸ For example, Talking Mats was used to assess anxiety in children before an operation.³⁸
- Improving social processes.^{27,29} For example Talking Mats could help people get to know someone or develop and maintain relationships.^{27,29}
- Resolving conflicts and differences of opinion.^{9,39}

Settings and target groups

The use of Talking Mats was described in a wide variety of settings, such as home environments, institutional care, rehabilitation, schools, and prisons. Target groups for which Talking Mats was used were:

- People with specific communication difficulties (17 publications);
- People with learning disabilities (19 publications);
- people with dementia (12 publications);
- Older people who are frail (2 publications);
- People with Huntington’s disease (3 publications);

- Children with and without communication impairments (7 publications);
- “Various target groups”, i.e. describing research in different settings with target groups not specifically mentioned, or not part of the above target groups (13 publications).

Related to the target groups for which Talking Mats can be used are the skills required to use it. The following skills were reported:

- Physical skills to indicate the placement of the symbols, such as hand pointing or eye movements.^{29,39}
- Sufficient vision to see the picture symbols.^{9,39,40}
- Cognitive skills to understand the symbols.^{39,41} and to understand the verbal instructions containing two or three information-carrying words.^{9,28,29}
- Expressive skills to indicate a reliable yes/no (verbal or non-verbal).^{9,39}

Talking Mats can be tailored to the specific needs of target groups. The types and number of symbols, and the size, colour, and texture of the symbols and mat can be adjusted depending on the person’s communication challenges. For example, one can use a range of two to five top scale symbols (e.g. like/dislike), depending on the person’s cognitive ability. In most cases, Picture Communication Symbols (PCS™), Talking Mats Communication Symbols,²² Sclera’s pictograms,⁴² or photographs are used for the symbols. Some symbol sets have been developed to reflect the World Health Organization’s International Classification of Functioning, Disability and Health (ICF) model, describing 9 different neutral domains of activity and participation.^{30,43,44}

Talking Mats is a partner-assisted communication framework. Although the intention of Talking Mats is to put the person who is communication vulnerable in control as much as possible, the communication partner has considerable influence.¹⁴ The communication partner preselects the conversation topics and therefore has control over which items/topics are visually presented, and thus which topics are communicated about.¹⁴ Furthermore, the quality of the conversation when using Talking Mats, e.g. the effects on facilitating communication and facilitating involvement, depends greatly on the support of the communication partner.¹⁷ Factors that could possibly impact the quality of using Talking Mats are: the conversation partners’ questioning style; their prompting or making assumptions;¹⁴ their preparation of the topics and symbols;⁴⁵ and their awareness of the symbols’ abstract nature.^{11,46} Ferm and colleagues¹⁷ described that Talking Mats presupposes a speaking partner who is open-minded and respectful and who knows how to use Talking Mats.

Part 2: Overview of the research evidence on the effects of using Talking Mats

Twelve articles reported research evidence for Talking Mats. The details of these articles are presented in table 5.2. We found no systematic reviews, randomized controlled trials or cohort studies. There were seven cross-over studies in which the patients had a conversation without Talking Mats and a conversation with Talking Mats (numbers of patients ranging from 4 to 48) and five descriptive case series (numbers of patients ranging from 9 to 12). One of the case series was a qualitative study, another used mixed methods. Six of the 12 studies were carried out by researchers involved in Talking Mats Limited organization.

The studies in Part two focused on the target groups: people with aphasia, learning disabilities, dementia or Huntington’s disease, and children. No studies in Part 2 examined the skills required to use Talking Mats which were discussed in Part 1. Tables 5.3 and 5.4 present an overview of the quality elements identified in the included publications.

The qualitative studies often did not report the qualitative methods and data analyses in detail (table 5.3), nor how the relationship between researcher and participants may have influenced the qualitative data gathering and analysis. In the quantitative studies, the design was often not described (table 5.4). Moreover, in several studies the sample size was not justified and a convenience sample was mostly used. The results are presented for each objective of Talking Mats: facilitating communication, facilitating involvement, and functional use of Talking Mats. Some studies reported on multiple objectives and are therefore described under several headings.

Facilitating communication

Ten publications reported on facilitating communication. They all reported results in favour of using Talking Mats. Six of these studies used quantitative variables (based on observations) clustered in coding frameworks.^{3,17,18,40,45,47} These six studies used three slightly different coding frameworks (see box 1). Some of the elements of the coding frameworks were: participants' understanding of the topic of discussion, participants' engagement with each other, participants' confidence, and researcher's understanding of persons' views.⁴⁷ The results show that the scores on these coding frameworks were higher when using Talking Mats (compared to usual conversation, structured conversation, or unstructured conversation) for young people with a learning disability,^{3,40} people with aphasia,^{45,47} and people with Huntington's disease.^{17,18}

Box 1. Details about the coding frameworks

The first coding framework that Cameron and Murphy used in their 2000 and 2002 studies included the following concepts: participants' understanding of topics, participants' confidence in manipulating symbols, confirmation of the researchers' interpretation, and satisfaction about each completed mat^{40,45}. The results of the 2000 study showed that the scores on the coding framework were higher when using Talking Mats compared to usual communication methods for people with aphasia⁴⁵. The study by Cameron and colleagues reported the use of the coding framework, but reported no quantitative results on this framework⁴⁰.

In Murphy and Cameron's 2008 study, they adjusted the coding framework by adding the concept of engagement, and changed "confirmation of the researchers' interpretation" to "interviewer's understanding of participant's views". This study, with people with a learning disability, found higher scores on the coding framework when using Talking Mats compared to using usual communication methods³.

These coding frameworks were further developed into a third coding framework, the effectiveness framework of functional communication. This framework contained the following concepts: participants' understanding of the topic of discussion; participants' engagement with each other; participants' confidence; and researcher's understanding of the person's views. In studies of people with dementia,⁴⁷ and people with Huntington's disease^{17,18} the researchers reported that the scores on the effectiveness framework were higher when using Talking Mats than those for usual communication.

Within the objective of facilitating communication, the use of Talking Mats was also studied with regard to more technical aspects of communication, based on researcher observations.^{3,17,33,47} Three studies focussing on these technical aspects reported positive results when using Talking Mats on the duration of the conversation, the number of topics, task behaviour, and perseveration. These results were identified for people with learning disabilities, dementia, and Huntington's disease.

One study focussing on the use of language by people with dementia did not find a difference when using Talking Mats. The details of the results are as follows:

- Duration of conversation: In studies of people with dementia, Huntington's disease and learning disabilities, the conversation lasted longer when using Talking Mats compared to an unstructured or usual conversation.^{3,17,47}
For example, in the study of people with Huntington's disease, the conversations with Talking Mats had a mean duration of 28.31 min., compared to 3.67 min. for an unstructured conversation, and 15.19 min. for a structured conversation.¹⁷
- Number of topics: Significantly more topics were discussed in conversations with Talking Mats than in usual communication, as was observed in a study of persons with a learning disability.³
- On-task behaviour (engagement of the participant with the conversation): A study of people with a learning disability reported more on-task behaviour when using Talking Mats than with usual communication.³ In a study of people with dementia, significantly more on-task behaviour was observed by people with moderate and late-stage dementia, compared to a structured conversation. By contrast, the on-task behaviour was not significantly greater among people with moderate dementia, when compared to an unstructured conversation.⁴⁷
- Perseveration: In a study of people with dementia, less perseveration of the persons with dementia was observed when using Talking Mats compared to structured and unstructured conversations.⁴⁷
- Use of language: In conversations between people with Alzheimer's disease and their family members, the use of language did not differ significantly between conversations with and without Talking Mats. The use of language was studied by observing seven typical language aspects of persons with Alzheimer's disease.³³

The study by Hallberg and colleagues was a mixed-methods study, and reported some qualitative results when using Talking Mats in a discussion group. The people with Huntington's disease described favourable experiences with regard to ease of use, remembering, talking, and controlling the discussion. Two participants had difficulty handling the photos. The discussion leader described that Talking Mats had helped to stay on topic. However, the Talking Mats discussion was experienced as less spontaneous, more time-consuming, and needing more preparation than the discussion without Talking Mats. The discussion without Talking Mats was experienced as more self-sustaining, more natural, and less controlled.¹⁸

Facilitating involvement

Two studies reported results about the objective of facilitating involvement. These studies on involvement showed positive results of using Talking Mats for people with dementia. In the study by Murphy and Oliver¹⁹ the "participant involvement questionnaire" was used to explore the influence of using Talking Mats. The results showed that persons with dementia and their communication partners reported more feelings of involvement when using Talking Mats compared to usual communication. Communication partners also felt significantly more satisfied with the discussion using Talking Mats.¹⁹ The study by Reitz and Dalemans focussed on shared decisions between people with Alzheimer's disease and their family members. They reported that the scores on the OPTION scale were significantly higher when using Talking Mats, compared to conversations without Talking Mats.³³ This study also reported positive experiences related to ease of use, finding out more about the conversation partners' thoughts, and making decisions. Two of the six participants were not sure about the effect of Talking Mats.³³

Functional use of Talking Mats

Three studies reported results about functional objectives. These studies focussed on activity choices, goal setting and diagnostic processes, and reported descriptive results on the use of Talking Mats. One publication studied the influence of repeatedly using Talking Mats on making activity choices.

In this study of young people with learning disabilities, Talking Mats was used twice to elicit views about photographed activities, and 92% of the photographs were placed on the same Talking Mats symbol on the second occasion.³⁵ Regarding the objective of goal setting, a study used Talking Mats to investigate both clients' and their assigned rehabilitation professionals' perceptions of the importance of ICF activities and participation domains for inclusion in their rehabilitation programme. The results showed that there were no statistically significant differences in ratings of the importance of ICF domains between patients and professionals when using Talking Mats.³⁴ One study focussed on using Talking Mats in a diagnostic process,³⁸ and included an initial validation with Talking Mats as part of the measurement instrument. The results showed that children older than seven years were able to use a modified anxiety instrument (to measure anxiety before surgery) with the help of Talking Mats.³⁸

To conclude, almost all studies using quantitative measurements reported positive outcomes when using Talking Mats, compared to conversations without Talking Mats, though the Dalemans study reported no difference in language use. No studies reported negative outcomes when using Talking Mats. Several functional objectives identified in Part 1 have not been studied in scientific research, namely supporting the participation of people in research and projects, improving social processes, and resolving conflicts and differences of opinions. Furthermore, none of the studies in Part 2 examined the skills required to use Talking Mats as reported in Part 1.

Discussion

This scoping review included 73 publications about Talking Mats in Part 1, and 12 publications describing the empirical scientific knowledge about Talking Mats in Part 2. The results reported in Part 1 highlight the use of Talking Mats for a variety of objectives in different settings and for people with different communication difficulties, such as learning disabilities, dementia and Huntington's disease, older people who are frail, and children with and without communication impairments. The studies discussed in Part 2, mainly descriptive, cross-over and case studies, highlight important empirical findings with regard to the use of Talking Mats. These empirical studies reported that Talking Mats could have a positive influence on technical communication aspects, facilitating communication, and involvement in communication and decision making. However, the included studies were small-scale, mainly descriptive studies with a limited amount of research per target group.

Using Talking Mats for specific target groups

Part 1 of this review reveals that the strength of Talking Mats is its flexibility and use for different target groups. The use of AAC tools is often limited to a specific target group, with specific physical or cognitive capabilities and/or limitations, requiring person-centred consultation from speech-language pathologists or occupational therapists. The literature does not show whether advice from such specialists is needed for Talking Mats. The question is whether Talking Mats could be used as a standard framework for visualising conversations by communication vulnerable people in healthcare. Although most of the research findings were positive, Bunning⁴⁸ warns that the value of Talking Mats can depend on the individual participants' communicative ability. There is a lack of empirical evidence about the requirements or skills that people should have in order to use Talking Mats. Available information about these requirements seems to come from researchers' insights and experiences (Part 1), rather than from scientific research (Part 2). Research into these requirements could help professionals determine for which people they can use Talking Mats.

Objectives of Talking Mats

The objectives identified in Part 1 were only partly evaluated in the empirical studies in Part 2. For example, the outcome measures in Part 2 focussed mainly on technical aspects and not on expression and thinking and understanding. The only element of the effectiveness framework which links to this was “participants' understanding of the topic of discussion”. However, this element was only observed, and the persons who were communication vulnerable were not asked about this. The second objective, *facilitating involvement*, has been used as an outcome measure in only two studies in Part 2.^{19,33} With regard to the functional use of Talking Mats, only one study in Part 2 reported on the validity of using Talking Mats (with another questionnaire) in a diagnostic process.³⁸ None of the studies in part 2 measured the outcomes of using Talking Mats in research or projects, or for the purpose of improving social processes and discussing conflicts & differences of opinions. More research is needed with regard to the objectives of Talking Mats, specifically focussing on user experiences.

Partner-assisted AAC

Several publications in Part 1 emphasised that Talking Mats is a partner-assisted communication framework. The person who is communication vulnerable may not have enough influence on the options (subtopics) that are discussed. Also, some persons might be confused about what the available symbols are supposed to represent. These issues may interfere with the reliability and trustworthiness of Talking Mats, and are important issues for professionals to be aware of. To enhance the reliability and trustworthiness, the same communication partner could repeat the interview, or other persons could be asked to validate the information.⁴⁹ When communicating with persons with severe cognitive disabilities, the communication partner should, in addition to using Talking Mats, use other communication strategies, such as adjusting the pace of the conversation, paraphrasing, and reading non-verbal behaviour. Professionals and other communication partners should be aware of their own communication skills and how these impact on the use of Talking Mats. Talking Mats Limited organisation recommends attending a training course in the use of Talking Mats. The literature does not describe in detail how people have been taught to use Talking Mats. In some articles the communication partner received formal training or instructions,^{18,33,50} while in others, the communication partners were researchers with experience using Talking Mats.¹⁷ The research in Part 2 did not consider the influence of the partners when using AAC. Future studies should incorporate this in their research about Talking Mats.

Empirical evidence of Talking Mats

Part 2 of this scoping review reveals that most of the evidence about Talking Mats points to positive results. Except for the Hallberg study,¹⁸ these studies report no limitations of Talking Mats. In the Hallberg study, the discussion group leader thought that discussions without Talking Mats were more self-sustaining, felt more natural and less controlled, and that Talking Mats was time-consuming in use and in preparation.¹⁸

The results of Part 2 confirm that people with an intellectual disability, dementia, or Huntington's disease did take longer to express themselves when using Talking Mats in a conversation than they did in unstructured conversations.^{3,17,47} According to Ferm and colleagues,¹⁷ visually supported communication may take longer because communication partners use fewer words, focus on important information, and speak more slowly. This slower pace could be seen as a disadvantage, since time in healthcare is expensive and limited.

However, it can also be viewed as a benefit, as it enabled people who have difficulties communicating to interact with others for significantly longer periods of time.³ Moreover, persons who are communication vulnerable often benefit from slower communication.¹⁷

This scoping review does not provide insights into the elements of Talking Mats that account for the positive findings. Talking Mats could be compared with other AAC tools aiming at visualisation, such as graphic topic setters, communication boards, pictographic books or picture pointing boards.⁵¹ Both quantitative research using validated observation lists and qualitative research focussing on the experiences of communication vulnerable people would provide valuable information on the effective elements of Talking Mats. Information is also needed about effective implementation strategies for using Talking Mats in daily life/practice for communication vulnerable people.

Part 2 of this review included disparate studies about Talking Mats. The qualitative studies often lacked an in-depth analysis of the experiences of persons using Talking Mats. The included quantitative publications were descriptive or pilot studies, using different outcome measures. Some empirical studies in this review reported to have investigated the effects of Talking Mats using the “effectiveness framework of functional communication”.^{17,47} However, no data about the content or construct validity of this framework were provided, which makes it difficult for professionals and researchers to assess the validity of this framework.

Talking Mats was developed in the UK, and we saw that almost all research about Talking Mats has also been done in the UK. Much of this research has been supported by Talking Mats Limited and has been published by the same authors. There is a need for research done by other research groups and in other countries.

Strengths and limitations

Strengths of this review include the use of the well-established Arksey and O’Malley framework²⁰ to systematically conduct the scoping review, and the use of both scientific databases and an open search in Google. However, despite the rigorous search process, relevant publications could have been missed, particularly in the grey literature. Furthermore, the overview of the countries in which Talking Mats was used might not be complete, since some data sources did not specifically report where the study was performed. Describing the methodological quality of studies in this scoping review was a challenge, since all types of study design were included. We used two rather generic lists to get some idea of the quality, but we did not perform a thorough quality assessment using design-specific criteria lists.

However, our global assessment was enough to get an overview of the empirical scientific knowledge, which was the aim of this study.

Conclusion

Talking Mats can be used to support communication and involvement and for functional objectives during the healthcare process. The empirical studies showed that Talking Mats had a positive influence on several communication aspects and involvement in conversations for people with aphasia, learning disabilities, dementia and Huntington’s disease. This supports the use of Talking Mats in conversations between communication vulnerable people and professionals or caregivers.

However, the body of scientific knowledge about Talking Mats is limited, due to the designs of the studies and the limited number of studies per target group. Establishing evidence-based recommendations for using Talking Mats in daily practice requires more scientific knowledge.

The focus for future research should be on rigorous research involving in-depth qualitative user-reported research, feasibility of Talking Mats, criteria for using Talking Mats, and effectiveness of Talking Mats.

End notes

1. Talking Mats is the registered trademark of the Talking Mats Centre, Stirling University Innovation Park, Stirling FK9 4NF, Scotland. See www.talkingmats.com.

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