

Research Article

Self-assessing music therapy: The validity and reliability of the music therapy practice scale (MTPS)

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ABSTRACT

Several questionnaires have been designed to accomplish specific research objectives in music therapy research. However, these do not always report the relevant psychometric properties. There is a need for valid and reliable instruments to self-assess music therapy practice. The development and validation of the Music Therapy Practice Scale (MTPS) - a quantitative 15-item scale for self-assessing music therapy practice - is reported. A total of 247 music therapists and music therapy trainees completed an MTPS. The validity and reliability of the scale were assessed, calculating descriptive statistics, exploratory factor analysis, Cronbach's alpha and confirmatory factor analysis. To demonstrate its utility, the scale was used to observe differences between music therapy students and post-graduate music therapists. The exploratory factor analysis focused on the following three dimensions for MTPS: 1. designing the treatment; 2. managing the sessions; 3. administrative duties. These dimensions were proved by the confirmatory factor analysis. Internal reliability (Cronbach's alpha) was high (values varied between .81 and .92) and significant group differences were shown between students and music therapists in all MTPS dimensions studied. Preliminary evidence supports the use of MTPS for understanding and self-assessing the practice of music therapy students and post-graduate music therapists. The scale could also be applied to further research investigating the correlation between music therapy practice and other constructs, such as self-esteem and self-efficacy.

Introduction

Assessing the competency and practice of music therapists is an emerging topic of research. Previous research focused mainly on the effects of music on humans and on the effectiveness of music therapy (Biasutti & Mangiacotti, 2018; Degli Stefani & Biasutti, 2016). The effects of music and the effectiveness of music therapy are relevant aspects for establishing an epistemological status and to increase the credibility of the music therapy. Knowledge of the potentialities of music is connected to the profession of the music therapist for two reasons: 1) scientific research is essential to demonstrate the effectiveness of therapy with music, 2) it becomes necessary that music therapists have a complete education and defined competencies (Bunt & Hoskyns, 2002; Decuir & Policastro Vega, 2010; Goodman, 2011; Kim, 2016). Designing a complete education involves definition of the competencies and the related curriculum for educating music therapists (Wigram, Pedersen, & Bonde, 2002). Several aspects could be considered when designing a curriculum, such as the space assigned for practice and the method for developing the competencies.

Nowadays the reflective practice model (Schön, 1983) is one of the most well-known and effective methods for developing the competencies of practitioners, and is highly relevant in training for music therapists. Reflective practice involves the skills to reflect on one's professional activities, and leads to the development of a consciousness about the processes activated during music therapy working. Although the development of educational activities based on reflective practice have been considered important, there are few contributions and validated tools for self-assessing the effectiveness of practice-based music therapy activities (Hsiao, 2014; Kern & Tague, 2017).

This paper presents the development and validation of a self-assessment quantitative scale, the Music Therapy Practice Scale (MTPS) to self-assess music therapy practice. Statistical analyses were computed to test the reliability of the scale to demonstrate its validity. The scale was applied to detect differences in the level of expertise in the practice of music therapy between music therapy students and post-graduate music therapists. The purpose of this comparison was to demonstrate the utility of the scale. Differences are expected according to the various levels of expertise. The instrument is intended to be used as

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a part of education/training activities, or in some other aspects of clinical work.

Background

The background of the current study is framed in the analysis of music therapy practice. Research studies on the practice of music therapy, the education of the music therapist and reflective practice, the internship period of trainees, and the questionnaires for assessing the skills of the music therapist are reviewed.

The practice of music therapy

The American Music Therapy Association (AMTA) defines the practice of music therapy as “the clinical and evidence-based use of music interventions to accomplish individualized goals for people of all ages and ability levels within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program. Music therapists develop music therapy treatment plans specific to the needs and strengths of the client who may be seen individually or in groups” (AMTA, 2019a). The AMTA (2019b) standards of clinical practice give a comprehensive view of all the areas considered by the music therapist. The standards include such skills as: conducting a music therapy assessment of a client to determine whether treatment is appropriate, developing and implementing an individualised music therapy treatment plan, evaluating the client's response to music therapy and the music therapy treatment plan itself. These activities are connected and affect each other reciprocally. Professional competencies linked to these aspects – as reported by the American Music Therapy Association (AMTA, 2019c) – include identifying the client's functional and dysfunctional behaviour, identifying the client's therapeutic needs, treatment planning, formulating objectives for individual and group therapy, recognising, interpreting and responding to significant events in music therapy sessions, designing and implementing methods for evaluating the effectiveness of therapeutic strategies; professional role/ethics, and performing the administrative duties usually required of clinicians.

Similar aspects are highlighted in handbooks and research studies focusing on music therapy education, which consider elements such as designing treatments, setting goals, and assessing patient needs (Bunt & Hoskyns, 2002; Goodman, 2011; Kern & Tague, 2017; Rushing & Capilouto, 2017; Tanguay, 2008; Taylor, 1987; Wheeler, Shultis, & Polen, 2005; Wigram et al., 2002).

The education of the music therapist and reflective practice

Several studies have focused on the education of the music therapist (Wigram et al., 2002) and one crucial issue is defining the best method for developing their competencies (Jackson, 2008; Madsen & Kaiser, 1999). Several approaches could be considered and reflective practice is one of the most well-known. Reflective practice consists of self-analysing professional practice, with critical thinking on aspects such as what, how and why we act. It involves the skills to reflect on one's working actions, critically examining the surrounding values, assessing whether the work meets defined criteria and the effectiveness of the work, the strengths and the weaknesses of the actions performed. Reflection is connected to meaningful learning and the development of metacognition, problem solving, critical thinking, and self-evaluation skills. Reflective practice is a relevant instrument in environments where professional learning is based on practice because it develops a consciousness about the processes enacted and engages participants in a process of continuous learning.

The internship period of trainees

Several studies of music therapists education focus on the internship

experience and the supervision period, which are crucial activities used to develop trainee abilities (Jackson, 2008; Madsen & Kaiser, 1999; Rushing & Capilouto, 2017; Tanguay, 2008). Trainees develop abilities to plan and conduct a session, administration skills, and ethics during the internship period. These professional competencies are perceived as important by experienced professionals, and are addressed during the final stage of the internship (Rushing & Capilouto, 2017).

Some studies have contrasted the views of trainees with those of supervisors. Knight (2008) investigated the concerns of 85 trainees and 21 of their supervisors using the Internship Concerns Questionnaire. The findings highlighted significant differences between trainees and supervisors in the following areas: communication with the staff and maintaining customer confidence. The average level of trainee concerns in these areas was significantly lower than that of the supervisors. These results were explained by assuming less interest on the part of the trainees in skills such as communication with staff and maintaining customer confidence.

Questionnaires for assessing the skills of the music therapist

Several tools have been developed for assessing the skills of the music therapist. Numerous variables affect the evaluation process, considering issues such as connecting learning activities to practical activities in music therapy. Questionnaires were designed to address specific research aspects such as gatekeeping practices of music therapy (Hsiao, 2014), the importance of supervision (Jackson, 2008) and the status and trends of music therapy practice worldwide (Kern & Tague, 2017). These questionnaires were developed in survey studies rather than in instrumentation studies and probably for these reasons the psychometric properties were not reported for all the tools developed. The focus of the studies was on the content rather on the method, making it difficult to determine the validity of the measurement tools and the potential for using them in follow-up studies.

Other tools involve evaluation of the basic competencies of the music therapist. Taylor (1987) carried out a study surveying the entry level competencies of professional music therapists. Participants were asked to rate 150 competency statements in the first phase and 100 in the second phase on an 8-point scale. Taylor's (1987) study was complex and provided a number of insightful ideas. However, too many items were considered simultaneously, producing 10 factors during the exploratory factor analysis (EFA) which made it difficult to manage and define them. There was no confirmatory factor analysis (CFA) of the factorial structure of the scale.

Additional tools were proposed for comparing the views of music therapist trainees and supervisors. Knight's (2008) Internship Concerns Questionnaire consists of two parts. The first part investigates possible concerns experienced during the internship, using a Likert scale. The second part asks participants to indicate any other concerns not presented in the first section (e.g. external concerns, such as accommodation, transportation, supervisor expectations, client interactions and musical skills). The findings compared single items without providing data on the validation of the tool such as EFA and CFA. While all of the questionnaires provided relevant information, creating an assessment supported by EFA and CFA is valuable because the psychometric characteristics are relevant indexes for understanding the validity of the assessment tools.

Synthesis of the literature review

Various issues regarding the abilities of the music therapists and the validity of tools for assessing the practice of music therapy emerged from the literature, such as planning the treatment, conducting the sessions and the administrative duties that music therapists have to face during their professional activity. Materials such as the AMTA documents (2019a, 2019b, 2019c) have presented a complete list of statements regarding the standards and the professional competencies of the

Table 1
Constructs, definitions and skills for MTPS.

Constructs	Definitions	Skills
Designing the treatment	Designing the treatment involves the ability to adopt the appropriate strategies for planning a music therapy treatment.	Awareness of the designing process, setting objectives, defining a functional diagnosis, selecting the musical experiences and evaluating a music therapy treatment.
Managing the sessions	Managing the sessions refers to the skills for conducting a music therapy session.	Awareness in dealing with maladaptive behaviour, managing time, addressing customers' needs and responding to significant events during music therapy sessions.
Administrative duties	Administrative duties refer to a variety of administrative and clerical duties.	Awareness of ethics and deontology, legal responsibilities, and communication skills for interacting with the staff, trainees, colleagues and supervisors.

music therapist. The AMTA documents are a resource to be used as a reference for the development of specific scales.

Questionnaires have also been developed, primarily asking specific questions about music therapy and how to conduct a session. Some measurement tools were presented without reporting detailed data on the reliability/validation process, and without basic analyses such as EFA, CFA and Cronbach's alpha (Hsiao, 2014; Jackson, 2008; Knight, 2008; Tanguay, 2008). Few studies reported EFA (Taylor, 1987). Including the factorial structure and validation data of assessment tools is important to justify the relevance of the items and support the coherence of the questionnaire.

Additional issues in previous research include statistical analyses that comparing participant answers to single items rather than factors (Hsiao, 2014; Jackson, 2008; Knight, 2008; Tanguay, 2008). Certain tools were also built for specific studies with no intention to generalise their use in different contexts as standardised measures (Hsiao, 2014; Jackson, 2008; Kern & Tague, 2017).

The current study aims to provide additional input on the assessment of music therapist skills, by developing and statistically validating an instrument for measuring music therapy practice. Studying the practice would enhance the understanding of the processes involved in the music therapy profession.

Aims and research questions

The objective of the current study is to develop and validate a quantitative scale, the MTPS to assess music therapy practice. MTPS is based on the following three elements: designing the treatment; managing the sessions and administrative duties. The theoretical framework of the scale is based on research into music therapy and on the AMTA documents (AMTA, 2019a, 2019b, 2019c). The following research questions were considered.

- 1) Are the dimensions of MTPS supported by the exploratory and confirmatory factor analyses?
- 2) Is MTPS found to be sufficiently reliable?
- 3) Can MTPS ascertain differences in the practice between music therapy students and post-graduate music therapists?

Methods

Procedure and participants

The scale was uploaded to the university website. Participants were recruited through personal contacts and collaboration with music therapy associations and schools which invited their members and students to participate in the study. Participants were asked to complete the questionnaire by e-mail, telephone or personal contact.

A convenience sample of 247 participants responded. In convenience sampling participants are selected because of their suitable accessibility to the researchers rather than being representative of the entire population. The participants were 141 music therapy students (mean age = 33.4; SD = 9.2, minimum age-maximum age = 20–56, 97

females and 44 males) enrolled in training programs to become music therapists, and 106 post-graduate music therapists (mean age = 41.1, SD = 8.1, minimum age-maximum age = 27–57, 69 females and 37 males). The music therapy students attended triennial programs to become music therapists delivered by private institutions. The training of the students included a total of 1200 h of activities in three years subdivided by music area (25%), music therapy area (45%), psychological area (15%) and medical area (15%). The post-graduate music therapists had at least two years of professional experience after graduation in music therapy in several contexts and with different patients. The data collected was randomly sorted into two groups: one was assigned to the EFA group, and the other to the CFA group.

The current study was implemented in agreement with the recommendations of the British Psychological Society. All participants signed an informed consent form and were assured of the confidentiality and anonymity of the study in accordance with the Declaration of Helsinki.

The scale development

MTPS was developed following the methodological guidelines by DeVellis (2003). A literature review was first performed to highlight existing theories and the strengths and weaknesses of available tools. Aspects such as the aims, the constructs measured and the factors of the existing scales were considered. This analysis provided input for the theoretical framework of the current study, which was based on the following three dimensions: designing the treatment; managing the sessions and administrative duties. The constructs, definitions and skills considered for the development of the scale are reported in Table 1.

The items were developed within this framework. Several questionnaires and documents related to the practice of music therapy and skills were examined during the development process, such as the competency rating scale (Taylor, 1987); the internship concerns questionnaire (Knight, 2008), the AMTA (2019a) scope of music therapy practice, the AMTA (2019b) standards of clinical practice and the AMTA (2019c) professional competencies. Some items were modified or adapted from these questionnaires and the AMTA (2019a, 2019b, 2019c) statements. All items were formulated in positive terms to prevent the necessity for reversing negative items prior to statistical analysis. Each competency was expressed as an observable behaviour. The process of adapting the items is presented in Table 2.

In order to assess content validity, a draft of the scale was sent to two experts who were music therapists with at least 20 years of clinical practice experience and several years as supervisors of trainee music therapists. Experts were asked to control whether any statements were unclear and if there was a weak correspondence between the conceptual validity and the formulation of the items. The suggestions of the experts were implemented in revising the scale and changes were made accordingly. The present study was focused on content validity and the validity of construct based on expert opinion rather than considering the predictive validity of the instrument.

The scale was preliminarily tested in a small-scale pilot study with five participants. Participants were asked to complete the assessment

Table 2

The MTPS items, the original items or statements and sources.

MTPS items (I know how:)	Original items or statements	Sources
1. To design individualised music therapy treatment	Developing an individualised music therapy treatment plan for the client	AMTA (2019b)
2. To diagnose client needs	Diagnosing client needs	Knight (2008)
3. To design the objectives of a music therapy treatment	Identify the client's therapeutic needs	AMTA (2019a)
4. To design the musical experiences of a music therapy treatment	Formulate goals and objectives for individual and group therapy	AMTA (2019a)
5. To design the evaluation of a music therapy treatment	Sequence and pace music experiences within a session according to the client's needs and situational factors.	AMTA (2019a)
6. To conduct music therapy sessions	Evaluating the client's response to music therapy and the music therapy treatment plan,	AMTA (2019b)
7. To manage maladaptive behaviour in music therapy sessions	Conduct or facilitate group and individual music therapy.	AMTA (2019a)
8. To manage time in music therapy sessions	Change to meet the priority needs of the client during crisis intervention.	AMTA (2019c)
9. To evaluate client responses and to adapt the intervention accordingly in music therapy sessions	Managing time and work	Knight (2008)
10. To respond to significant events in music therapy sessions	The music therapist implements ongoing evaluation of client responses and adapts the intervention accordingly	AMTA (2019b)
11. To communicate with staff	Recognise, interpret, and respond appropriately to significant events in music therapy sessions as they occur.	AMTA (2019a)
12. To communicate with trainees, colleagues, supervisors	Communicating with facility staff	Knight (2008)
13. To perform administrative duties	Communicating with other interns	Knight (2008)
14. To interpret the rights and legal responsibilities of the music therapist	Perform administrative duties	AMTA (2019a)
15. To adhere to the ethics of the music therapist	Understanding my legal rights and responsibilities as a therapist	Knight (2008)
	Interpret and adhere to the AMTA code of ethics	AMTA (2019b)

tool and to provide comments regarding the understanding, fairness and appropriateness of the assignments and questions. The recruitment of the five participants was based on having at least 10 years of clinical practice.

The final version of the MTPS scale was a self-report scale consisting of 15 items measuring the level of expertise in the practice during music therapy activities. Participants were asked to express their agreement on a five-point Likert scale with the following grades: strongly disagree, disagree, neutral, agree, and strongly agree. The full scale is reported in Appendix A.

Data analysis and results

IBM SPSS Statistics 20 and Lisrel 8.80 were used to analyse the validity and reliability of the scale. Descriptive statistics, EFA, Cronbach's alpha and a CFA were computed. A *t*-test was also performed to compare music therapist students and post-graduate music therapists, and for identifying any gender differences.

Research question one: psychometric properties and factorial structure of the scale

The [Worthington and Whittaker \(2006\)](#) procedures were considered in response to the first research question. An EFA was computed using the principal component analysis and Varimax rotation method on data from the first group of participants. EFA was adopted to verify the connections among observed variables and underlying factors ([Byrne, 1998](#)). The number of factors was determined using the Kaiser criterion and the Scree test. Factors were considered if Eigenvalues were equal or superior to one. The EFA revealed a model of three factors, with five items per factor. The rotated component matrix indicated values ranging between .51 and .82, as indicated in [Table 3](#). The rotation was unconstrained and items with factor loadings below .42 were not reported. When an item was loaded in two factors, the higher value was considered. The total variance explained by the factors is 64.73%, as reported in [Table 4](#). Descriptive statistics, Eigenvalues, percentages of variance and Cronbach's alphas are indicated in [Table 4](#).

The CFA was performed to support the factorial structure of the scale. CFA investigation examines potential variables and limits the total number of variables. CFA was computed with data from a second group of participants using the robust maximum likelihood method. The results are presented in [Table 5](#). RMSEA could be considered acceptable (values $\leq .05$ indicate a good fit and values as high as .08 a

reasonable fit), as well as the SRMR (values $\leq .08$ are acceptable), and a good fit for CFI, NNFI and IFI was found (values $> .95$ are good; [Byrne, 1998](#)). GFI and AGFI values were close to the value 1, which indicates an acceptable fit ([Byrne, 1998](#)). The path diagram model of the scale is reported in [Fig. 1](#). In conclusion, CFA confirmed the three factor model.

Research question two: reliability of the scale

The second research question focused on the reliability of the scale. Cronbach's alpha (reliability coefficient) was calculated to evaluate the scale's reliability and internal consistency. The values for each factor ranged from .81 to .86, while .92 was the alpha for the whole scale. The findings are reported in [Table 4](#) and indicate a very good internal consistency.

Research question three: group comparison

The third research question examined the differences in practice between music therapy students and post-graduate music therapists. A group comparison was performed with a *t*-test (with Cohen's *d* as the effect size index). Gender was also considered. The findings highlighted that music therapists evaluated their practices regarding designing the treatment $t(1,171) = 8.75, p < .001, d = 1.33$; managing the sessions $t(1,171) = 9.87, p < .001, d = 1.51$; and administrative duties $t(1,170) = 6.21, p < .001, d = .95$ better than students did, demonstrating stronger competencies in the practice of music therapy. The mean values for students and post-graduate music therapists for designing the treatment were, $M = 2.58, SD = .78$ and $M = 3.60, SD = .74$ respectively; for the factor managing the sessions, $M = 2.67, SD = .86$ and $M = 3.87, SD = .73$ respectively; for the factor administrative duties, $M = 2.89, SD = .84$ and $M = 3.65, SD = .77$ respectively. No differences were found among participants regarding gender for any of the factors.

Discussion

The current study reports the construction and validation process of a quantitative 15-item scale for measuring the practice of the music therapist. This study was based on the literature of music therapy practice ([Hsiao, 2014](#); [Jackson, 2008](#); [Kern & Tague, 2017](#)) and the assessment of the music therapist's skills ([Knight, 2008](#); [Taylor, 1987](#)). Previous instruments considered aspects such as practices of music therapy ([Hsiao, 2014](#)) and the status and trends of music therapy

Table 3

Mean (M), standard deviation (SD), and rotated factor matrix (exploratory factor analysis) for the MTPS. (*Factors: 1. Managing the sessions; 2. Administrative duties; 3. Designing the treatment).

Items	M (SD)	Factors *		
		1.	2.	3.
1. To design individualised music therapy treatment	3.25 (1.18)			.71
2. To diagnose client needs	2.56 (1.03)			.80
3. To design the objectives of a music therapy treatment	3.41 (1.08)			.66
4. To design the musical experiences of a music therapy treatment	3.16 (1.07)			.57
5. To design the evaluation of a music therapy treatment	2.93 (1.20)			.68
6. To conduct music therapy sessions	3.30 (1.23)	.65		
7. To manage maladaptive behaviour in music therapy sessions	3.32 (1.09)	.51		
8. To manage time in music therapy sessions	3.35 (1.10)	.78		
9. To evaluate client responses and to adapt the intervention accordingly in music therapy sessions	3.22 (1.10)	.81		
10. To respond to significant events in music therapy sessions	2.97 (1.16)	.80		
11. To communicate with staff	3.49 (1.12)		.82	
12. To communicate with trainees, colleagues, supervisors	3.65 (1.01)		.70	
13. To perform administrative duties	2.80 (1.13)		.75	
14. To interpret the rights and legal responsibilities of the music therapist	2.97 (1.14)		.80	
15. To adhere to the ethics of the music therapist	3.40 (1.15)		.67	

Table 4

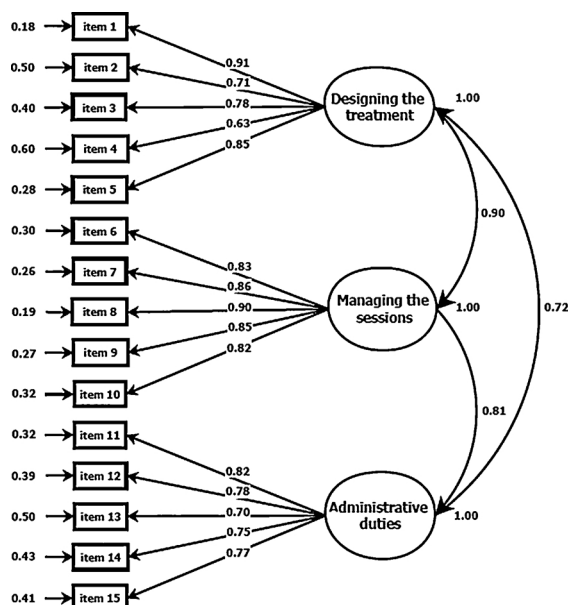
Descriptive statistics mean (M) and standard deviation (SD), eigenvalue, percentage of variance, Cronbach's alpha (reliability) for the MTPS.

Factors	M (SD)	Eigenvalue	% Variance	Cronbach's α
1. Managing the sessions	3.23 (1.13)	8.04	26.16	.86
2. Administrative duties	3.26 (1.11)	2.18	20.40	.82
3. Designing the treatment	3.06 (1.11)	1.12	18.17	.81
Total	3.18 (1.12)		64.73	.92

Table 5

Goodness of fit of CFA of MTPS.

Model	N	S-B χ^2 (df)	RMSEA	SRMR	GFI	AGFI	CFI	NNFI	IFI
CFA	104	150.49 (87)	.08	.05	.84	.78	.98	.98	.98

**Fig. 1.** Confirmatory factor analysis model of the MTPS.

practice worldwide (Kern & Tague, 2017). MTPS focuses on self-assessment in the practice of music therapy. Several statistical analyses were computed, demonstrating that MTPS is reliable. The EFA of MTPS highlighted three factors which were confirmed by the CFA.

Furthermore, reliability and stability analyses (Cronbach's alpha) have shown that MTPS is valid and appropriate for assessing music therapy practice. The data supports a model based on three dimensions to measure the practice of music therapy.

To demonstrate its usefulness, MTPS was administered to detect differences in practice between music therapy students and post-graduate music therapists. This analysis provided insight into the possible practical applications of the scale. The results have shown group differences: the post-graduate music therapist self-assessments indicated higher values for their expertise in designing, managing and performing administrative duties than did those of the students. These results concur with previous studies on the internship practice of music therapists (Knight, 2008).

It would be interesting to discuss how music therapy practice might be improved and how MTPS could be used for analysing the strengths and weaknesses of competencies developed during educational music therapy activities. MTPS could be applied during both the educational and the professional development of the music therapist. MTPS can be used as a reflective tool for critical thinking on the processes that the music therapists have to master for their professional activity. The improvement of clinical reasoning skills is crucial in the professional development of a music therapist (Baker, 2007). The development of clinical reasoning abilities involves metacognitive skills which are an important requirement for developing a reflective approach to music therapy. MTPS could be used for analysing how single elements affect music therapy and how skills might be improved.

Additional applications could be based on a didactic approach to the processes rather than the products (Biasutti, 2013, 2017). Specific activities such as designing the objectives and defining the assessment of treatment could be promoted, providing self-assessment tools for evaluating their effectiveness. Practice is often an intuitive process and the aim of these activities is to encourage a shift from the implicit to the explicit level of awareness. It is important that trainees intentionally express their understanding of the practice and procedures involved in music therapy (Baker, 2007). The development of metacognitive skills could also be promoted, encouraging students to adopt self-regulating learning strategies that foster their abilities to understand their own thinking processes.

Limitations and further developments

The current study has limitations, such as the limited number of participants in the research. This aspect limits the potential to generalise the findings to student music therapists and music therapists. It would be useful to develop further research to test the validity of MTPS

with a greater number of participants.

It would be interesting to consider additional ways to apply MTPS in further research. MTPS could be used for assessing education programs or for the professional development of music therapists, and to prove the effectiveness of these programs. A pre-post research design might be adopted to verify whether participant results vary after having participated in activities aimed at fostering their music therapy

competencies. The use of MTPS can also be extended to other contexts and conditions, such as comparing students trained with different approaches, and in different types of settings. MTPS could also be used to examine the variables affecting music therapy and the correlations between practice and other constructs, such as attitudes, confidence, self-esteem and self-efficacy, which contribute to the development of the identity of the music therapist.

Appendix A. Music therapy practice scale (MTPS)

The following questionnaire contains statements about the practice of music therapy. Next to each statement, please indicate the number that represents how strongly you feel about the statement by using one of the responses provided:

1. Strongly Disagree; 2. Disagree; 3. Neutral; 4. Agree; 5. Strongly Agree

Items I know how:	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1. To design individualised music therapy treatment	1	2	3	4	5
2. To diagnose client needs	1	2	3	4	5
3. To design the objectives of a music therapy treatment	1	2	3	4	5
4. To design the musical experiences of a music therapy treatment	1	2	3	4	5
5. To design the evaluation of a music therapy treatment	1	2	3	4	5
6. To conduct music therapy sessions	1	2	3	4	5
7. To manage maladaptive behaviour in music therapy sessions	1	2	3	4	5
8. To manage time in music therapy sessions	1	2	3	4	5
9. To evaluate client responses and to adapt the intervention accordingly in music therapy sessions	1	2	3	4	5
10. To respond to significant events in music therapy sessions	1	2	3	4	5
11. To communicate with staff	1	2	3	4	5
12. To communicate with trainees, colleagues, supervisors	1	2	3	4	5
13. To perform administrative duties	1	2	3	4	5
14. To interpret the rights and legal responsibilities of the music therapist	1	2	3	4	5
15. To adhere to the ethics of the music therapist	1	2	3	4	5

References

- AMTA (2019a). *Scope of music therapy practice*. Retrieved on March 4th 2019 from https://www.musictherapy.org/about/scope_of_music_therapy_practice/.
- AMTA (2019b). *Standards of clinical practice*. Retrieved on March 4th 2019 from <https://www.musictherapy.org/about/standards/>.
- AMTA (2019c). *Professional competencies*. Retrieved on March 4th 2019 from <https://www.musictherapy.org/about/competencies/>.
- Baker, F. (2007). Enhancing the clinical reasoning skills of music therapy students through problem based learning. *Nordic Journal of Music Therapy*, 16(1), 27–41. <https://doi.org/10.1080/08098130709478171>.
- Biasutti, M. (2013). Improvisation in dance education: Teachers views. *Research in Dance Education*, 14(2), 120–140. <https://doi.org/10.1080/14647893.2012.761193>.
- Biasutti, M. (2017). Teaching improvisation through processes. Applications in music education and implications for general education. *Frontiers in Psychology*, 8, 911. <https://doi.org/10.3389/fpsyg.2017.00911>.
- Biasutti, M., & Mangiacotti, A. (2018). Assessing a cognitive music training for older participants: A randomised controlled trial. *International Journal of Geriatric Psychiatry*, 33(2), 271–278. <https://doi.org/10.1002/gps.4721>.
- Bunt, L., & Hoskyns, C. L. (2002). *The handbook of music therapy*. East Sussex, U.K: Brunner-Routledge.
- Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Decuir, R. M. T., & Policastro Vega, V. (2010). Career longevity: A survey of experienced professional music therapists. *The Arts in Psychotherapy*, 37(2), 135–142.
- Degli Stefani, M., & Biasutti, M. (2016). Effects of music therapy on drug therapy of adult psychiatric outpatients: A pilot randomized controlled study. *Frontiers in Psychology*, 7, 1518. <https://doi.org/10.3389/fpsyg.2016.01518>.
- DeVellis, R. F. (2003). *Scale development: Theory and application*. Thousand Oaks, CA: Sage Publication.
- Goodman, K. D. (2011). *Music therapy education and training: From theory to practice*. Springfield (IL) USA: CC Thomas Publisher.
- Hsiao, F. (2014). Gatekeeping practices of music therapy academic programs and internships: A national survey. *Journal of Music Therapy*, 51(2), 186–206.
- Jackson, N. A. (2008). Professional music therapy supervision: A survey. *Journal of Music Therapy*, 45(2), 192–216.
- Kern, P., & Tague, D. B. (2017). Music therapy practice status and trends worldwide: An international survey study. *Journal of Music Therapy*, 54(3), 255–286. <https://doi.org/10.1093/jmt/thx011>.
- Kim, Y. (2016). Music therapists' job demands, job autonomy, social support, and their relationship with burnout and turnover intention. *The Arts in Psychotherapy*, 51, 17–23.
- Knight, A. J. (2008). Music Therapy internship supervisors and preinternship students: A comparative analysis of questionnaires. *Journal of Music Therapy*, 45(1), 75–92.
- Madsen, C. K., & Kaiser, K. A. (1999). Pre-internship fears of music therapists. *Journal of Music Therapy*, 36(1), 17–25.
- Rushing, J., & Capilouto, G. J. (2017). Obtaining competencies with self-determination theory: The music therapy internship. *Music Therapy Perspectives*, 35(2), 247–253. <https://doi.org/10.1093/mtp/miw017>.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Tanguay, C. L. (2008). Supervising music therapy interns: A survey of AMTA national roster internship directors. *Journal of Music Therapy*, 45(1), 52–74 SPR.
- Taylor, D. B. (1987). A survey of professional music therapists concerning entry level competencies. *Journal of Music Therapy*, 24(3), 114–145.
- Wheeler, B., Shults, C., & Polen, D. (2005). *Clinical training guide for the student music therapist*. Gilsum: Barcelona Publishers.
- Wigram, T., Pedersen, I. N., & Bonde, L. O. (2002). *A comprehensive guide to music therapy: Theory, clinical practice, research and training*. London: Jessica Kingsley Publishers.
- Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34(6), 806–838.