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Use of Outcome Measurement by paediatric AHPs in Northern Ireland

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Abstract

Background: Professional standards advocate routine use of outcome measurement (OM) in the practice of allied health professionals (AHPs). Historically, OM has focused on impairment and its immediate constraints on activity while current policy encourages the development and addition of impact-based OM. There appears to be an assumption at this stage of AHP development that the use of OM in general is well embedded into practice. However, there is no evidence to support this assumption which leads to the current investigation into the overall readiness of paediatric AHPs (Speech and Language Therapy (SLT), Occupational Therapy (OT) and Physiotherapy (PT)) to use OM in general.

Aims: To investigate the readiness of paediatric AHPs in the use of OM in general and to consider what influences this use.

Methods & Procedures: 133 paediatric AHPs working in the National Health Service in Northern Ireland completed the Clinician Readiness for Measuring Outcomes Scale (CReMOS). CReMOS' 26 statements are rated on a 6-point Likert scale identifying readiness to use OM based on the Transtheoretical Model of Change.

Outcomes & Results: While ~75% of clinicians were using OM in general, 25% require support to roll this out in their practice. This pattern was similar across the professions and while the majority perceived the value of OM in general, several factors influenced their use.

Conclusions & Implications: Further clarity is required in relation to current use/s of the term 'outcome measurement'. In addition, clinicians would benefit from protected time and support from experts/role models to promote and support best practice in the use of OM in general. Furthermore, funding for AHP services based on measurable outcomes for service users would facilitate their use in practice.

Key words: outcome measurement, allied health professionals, impairment, impact, speech and language therapist

What this paper adds?

What is already known on the subject?

Outcome measurement (OM) in general is a professional requirement for all AHPS and a fundamental component of accredited Speech and Language Therapy degree programmes. However, there has been no investigation into clinicians' readiness to embed this into their daily practice.

What this study adds?

This study is timely considering the direction of current policy into OM in the United Kingdom. It indicates that while many paediatric AHPs are using OMs in general and all have positive attitudes towards them, a proportion are not yet using them in practice. We suggest several contributing factors to this finding and raise the profile of this for further discussion.

Introduction

Outcome measurement (OM) is used to identify if change has been made as result of intervention. It can be formal and/or informal and is assumed to be standard practice for Allied Health Professionals (AHPs) (HCPC, 2013). Historically, AHPs have predominantly considered impairment and its immediate constraints on activity when measuring outcomes e.g., a SLT will consider that a hearing impairment may lead to difficulty with comprehension and expression of tense markers. Indeed, there are a range of formal standardised assessments which focus at this level. However, recent policy is encouraging AHPs to incorporate how a child's impairment and its immediate constraints on activity impact on: overall quality of life; participation in society; the environment around the child;

and personal factors unique to the child (Roulstone et al. 2012; McCormack et al. 2011; Markham et al. 2009). Despite this, the development of valid and reliable impact-based outcome measurement is challenging (Roulstone et al. 2012; Roulstone and McLeod 2011), and currently there are few examples of universally agreed, standardised assessments of this nature.

It could be assumed then, that paediatric AHPs measure impairment and its immediate constraints on activity as a matter of routine in clinical practice, and more rarely, measure the impact of this on daily life. Despite this assumption, there has been no investigation into what might influence readiness to measure outcomes generally (whether impairment- or impact-based) and it is not known whether an AHPs' working context: professional background; type of team; number of years of practice; number of working hours; clinical setting or other factors contribute to this. Consequently, the aims of this study are to: (1) investigate the readiness of paediatric AHPs in the use of outcome measurement in general; and (2) consider what influences this use.

Methods

Sample

All paediatric OTs, PTs and SLTs in the National Health Service in N.I.[1] were sampled providing a potential 542 participants. Paediatric SLTs, OTs and PTs were considered together in this study because of the nature of collaborative working between these professions and the subsequent importance of identifying and considering commonalities and differences in their approach to OM.

Data Collection

[1] The data was collected from paediatric AHPs in NI. Despite this, findings will be relevant to paediatric AHP services in the rest of the UK because: pre-registration training for OT, PT and SLT in NI is regulated by the same process as in the rest of the UK; AHPs come into the workplace in NI from a range of pre-registration training establishments across the UK; and workplace constraints in the NHS are similar in NI to the rest of the UK.

The Clinician Readiness for Measuring Outcomes Scale (CReMOS) (Bowman 2009) was selected for use in this study. It is a self-administered questionnaire and gathers quantitative data regarding therapists' readiness to measure outcomes. The content and construct validity, internal consistency and temporal reliability of the questionnaire were established in a study with 396 AHPs (SLTs, PTs, OTs) in Australia (Bowman *et al*. 2009). Although not validated in the UK, there are significant similarities between the AHPs in the two countries and no difficulties in the interpretation of statements were anticipated. Five questions were added to the questionnaire to investigate possible influences on the use of OMs in general considering the working context of participants: professional background, team type, number of years in clinical practice, working hours and clinical setting. Other than this, the CReMOS was not modified, ensuring that its reliability or validity were not compromised.

The CReMOS is a 26-item questionnaire where statements are rated on a six point Likert scale ranging from *strongly agree* to *strongly disagree*. Scoring depends on whether the statements are positively worded (n=20) e.g., *strongly agree* = 5/*strongly disagree* = 0 or negatively worded (n=6) e.g., *strongly agree* = 0/*strongly disagree* = 5. Each participant's total score is calculated and places them at one of the five stages of change: Pre-contemplation (0-25); Contemplation (26-52); Preparation (53-70); Action (71-104); or Maintenance (105-130) on the Transtheoretical Model of Change (Prochaska 2008). At the 'pre-contemplation' stage individuals deny the existence of a problem and could be described as resistant to change. During the contemplation stage there is an awareness of the issue but no commitment to take action. Individuals begin to take small steps towards adopting a new behaviour when they are at the 'preparation' stage. 'Action' is the stage at which people have made specific modifications to their behaviour within the past 6 months. At the 'maintenance' stage the new behaviour has been sustained for more than 6 months and there is less likelihood of reversion to old practices.

Procedure and administration

The questionnaire was distributed electronically using the online survey tool, Survey Monkey. AHP managers distributed the survey through local networks ensuring anonymity for participants. The survey commenced with information stressing the importance of OM generally and also of capturing change beyond that measured by the majority of current standardised assessments i.e., with tools such as the Therapy Outcome Measures for Rehabilitation Professionals (Enderby and John 2015). Thus, respondents were encouraged to consider both impairment, and its immediate constraints on activities, as well as its impact. The wording throughout the CReMOS uses the terms *client outcomes* and *outcome measures* thus capturing thinking around measurement of outcomes generally. Furthermore, participants were encouraged to reflect on collection of overall outcome measurements ranging from informal functional measures of performance that may be reported in clinical notes to formal, standardised testing. Once participants had given consent, the electronic survey could be completed. The opportunity to complete the CReMOS was provided over a total of 4 weeks.

Data analysis

In total, 155 participants responded to the questionnaire (a response rate of 24.5% (consistent with other AHP research)). There was a similar response rate across all professions and 22 responses were removed from the study as participants had omitted more than 50% of items (table 1). Across the other 133 participant responses, 29 items were unanswered equating to 0.8% of the data set. Consequently, the missing responses were predicted using a missing value impute procedure based on an ordinal regression model following the premise that this was the optimal statistical approach to the data considering the low numbers of missing values involved.

The Survey Monkey system provided an initial analysis of responses filtered using the details noted above in relation to working context. The CReMOS scoring system was applied to provide the total score and stage of change for each participant. T-tests were used to compare mean CReMOS scores for groups depending on team type and working hours. Univariate analysis of variance (ANOVA) was applied to compare mean CReMOS scores across the three professions, participants' years of clinical experience, and clinical settings. Overall CReMOS scores were used to investigate general readiness of paediatric AHPs in their use of outcome measures in general, whilst a range of pertinent items from the CReMOS were used to further investigate what influences this.

Results

This study aimed to: (1) investigate the readiness of paediatric AHPs in the use of outcome measurement in general; and (2) consider what influences this use.

1) The readiness of paediatric AHPs in the use of outcome measurement (OM) in general

	Occupational Therapy	Physiotherapy	Speech and Language Therapy	Total
Staff in Paediatrics across Northern Ireland	132	118	292	542
Number of respondents	*n* = 39	*n* = 21	*n* = 73	133

Table 1. Response rate for each profession

Total scores on the CReMOS

The majority of respondents (62.4%), scored within the action stage (figure. 1) and 9.8% scored within the maintenance stage. No participants scored within the pre-contemplation stage and 3.8% were in the contemplation stage, while 24% scored within the preparation stage.

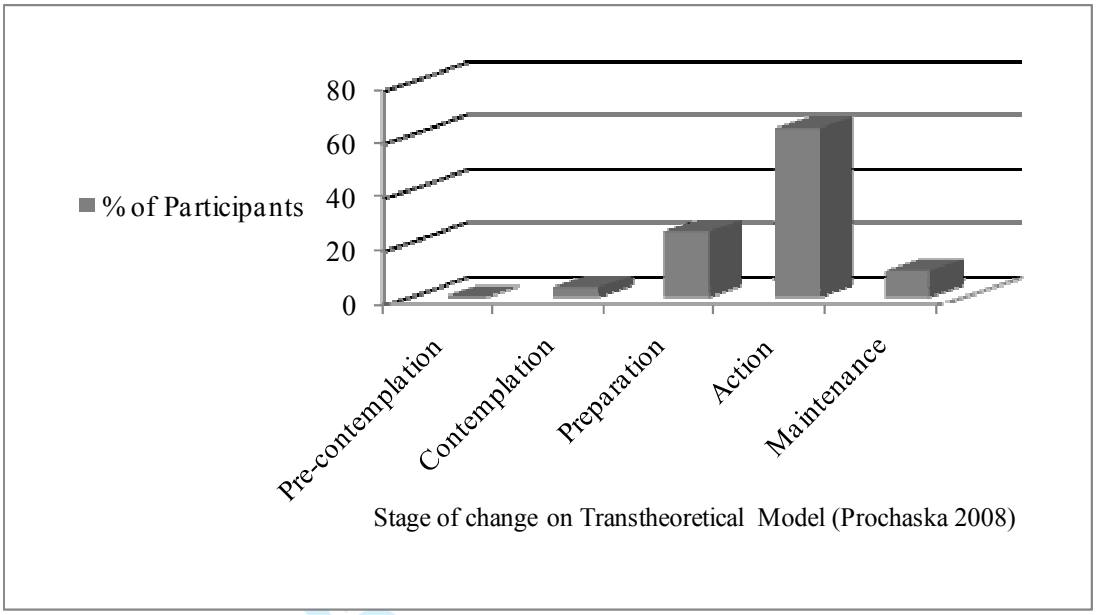

Figure 1. Percentage of participants at each Stage of Change of the Transtheoretical Model (Prochaska 2008)

2) What influences the use of outcome measurement (OM) in general by paediatric AHPs?:

a. Perceived clinical relevance

b. Time

c. The working context

d. Selection and training issues in choice and use of OM tools

a. Perceived clinical relevance:

More than three quarters of respondents (76.6%) reported that they 'always use outcome measures along with my clinical observation in discussing client progress with colleagues' (no. 11) and that 'they consistently report outcomes in their notes' (no. 20) (82.3%). The vast majority (96.3%) agreed (giving a rating of 3-5 (mild to strong agreement)) that 'Measuring outcomes helps me to make objective decisions

about my clients' (no. 23) and that 'measuring outcomes helps me monitor client progress' (no. 3) (99%).

b. Time:

Participants tended to agree (64.8%) (giving a rating of 3-5 (mild to strong agreement)) that 'Measuring outcomes would be good if it did not mean spending time doing paperwork' (no. 26). However, 75.9% reported that they 'use time management strategies to support outcome measurement use in practice' (no. 4) and the majority of respondents indicated that they 'Think about how they could incorporate OM into their daily practice' (no. 13) (89.8%), with 64.8% agreeing (ranging from 'mildly agree' to 'strongly agree') that they 'Organise their work to make outcome measurement part of their practice' (no. 17).

c. *The working context:*

Professional background, team type, experience, working hours and clinical setting did not have a significant influence on clinicians' readiness to use OM (table 2). There was a trend towards increasing mean CReMOS score with increasing years of clinical experience (ANOVA: F (1,3) = 2.41, p = .07).

Area Investigated		***N***	**Mean CReMOS score**	**SD**	**F/t**	***p***
Professional background	OT	39	79.10	18.74	F (1,2) = .987	p= .38
	PT	21	85.90	19.08		
	SLT	73	81.21	17.14		
Team Type	Multidisciplinary	95	82.74	17.78	t = 1.571	p= .35
	uniprofessional	37	77.29	16.02		
Years	1-5	24	75.96	14.02	F (1,3)= 2.413	p = .07
	6-10	27	76.26	14.58		
	11- 15	17	84.12	14.08		
	>15	65	84.69	20.38		
Working hours	Full time	87	82.91	17.61	t = 1.236	p= .22
	Part time	44	78.82	18.41		

Clinical Setting	Acute	7	92.43	21.01		
	Community	47	78.40	18.32		
	Education	49	83.78	16.51		
	Split acute/ community	2	68.50	16.26	F (1, 4) = 1.525	*p*= .21
	Split community/ education	28	80.11	18.29		

Table 2. The influence of Working Context across Professions

d. Selection and Training Issues in Choice and Use of OM Tools:

73.1% of respondents agreed (ranging from 'mildly agree' to 'strongly agree') that they 'have critiqued outcome measures to choose the most suitable one/s for their clients' (no.1). Just over half agreed (ranging from 'mildly agree' to 'strongly agree') they had 'searched the literature to identity potential outcome measures' (no. 15). Of these, only 3.8% of respondents reported that they 'strongly agreed' with this statement. In contrast, 72.8% reported they 'take advice from other clinicians about which outcome measures to use' (no. 12).

Training others and also receiving training influenced OM use with almost half (47.3%) of participants reporting that they 'mentor other clinicians in outcome measurement use' (no. 16) and a similar percentage (50.8%) reporting that they 'enrol in workshops/courses to learn how to measure client outcomes' (no. 24). However only 19.8% reported having been taught how to search databases to independently investigate the value of available OMs (no. 2).

Discussion

This study aimed to: (1) investigate the readiness of paediatric AHPs in the use of outcome measurement (OM) in general; and (2) consider what influences this use.

Similar patterns of readiness to use OM in general were found across the paediatric AHP groups. Consequently the findings have the same implications across the professions included in the study in relation to the common attitudes and competencies necessary for improving continuity and consistency of care for children in their multidisciplinary services (Gascoigne 2008).

What is striking however, is that only around 10% of participants were at the maintenance stage of readiness having bedded the use of OM in general into their everyday practice. This left 62.4% actively engaged in rolling out OM, 24% at the planning stage, and a small number (3.8%) considering its use. This pattern is both encouraging (that the majority are at least actively engaged in rolling out OM in general) and concerning (that ~28% are not using OM in general). These findings highlight that the use of OM in general is an important professional issue requiring some reflection.

Even though the CReMOS does not differentiate between impact- and impairment-based outcome measurement, the very fact that the term 'outcome measure' is used in the questionnaire could be seen to highlight potential confusion. This is because the term 'outcome measurement' (OM) may currently be interpreted as measurement of: impairment and its immediate constraints on activity; impact of impairment; or a combination of both. In the light of this, one possible interpretation of these results is that the CReMOS was interpreted in relation to impact-based OM reflecting an evolving picture of various stages of readiness to roll out such measurement. If so, it would be a positive profile considering the challenges identified in relation to the development and implementation of impact-based OM (Roulstone et al. 2012). However, this information cannot be specifically extracted from the CReMOS which has to be interpreted from the perspective of OM in general. This in itself raises a need for AHP leaders at pre- and post-registration levels to clarify and agree terminology, and ensure that the theoretical underpinning to this terminology is understood.

What is important in this study is that the wording in the CReMOS, is most likely to have been interpreted in relation to OM in general which suggests that although practice is changing, there is still work to be done to improve use of such measurement across paediatric AHPs. So, what is stopping ~28% of paediatric AHPs from progressing to the action and maintenance stages of readiness to use OM in general?

The CReMOS shows that AHPs are clearly perceiving OM in general as clinically relevant and are using this for a range of important issues in case management i.e., monitoring client progress (99%). Those who do use OM in general, integrate it into their practice. Those who do not, realise its value (in theory at least). However it seems that across the board, time is a factor influencing the attitude towards use of OM in general (64.8%). Encouragingly, respondents are willing to consider time management strategies to incorporate this work (89.8%). Consequently, support for this important practice could be developed by providing protected time within teams or individually, where case studies are reviewed on a regular basis.

The CReMOS shows that paediatric AHPs prefer to take advice from colleagues who may be experts in OM in general, have more experience/interest in the area or who may have a favourite measure, than investigate optimum OM methods themselves. There was also a trend towards increasing readiness to use OM in general with greater clinical experience. In order to circumvent ad hoc approaches towards development and use of OM in general, key experts/role models could be fostered to critically evaluate, share and apply knowledge about OM in general within teams. Consensus-meetings with skilled process-leaders to help clinicians openly discuss feelings, attitudes and values around OM in general to empower them to integrate these into routine clinical practice may be worthwhile. Furthermore, a move towards funding AHP services based on measurable outcomes for service users would also facilitate their use in practice.

A limitation of this study is that the nature of the CReMOS means it can be difficult to tease out subjective responses based on a respondent's attitudes or how they feel they should respond versus actual behaviour e.g., just because participants agree 'they are making small steps towards adopting new behaviour', does not necessarily mean that they are making steps that are meaningful. Subsequently, despite thorough validation of the CReMOS supporting its usefulness to investigate general readiness to use OMs (Bowman et al. 2009), the results of this study should be interpreted with this in mind.

Conclusions and Recommendations

This study raises questions around the use of OM in general for the paediatric AHPs surveyed. Several actions are recommended: resolving confusion in terminology; providing protected time for the development, use and interpretation of OM in general; identifying key experts/role models to support best practice in this area; and funding services based on measurable outcomes for service users.

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