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SERVICE EVALUATION

Use of the Therapy Outcome Measure in community intermediate care: results of a service evaluation

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Abstract

Background/Aims Outcome measures are essential in clinical practice to demonstrate patient improvement and secure funding for services. The purpose of this service evaluation was to explore levels of patient improvement as measured by the Therapy Outcome Measure in a community intermediate care team.

Methods A total of 232 patients who completed a course of therapy treatment with a community intermediate care team between December 2021 and February 2023 were scored on admission and at discharge using the Therapy Outcome Measure. Changes in scores from admission to discharge were summarised as percentages or median (interquartile range). The authors assessed if receiving input from intermediate care support workers had an impact on the improvement. Additionally, the authors explored if there was a relationship between change in scores and the number of therapy sessions.

Results Across the four Therapy Outcome Measure domains (impairment, activity, participation and wellbeing) the proportion of patients exhibiting a 0.5-point or more increase in scores ranged between 43.5% and 52.2%. Between 0.9% and 3% of patients showed a deterioration in scores and between 47.0% and 54.3% experienced no change in score. Regarding intermediate care support worker input vs no intermediate care support worker input, the proportion of patients that improved by 0.5 points or more was significantly different between the two groups in the impairment domain (67.2% and 43.9% respectively, P=0.003). There were very weak correlations found between the number of therapy sessions and the level of improvement.

Conclusions The Therapy Outcome Measure may be a useful tool for community teams to assess patient outcome measures. More studies are required in other community therapy teams to allow for comparison between services.

Implications for practice The results of this service evaluation may assist allied health professionals in selecting an appropriate outcome measure to use with their patients and the data may also be useful for benchmarking purposes.

Key words: Community intermediate care; Community occupational therapy; Community physiotherapy; Rehabilitation; Service evaluation; Therapy Outcome Measure

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Introduction

Using outcome measures in clinical practice is necessary to assess a patient's response to treatment, evidence effective service delivery and demonstrate evidence-based practice (Copeland, 2009; NHS England, 2016). Additionally, outcome measures have a role in securing funding for rehabilitation services (World Health Organization, 2024).

The Therapy Outcome Measure (TOM) (Enderby et al, 2006; Enderby and John, 2015) is an outcome measure based on the International Classification of Disability and Function (World Health Organization, 2001). While initially designed for use by speech and language therapists, further scales were developed for use by physiotherapists, occupational therapists, rehabilitation nurses and hearing therapists (Enderby and John, 2015). Clinicians score patients from 0 to 5 in four different domains: impairment, activity, participation and wellbeing, with 0 being the more severe end of the scale and 5 representing normal for the patient (Enderby et al, 2006). Clinicians can also score patients with half points if the patient

appears slightly better or worse than the adapted scale descriptor (Enderby et al, 2006). Therefore, each domain of the TOM is scored using an 11-point ordinal scale. Initially, a core scale was used and then adapted scales were developed by clinician specialists to enhance both reliability and decision making (Enderby and John, 2015). There are currently over 60 adapted TOM scales in use; clinicians will select a scale to score the patient that best matches their pathology (Enderby and John, 2019).

The TOM has been shown to be a valid outcome measure to use in intermediate care in a large-scale secondary analysis (Ariss et al, 2015). In addition, reliability studies have been conducted with physiotherapists, occupational therapists and rehabilitation nurses working across different disciplines and overall showed moderate to high inter-rater reliability (Enderby et al, 2006). The TOM has been used by other community therapy teams, including a community rehabilitation team and adult social care occupational therapy team (Caldwell et al, 2015; Davenport, 2021), and has been noted to be easy to use, with levels of patient improvement as measured by the TOM being high to very high.

This article discusses the results from a service evaluation conducted in a community intermediate care team to examine patient outcomes using the TOM. Because of the huge heterogeneity of intermediate care teams (Ariss et al, 2015), outcomes may differ depending on team composition, patient admission criteria for services and differing treatment waiting times.

Aims

The primary aim of this service evaluation was to determine the level of patient improvement within patients referred to a community intermediate care team as measured by the TOM. Secondary aims were to assess if there was any correlation between number of therapy sessions received or intermediate care support worker input, and level of improvement as measured by the TOM.

Methods

This service evaluation took place between December 2021 and February 2023 at St Helens, Merseyside, England.

Ethical approval

Approval from an external ethics committee was not required for this service evaluation (Royal College of Occupational Therapists, 2016; Chartered Society of Physiotherapy, 2018). However, as per clinical governance guidelines for Mersey and West Lancashire Teaching Hospitals NHS Trust, the service evaluation was registered and approved with the Quality Improvement and Clinical Audit Service (SE 263 21 22 – approved 12 January 2022). Approval was gained from the Mersey and West Lancashire Information Governance team and St Helens Council for publication.

Background

The St Helens community intermediate care team is a team consisting of NHS physiotherapists, occupational therapists and therapy assistants. The team provides rehabilitation to patients within their own homes or residential/nursing facilities. Referrals are accepted for patients over the age of 18 years, who are registered with a St Helens general practitioner (GP) and who would benefit from participating in an individualised exercise programme to help them to improve their functional independence. The team is integrated with St Helens Council and has access to intermediate care support workers who are trained to deliver an individualised exercise programme, which is prescribed by the assessing community intermediate care team therapist or therapy assistant.

Whether the patient received intermediate care support worker input or not was decided by the clinician during assessment, as patients with clinically complex needs are not suitable for delegation to support workers (Nancarrow, 2004). Where intermediate care support worker input was not received, therapy was conducted exclusively by the NHS therapy team. Because of the high workload of the therapy staff, this was likely to be no more than

once a week but could be less than this dependent on patient need. The intensity of therapy input (either with or without intermediate care support workers) was a joint decision made by the clinician and the patient, dependent on the patient's needs.

Before the start of the service evaluation, each team member practised rating the TOM on previous case studies in team meetings as recommended by Enderby et al (2006). In addition, to further secure inter-rater reliability, during the study period, monthly meetings were conducted where the team would score and discuss additional case studies. Any new starters to the team during the study period rated previous case studies before using the TOM on patients. Only staff graded band 4 (a grade according to their level of experience and the qualifications they hold, starting at band 2) or above scored patients using the TOM, as other bands do not complete initial assessments or discharges within the team.

Participants

All patients (n=232) who completed a full course of therapy treatment with a community intermediate care team between December 2021 and February 2023 were scored on admission to the service and at discharge using the TOM.

Data collection

On initial assessment, staff scored each patient using the multifactorial TOM scale, as patients had multiple pathologies. This score was documented in the electronic patient assessment. On discharge, a second score was given; the member of staff completing the discharge would then enter this data into a Microsoft Excel spreadsheet, which contained information on the patient's main reason for referral, admission TOM score, discharge TOM score, duration of therapy intervention, number of therapy sessions, whether the patient had intermediate care support worker input and if so, how often. The spreadsheet was password protected and stored on a group drive that only members of the community intermediate care team could access.

Before data collection, the team met to discuss the most common reasons for referral. Patients are often referred to the community team because of a recent event such as hospital admission or for a combination of reasons that are multifactorial in nature, rather than for a particular pathology or condition. For these patients, the team defined a range of referral categories:

- General chronic deterioration: those experiencing a general decline in functional ability with no specific aetiology
- Falls: those referred following a fall without specific injury
- Deterioration post hospital admission: those referred following a deterioration in functional ability following a hospital admission without surgery
- Deterioration post general surgery: those referred following any deterioration post surgery
- Deterioration post-acute illness: those referred following an episode of acute illness that did not require hospital admission.

As the service evaluation was not approved until January 2022, for December 2021 up until approval on 12 January 2022, data were retrospectively collected.

Data analysis

The data were anonymously analysed by an independent medical statistician. Continuous variables are summarised by median (interquartile range [IQR]) and categorical variables by count. TOM scores were analysed for each domain separately to assess whether there was any improvement, no change or a deterioration in score, as it is the change in scores within each domain, rather than the total score, that should be used to assess improvement (Enderby and John, 2015). An improvement in TOM score was classed as an increase of 0.5 points or more in any domain, as this has been described as a clinically significant improvement (Enderby and John, 2019). A deterioration in TOM score was classed as a decline of 0.5 points or more in any domain.

Changes were assessed to determine if there was a difference between the two groups with and without intermediate care support worker input. To compare, the Mann–Whitney U test for continuous variables and chi-squared test for proportions were used. To assess the relationship between the number of therapy sessions and improvement in TOM score,

Spearman's correlation was used, which evaluates the monotonic relationship. Correlation coefficient (rho) is depicted on each relevant plot, which indicates the strength of the correlation. Correlation coefficient is a number between 0 (no correlation at all) and 1 (perfect correlation).

Results

Data were collected on 232 patients who were assessed and discharged from the community intermediate care team. Table 1 summarises the descriptive statistics on reason for referral, duration of therapy intervention, number of therapy sessions and intermediate care support worker input. The most frequent reason for referral was general chronic deterioration (28.4%), followed by falls (28.0%); however, overall reasons for referral were diverse. Median duration of therapy intervention was 42 days and median number of therapy sessions (with the NHS therapy team) was four. Just over a quarter of patients (*n*=61, 26.3%) received intermediate care support worker input and of those who received intermediate care support worker input, the most common was twice weekly (*n*=40, 65.6%).

Patient outcomes

Table 2 summarises patient outcomes in each of the four domains of the TOM (impairment, activity, participation and wellbeing). Overall, 50% of all patients showed an improvement of 0.5 points or more in the impairment domain, 52.2% in the activity domain, 47% in the participation domain and 43.5% in the wellbeing domain. Only a small number of patients deteriorated in their TOM score across the domains, ranging from 0.9–3%, the largest deterioration being in the impairment domain. A majority of patients (between 47% and 54.3%) experienced no change in scores across the domains.

Improvement in groups with or without intermediate care support worker input

Table 3 compares the changes in scores between patients who had intermediate care support worker input and those who did not. The proportion of patients with a 0.5-point or more improvement in the impairment domain was statistically different between

Table 1. Demographics and characteristics of patient population

Characteristic		Result
Referral, *n* (%)	Fall	65 (28.0)
	General chronic deterioration	66 (28.4)
	Deterioration post hospital admission	23 (9.9)
	Deterioration post-acute illness	13 (5.6)
	Deterioration post general surgery	8 (3.4)
	Parkinson's disease	12 (5.2)
	Lower limb fracture	16 (6.9)
	Upper limb fracture	4 (1.7)
	Heart failure	2 (0.9)
	Motor neurone disease	2 (0.9)
	Multiple sclerosis	3 (1.3)
	Osteoarthritis	4 (1.7)
	COVID-19	2 (0.9)
	Progressive supranuclear palsy	1 (0.4)
	Spinal fracture	6 (2.6)
	Stroke	5 (2.2)
Duration of therapy intervention	Days, median (interquartile range)	42.0 (26.0, 61.2)
Had intermediate care support worker	*n* (%)	61 (26.3)
Intermediate care support worker frequency (*n*=61) *n* (%)	Once a week	3 (4.9)
	Twice a week	40 (65.6)
	Three times a week	18 (29.5)
Number of therapy sessions	Median (interquartile range)	4.0 (3.0, 6.0)

Table 2. Summary of scores and changes within each domain

Domain		Median [IQR] or *n* (%)
Impairment	Score on admission	3.5 [3.0, 4.0]
	Score on discharge	4.0 [3.5, 4.5]
	Change from admission to discharge	0.2 [0.0, 0.5]
	Score improved by 0.5 or more	116 (50.0)
	Score deteriorated by 0.5 or more	7 (3.0)
	No change in score	109 (47.0)
Activity	Score on admission	3.5 [3.0, 4.0]
	Score on discharge	4.0 [3.5, 4.5]
	Change from admission to discharge	0.5 [0.0, 0.5]
	Score improved by 0.5 or more	121 (52.2)
	Score deteriorated by 0.5 or more	2 (0.9)
	No change in score	109 (47.0)
Participation	Score on admission	3.5 [3.0, 4.0]
	Score on discharge	4.0 [3.5, 4.5]
	Change from admission to discharge	0.0 [0.0, 0.5]
	Score improved by 0.5 or more	109 (47.0)
	Score deteriorated by 0.5 or more	5 (2.2)
	No change in score	118 (50.9)
Wellbeing	Score on admission	4.0 [3.5, 4.5]
	Score on discharge	4.5 [4.0, 5.0]
	Change from admission to discharge	0.0 [0.0, 0.5]
	Score improved by 0.5 or more	101 (43.5)
	Score deteriorated by 0.5 or more	5 (2.2)
	No change in score	126 (54.3)

IQR: interquartile range

Table 3. Improvement with or without intermediate care support worker (ICSW) input

Domain		Without ICSW (*n*=171) Median [IQR] or *n* (%)	With ICSW (*n*=61) Median [IQR] or *n* (%)	*P*
Impairment	Score on admission	3.5 [3.0, 4.0]	3.5 [3.0, 4.0]	0.292
	Score on discharge	4.0 [3.5, 4.5]	4.0 [3.5, 4.5]	0.628
	Difference	0.0 [0.0, 0.5]	0.5 [0.0, 1.0]	0.003
	Score improved by 0.5 or more	75 (43.9)	41 (67.2)	0.003
Activity	Score on admission	3.5 [3.0, 4.0]	3.5 [3.0, 4.0]	0.532
	Score on discharge	4.0 [3.5, 4.5]	4.0 [3.5, 4.0]	0.613
	Difference	0.5 [0.0, 0.5]	0.5 [0.0, 0.5]	0.434
	Score improved by 0.5 or more	86 (50.3)	35 (57.4)	0.423
Participation	Score on admission	3.5 [3.0, 4.0]	3.0 [3.0, 4.0]	0.009
	Score on discharge	4.0 [3.5, 4.5]	4.0 [3.0, 4.0]	0.038
	Difference	0.0 [0.0, 0.5]	0.5 [0.0, 1.0]	0.234
	Score improved by 0.5 or more)	77 (45.0)	32 (52.5)	0.396
Wellbeing	Score on admission	4.0 [3.5, 4.5]	4.0 [4.0, 4.5]	0.981
	Score on discharge	4.5 [4.0, 5.0]	4.5 [4.0, 5.0]	0.716
	Difference	0.0 [0.0, 0.5]	0.0 [0.0, 0.5]	0.615
	Score improved by 0.5 or more	76 (44.4)	25 (41.0)	0.751

IQR: interquartile range

the two groups (P=0.003), with those who had intermediate care support worker input showing a statistically greater improvement in the impairment domain than those who did not (67.2% vs 43.9%).

When comparing the activity, participation and wellbeing domains, there were no statistically significant differences in the proportion of patients that improved between those who had intermediate care support worker input and those who did not.

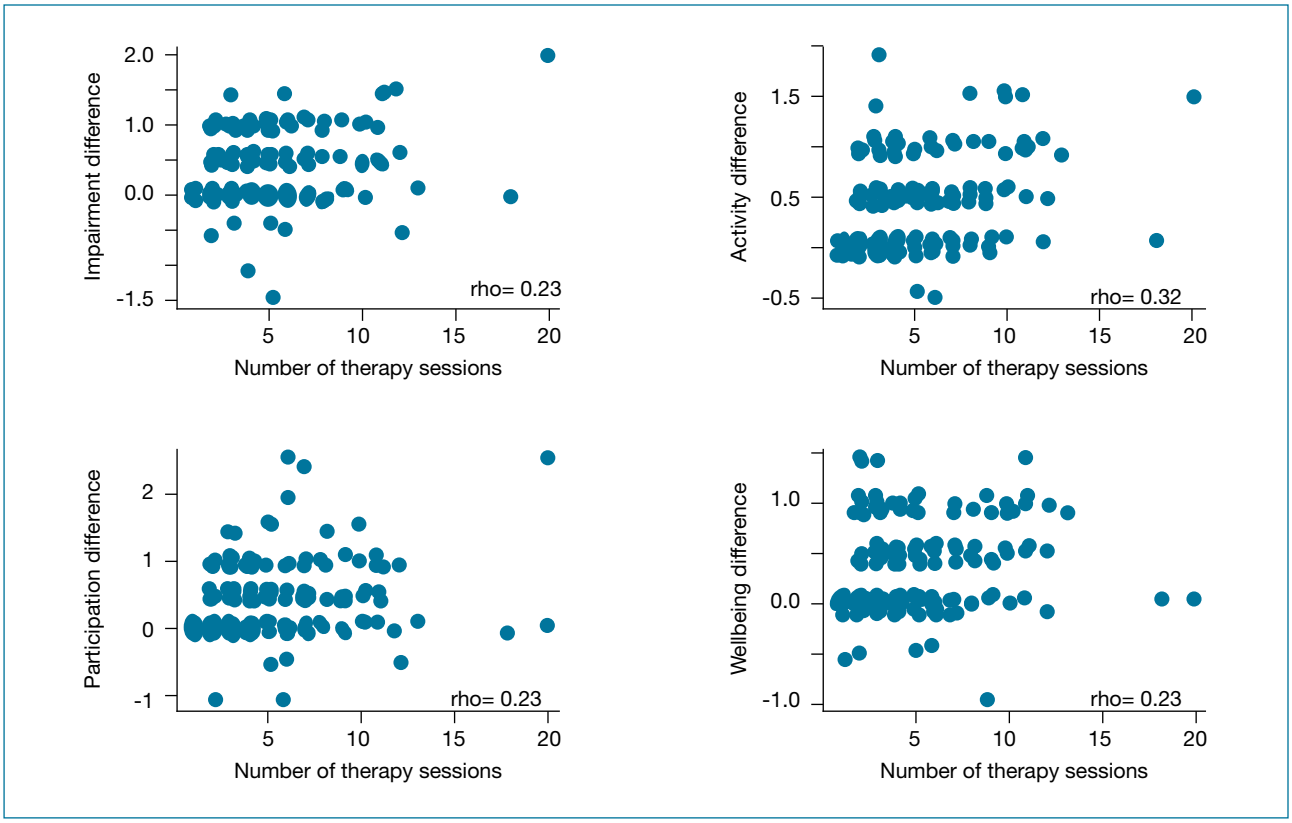

Figure 1. Correlation between number of therapy sessions and improvement in scores.

Number of therapy sessions and improvement

Figure 1 shows very weak correlations between the number of therapy sessions and improvement in TOM score (correlation coefficients (rho) below 0.35). Linear regressions of improvement against number of therapy sessions indicated an increase of only 0.02–0.04 in scores with one additional therapy session; therefore, the data do not suggest an effect from the number of therapy sessions on the scores.

Discussion

This service evaluation documents the level of improvement observed using the TOM in patients referred to a community intermediate care team. The range of referrals to the community intermediate care team were diverse and the reason for referral is likely to have had an impact on outcomes. Similar outcomes were observed in a study of intermediate care by Abrahamsen et al (2016), who found that patients with orthopaedic conditions had a higher probability of having slow or poor recovery when compared to patients referred with medical conditions.

Within this service evaluation, some of the referrals were for conditions that are likely to deteriorate, such as progressive supranuclear palsy, Parkinson's disease or multiple sclerosis. Additionally, any patients who have had a stroke seen by the team were more likely to be seen long after their acute episode, as the majority of these patients will have been picked up by the early supported stroke discharge team in the first instance, and it is acknowledged that at 6 months post stroke, it is more likely that any remaining deficits will be chronic (Grefkes and Fink, 2020). In their secondary analysis, Ariss et al (2015) observed that there appeared to be an increased proportion of patients being referred to intermediate care that could either be considered as inappropriate or have increasingly complex needs, thus affecting patient outcomes. They advised that further investigation is needed into what could be viewed as an inappropriate referral to intermediate care and that no deterioration in score in some patients could be seen as a good outcome.

Data in the present study showed that around half of patients experienced no change in TOM score from admission to discharge, while only a small number of patients showed a

deterioration in scores across the domains. The large number of patients with no change in scores could indicate that there were patients with increasingly complex needs, some of whom were never going to improve their scores. Only a quarter of the patients received intermediate care support worker input, which suggests that many patients were not able to receive intermediate care support worker input because of complexity.

Between 43.5% and 52.2% of all patients referred during the study period showed an improvement of 0.5 points or more in TOM score from admission to discharge. The median change in score was 0.5 in the activity domain only, with the change in the impairment, participation and wellbeing domains ranging from 0–0.2 points. This suggests some variability across the domains, with the activity domain showing the largest proportion of improvement (52.2%) and the lowest amount of deterioration (0.9%).

Other studies have shown variable results. In a secondary analysis that investigated a range of patients from a variety of settings including both inpatient and community intermediate care, Ariss et al (2015) reported that an average of 43% of all patients showed improvement of 0.5 or more in the impairment domain, 44% in the activity domain, 37% in the participation domain and 32% in the wellbeing domain. Joyce et al (2021) investigated improvement in TOM scores in an inpatient intermediate care facility and found that 63% of patients improved in the impairment domain, 77% in the activity domain, 73% in the participation domain and 66% in the wellbeing domain.

In a community rehabilitation team, Caldwell et al (2015) reported that the biggest improvement occurred in the participation domain (23.6% increase in scores from admission to discharge) and the smallest change occurred in the wellbeing domain (6.9% increase in scores from admission to discharge).

The reason for the variation in improvement could include the sample size of the study (Faber and Fonseca, 2014), referral to treatment time of the team, and even the admission criteria, as this may impact on the volume of inappropriate referrals to the team. However, some similarities can be seen, for example in the studies by Ariss et al (2015) and Joyce et al (2021), the largest improvement was seen in the activity domain, which is similar to the results found in the present study. As therapists in intermediate care, the focus is on the functional improvement of the patient and reducing dependence on others, therefore it is understandable that a larger proportion of improvement may be seen within this domain.

In terms of the impact of intermediate care support worker involvement, there were minimal differences observed between those who received support and those who did not. For the domains of activity, participation and wellbeing, no significant differences were observed in terms of improvement gained. For the domain of impairment, those with intermediate care support worker input showed a higher percentage of improvement than those who did not have intermediate care support worker input. The reason for this is unclear and this would need further investigation and analysis. However, similar results have been reported in another study, whereby a positive association was found between care delivered by intermediate care support workers and improvement in TOM score, specifically within the impairment and activity domains (Moran, 2009).

Dixon et al (2010) also found that a higher ratio of support staff to qualified staff led to an improvement in EuroQol scores. It could be hypothesised that the patients receiving intermediate care support worker support might have less complex needs, thus have greater potential to improve. This may be particularly true of the impairment domain, as those with less complex conditions may be more likely to show an improvement in their condition. Dixon et al (2010) also suggested that support staff may be more likely to spend an increased amount of time with patients compared to qualified staff, which is likely to impact on outcome. It is possible this may have had an impact within this service evaluation, as those who received no intermediate care support worker input will have been limited to sessions once a week, whereas those with intermediate care support worker input may have received input twice or three times a week, depending on their need.

It should be noted that within this service evaluation, when comparing those with intermediate care support workers input to those without intermediate care support workers input, all patients receiving intermediate care support workers input regardless of whether they had input once, twice or three times weekly were included in the analysis. Results may have been different if the groups were separated.

There was a very weak correlation between the number of therapy sessions and change in TOM scores, with linear regressions showing a 0.02–0.04 point increase in score with one additional therapy, which would not be classed as a clinically significant improvement according to Enderby and John (2019). Therefore, the data do not suggest that the number of therapy sessions would be a predictor of patient outcome. This seems logical given that the number of therapy sessions is clinically reasoned by the therapist and therapy finishes when improvement is believed to have reached its limit. Another study of home-based rehabilitation also echoed similar decisions in terms of discharge planning where decision to discharge was made either when the patient had achieved their goals or had reached a plateau in terms of their improvement (Levi et al, 2020).

Implications for practice

The results of this study may help allied health professionals working within community therapy teams when selecting an appropriate outcome measure to use with their patients. The data may also be useful for benchmarking purposes between community therapy teams.

Strengths and limitations

This service evaluation adds further information on the outcomes of patients referred to a community intermediate care team as measured by the TOM. The relatively large sample size means that the data are more likely to be representative of the population (Andrade, 2020), which is important, given that patients in community settings often have multiple pathologies (Caldwell et al, 2015) which may impact on the results gained.

This service evaluation depended on the compliance of staff within the team entering the data onto a spreadsheet following patient discharge, and it is possible that some patients may have been excluded in error if staff members did not complete the spreadsheet. Some data were collected retrospectively (the period between completing service evaluation registration documents and service evaluation approval), which may have also led to some patients being excluded in error. In addition, the team had new members of staff join during the study period and while every effort was made to train the new staff members to the appropriate level regarding use of the TOM, it is possible that the reliability of the results was affected by this.

Throughout this study, the team used the adapted multifactorial TOM scale, as it was agreed by the team that this was the most suitable scale because the patients had several different comorbidities. However, Enderby and John (2015) suggested that in some instances, using more than one TOM scale may be beneficial. Whether the results would have been different with the use of additional scales is unknown. In addition, this service evaluation was focused on the improvement in patients' TOM scores, as such carer wellbeing scores were not completed. However, it is possible that this information may have enhanced knowledge of improvement from the carer's point of view.

An additional drawback of the TOM is that it is clinician rated. Whether similar results would have been reported from a patient perspective is unknown. Patient reported outcome measures are an increasingly important way to monitor the quality and effectiveness of services (The King's Fund, 2010). They are of value to use in clinical practice as they can promote a patient's understanding of how they are affected by their condition and empower

Key points

- When using the therapy outcome measure to determine levels of patient improvement following a course of treatment with a community intermediate care team, the majority of patients either improved or maintained their scores.
- When comparing scores of those receiving intermediate care support worker input to those not receiving intermediate care support worker input, there was a significant difference only in the impairment domain.
- There was a weak correlation observed between the number of therapy sessions and level of improvement gained as measured by the therapy outcome measure which would not be classed as a clinically significant improvement.

patients to broach issues with clinicians (Greenhalgh et al, 2018), which could impact on the overall outcome achieved. However, patient reported outcomes may not be practical to use with the entire community population, for example, those with cognitive difficulties.

Conclusions

This service evaluation has demonstrated the use of the TOM within a community intermediate care team. Most patients either improved or maintained their scores from admission to discharge. A very small number of patients experienced a deterioration in scores. The TOM is a quick and easy outcome measure that can be useful to use within community teams to monitor patient outcomes. More studies are required in other community teams to allow for comparison across teams.

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Author contribution

AC was responsible for conceptualisation, methodology design and writing the original draft. CC designed the data collection tool and reviewed and edited the manuscript. AR completed formal statistical analysis including visualisation of the data and reviewed and edited the manuscript. BK provided supervision and reviewed and edited the manuscript.

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Conflict of interest

The authors declare that they have no conflicts of interest.

Data sharing

Data are available from the authors on reasonable request.

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