

ARTICLE

The Communication-Relationship Outcomes Matrix (CROM): A tool for measuring communication outcomes in everyday music therapy practice

Jenny Kirkwood

Independent scholar, Northern Ireland

ABSTRACT

Music therapy in the UK today operates within complex healthcare systems and a pressurised funding climate, where it is vital to evidence the benefit of services. However, effectively “measuring” the impact of therapeutic work can be challenging. Many outcomes measurement tools are too complex to be implemented consistently and can lack relevance to everyday therapy practice. This paper introduces the Communication-Relationship Outcomes Matrix (CROM), a clinician-reported observational outcomes measurement tool which was developed within a service evaluation protocol submitted by the author in 2015 for a top-up to Masters in Music Therapy qualification. The tool was developed to be used in a service for children with disabilities presenting with “severe communication difficulties” and “challenging behaviour” (criteria defined by the funder). It is commonly accepted in music therapy that the establishment, maintenance and development of the “therapist-client relationship” is one of the cornerstones underpinning practice and permeates all of the work that we do. In terms of specific therapeutic objectives, developing “communication skills” is a common area of focus for many service users, but it is a wide umbrella term, which can include numerous behavioural elements and mechanisms such as self-awareness, engagement, attention, facial expression, gesture, verbal and non-verbal interaction, and emotional self-expression, all of which are difficult to define and measure. This outcomes tool has been designed to address some of the key constructs of developing communication within the context of a relationship-based approach. It also aims to be sufficiently practical to be applicable in everyday practice while still capturing the nuances of our work.

KEYWORDS

music therapy,
outcomes
measurement,
communication,
relationship

Publication history:

Submitted 27 Oct 2020
Accepted 16 Jun 2021
First published 10 Oct 2021

AUTHOR BIOGRAPHY

Jenny Kirkwood completed her postgraduate diploma in music therapy with MusicSpace Italy in Bologna in 2007. She worked for Every Day Harmony Music Therapy from 2007, and as Music Therapy Manager from 2016 until December 2018. In 2015 she was awarded her MA in Music Therapy. Her clinical work was mainly in learning and physical disability and paediatric palliative care. She has worked as AHP Coordinator in the Public Health Agency of Northern Ireland since 2019. [kirkwoodj78@gmail.com]

INTRODUCTION

Evaluation in music therapy can be both inward-looking and outward-looking. As we reflect on our work, a constantly questioning attitude underpins best practice. This self-evaluation of the music therapy process – whether a formalised protocol or an inherent part of the process – is essential to maintaining high-quality interventions as “part of professional accountability and integrity” (Tsiris et al., 2014, p.19). Outwardly, we have a professional and ethical obligation to our service users, their families, and our funders or employers to provide services that are as effective as they can be, and to report back to our stakeholders on the impact of our work and its transferability to everyday life. The economic climate highlights this all the more, especially as one of the smaller in number and less commissioned Allied Health Professions. Service evaluation in this sense is a process of judging and defining how well a service is performing in achieving its set aims or targets in order to reflect this to stakeholders, inform local decision-making, and form part of quality improvement processes. A service evaluation can be made up of patient/client experience, an assessment of costs, therapist experience, and outcomes.

There has been a strong drive in recent years towards outcomes-based accountability within the context of evidence-based practice throughout health and social care. As described above, outcomes measurement forms an important element in an overall service evaluation and improvement process. An example of the importance of outcomes measurement in the strategic context can be seen in Northern Ireland, where the service in question was located and the tool was developed, where outcomes-based practice was stated as a key driver in a number of recent strategic documents published by the Northern Ireland Executive and Department of Health: “Draft Programme for Government Framework” (Northern Ireland Executive, 2016); “Health and Wellbeing – Delivering Together” (Northern Ireland Executive, 2016); and “New Decade New Approach” (Northern Ireland Executive, 2020). Specifically in relation to the music therapy profession, “the drive to use outcome measures in music therapy research and practice has particularly increased in recent years. This has been encouraged by various factors, including the urge for evidence-based practice, funding expectations, as well as the belief that the use of such measures and tools can contribute to understanding about the effects and effectiveness of interventions” (Spiro et al., 2018, p.67).

The terms “evaluation,” “assessment” and “outcomes measurement” are often interchanged in music therapy discourse, and it is this author’s opinion that clarity on this is required across the profession. A clinical assessment usually takes place upon referral at the start of the clinical journey and or at key points in the treatment process, and involves gathering information about a patient through observation, assessment tools or tests, and interview or consultation with relevant parties. It can use a range of approaches to gather data from a range of sources, in order to provide a full and thorough understanding of the patient, their presentation and its impact on their lives, and it leads to key clinical decisions and recommendations for the direction of their treatment plan. Douglass (2006) wrote that

assessment is an important aspect of the music therapy process because it helps the therapist to identify patient needs, communicates to other parties the rationale for music therapy treatment, and guides the choice of objectives and the on-going evaluation of treatment benefits. (p.73)

In particular, assessment tools can be larger scale and require a significant investment of therapists' time, which may only be possible upon intake at referral, rather than being tools that can reasonably be implemented throughout a patient's treatment.

Outcomes measurement, on the other hand, provides an appraisal of the person's current status and will provide a score or representation of a baseline and then the change that takes place during the course of the therapy process. Outcomes measurement tools can provide rationale and justification for ongoing treatment, can provide service users themselves and other stakeholders with a representation of progress made, and as aggregated data can help to assess the quality of care being provided in a particular service.

If we are, as a profession, to become more integrated into the Health and Social Care system, outcomes measurement should become embedded in our practice, fully integrated with processes of assessment, objective setting and clinical intervention, and therefore directly benefitting service users.

Context for the development of the Communication-Relationship Outcomes Matrix (CROM)

The above considerations lay behind the development of an experimental tool, originally designed for use in a music therapy service in Northern Ireland for children with learning disabilities. The service in question provided approximately 130 children per year with an average of 12 sessions each, taking place in a range of settings across all of Northern Ireland including mainstream and special schools, community venues, and home visits. The referral criteria set by the funder were to provide music therapy for children aged 0-19 with "significant challenging behaviour," "severe communication difficulties" and in early intervention. Service evaluation in this service comprised of consultation and questionnaires with parents/carers, teachers and social workers, with a different questionnaire developed for those present in sessions with the child and those not. In addition, the long-standing outcomes measurement protocol completed by therapists used a simple Likert scale to score children pre- and post-intervention across a number of broad categories – communication, interaction, sensory skills, behaviour, emotional skills and physical skills. However the impact measured lost meaning when it emerged through peer discussions that there was no shared, mutually understood, clear definition of these categories. They were too broad and too vague, in particular that of "communication." Watson (2007, p.2) stated that "having a Learning Disability has a different impact for each person due to the wide range of different diagnoses and difficulties that are encompassed in the term," and that in music therapy such clients find "different ways of 'being with others', expressing feelings, telling their stories, forming relationships." To categorise all of this together under umbrella terms of "communication" and "interaction" is to undermine the uniqueness and precision of work with this client group – it deserves greater consideration. The intention, therefore, was to develop a more custom-fit tool that could demonstrate real impact for service users more clearly. "Severe communication difficulties" was one of the main referral criteria set by the funders for the particular service in question, but it is also a common objective area across a range of music therapy client groups. An outcomes measurement tool designed specifically for this area in music therapy could be a useful addition to practice.

LITERATURE REVIEW

In its first iteration in 2015, the literature review was carried out with the aim of identifying a suitable existing outcomes measurements tool to be used in the service evaluation protocol under development, and it was through completing the first review that the author established that such a tool did not appear to exist. Further examination of the literature was then carried out to inform the development of a new, bespoke tool. Subsequently, during preparation of the text for publication, the literature was rechecked for new information published in the interim. It was beyond the scope of this work to include the full range of publications relating to outcomes measurement and assessment in music therapy generally, or to consider all available tools in other sectors. In the next section texts relevant to the evaluation or assessment of music therapy work generally or specifically with people with learning disabilities are briefly described, outlining why they did not meet the needs of the service in question, and thus highlighting a gap in the music therapy toolkit.

Of the relevant texts identified, several describe complex assessment tools or approaches to assessment or analysis which give a detailed, multidimensional profile of a client (for example: Bell et al., 2014; Carpente, 2014; Gattino et al., 2011; Kim, 2006; Raglio et al., 2011a, 2011b; Spiro & Himberg, 2016). These would be suitable for the purposes of research or in-depth clinical assessment which is beyond the scope of what was required in this work. Assessments are complex and involve multifaceted interpretation of a range of client behaviours. It is not practical for a therapist to apply this level of analysis and assessment to all clients in their everyday practice, whereas this is something that can be usefully undertaken upon intake or at key transition or transformational moments in the therapy process.

A large number of broader evaluation tools are available, which are also often extremely complex and can come with a cost, making their adoption in everyday practice more challenging. For example, the East Kent Outcomes System (EKOS) has had successful application in some music therapy contexts (Saville, 2018), but it was found to be more suited as an overall system for service evaluation rather than being an outcomes measure in itself. Scales such as the Childhood Autism Rating Scale (Schopler et al., 2010) again are more suited to more in-depth, complex assessments of presentation rather than an ongoing monitoring of progress. The Music Therapy Session Assessment Scale (MT-SAS), published by Raglio et al. (2017), entails seven binary items (eye contact, body reciprocity, emotional engagement, refusal or disturbed behaviours, sonorous-musical productions, attuned sonorous-musical productions, dynamism or variations), however, it is not clear how these items have been identified and selected, and they are measured in binary terms of being either "predominantly present" and "predominantly absent."

Many tools detailed by Raglio and colleagues, for example the coding scheme (Raglio et al., 2007) and rating scale (Raglio et al., 2011a), entail complex coding systems and re-watching of video recordings of sessions which represent a significant burden on a therapist's time and so again are not practical for consistent implementation in practice, rather again lending themselves to a profound analysis of the music therapy process for deeper learning or research processes. Similarly, the methods and techniques presented by Wosch and Wigram in their publication *Microanalysis in Music Therapy: Methods, Techniques and Applications for Clinicians, Researchers, Educators and Students* (2007) lend themselves more to this in-depth level of reflection, analysis and evaluation of the music therapy

process. The Outcomes Star (2021) is another well-known tool, which is reportedly effectively implemented in music therapy practice. However, like many others, licencing for the tool itself and its associated training comes with related costs and it can be challenging for small organisations or indeed individual practitioners with restricted funding opportunities to invest in such tools before knowing that they suit the services in question.

In fact, in the literature, the terminology for more detailed “assessments” of clients and for tools for “outcomes measurement” to monitor progress over time is often used interchangeably, when in fact they are quite different processes in practice. In the online resource “Outcome Measures in Music Therapy” (Cripps et al., 2016), many of the tools described are actually complex assessment tools (e.g. IAPs, IMCAP-ND, IMTAP). While this type of in-depth analysis is of great value to the profession, it is just not feasible for consistent implementation in everyday practice. Outcomes measurement tools for routine use must be more practical.

The basis of the next phase of the literature review was the fact that no easily accessible tool to measure communication-related outcomes in music therapy in a detailed way had been readily found. In fact, the literature review proved problematic at this stage as little appeared to have been written specifically on evaluating communication with children with learning disabilities, despite this being a significant area of work in the music therapy profession. Large numbers of search results gave few truly relevant or informative texts. In *Music Therapy with Adults with Learning Disabilities* Watson (2007) states that “little research has been with adults with learning disabilities” and “there are currently no standardised research or evaluation tools for music therapy work with people with learning disabilities” (p.16).

The next step was to look for instruments specifically developed for assessing communication skills, including from outside the field of music therapy, where numerous generic tools and scales can be found. Relevant examples are: the Functional Communication Profile (Kleiman, 2003), Social Networks: A Communication Inventory for Individuals with Complex Communication Needs and their Partners (Blackstone & Hunt Berg, 2012), Sequenced Inventory of Communication Development – Revised Edition (SICD-R; Hedrick et al., 1975), the Social Responsiveness Scale (Constantino, 2005), the Early Social-Communication Scale (Mundy et al., 2003), and the Communication Assessment Profile (van der Gaag, 1988). Some of these tools, such as the Sequenced Inventory of Communication Development and the Checklist of Communicative Responses / Acts Score Sheet (CRASS) developed by Edgerton in 1994 for the study “The effect of improvisational music therapy on the communicative behaviours of autistic children,” seem promising, but are essentially again too time-consuming or indeed costly for use in everyday therapy practice. In 2004, Chase completed a “Survey of music therapy assessment with developmental disabilities,” and stated that “in the specific population of the developmental disabilities (DD), music therapy assessment research is scarce” (p.29). We are missing a versatile, applicable small-scale tool for ongoing work with this client group.

Preparing to create a tool

Having identified that there were no existing outcomes measurement tools that were suitable and feasible for implementation in the service in question, the literature was subsequently scanned to inform how this could be addressed. As part of the preparation phase for development of a bespoke instrument for measuring communication outcomes, texts relevant to defining and assessing the

communication skills of people with disabilities were considered. Of particular interest was the Perry (2003) article “Relating improvisational music therapy with severely and multiply disabled children to communication development” in which Perry describes in more detail the elements of pre-verbal and pre-intentional communication that are acted upon in music therapy, such as mutual gaze, orientation to sensory stimuli, babble and expressive vocal sounds, communicative gestures and whole body movements, facial expressions, sharing attention, and anticipating turns. She explores music therapy as a vital intervention in the development of pre-verbal communication skills due to the way that it can support the child in engaging in joint attention and interactions with others. Perry highlights the importance of the relationship as the context for early communication development and says,

the literature is replete with ... descriptions of how music helps build such a relationship ... Part of the process of developing this relationship is the affective sharing that takes place in musical interaction. Recent literature has drawn explicit links between this affective sharing in music therapy and in preverbal communication. (Perry, 2003, p.230)

“Developing social closeness” is vital in the development of communication and “the goal (of communication) is to establish, maintain and develop personal relationships with others” (Perry, 2003, p.241). The more a child can engage in communicative relationships, the more they will be able to be-in-the-world and the more they will be able to communicate their needs, desires and preferences and be understood by others. This socio-relational model of communication emphasises the “role of the communication partner in extending and elaborating potentially communicative behaviour, the reciprocal, interactive and active nature of communication, and the importance of the child developing an understanding of intentionality” (Perry, 2003, p.242). This article clearly supports the author’s theory that it is appropriate to consider communication as embedded within a developing relationship in music therapy. As Silverman states: “humans are social beings who thrive in communication with one another” (2008, p.3). Communication is a social act, and its development is embedded in our relationships with others. In reference to communication difficulties, Schalkwijk tells us that “what lies at the root is the fact that the person with the developmental disability ... experiences difficulty in relating to other people” (1994, p.34). Assessing communication across a matrix of developing interpersonal relationships is perhaps the ideal way to evaluate it in the music therapy context.

A rapid review of the literature published since this tool was first developed in 2015 showed that, while no new specific assessment or outcomes tools for communication in children with learning disabilities emerged, there have been a number of recent publications looking at outcomes measurements and service evaluation more broadly (Spiro et al., 2020; Tsiris et al., 2020). In their 2020 publication “Sounds good, but... what is it? An introduction to outcome measurement from a music therapy perspective”, Spiro et al. (2020) discussed key considerations that inform the choice and use of outcomes measures for music therapists, and these included the accessibility of tools, including cost, complexity, and length of administration, as well as the categories of outcome and types of scale. These areas align with the experiences and considerations of the therapists working in the service in question in this paper. In their 2018 systematic review, the same authors mention that fact that “although an increased number of tools have been published, many do not seem to be used widely in

either practice or research" (p.67), and that "related questions include, for example, which of the measures are being used by practitioners, in what contexts, and for what purposes? Do practitioners use measures as part of their own analyses of music therapy work?" (Spiro et al., 2018, p.75), which again align with and support the points raised in this paper of accessibility of outcomes measurement tools for use in everyday therapy practice.

Thus, the literature overall revealed that there is space for measurement tools that can realistically be utilised in ongoing evaluation of service. As Tsiris et al. (2014, p.11) state "many are now attempting to evaluate but they are struggling to find appropriate methods." During discussion with therapist colleagues in relation to the service in question the priority was for a tool that could be integrated into the therapy process and not be too time-consuming. Caution is required with regard to "DIY service evaluation which is little more than circumstantial" (Tsiris et al., 2014, p.22), but at the same time the tool must suit the service.

During the first literature review completed, the Assessment of the Quality of Relationship (AQR) instrument published by Schumacher and Calvet within *Microanalysis in Music Therapy* (Wosch & Wigram, 2007, Chapter 6) had stood out as being a useful structure to assess the developing therapeutic relationship. In 2012, Lawes published an article describing a version of the AQR instrument used to report on outcomes in a school for children with autism. The tool has also since been developed in the book *The AQR Tool – Assessment of the Quality of Relationship: Based on Developmental Psychology* published in 2019. During the phase of preparation and conceptualization of the instrument, through extensive discussion with peers it was agreed that this instrument could form the basis of a tool tailored to measure communication-related outcomes in music therapy with children with disabilities.

Definition of the Communication-Relationship Outcomes Matrix (CROM) tool

The Communication-Relationship Outcomes Matrix breaks "communication" down into eight sub-categories, and scores them across eight "stages" or "levels" of a developing relationship derived from the AQR instrument. The 8 sub-categories of communication are:

- Sense of self / self-identity
- Attention and engagement
- Gaze and facial expression
- Emotional expression
- Physical
- Use of voice
- Instrumental play
- Interaction

Service users can be assessed in any or all of these sub-categories, and are given a score across the eight stages of the developing 'quality of relationship':

Stage 1: Lack of contact / Contact refusal / Pause

Stage 2: Contact – Reaction

- Stage 3: Functional – Sensory – Contact
- Stage 4: Contact to oneself / Sense of a subjective self
- Stage 5: Contact to others / Intersubjectivity
- Stage 6: Relationship to others / Interactivity
- Stage 7: Joint experience / Interactivity
- Stage 8: Verbal – Music space

	Sense of self / self-identity	Attention and engagement	Gaze and facial expression	Emotional expression	Physical	Use of voice	Instrumental play	Interaction
Stage 1: Lack of contact / Contact refusal / Pause								
Stage 2: Contact - Reaction								
Stage 3: Functional – Sensory Contact								
Stage 4: Contact to oneself / Sense of a subjective self								
Stage 5: Contact to others / Intersubjectivity								
Stage 6: Relationship to others / Interactivity								
Stage 7: Joint experience / Interactivity								
Stage 8: Verbal – Music space								

Figure 1: Outline of the Communication-Relationship Outcomes Matrix (CROM) tool

Thus “communication” is assessed and measured as embedded within the context of a developing relationship between therapist and client. The full score sheet eventually implemented by the therapists in this service can be seen in Appendix 1, while Appendix 2 provides a detailed breakdown of how each sub-category of communication was defined across each of the stages of the developing relationship.¹

DEVELOPMENT OF THE TOOL

The next phase was to develop the structure of the tool, building on the AQR instrument, and identifying and integrating the relevant clinical communication-related objectives that needed to be measured.

¹ Copies of the scoresheet and the full matrix can be obtained in an Excel format by contacting the author via email.

Building on Schumacher and Calvet's AQR instrument

The review of the literature in 2015 had not presented any tools that could practically be applied to measure outcomes in the service in question, either due to complexity, challenges of accessibility, or practical considerations of implementing the tool into everyday clinical practice of a team of therapists operating in a restricted funding context. However, the AQR instrument had stimulated the development of a concept for a possible outcomes tool which would measure communication embedded within the context of the therapeutic relationship, as this would reflect how communication takes place in the music therapy session. Thus the "quality of relationship" stages in the CROM matrix were derived from the AQR instrument described. The AQR instrument was developed by Schumacher and Calvet-Kruppa (1999), a developmental psychologist and a music therapist, and is based on developmental psychology with particular relevance to Stern's revised concept of self and the stages of "emergent self," "core self," "self with other," "sense of an intersubjective self," "verbal self," and "narrative self" (Schumacher & Calvet, 2007, p.81). The AQR instrument helps to assess the quality of relationship between the patient and the therapist. In its original form it is divided into four categories assessing the quality of the interpersonal relationship – to instrument, to self (physical-emotional), to voice and with other (therapist). Each of these categories are scored across stages known as "modi" which follow a clear developmental pattern, and this is the part that during peer discussion was quickly identified as being useful to the music therapy practice in the service in question with children with learning disabilities. We agreed that these modi could be usefully adopted as a scale for a developing therapeutic relationship, and so they were translated as the "stages" defined above. However, colleagues felt that the four categories scored in Schumacher and Calvet's original AQR tool were not closely enough aligned to the therapeutic aims of our services in order to be applicable.

Integration with therapeutic objectives

The need for a suitable tool had emerged following detailed peer discussions regarding difficulties with accurately measuring outcomes for the broad and often vague area of "communication." Through a complete audit of the clinical records of the team of ten therapists and collation of all processes and responses under the umbrella of communication, a reference list of therapeutic objectives was created. This was then cross-checked against the components of communication as defined in the literature: facial expression; eye gaze; joint engagement/attention; using sound/gesture to communicate intention; imitation; vocalising; functional play skills/symbolic play skills; body movements; and social referencing. Much of this or similar terminology is already present in the existing AQR scale, and so the modi of the AQR instrument were realigned with these, resulting in the eight sub-categories identified in the new tool: sense of self / self-identity; attention and engagement; gaze and facial expression; emotional expression; physical; use of voice; instrumental play; and interaction.

This process meant that the resulting Communication-Relationship matrix corresponded closely to the therapeutic objectives most commonly set by colleagues, and so could reasonably be expected to allow them to monitor their clients' progress effectively. Small-scale individual piloting at the time

of development suggested that the tool was relatively practical and easy to apply once the developmental stages were made clear.

IMPLEMENTATION OF THE CROM TOOL AND SCORING SPECIFICATIONS

The CROM tool can be laid out on a single spreadsheet or printed sheet, and so can be practically incorporated into existing electronic or paper-based clinical record-keeping. Therapists should complete a score for the relevant sub-categories during the assessment process in order to set baseline measurements, and then at key points during the therapy process when a scored outcomes measurement is required. This may take place at the end of therapy, at regular intervals, at key moments of the therapeutic process, or even weekly if appropriate. With familiarity, the scoresheet should not take more than a few minutes to complete alongside clinical notes, and can also be used to inform the therapist's broader reflective process. During assessment, the baseline scores can serve to inform the setting of therapeutic objectives by highlighting areas of communication where the service user needs most support. The stages of the quality of relationship also provide a useful support for intervention planning by showing the next stage to which the service user's communication skills can develop, helping to avoid the risk of setting therapeutic objectives that are too far ahead and therefore too challenging or unrealistic for the period of therapy available.

Scoring procedure

There is often an assumption, especially in outcomes or assessment scales, that progress occurs in a linear sequence represented by a higher score on a scale, but in music therapy practice we know that not to be the case. In this tool service users do not pass discretely from one stage to the next, nor is any one stage objectively "better" than the one before. Rather each stage forms part of a variable, developmental process and a child may move between the stages even within a single therapy session. To adequately represent this, the scoring method implemented in this CROM tool is that described by Nordoff and Robbins in *Creative Music Therapy – A Guide to Fostering Clinical Musicianship* (2007, p.386). In this scoring method therapists distribute a total of 10 points across the 8 stages of the tool for each communication sub-category based on how the child has responded during the whole time of their music therapy session. A child may move through a number of different stages of quality of relationship even within a single session and this should be represented in the data collected, enabling the therapist to reflect on the full and varying range of a child's responses. The multiplied average of the points distributed shows global progress overall, but also the full range of relationship interactions within which the child is communicating.

In the completed score sheet below (Figure 2) we can see that the child in question's responses range between stages 1 and 6 of the developing quality of relationship across the various sub-categories of communication. A simple mathematical calculation allows an overall average score for the session to be calculated for each sub-category, and an overall average can be calculated for "communication" overall (3.8 in this case).

	Sense of self / self-identity	Attention and engagement	Gaze and facial expression	Emotional expression	Physical	Use of voice	Instrumental play	Interaction
Stage 1: Lack of contact / Contact refusal / Pause								
Stage 2: Contact – Reaction	1				2	2	2	1
Stage 3: Functional – Sensory Contact	3	1	4	4	2	3	4	2
Stage 4: Contact to oneself / Sense of a subjective self	4	4	4	5	3	2	2	4
Stage 5: Contact to others / Intersubjectivity	2	4	2	1	3	3	1	2
Stage 6: Relationship to others / Interactivity		1					1	1
Stage 7: Joint experience / Interaffectionality								
Stage 8: Verbal – Music space								
Total point (10)	10	10	10	10	10	10	10	10
Final point	3.7	4.5	3.6	3.5	4	3.8	3.7	3.7

Figure 2: Completed score sheet for a 9-year-old child

The example above also shows the peak moments and communication areas of this child's interactions in their music therapy session, which are representative of the potential for progress and growth. These are represented in Schumacher and Calvet's (2007) original AQR instrument as "picks." A pick is defined as a "new and momentary quality", which "refers to the potential possibilities of a patient. Especially because they only appear for a short and irregular moment, they need to be perceived and evaluated" (Schumacher & Calvet, 2007, p.89). Nordoff and Robbins supported this concept:

a child's behaviour in any one session is rarely so unvaried that it can be described by a single level of the scale. Together with a characteristic trend of response, he can, in the swing of involvement manifest moments of higher level function, periods of ambivalent behaviour, and withdrawal from activity. (Nordoff & Robbins, 2007, p.382)

In the example above picks can be seen in the categories of "engagement," "instrumental play" and "interaction." In the development of this tool it was considered that these picks can be an extremely useful indicator for therapists when reflecting on the therapy process and planning interventions; the distribution of points across a number of stages, and therefore responses, in the Nordoff Robbins scoring method implemented here allows for this. By distributing 10 points across the scale based on how the child has responded during the whole time of their music therapy session, these picks are incorporated into the overall score, enabling the therapist to reflect on the full a varying

range of a child's responses. As this is a bespoke clinician-reported observational tool specifically designed for use in music therapy, it is considered that the scoring should be completed by an HCPC-registered (or equivalent) music therapist, or by another person involved in the work and trained in using the tool under the relevant music therapist's direct supervision to ensure appropriate clinical judgement is applied during completion. It is, of course, in the therapist's interest if the tool is to effectively inform their work, that it be completed as objectively and authentically as possible.

Over a period of time, graphs such as the one below can be created to show individual progress:

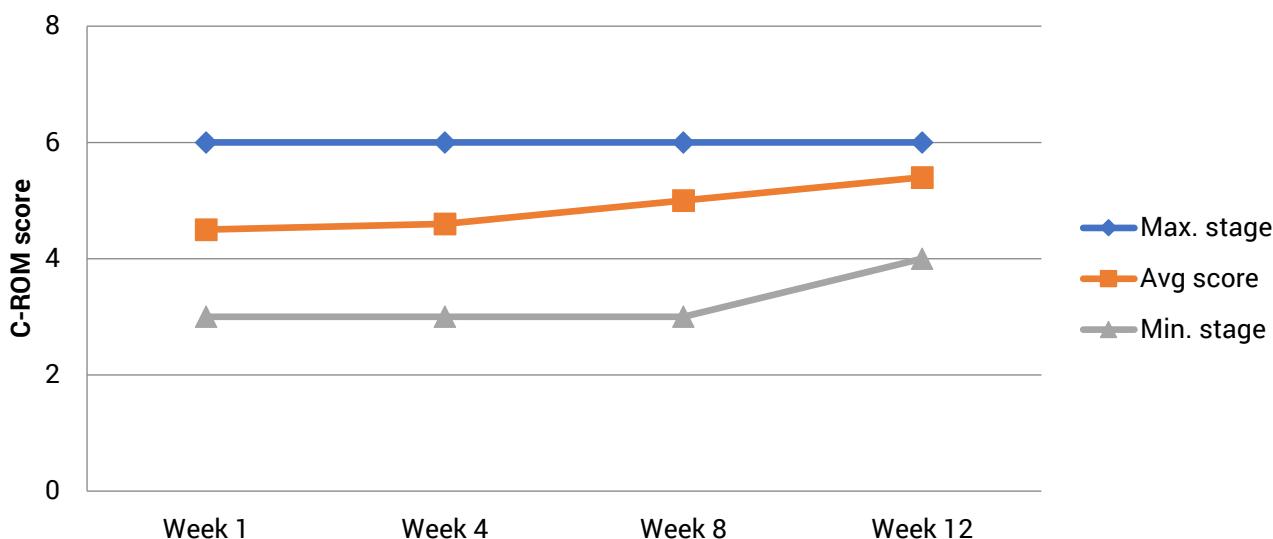


Figure 3: An individual's progress in Attention and Engagement

If the score sheet is used for more frequent monitoring of sub-categories the resulting graphs will be more detailed.

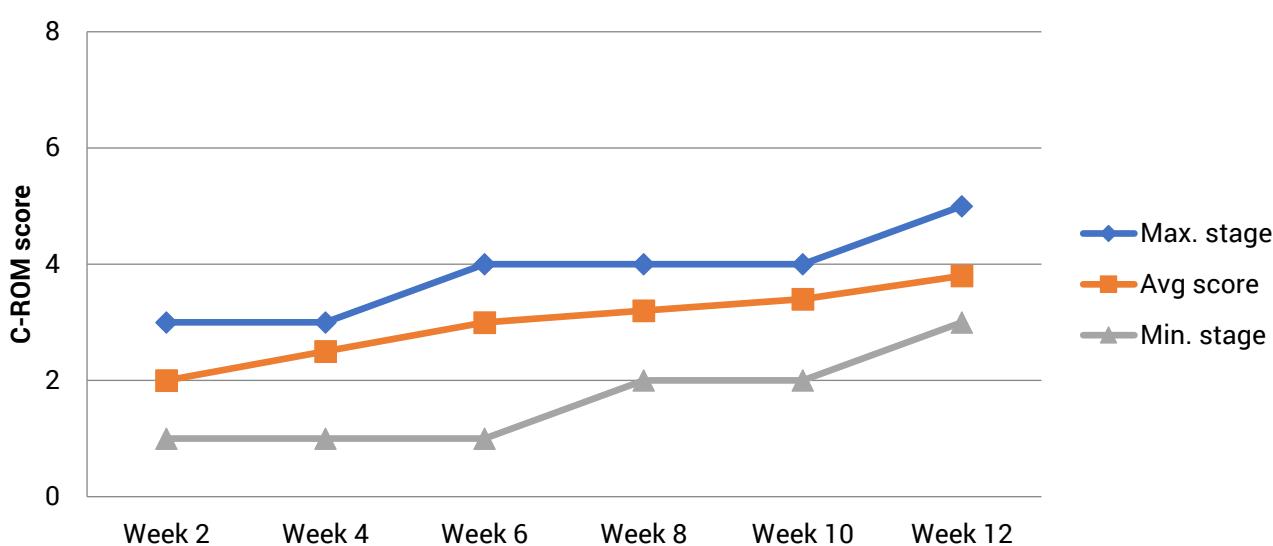


Figure 4: An individual's progress in Use of Voice

Graphs can be produced for individual categories, or the scores for the sub-categories averaged to give an overall measurement for “communication.” For reporting purposes, a child’s scores can be changed into percentages and their progress described as a percentage difference, for example progress in a particular sub-category from 2.4 to 3.4 is equivalent to an overall 15% improvement in this particular area. By translating scores into percentages, scores can be cumulated for a number of children as part of an overall service evaluation (e.g. ‘attention and engagement improved by 15% on average’). Again this can be represented graphically, and data could subsequently be broken down into subsets of male/female, age groups, or by venue or location if this was of use in reporting on services.

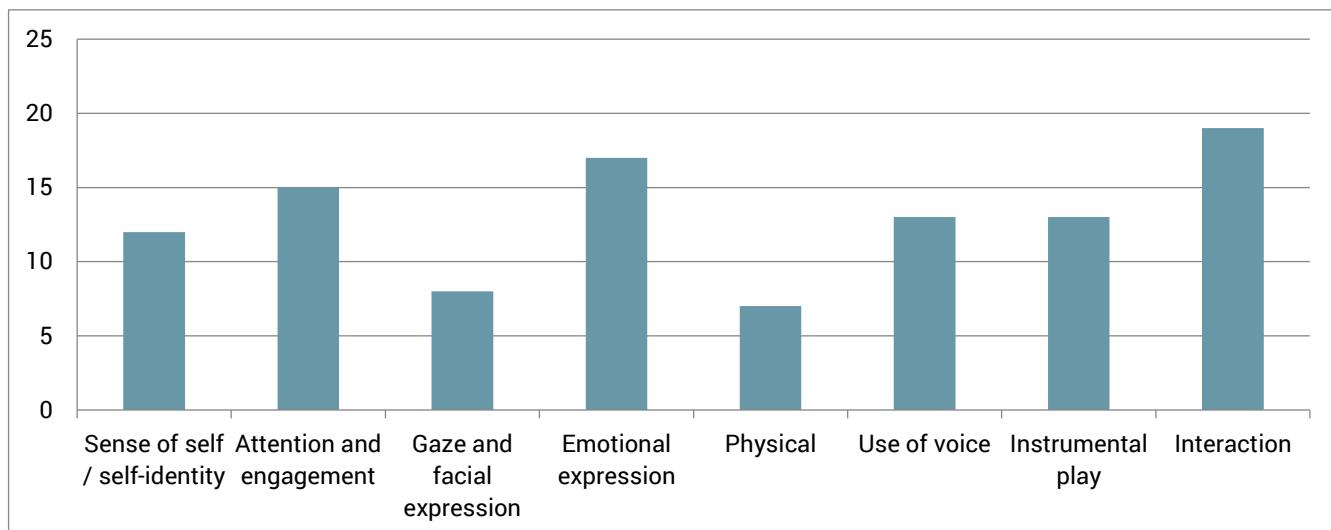


Figure 5: Example of graph showing average % difference between week 1 and week 12 in each category

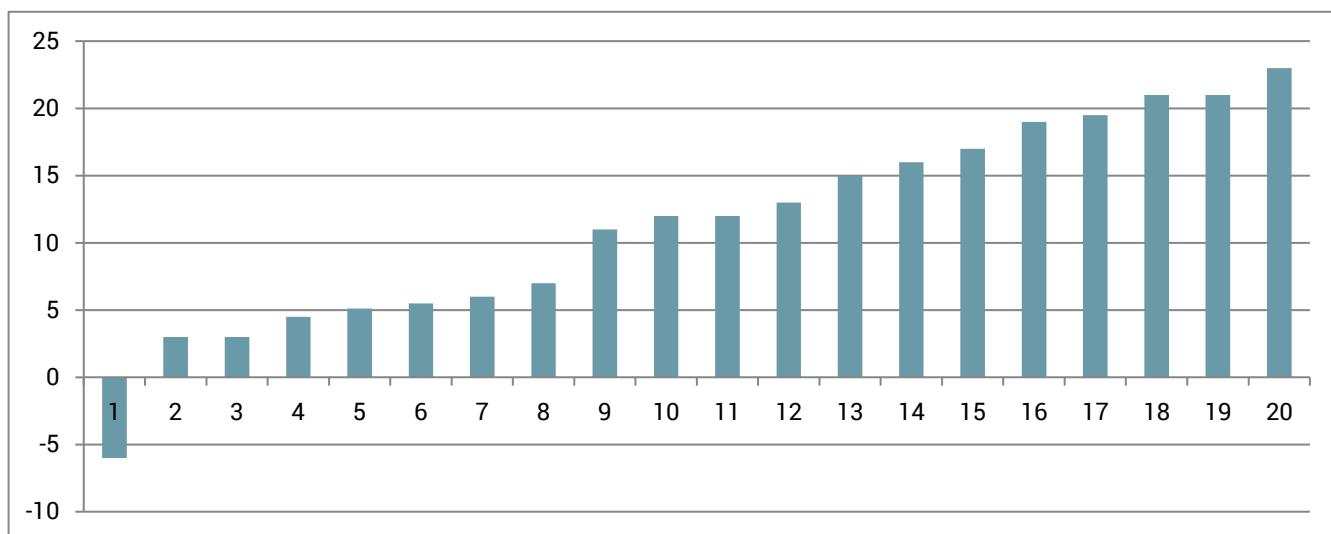


Figure 6: Development (% change from baseline) in Interaction for 20 children

There are numerous ways in which the numerical data this tool provides can be represented visually, which can both aide therapists’ understanding and reflection on their processes, and support reporting to the service user, their family and others.

REPORTING AND DISSEMINATION

Particular attention is needed when translating information from the communication-relationship matrix into a format to be accessed by a wider readership, so that it can be readily interpreted and understood. It should be highlighted that each stage in the matrix represents a significant step in the development of communication within interpersonal relationships, and so even apparently minor progress towards the next stage could be considered as a notable outcome, especially if for a relatively short period of therapy as in the service it was originally designed for.

As a tool scored by the therapist themselves it must be stressed, as with all outcomes measurement, that the aim of the work is not to judge the quality of a therapist's work, or indeed of a service user's progress towards agreed objectives, but to ensure that the service as a whole reaches as high a standard as possible for the benefit of the clients. The possibility of children's scores fluctuating over time should also be acknowledged and recognised as legitimate.

CRITICISMS OF THE TOOL

The tool was implemented in the service it was designed for, with children with disabilities having "severe communication difficulties" and "challenging behaviour." The ten therapists working within this service also began to implement it in other settings, including day centres for adults with learning disabilities, mental health services, and children with social/emotional needs. As it was implemented there was a process of feedback, shared learning and adjustment within the team in order to review the tool and its application, which led to the following considerations:

Lack of musical elements – An evaluation tool cannot measure every dimension of our work, and this is something to keep in mind. This tool is intended to measure therapeutic outcomes, and therapists would be in a position to emphasise or reflect on corresponding relevant musical elements in their clinical notes and reports.

Service users scoring within stages 6-8 – This tool may not be subtle enough to pick up the progress of service users whose scores fall consistently within the top levels of the matrix, as therapy work will become more detailed at this stage. This may affect its applicability and usefulness for some service users.

Subjectivity – Lawes (2012) makes an important point that, being completed by therapists themselves, there is a strong subjective component and this brings a risk of bias. However a degree of subjectivity is appropriate to the area we are evaluating – it cannot in its essence be quantified and so an adaptive tool such as this is needed. The same will be true of any therapist observation tool completed within the routine of their own work, and certainly it is not uncommon in most Allied Health Professions for therapists to make a clinical judgement on the work being completed and to assess whether interventions are meeting objectives.

Can others understand it? – The instrument uses specialist knowledge of the development of relationships and human communication, and so it may not be accessible for wider reading in its current format. However, the information can be translated into a more accessible format for reporting and dissemination, including the use of visual graphs as described. Clinician-reported measures in music therapy, in the experience of the author, can draw criticism due to the potential for reporting

bias, however they are commonly used throughout health and social care professions due to the expertise and training of the clinician. Ideally, alongside this as a clinician-reported outcomes measurement, patient-reported and observer-reported measures would provide useful further information about a person's progress in therapy.

Validity and reliability - video analysis – To date the tool has not been tested for validity or reliability except on a small scale within the local service described (which did find measurements between therapists to be consistent). The author would welcome the opportunity for this to be done.

DISCUSSION

This outcomes measurement tool was primarily designed for therapists to incorporate into practice without disruption to services. It should require a relatively low time investment and therefore represents a low equivalent “cost” to any organisation or funding programme. Therapists using the tool have commented on its usefulness not only in quickly and effectively keeping track of progress and outcomes, but also during the initial assessment phase for identifying and setting clinical objectives as the scoring across the range of sub-categories can highlight areas where work can usefully focus, and to inform, consolidate and focus subsequent feedback and reporting. It supports therapists in understanding progress made in the outcome areas identified, and can therefore also support therapists’ self-reflection and development. As stated by Tsiris et al. (2014, p.10) we want “appropriate evaluation tools that work from the inside out.”

The scoring system allows for variation in a client’s engagement and responses from week to week, and even within one session. While the tool gives a single, final “outcomes measurement” it still allows the therapist (and others) to see the full range of a client’s communication within their relationship and, perhaps most importantly, their potential communication skills through the highlighting of “picks.” In the setting of objectives, therapist colleagues commented that it aided the identification of more specific areas for focus, and the appropriate “zone of proximal development” rather than the broader focus of improving “communication” as a whole. Therapists also considered that the tool may be of use with a much wider range of client groups than it was originally developed for, given the prevalence of communication as an outcomes area in wider music therapy practice.

It is not feasible to make an effective comparison between the results of this tool and those of other outcomes measurement tools due to the lack, as described, of similar practical and accessible instruments in the music therapy profession. This type of tool can help meet the profession’s need to evaluate, measure and communicate its outcomes, and therefore its impact. This cannot always feasibly be done using music therapy assessment tools given the key considerations highlighted by Spiro et al. (2020) of the accessibility, cost, and complexity of tools, and the burden they create for the therapist’s workload.

This tool is directly focussed on a specific subset of clinical outcomes in the context of the music therapy setting, observed and scored by the clinician. It does not address the translation of clinical outcomes into more widely distributed impact on the client’s life and that of their families, carers, staff involved in their care, and the organisational context (Tsiris et al., 2020). Nor does it inherently address the involvement of the service user in the planning, delivery and development of their care, which this author considers to be an essential component of the therapy process.

What it does provide is scope for therapists to quickly and effectively carry out a detailed and nuanced appraisal of an individual's responses in a structure designed to be responsive to variation both within the session and across the period of therapy. Alongside this, it offers the possibility of translating numerical results into a graphic or visual representation to facilitate the therapist's communication of the outcomes to others (the service user, families, carers, colleagues, and funders or commissioners), and as such it may be a valuable addition to the therapy documentation process.

This new observation tool provides an effective means of capturing and assessing communication in music therapy within the context of a relationship-based approach. There is a risk in using a newly developed and unverified tool. It will require some training or time for therapists to familiarise themselves with it, although this should be straightforward as the tool is based on concepts that are already known. If it enables therapists to effectively measure the impact their work is having on a service user's ability to communicate within a relationship, it will be of value to the profession and, by consequence, to the people we work with.

ACKNOWLEDGEMENTS

I would like to express my sincere thanks to my music therapist colleagues who contributed to an immeasurable degree to the development of this work, through their input, discussions, support and feedback throughout the process, but especially through their skill and grace as therapists – Julie Allen, Catherine Gordon, Emma Hamer, Roisin Kennedy, Pamela Blair, Claire Adair, Naomi Hughes, Conall Dunlop, Jill Huey, Qiaoyi Li.

APPENDIX 1

	Sense of self / self-identity	Attention and engagement	Gaze and facial expression	Emotional expression	Physical	Use of voice	Instrumental play	Interaction
Client name:								
DOB and age:								
Service:								
Diagnosis:								
Time period	Awareness, reality orientation, identity, esteem, confidence,	Concentration, working memory, processing, reasoning, decision-making,	Gaze, facial expression, eye contact	Self-expression for communication, expression of emotion	Use of physical gesture to communicate	Use of voice, verbal communication	Use of musical instruments	Non-instrumental
Stage 1	No contact: No reaction, non-acknowledgement, avoidant							
Stage 2	Reaction: Reflexive, brief, fleeting, reluctant, uncontrolled							
Stage 3	Contact (Functional-Sensory): Undirected responses, no clear intent							
Stage 4	Sense of self: Some awareness, exploration, expression, attention, appropriate play, self-referenced							
Stage 5	Contact with others:							
	Awareness of other, joint attention, attuning, social referencing, choice-making, early communicative intent							
Stage 6	Relationship with others:							
	Longer engagement, mutual, imitation, turn-taking, self-regulation, communicative intent, initiation							
Stage 7	Shared affect: Imagination, shared experience, expressive,							
Stage 8	Full participation: Responsive focus, partnership, full participation							
	Total points (10)							
	Final score							

Table 1: Individual session score sheet 2

APPENDIX 2

	Sense of self / self-identity	Attention and engagement	Gaze and facial expression	Emotional Expression	Physical	Use of voice	Instrumental play	Interaction
	<i>Awareness, reality orientation, identity, esteem, confidence, control, independence</i>	<i>Concentration, working memory, processing, reasoning, decision-making</i>	<i>Gaze, facial expression, eye contact</i>	<i>Self-expression for communication, expression of emotion</i>	<i>Use of physical gesture to communicate</i>	<i>Use of voice, verbal communication</i>	<i>Use of musical instruments</i>	<i>Non-instrumental</i>
Stage 1 No contact: None, avoid, no reaction, unacknowledged	No contact or response	No contact or response	No contact or response	Affect difficult to interpret, indifferent, reluctant, distressed Pause to regulate affect	No contact or response May turn away or attempt to leave No movement or non-communicative movement	No contact or response, considered to be without speech	No awareness of musical instruments	No contact or response Pause to regulate affect
Stage 2 Reaction: brief, fleeting, reluctant, uncontrolled, reflexive	Fleeting response to other	Fleeting response to other	Fleeting response to other	Fleeting affect response, otherwise neutral and difficult to interpret, reluctant	Fleeting reflexive movements, habitual sounds Passive physical contact Movements made audible by appropriate musical improvisation	First vocal expression, habitual sounds Fleeting reflexive sounds Briefly connected to music, tonal crying	First awareness of instruments Inadvertent, chance sound-making Fleeting, reflexive response Strongly evoked play	First awareness Fleeting, reflexive response Strongly evoked involvement
Stage 3 Contact (functional – sensory): undirected responses, no clear intent	Fleeting attention Tension	Fleeting attention Tension	Fleeting or unnatural Lacking communicative intent	May present as: undirected, sensory, stereotyped, perseverative, disordered, impulsive, uncontrolled, inflexible, compulsive, tense Inadvertent communication without intent or for functional purposes	Functional, sensory, habitual movements Undirected reflexive movements possibly linked to the music Inadvertent communication without intent	Functional, sensory, habitual use of voice Voice expressing tension or needs Voice without communicative intent Some relationship to the music	Instrument use is: undirected, sensory, stereotyped, perseverative, disordered, impulsive, uncontrolled, inflexible, compulsive Evoked play, without communicative intent Some relationship with the music	May present as: undirected, sensory, stereotyped, perseverative, disordered, impulsive, uncontrolled, inflexible, compulsive Evoked involvement Inadvertent communication without intent Therapist is functionalised

(Table 2 continued)

Stage 4 Sense of self: Some awareness, exploration, expression, periods of attention, appropriate play, self-referenced	Awareness and exploration of self - "Here I am - this is me"	Able to attend for short periods in order to explore	Gaze rests, eye pointing	Affect to instrument is appropriate Emotional expression/intentional play but not to/with other Child displays emotional responses, may avoid proximity or closeness	Physical contact and movement in order to perceive and explore self Movements related to music, but not communicatively directed to the therapist May avoid physical proximity	Exploring voice, more variability Aware of own expression First motifs, fragmentary vocal/tonal responses, musical patterns and structuring beginning to form Reflexive or evoked vocal responses	Instrument explored appropriately, more variability Exploring own capacities and boundaries Moments of responsiveness, but no coactivity, self-referencing, not relating to other First motifs/fragmentary musical responses, musical patterns and structuring forming Reflexive or evoked responses to the music	Exploring own capacities and boundaries Object is explored appropriately Moments of responsiveness, but no coactivity, self-referencing, not relating to other Fragmentary responses
Stage 5 Contact with other: Awareness of other, joint attention, attuning, social referencing, choice-making, beginnings of communicative intent	Awareness and exploration of other - "Here I am - this is me" in relation to other and surroundings Social referencing	Brief joint attention 'Moments of synchronicity' – attuning Joint play evoked Social referencing	Eye contact made Social referencing	Attuning Social referencing Emotional responses/intentional play referenced to other, not always appropriate choice-making	Social referencing of movement to other and surroundings Interresponsive, communicative movement, including in music Choice-making (physical support)	First joint phrases, 'moments of synchronicity' – attuning Social-referencing - voice in relation to other, directed, responsive, anticipation, evoked imitation	First joint play, 'moments of synchronicity' – attuning Following a mutual theme, cause-and-effect Social referencing - play is directed, responsive, uses anticipation, evoked imitation or interaction Awareness of surroundings Choice-making	First joint activity, 'moments of synchronicity' - attuning Following a mutual theme, cause-and-effect Social referencing - reference to other, responsive, uses anticipation, evoked imitation or interaction Awareness of surroundings Choice making Object used for function

(Table 2 continued)

Stage 6 Relationship with other: Longer engagement, mutual, imitation, turn-taking, self-regulation, communicative intent, initiation	Relationship with other - dialogue <ul style="list-style-type: none"> Longer attention, engagement with other in dialogue/ shared music-making Motivation to interact with other, not evoked Some redirection possible Can self-regulate Choice-making 	<ul style="list-style-type: none"> Relaxed exchange of eye contact Can regulate by averting gaze Communicative intent 	<ul style="list-style-type: none"> Emotional responses/intentional play referenced to other and seeking response Some periods of shared affect sometimes appropriate to situation Freedom of expression (including resistiveness/assertiveness) Can regulate 	<ul style="list-style-type: none"> Uses movement purposefully in engagement and coactivity with other Communicates through movement Physically engaged by music 	<ul style="list-style-type: none"> Voice used in interaction - turn-taking, imitation, question-and-answer, give-and-take, call-and-response Communicative play - joint creating Communicative singing - joint creating Discovering vocal freedom of expression Increased musical structuring/patterns Introduces own ideas/initiates Greater control and self-regulation Responsive to dynamics, tempo, phrasing Plays with awareness and responsiveness 	<ul style="list-style-type: none"> Instrument used in interaction - turn-taking, imitation, question-and-answer, give-and-take, call-and-response Joint creating Discovering musical freedom of expression Increased musical structuring/patterns Introduces own ideas/initiates Greater control and self-regulation Responsive to dynamics, tempo, phrasing Plays with awareness and responsiveness 	<ul style="list-style-type: none"> Interaction and coactivity: turn-taking, imitation, question-and-answer, give-and-take, call-and-response Joint creating Freedom of expression (including resistiveness/assertiveness) Sustained directed responsiveness Longer duration 	
Stage 7 Shared affect: Imagination, shared experience, expressive, creative, dialogue, flexibility	Relationship with other - shared meaning Imagination and creativity Initiation Dialogue Flexibility - open to input from others	<ul style="list-style-type: none"> Creative flow Attentive and responsive Open to input from others, flexible Choice-making 	<ul style="list-style-type: none"> Shared meaning and affect Emotional quality of eye contact 	<ul style="list-style-type: none"> Imagination and creativity linked to affect Flexible emotional expression and response, appropriate to situation Using musical ideas to express personal issues Symbolic expression 	<ul style="list-style-type: none"> Uses movement in joint creation and shared affect exchanges. 	<ul style="list-style-type: none"> Voice used to demonstrate affect Voice expressed in meaningful shared dialogue Exchanges of imaginative ideas Creative expression of new/known vocal material Role-swapping, can lead or be led 	<ul style="list-style-type: none"> Musical play used to demonstrate affect Self-expression in meaningful shared dialogue Exchanges of imaginative ideas Creative expression of new/known musical ideas Role-swapping, can lead or be led 	<ul style="list-style-type: none"> Self-expression in a meaningful shared dialogue and activities Exchanges of imaginative ideas, creativity Role-swapping, can lead or be led Flexible Purposefulness

(Table 2 continued)

Stage 8 Full participation: Responsive, focus, partnership, full participation	Addition of verbal and emotional expression Emphasis on partnership Musical character is established, both leading and supporting		Connection of emotional and imaginary expression to verbal description and reflection Expresses self spontaneously, coherently and consistently.		Consistent use of voice in imaginative or expressive ideas leading to verbal description and reflection Vocal exploration Full participation in musical/vocal partnerships Work on vocal skills Musical character is established, both leading and supporting	Consistent use of instrument in imaginative or expressive ideas leading to verbal description and reflection Musical exploration Full participation in musical partnerships Work on musical skills Musical character is established, both leading and being supported	Object/interaction used in imaginative or expressive ideas leading to verbal description and reflection Full participation in partnership Work on new skills Leading and supporting
--	---	--	---	--	---	---	--

Table 2: Detailed definition of each sub-category of communication across each of developing relationship stages:

Sense of self / self-identity		
Stage 1	Lack of contact / Contact refusal Pause	No visible reaction
Stage 2	Contact – Reaction	Short awareness of other Brief reaction
Stage 3	Functional – Sensory – Contact	Fleeting attention Tension
Stage 4	Contact to oneself / Sense of a subjective self	Awareness of self Who am I in this setting? Exploration of self Child aware that he is author of his own activities
Stage 5	Contact to others / intersubjectivity	Awareness of other Exploration of other Who is here with me? Social referencing Joint activity (side-by-side) Awareness of surroundings
Stage 6	Relationship to others / Interactivity	Self in relation to other Being/doing with other Internal motivation to form a dialogue
Stage 7	Joint experience / Interaffection	Self in relation to other Shared (musical) meaning Use of imagination and creativity Other as playing partner Role-swapping
Stage 8	Verbal – Music space	Self-in-relation-to-other Verbal expression and connection of emotional experience and speech are the focus Introspection encouraged

Table 3: Communication-Relationship Outcomes Matrix (CROM) – Sense of self / self-identity

Attention and engagement		
Stage 1	Lack of contact / Contact refusal / Pause	No visible reaction
Stage 2	Contact – Reaction	Short awareness of other Brief reaction
Stage 3	Functional – Sensory – Contact	Fleeting attention Tension Restlessness
Stage 4	Contact to oneself / Sense of a subjective self	Awareness of self Able to attend in order to explore Accepts some redirection
Stage 5	Contact to others / Intersubjectivity	Awareness of other 'Moments of synchronicity' Joint attention Social referencing Child and other follow a mutual theme Awareness of surroundings
Stage 6	Relationship to others / Interactivity	Mutually desired contact with a dialogue partner Internal motivation to form a dialogue Dialogue not evoked Longer duration of engagement Joint creating of form Caught up in music-making
Stage 7	Joint experience / Interffectivity	Shared (musical) meaning Joint creation of form Working on a theme Caught up in creative flow of session Shows an attentive and responsive attitude
Stage 8	Verbal – Music space	Caught up in creative flow of session Shows an attentive and responsive attitude

Table 4: Communication-Relationship Outcomes Matrix (CROM) – Attention and engagement

Gaze and facial expression		
Stage 1	Lack of contact / Contact refusal / Pause	No eye contacts Avoiding eye contact Gaze averted Looks past or through Facial expression may appear blank or empty
Stage 2	Contact – Reaction	Fleeting eye contact Reacts only briefly to eye contact Change / indirect / inadvertent sound-making
Stage 3	Functional – Sensory – Contact	Eye contact may be controlling, unnaturally held, fleeting inadvertent communication, not communicative intent
Stage 4	Contact to oneself / Sense of a subjective self	Gaze rests on therapists
Stage 5	Contact to others / intersubjectivity	Eye contact has an expression of confirmation Socially referenced
Stage 6	Relationship to others / Interactivity	Mutually desired contact Relaxed exchange of eye contact Can regulate by averting gaze
Stage 7	Joint experience / Interaffectivity	Shared meaning Emotional quality of eye contact
Stage 8	Verbal – Music space	Shared meaning Emotional quality of eye contact

Table 5: Communication-Relationship Outcomes Matrix (CROM) – Gaze and facial expression

Emotional expression		
Stage 1	Lack of contact / Contact refusal / Pause	Unapproachable Affect difficult to interpret Pause to regulate affective tension Indifference, unwilling or distressed
Stage 2	Contact – Reaction	First reactions of positive affect observed, otherwise neutral and difficult to interpret Notices therapist's intervention for a short time Diffuse anxiety Reluctance
Stage 3	Functional – Sensory – Contact	High inner tension and restlessness Therapist focuses on child's affect Sensory, destructive, stereotyped
Stage 4	Contact to oneself / Sense of a subjective self	The state of affect (tension) transferred to the instrument is appropriate Self-regulation Child expresses himself emotionally Child realising he is author of his own activities Child may show excitement, wonder, pleasure Child may revert to defensive behaviour – evasive, aloofness, avoidance due to closeness of contact
Stage 5	Contact to others / Intersubjectivity	Attuning Social referencing Child feels the need for confirmation of his perceptions and feelings Shows pleasure in being active with the music Can assert himself – choice-making
Stage 6	Relationship to others / Interactivity	Can regulate Internal motivation Eagerness, enjoyment Will use the expressive possibilities of the situation Compulsiveness, rebelliousness, fixation
Stage 7	Joint experience / Interaffectivity	Shared meaning Demonstrates a state of affect linked to imaginative ideas Action and affect are brought together Flexible expressiveness Using musical ideas to express personal issues Emotionally responsive
Stage 8	Verbal – Music space	Emotional changes and/or imaginary contents that lead to verbalisations (description/ reflection) Connection of emotional experience to verbal Encouraged introspection Expresses self spontaneously and coherently

Table 6: Communication-Relationship Outcomes Matrix (CROM) – Emotional expression

Physical		
Stage 1	Lack of contact / Contact refusal / Pause	Unapproachable Affect difficult to interpret Pause to regulate affective tension Indifference, unwilling or distressed
Stage 2	Contact – Reaction	First reactions of positive affect observed, otherwise neutral and difficult to interpret Notices therapist's intervention for a short time Diffuse anxiety Reluctance
Stage 3	Functional – Sensory – Contact	High inner tension and restlessness Therapist focuses on child's affect Sensory, destructive, stereotyped
Stage 4	Contact to oneself / Sense of a subjective self	The state of affect (tension) transferred to the instrument is appropriate Self-regulation Child expresses himself emotionally Child realising he is author of his own activities Child may show excitement, wonder, pleasure Child may revert to defensive behaviour – evasive, aloofness, avoidance due to closeness of contact
Stage 5	Contact to others / Intersubjectivity	Attuning Social referencing Child feels the need for confirmation of his perceptions and feelings Shows pleasure in being active with the music Can assert himself – choice-making
Stage 6	Relationship to others / Interactivity	Can regulate Internal motivation Eagerness, enjoyment Will use the expressive possibilities of the situation Compulsiveness, rebelliousness, fixation
Stage 7	Joint experience / Interaffectivity	Shared meaning Demonstrates a state of affect linked to imaginative ideas Action and affect are brought together Flexible expressiveness Using musical ideas to express personal issues Emotionally responsive
Stage 8	Verbal – Music space	Emotional changes and/or imaginary contents that lead to verbalisations (description / reflection) Connection of emotional experience to verbal Encouraged introspection Expresses self spontaneously and coherently

Table 7: Communication-Relationship Outcomes Matrix (CROM) – Physical

Interaction		
Stage 1	Lack of contact / Contact refusal / Pause	Restriction of social interaction, unapproachable Stereotype behaviour Child makes a pause No obvious contact or reaction
Stage 2	Contact – Reaction	First awareness Short reaction becomes perceptible by chance Brief contact Evoked involvement Uncommunicative and non-responsive
Stage 3	Functional – Sensory – Contact	Sensorial play Sensory, destructive or stereotype Evoked involvement Some interest in participating but unable to relate to other Uses objects perseverative Inadvertent communication without intent Therapist is functionalised
Stage 4	Contact to oneself / Sense of a subjective self	Exploring own capacities and boundaries Sensorial play Object is explored Cause-and-effect Child expresses himself by means of an activity Child realising he is author of his own activities Moments of responsiveness Holds off from coactivity, but without distress Fragmentary responses becoming formed
Stage 5	Contact to others / Intersubjectivity	Interest in joint activity Object used for function Social referencing Attuning 'Moments of synchronicity' Awareness of imitation Awareness of surroundings Able to introduce own ideas Seek dialogue Child and other follow a mutual theme Child can assert himself-choice-making Dialogue can be evoked for short periods

(Table 11 continued)

Stage 6	Relationship to others / Interactivity	Basic turn-taking 'Moments of synchronicity' Dialogue Imitation Question-and-answer game Joint creating of form Coactivity Resistiveness / assertiveness as part of communication Sustained directed responsiveness Dialogue not evoked
Stage 7	Joint experience / Interaffectivity	Relationship is firmly established Self-expression in a playful activity Imaginative ideas Joint playing Role-swapping Flexible exchange of ideas Interest centres on meaningful activities Purposefulness Works intently at coordinating and controlling actions
Stage 8	Verbal – Music space	Object / interaction sets off emotional changes and/or imaginary contents that lead to verbalisations (description/ reflection) Partnership Participates enthusiastically in adventures and explorations and is keen to work on new skills Satisfaction in using expressive and structural components

Table 8: Communication-Relationship Outcomes Matrix (CROM) – Interaction

Sub-categories of 'communication':

Sense of self – Refers to the client's self-awareness, reality orientation, self-identity, self-esteem, confidence, control, and independence.

Attention and Engagement – Related to cognitive skills, this includes concentration, working memory, processing, reasoning, and decision-making.

Gaze and facial expression – How the client uses gaze, facial expression and eye contact for communicative purposes.

Emotional Expression and Support – Communication as a form of self-expression and expression of emotions, as well as emotional support provided by the therapist.

Physical - This refers to the use of physical movements and gestures to communicate (as opposed to functional motor skills).

Vocal / Verbal skills – The use of the voice and vocalisations in communication, and verbal skills.

Interaction - Shared mutual or reciprocal action between two people, cooperation or collaboration.

Each 'communication sub-category' is scored across a scale which refers to *eight stages of a developing relationship* with another person. The stages are defined as follows:

- Stage 1 "No contact"** – Client does not react or acknowledge the therapist or the music, or actively avoids contact.
- Stage 2 "Reaction"** – The client's responses are reflexive, brief, fleeting, reluctant, or uncontrolled.
- Stage 3 "Contact"** – Responses serve a purely functional or sensory purpose, or else are undirected, with no clear intent.
- Stage 4 "Self-awareness"** – Client shows some awareness, exploration, expression, attention, and/or appropriate play, all of which is mainly self-referenced.
- Stage 5 "Contact with other"** – Client shows awareness of other, joint attention, attuning, social referencing, choice-making, and/or early communicative intent.
- Stage 6 "Relationship with other"** – Client engages for longer periods in mutual or shared interactions which may incorporate imitation, turn-taking, or initiation. There is evidence of self-regulation and communicative intent.
- Stage 7 "Shared affect"** – Develops from the previous stage but includes imagination, shared experiences, and expressive, creative, dialogue.
- Stage 8 "Full participation"** – Develops from the above, which increased responsiveness and focus on partnership.

REFERENCES

- Bell, A. P., Perry, R., Peng, M., & Miller, A. J. (2014). The Music Therapy Communication and Social Interaction Scale (MTCSI): Developing a new Nordoff Robbins scale and examining interrater reliability. *Music Therapy Perspectives*, 32(1), 61-70. <https://doi.org/10.1093/mtp/miu002>
- Blackstone, S. W. & Hunt Berg, M. (2012). *Social networks: A communication inventory for individuals with complex communication needs and their communication partners*. Attainment Company Inc. [https://communicationmatrix.org/Uploads/Posts/8668/SN_inventory%20\(1\).pdf](https://communicationmatrix.org/Uploads/Posts/8668/SN_inventory%20(1).pdf)
- Carpente, J. A. (2014). Individual Music-Centered Assessment Profile for Neurodevelopmental Disorders (IMCAP-ND): New developments. *Music Therapy Perspectives*, 32(1), 56-60. <https://doi.org/10.1093/mtp/miu005>
- Chase, K. M. (2004). Music therapy assessment for children with developmental disabilities: A survey study. *Journal of Music Therapy*, 41(1), 28-54. <https://doi.org/10.1093/jmt/41.1.28>
- Constantino, J. N. (2013). Social responsiveness scale. In F. R. Volkmar (Ed.), *Encyclopedia of autism spectrum disorders* (pp. 116-139). Springer. https://doi.org/10.1007/978-1-4419-1698-3_296
- Cripps, C., Tsiris, G., & Spiro, N. (Eds.). (2016). *Outcome measures in music therapy: A resource developed by the Nordoff Robbins research team*. Nordoff Robbins. www.nordoff-robbins.org.uk
- Douglass, E. T. (2006). The development of a music therapy assessment tool for hospitalized children. *Music Therapy Perspectives*, 24(2), 73-79. <https://doi.org/10.1093/mtp/24.2.73>
- Edgerton, C. L. (1994). The effect of improvisational music therapy on the communicative behaviours of autistic children. *Journal of Music Therapy*, 31(1), 31-62. <https://doi.org/10.1093/jmt/31.1.31>
- Gattino, G. S., Riesgo, R. d. S., Longo, D., Leite, J. C. L., & Faccini, L. S. (2011). Effects of relational music therapy on communication of children with autism: A randomized controlled study. *Nordic Journal of Music Therapy*, 20(2), 142-154. <https://doi.org/10.1080/08098131.2011.566933>
- Hedrick, D. L., Prather, E. M., & Tobin, A. R. (1975). *Sequenced inventory of communication development*. University of Washington Press
- Kim, J. (2006). *The effects of improvisational music therapy on joint attention behaviours in children with autistic spectrum disorder* [PhD thesis, Aalborg University]. [http://vbn.aau.dk/en/publications/the-effects-of-improvisational-music-therapy-on-joint-attentionbehaviours-in-children-with-autistic-spectrum-disorder\(b247d332-4985-4efc-8386-ccb6c6ce9160\).html](http://vbn.aau.dk/en/publications/the-effects-of-improvisational-music-therapy-on-joint-attentionbehaviours-in-children-with-autistic-spectrum-disorder(b247d332-4985-4efc-8386-ccb6c6ce9160).html)
- Kleiman, L. (2003). *Functional communication profile: Assessing communicative effectiveness in clients with developmental delays*. LinguiSystems.
- Lawes, M. (2012). Reporting on outcomes: An adaptation of the 'AQR-instrument' used to evaluate music therapy in autism. *Approaches: Music Therapy and Special Music Education*, 4(2), 110-120. http://approaches.gr/wp-content/uploads/2015/09/Approaches_422012_Lawes_Article.pdf
- Malloch, S., & Trevarthen, C. (Eds.). (2009). *Communicative musicality: Exploring the basis of human companionship*. Oxford University Press.
- Mundy, P., Delgado, C., Block, J., Venezia, M., Hogan, A., & Seibert, J. (2003). *A manual for the Early Social Communication Scales (ESCS) (Draft)*. http://education.ucdavis.edu/sites/main/files/file-attachments/escs_manual_2003_2013.pdf
- Nordoff, C., & Robbins, P. (2007). *Creative Music Therapy – A guide to fostering clinical musicianship*. Barcelona Publishers.
- Northern Ireland Executive (2016). *Draft Programme for Government Framework 2016-2021*. <https://www.northernireland.gov.uk/sites/default/files/consultations/newnigov/draft-pfg-framework-2016-21.pdf>

- Northern Ireland Executive (2016). *Health and wellbeing – Delivering together 2016-2026*. <https://www.health-ni.gov.uk/sites/default/files/publications/health/health-and-wellbeing-2026-delivering-together.pdf>
- Northern Ireland Executive (2020). *New decade, new approach*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/856998/2020-01-08_a_new_decade_a_new_approach.pdf
- Perry, M. M. R. (2003). Relating improvisational music therapy with severely and multiply disabled children to communication development. *Journal of Music Therapy*, 40(3), 227-246. <https://doi.org/10.1093/jmt/40.3.227>
- Raglio, A., Traficante, D., & Oasi, O. (2007). Comparison of the music therapy coding scheme with the music therapy checklist. *Psychological Reports*, 101(3 Pt1), 875-880. <https://doi.org/10.2466/pr0.101.3.875-880>
- Raglio, A., Traficante, D., & Oasi, O. (2011a). The evaluation of the music therapy process in the intersubjective perspective: the music therapy rating scale, a pilot study. *Pragmatic and Observational Research*, 2, 19-23. <https://doi.org/10.2147/POR.S21891>
- Raglio, A., Traficante, D., & Oasi, O. (2011b). Autism and music therapy: Intersubjective approach and music therapy assessment. *Nordic Journal of Music Therapy*, 20(2), 123-141. <https://doi.org/10.1080/08098130903377399>
- Raglio, A., Gnesi, M., Monti, M. C., Oasi, O., Gianotti, M., Attardo, L., Gontero, G., Morotti, L., Boffelli, S., Imbriani, C., Imbriani, M., & Montomoli, C. (2017). The Music Therapy Session Assessment Scale (MT-SAS): Validation of a new tool for music therapy process evaluation. *Clinical Psychology & Psychotherapy*, 24(6), 01547-01561. <https://doi.org/10.1002/cpp.2115>
- Saville, R. (2018). Applying the 'East Kent Outcomes System' (EKOS) in music therapy. *Approaches: an Interdisciplinary Journal of Music Therapy*, 10(1), 7-17. <http://approaches.gr/wp-content/uploads/2018/10/1-Approaches-10-1-2018-a20160327-saville.pdf>
- Schalkwijk, F.W. (1994). *Music and people with developmental disabilities*. Jessica Kingsley Publishers.
- Schopler, E., Van Bourgondien, M. E., Wellman, G. J., & Love, S. R. (2010). *Childhood autism rating scale* (2nd ed.). Pearson Education Ltd.
- Schumacher, K., & Calvet-Kruppa C. (1999). The "AQR" – an analysis system to evaluate the quality of relationship during music therapy. *Nordic Journal of Music Therapy*, 8(2), 188-191. <https://doi.org/10.1080/08098139909477974>
- Schumacher, K., & Calvet, C. (2007). The "AQR-instrument" (Assessment of the Quality of Relationship) – An observation instrument to assess the quality of a relationship. In T. Wosch & T. Wigram (Eds.), *Microanalysis in music therapy: Methods, techniques and applications for clinicians, researchers, educators and students*. Jessica Kingsley Publishers.
- Silverman, M. J. (2008). Nonverbal communication, music therapy, and autism: A review of literature and case example. *Journal of Creativity in Mental Health*, 3(1), 3-19. <https://doi.org/10.1080/15401380801995068>
- Spiro, N., & Himberg, T. (2016). Analysing change in music therapy interactions of children with communication difficulties. *Philosophical Transactions, Royal Society Publishing*, 371. <https://doi.org/10.1098/rstb.2015.0374>
- Spiro, N., Tsiris, G., & Cripps, C. (2018). A systematic review of outcome measures in music therapy. *Music Therapy Perspectives*, 36(1), 67-78. <https://doi.org/10.1093/mtpp/mix011>
- Spiro, N., Tsiris, G., & Cripps, C. (2020). "Sounds good, but... what is it?" An introduction to outcome measurement from a music therapy perspective. *Approaches: An Interdisciplinary Journal of Music Therapy*, 12(1), 8-29. <https://approaches.gr/spiro-a20180627/>
- The Outcomes Star (2021). <https://www.outcomesstar.org.uk>
- Tsiris, G., Pavlicevic, M., & Farrant, C. (2014). *A guide to evaluation for arts therapists and arts and health practitioners*. Jessica Kingsley Publishers.
- Tsiris, G., Spiro, N., Coggins, O., & Zubala, A. (2020). The Impact Areas Questionnaire (IAQ): A music therapy service evaluation tool. *Voices A World Forum for Music Therapy*, 20(2). <https://doi.org/10.15845/voices.v20i2.2816>
- van der Gaag, A. (1988). The development of a communication assessment procedure for use with adults with a mental handicap – an interim report. *The British Journal of Mental Subnormality*, 34(1), 62-68. <https://doi.org/10.1179/bjms.1988.008>
- Watson, T. (2007). *Music therapy with adults with learning disabilities*. Routledge.
- Wosch, T., & Wigram, T. (Eds.). (2007). *Microanalysis in music therapy: Methods, techniques and applications for clinicians, researchers, educators and students*. Jessica Kingsley Publishers.

Ελληνική περίληψη | Greek abstract

Το Δίκτυο Αποτελεσμάτων Επικοινωνίας-Σχέσης (Communication-Relationship Outcomes Matrix, CROM): Ένα εργαλείο για την μέτρηση των αποτελεσμάτων επικοινωνίας στην καθημερινή μουσικοθεραπευτική πράξη

Jenny Kirkwood

ΠΕΡΙΛΗΨΗ

Η μουσικοθεραπεία στο Ηνωμένο Βασίλειο στις μέρες μας λειτουργεί εντός σύνθετων συστημάτων υγειονομικής περίθαλψης και ενός πιεσμένου κλίματος χρηματοδότησης, όπου η τεκμηρίωση του οφέλους

των υπηρεσιών είναι ζωτικής σημασίας. Όμως η αποτελεσματική «μέτρηση» του αντίκτυπου του θεραπευτικού έργου μπορεί να αποτελέσει πρόκληση. Πολλά εργαλεία αξιολόγησης αποτελεσμάτων είναι πολύ σύνθετα για να εφαρμοστούν με συνέπεια και μπορεί να στερούνται συνάφειας ως προς την καθημερινή μουσικοθεραπευτική πρακτική. Αυτό το άρθρο παρουσιάζει το Δίκτυο Αποτελεσμάτων Επικοινωνίας-Σχέσης (Communication-Relationship Outcomes Matrix, CROM), ένα εργαλείο καταγραφής και αποτίμησης των παρατηρήσεων του θεραπευτή το οποίο αναπτύχθηκε στο πλαίσιο ενός πρωτόκολλου αξιολόγησης υπηρεσίας που κατατέθηκε από την συγγραφέα το 2015 για την συμπλήρωση κατάρτισης μεταπτυχιακού τίτλου μουσικοθεραπείας. Το εργαλείο αναπτύχθηκε για να χρησιμοποιηθεί σε κέντρο με παιδιά με αναπηρίες που εκδηλώνουν «σοβαρές επικοινωνιακές δυσκολίες» και «προκλητικές συμπεριφορές» (τα κριτήρια όπως διατυπώθηκαν από τον φορέα χρηματοδότησης). Είναι κοινώς αποδεκτό στη μουσικοθεραπεία ότι η εδραίωση, διατήρηση και ανάπτυξη της «σχέσης θεραπευτή-θεραπευόμενου» αποτελεί έναν από τους ακρογωνιαίους λίθους που θεμελιώνει την πρακτική και διαποτίζει όλη τη δουλειά που κάνουμε. Ως προς τους συγκεκριμένους θεραπευτικούς στόχους, η ανάπτυξη «επικοινωνιακών δεξιοτήτων» είναι μια κοινή περιοχή εστίασης για πολλούς χρήστες υπηρεσιών, αλλά είναι ένας όρος με ευρύ φάσμα που μπορεί να συμπεριλαμβάνει πολυάριθμα συμπεριφορικά στοιχεία και μηχανισμούς όπως αυτεπίγνωση, εμπλοκή, προσοχή, έκφραση προσώπου, χειρονομία, λεκτική και μη-λεκτική διάδραση και συναισθηματική αυτο-έκφραση, όλα εκ των οποίων παρουσιάζουν δυσκολία στον ορισμό και τη μέτρησή τους. Αυτό το εργαλείο αποτελεσμάτων έχει σχεδιαστεί για να απευθυνθεί σε κάποιες από τις βασικές δομές ανάπτυξης της επικοινωνίας εντός του πλαισίου μίας σχεσιακής προσέγγισης. Στοχεύει επίσης να αποτελεί μία επαρκώς πρακτική εφαρμογή για την καθημερινή πρακτική αποτυπώνοντας παράλληλα τις λεπτές αποχρώσεις της δουλειάς μας.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

μουσικοθεραπεία, μέτρηση αποτελεσμάτων, επικοινωνία, σχέση