E – LEARNING AND MUSIC THERAPY – CORRELATIVE STUDY

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ABSTRACT

Purpose: Music therapy is recognized as an effective scientific method both in solving medical and psychological problems and in maintaining psychological well-being in healthy people. However, its therapeutic potential is used to a limited extent. The present study brings to the fore, as a working hypothesis, the correlation between the accessibility of music therapy as a method of remote medical and psychological intervention, in relation to the digital literacy offered by technological developments. The potential of remote music therapy has been recognised in the context of pandemic social isolation and the concept deserves to be preserved and used in the future due to its undeniable benefits. ***Method***:The design of the study was conceived in such a way as to use digital methods in order to collect data from the sample of respondents, through the Google Forms application, software for collection and automatic statistical analysis of data. An analysis of the collected data was applied in parallel, using the Minitab software. ***Results:*** Data processing confirms the working hypothesis, namely the fact that melotherapy can represent an alternative method of therapy, with a positive statistical correlation between acceptability and adherence to MT and e-learning. ***Conclusions:*** The limits of the study are determined by the small size of the study sample. Although there are positive correlations between variables, more in-depth studies on larger statistical populations and the integration of data in a wider context are needed in accordance with the evolution of e-learning and the development of telehealth tools. An important role is played by patients' beliefs regarding both telemedicine and the benefits of TM per se.

Keywords: Music therapy; e-learning; medical and psychological settings; evidence-based therapy methods.

Introduction

In the last 25 years, the effects of music have been increasingly studied and consequently applied in medical and psychological clinical practice, considering the general positive trend of music therapy. Research in the field has discovered the neurophysiological substrate of music's mode of action, thus including music therapy

in the category of evidence-based therapy methods. In other words, music therapy can be classified according to levels of clinical evidence.

An important step in the acceptance and recognition of music therapy as a scientific method of therapy was represented by the possibility of carrying out accepted and scientifically validated studies, a mandatory condition for its use in clinical practice. [1,2] An important contribution in this sense was brought by the technological progress that offered concrete means to achieve some correlations between the anatomical substrate and the psychic manifestations, with an emotional and cognitive response. The period of the last three years in which social isolation against the background of the epidemiological context triggered an increase in the prevalence of anxiety and depression cases on the one hand and the rise of the use of digital means of distance communication, on the other hand, constituted a favorable framework for the implementation of e - learning and for the use of music therapy as an easy alternative to therapy. The reluctance of professionals and patients has decreased and currently music therapy is more and more studied and accepted in clinical practice due to the good results and the reduced risks of its remote use for multiple age groups.

A very disputed aspect in the application of music therapy as a non-pharmacological method of therapy is the use of music as a therapeutic method on its own or in association with other forms of psychotherapy.[21]

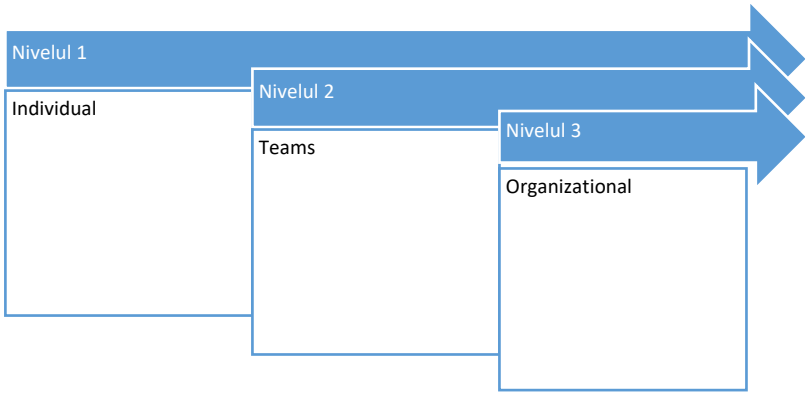


Fig. 1 Hierarchical model in MT implementation

Material and method

The study was conducted on a sample of 99 respondents aged between 18 and 70. The answers were collected based on a questionnaire developed by the author of the study, structured in three sections: structural data [*section A*], information related to e-learning [*section B*] and information related to music therapy [*section C*]. The collection

of data from the respondents under study was carried out through the Google forms application. The completion was done online, on the basis of collaborative participation, the respondents, although anonymous, were informed about the purpose of data collection and processing and especially about maintaining the confidentiality of these data. An analysis of the collected data was applied in parallel, using the Minitab software.

Criteria for inclusion in the study

Table 1. General data

Age	18-70 (>70 ani)
Genre	M,F
Religion	Orthodox, Catholic, Islamic, other denominations
Marital status	Married, divorced, single, consensual communion
Residence	Rural, urban
Employement	Employee, pupil/student, pensioner, unemployed, self-employed
Level of instruction/education	High school, post-high school, university, postgraduate, doctoral studies

Research questions:

1. Can MT be a complementary therapy method in association or not with other psychotherapy methods with real accessibility

2. Are there premises at the present time for the implementation of this type of therapy?

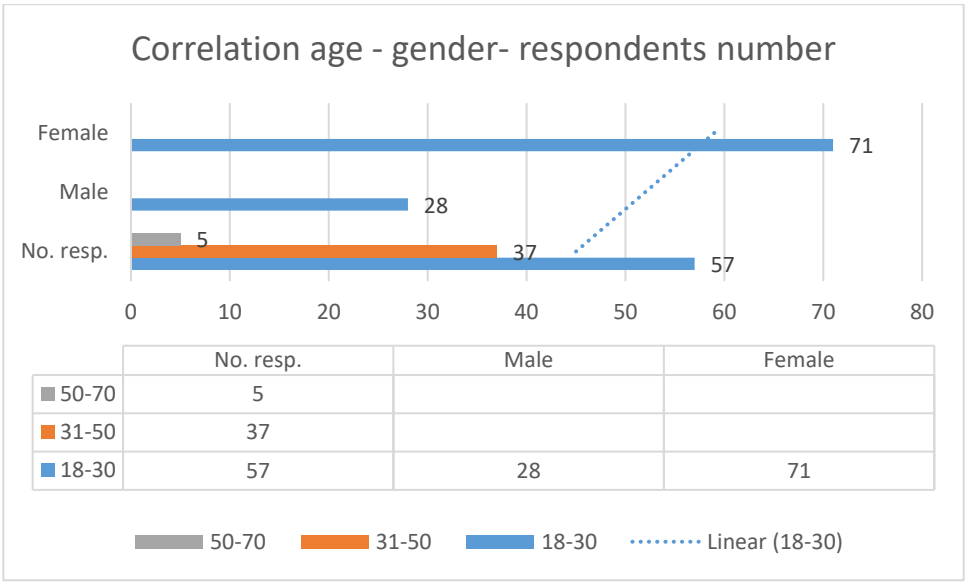
3. Does the general population currently have the necessary knowledge and/or the availability of continuous digital literacy?

Result

Note: the sample of respondents was constituted randomly by its own through their personal participatory motivation.

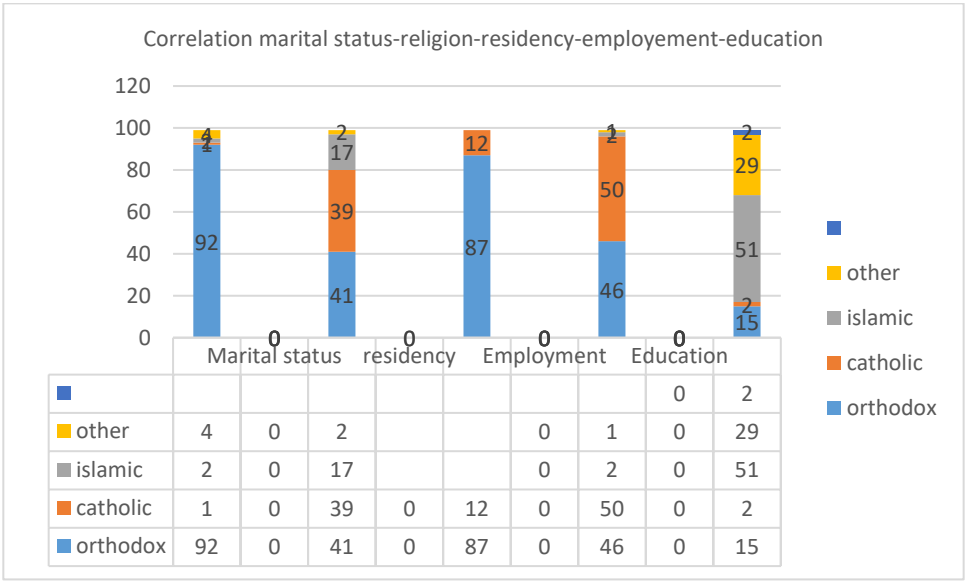
Section A - data on the general structure of the sample contains socio-demographic data of the respondent population.

Table. 2 Correlation between the structural data; age, gender, number of respondents



	No. resp.	Male	Female
50-70	5		
31-50	37		
18-30	57	28	71

Table 3 Correlation between the structural data; marital status – religion – residency- employement-education

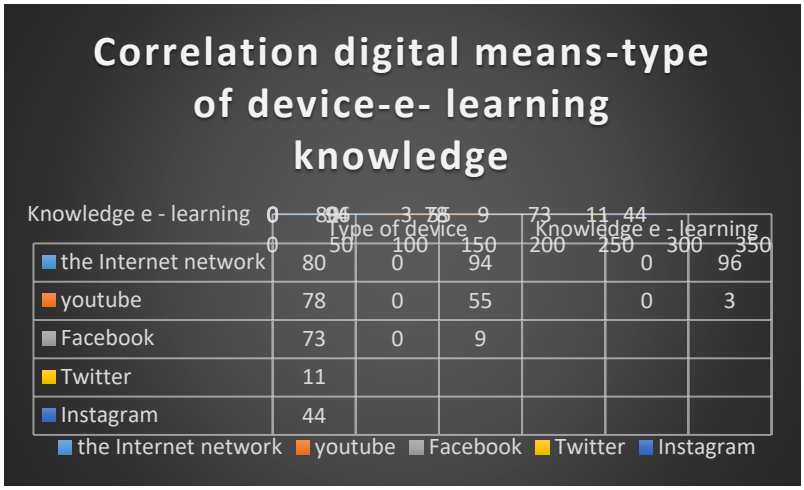


	Marital status			residency		Employment		Education	
								0	2
other	4	0	2			0	1	0	29
islamic	2	0	17			0	2	0	51
catholic	1	0	39	0	12	0	50	0	2
orthodox	92	0	41	0	87	0	46	0	15

For a more balanced distribution of data, sections B and C of the questionnaire were designed to contain an equal number of items.

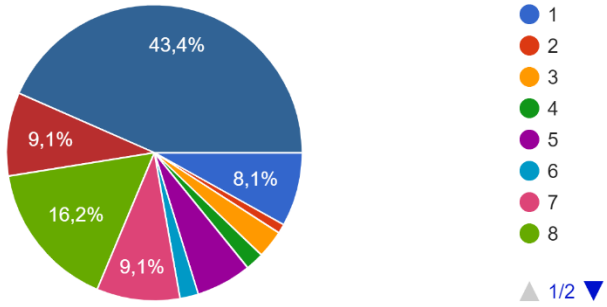
Section B contains data related to e-learning, types of digital means used and their correlation with the availability to use them for therapeutic purposes, particularly for the purpose of music therapy. The section is made up of 6 items.

Table 4 Correlation digital means – type of device- e – learning knowledge



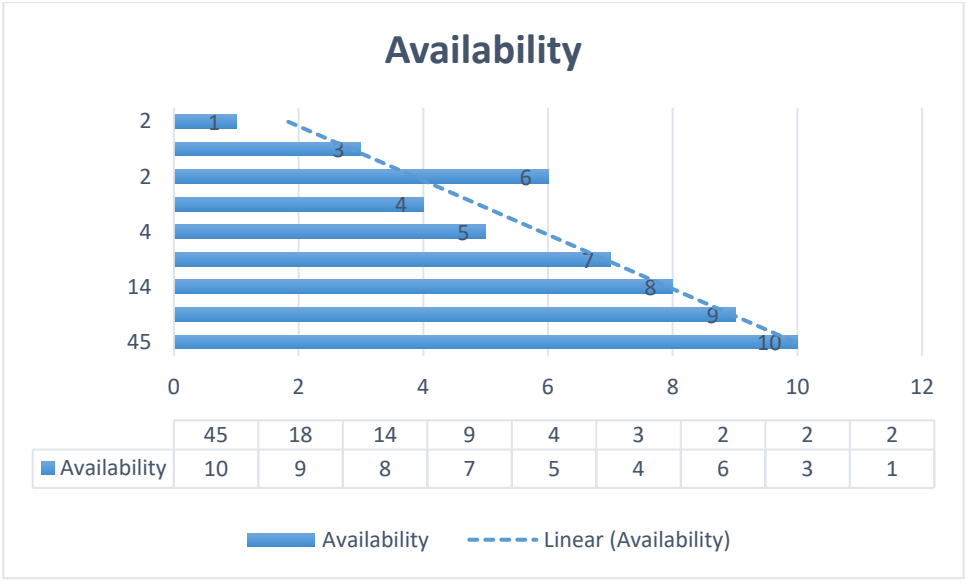
B.4. În cazul în care nu deținеti cunoștințele necesare/suficiente, pe o scară de la 1 la 10, care ar fi disponibilitatea de a fi instruit pentru a utiliza mijloacele digitale?

99 de răspunsuri



Graph 1 – Item B.4. If you do not have the necessary/sufficient knowledge, on a scale of 1 to 10, how would you be willing to be trained to use digital means?

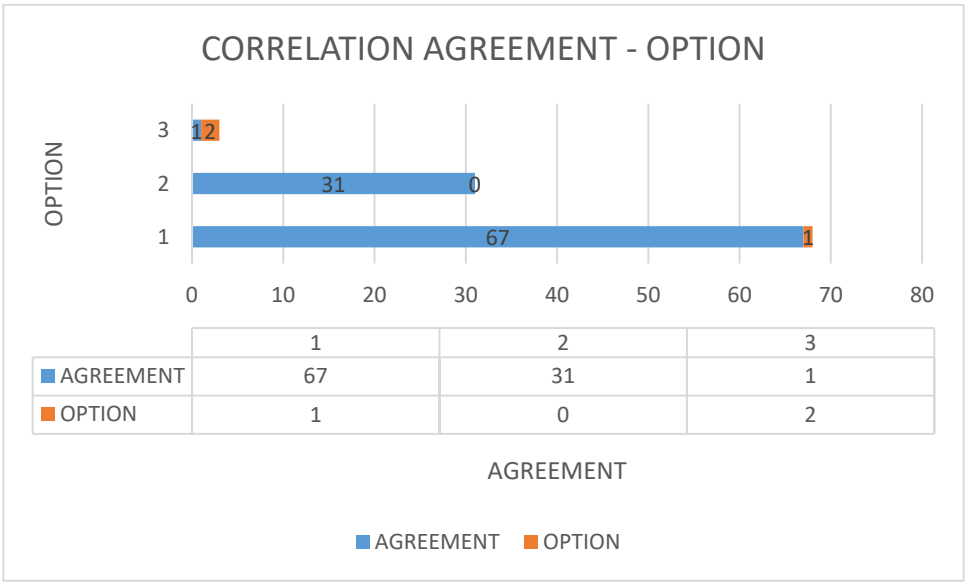
Table 5 Availability to be trained in the use of digital means



Interpretation: Availability for e-learning on a scale from 1 to 10 is correlated with the highest score for the highest percentage of patients

Section C was designed to collect data related to the relationship the respondents have with music, general and specific information, regarding music therapy.

Table 6 Correlation Agreement – option



1 – Yes/accord; 0 – Uncertain/Undecided; 2 – No/disagreement

Interpretation: Table 5 shows the significant correlation between the "yes" option and the largest number of respondents, in the use of music as a therapy method

Table 7 Correlation number of respondents - musical genres

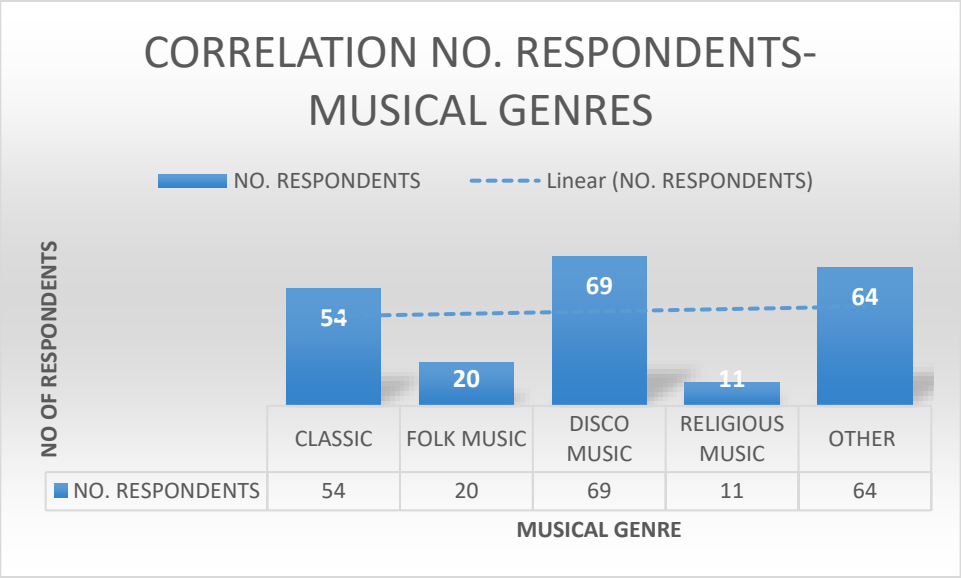
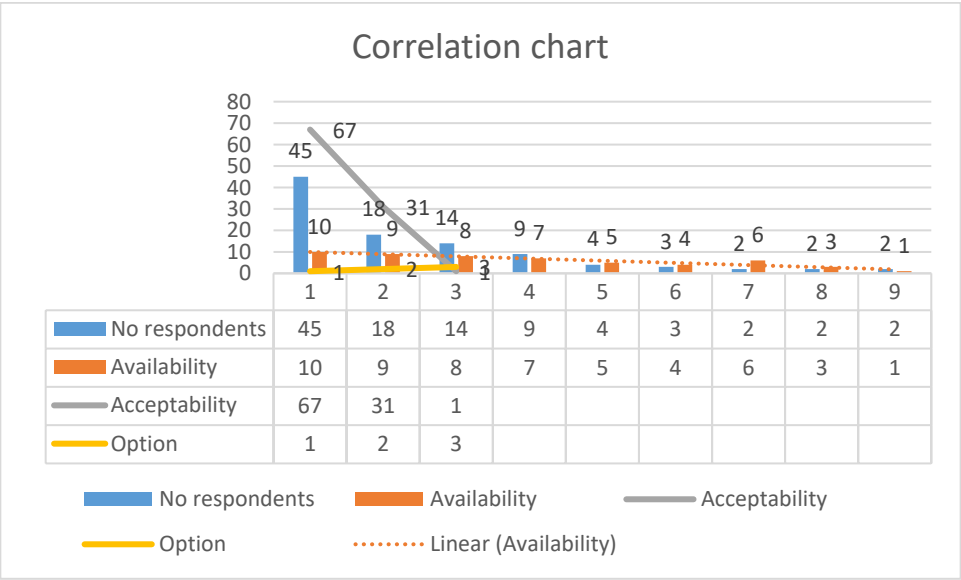


Table 8 - Correlation between B.5. – C.3. Items



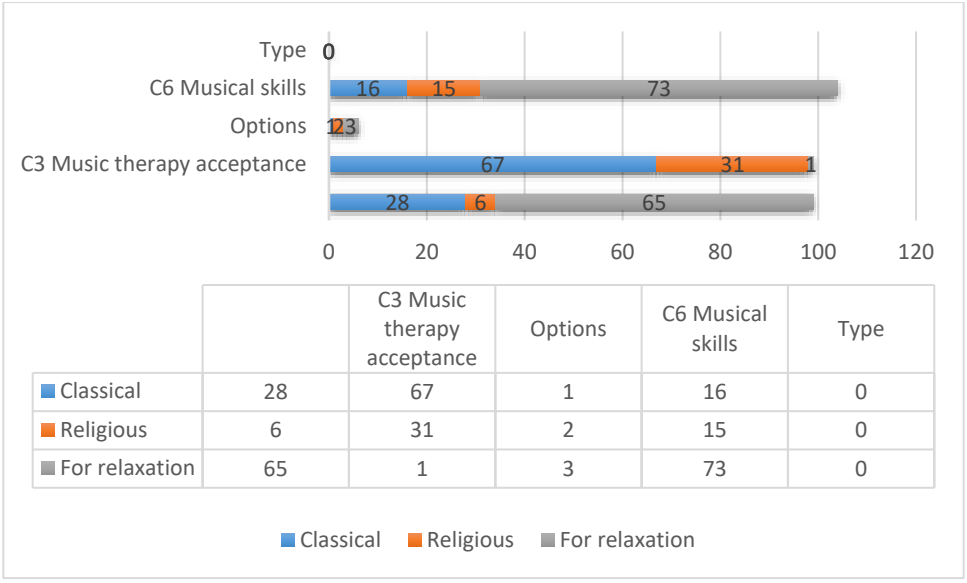
Options 1 – yes; 2 - uncertain/undecided; 3 - no

C.3. Would you agree with using music to treat your medical conditions as a complementary method of treatment?

B. 5. If you had access to a type of therapy or medical information about your therapy plan through digital means, how likely would you be, on a scale of 1 to 10, to use this option?

Interpretation: The acceptability and availability of melotherapy and its remote use is present in the largest number of respondents. It is observed that a significant number (37) of patients are undecided in their choice. According to the statistical laws, a percentage of them will join the MT; consequently, it can be stated that adherence to MT is in a positive trend (67 +37)

Table 9 Correlation between C5 – C3 – C6 Items



		C3 Music therapy acceptance	Options	C6 Musical skills	Type
Classical	28	67	1	16	0
Religious	6	31	2	15	0
For relaxation	65	1	3	73	0

Options 1 – yes/accord; 2 – uncertain; 3 – no/disagreement

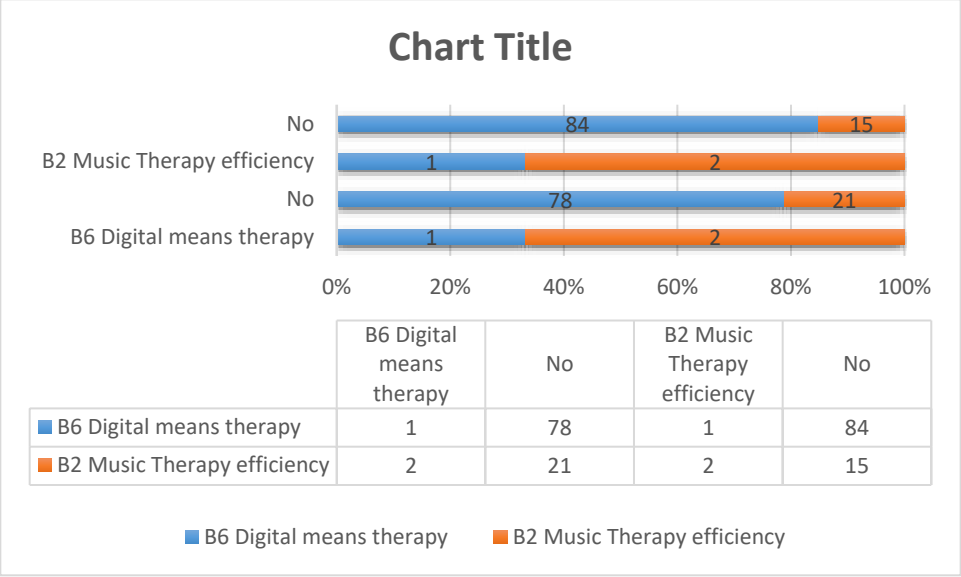
C.3. Would you agree with using music to treat your ailments as a complementary method of treatment?

C.5. Which of the following musical genres would you choose for therapeutic purposes?

C.6. Do you sing/perform any musical instrument/vocals?

Interpretation: In this case, we observe that although the number of respondents who do not have musical skills exceeds that of those with this type of skills, adherence to melotherapy has a positive, statistically significant trend. The "relaxation" music knows the biggest option

Table 10 Correlation between C2 – B6



B.6. *Do you accept the idea of being "treated" at home using digital means?*

C. 2. *Do you believe in the healing power of music?*

Interpretation: In this case, a positive correlation is found between trust in MT and telemedicine

Discussion and comparison with other similar studies

General and conceptual framework of e-learning and music therapy (MT)

Research in the field of music therapy is still far from being completed. It is possible that the diversity and universality of music has a counterpart in the constellation of the human psyche depending on the cultural coordinates to which the respondents belong. For this reason, a phenomenological approach is necessary to bring explanations regarding the intrinsic mechanisms of the therapeutic effects of music. Despite all the unknowns that still exist in this field, there is currently a growing acceptance for the use of music as a therapy method in clinical settings. A particular aspect of music therapy consists in the fact that it offers a new perspective on the patient and the therapeutic relationship in a clinical context in medicine and psychotherapy. [21,22]

The analysis of the data collected in this study is divided into three levels of interest:

1. **Digital education** with its coordinates: the interest in using digital means, having the necessary knowledge to use them, the availability to accumulate digital knowledge (e-learning) [8,18]. There are a number of nuances regarding the terminology and the process itself, regarding digital literacy. Thus, the general concept of digital literacy has a series of sub-concepts, namely: electronic learning (e – learning), mobile (m- learning) learning and digital learning (d- learning). Beyond the terminology, the problem of this type of education actually boils down to access and the availability to take over the information in accordance with a series of personal and contextual variables. [2]

2. **Music therapy** as a complementary method of therapy with its limitations, among which can be cited: few data available in the specialized literature and sometimes contradictory, the large subjective component of qualitative studies, the adherence of a limited number of patients to this type of therapy.[20] An important aspect of the approach in MT is represented by the type of conditions that have an indication for this type of therapy. Studies show that the range of ailments is wide, starting with anxiety and depression or addictions and ending with different types of neuropsychiatric diseases, among which Alzheimer's dementia or Parkinson's disease can be mentioned. It is important that future studies bring more data regarding musical genres that can be used with a scientific foundation. In fact, one of the most controversial and little-known aspects of MT consists precisely in the choice of the chosen musical genre. A series of questions arise that at this moment do not have an answer in accordance with EBP (Evidence Based Psychology) so as to know a scientific validation.
The studies carried out so far try to establish a series of correlations between the choice of musical genre and the patient's personality type. There is a high degree of subjectivity in this equation and the barrier imposed by the patient's preferences regarding preferences for certain musical genres and what is considered acceptable from a psychological perspective for MT. Thus, the dilemma arises regarding the possibility of using some musical genres for which there are no studies but which are therapeutically effective in certain observational or experimental settings.
Another aspect is that of using the universality of music as an intrinsic characteristic in relation to the indications for use in therapeutic models for people without conditions that can fit into the DSM but can be characterized as disturbing factors of the physical and emotional well-being of individuals.
The concept of interdisciplinarity removed the artificial barriers between medicine and psychology regarding the patient/client-centered approach, expanding the field of applicability of psychotherapy and creating an area of intersection between music medicine and the concept of melotherapy in its initial meaning.

This aspect broadened the MT indications and increased trust and acceptability in this direction, a fact demonstrated by the results of the current study.

3. ***Correlation of e-learning data with the use of melotherapy***

Digital education cannot be considered a recent phenomenon and the period of the last 3 years has determined the population to acquire the e-learning knowledge necessary to access different digital platforms. The data of this study demonstrate that in the sample of participating respondents, the proportion of those who have digital knowledge is 97%. However, at least the previously nominated participants are aware that they need a permanent improvement of their knowledge in the field as proof of this fact being the answer to item B4 where the willingness to be trained in the use of digital tools on the Likert scale is level 10 to higher proportion of respondents. Availability and acceptability for e-learning are increased. [9,12]

Results and comparation with other similar studies

This fact correlates with the results of a study [14] which reveals the fact that an increase in interest in digital education and consequently an increase in digital skills represented an increase in the well-being (emotional and social adaptation) of the participants by "increasing independence and positive interdependence in new types of learning communities that strengthen learning and well-being" especially in older adults.[4]

MT requires a multifactorial approach and the approach is oriented in four directions:

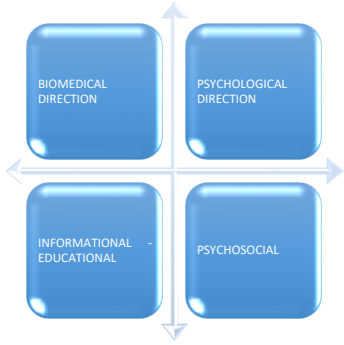


Fig. II The multifactorial approach in MT

In another vein, the study shows that "digital identity" is gradually built over time, contributing to their digital inclusion, increasing social access, including to health systems in the form of telemedicine.[5, 6]

Other studies provide convincing evidence regarding the start and advance of telemedicine, especially in countries with high incomes. Thus, it is necessary to explore the conditions in low- and middle-income countries that need the "utilization of the

potential and the transformation of health care" in accordance with the impact that telemedicine can have in the future on the progress of medical systems. [10]
The analysis still has its limits because there is a demographic gap and one related to accessibility to digital means, even more so to e-learning. However, considering the confidence interval and the normal distribution of the data, relevant conclusions can be drawn for the population sample included in the study. [17,18]

Music therapy as an alternative to telemedicine therapy.

Items B5 and B6 from the current study revealed an increased willingness to adhere to telemedicine (45.5% of respondents chose 10 on the Likert scale), and the idea of being treated at home was agreed by 78.8% of participants in this study. However, the limitations regarding the extrapolation to the general population are those previously mentioned, being determined by the accessibility of digital means, personal beliefs, the level of education, financial factors, and the age of the patients. [11, 13] The "inertia" regarding new ways of accessing care systems is due to multiple factors and which are mostly related to the context of the patient's positioning at the level of the health system, the geographical or cultural area and the restrictive financial possibilities. [19] This statement is supported by the fact that in this study, random data collection was accessible to only 5% of respondents in the 50-70 age group. "The Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services defines telehealth as the use of electronic information and telecommunications technologies to support and promote long-distance clinical health care, patient and professional medical education , public education. health and health management." [5]
In a meta-analysis of some studies on the use and results of music therapy (MT) in the last 20 years, through bibliometrics, it is concluded that the results of the analysis are favorable to the use of MT in medical settings. [8] The need for a more in-depth deciphering of the mechanisms of action of MT and an extension of the applications of this method to other categories of medical conditions is emphasized. [15, 16]. The limits of the study are determined by the fact that the analysis of small statistical populations can induce bias in the reference frequency. [1,2,3]
An analysis of MT in association with e-learning can lead to a surprising conclusion, namely that of a participatory action with a higher level of involvement than in other types of therapy. The explanation can be a simple one and consists on the one hand in the fact that music can be considered an indissoluble component of human existence that accompanies us during the entire existence, it has no major adverse reactions and on the other hand it is cheap and easily accessible. The only amendment refers to certain scientific coordinates in the choice and mode of "administration", alone or as a

component of a complex psychotherapeutic intervention plan. On the other hand, the experience of the last three years has demonstrated that the evolution of humanity in borderline situations is determined by the level of adaptability of individuals and is, in fact, a summative effect of this aspect.
The living proof of this fact is represented by the intrinsic motivation of the individuals which represented the engine of triggering some cognitive and emotional learning behaviors to overcome sanitary, relational obstacles and individual barriers.
What is important to study, deepen and certainly at least adjust, if not improve, is the way of relating with direct reference to the way of creating and consolidating the therapeutic relationship, to transference, countertransference and empathy, between the doctor and the MT beneficiaries, but also in this direction signals are optimistic.
Another dimension of telemedicine with specialization for MT refers to the ethical and legal aspects of remote therapies. It is an important aspect with clear objectives related especially to confidentiality and informed consent.

Conclusions

Following the correlation of the items from sections A, B and C and the data analysis, we obtained a series of results regarding the acceptability and willingness to adhere to melotherapy as a complementary method of therapy, regarding the availability of e-learning and the respondents' acceptability of to be treated at home and last but not least, to the musical genres that the respondents prefer for therapeutic purposes. An important aspect regarding the results obtained was that of the effectiveness of melotherapy and the access to e-learning and the necessary technical means of some social categories: especially people from the age segment 18-50 years (there is an assumption that this category is more willing to access digital platforms), with at least high school education and who already possess a number of digital skills. [4,7]

The main conclusions of the study is that melotherapy represents an alternative to classical psychotherapy, agreed by the majority of respondents participating in the study. [6,11,13]

On another note, the working hypotheses were confirmed by the results of the study. There are of course certain statistically determined limits. The importance of the work consists in achieving the association of the two levels of interest, namely e-learning and melotherapy opening the way for future studies.

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