Medical Music Therapy Knowledge among Medical Students of Jimma University, Ethiopia

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Abstract
The use of music therapy as an adjunct medical treatment option is well established. However, there is no evidence on the knowledge of music therapy among medical practitioners in Ethiopia. Hence, this institutional based cross-sectional study was conducted to assess the knowledge and practices of Jimma University medical students on music therapy as an adjunct medical treatment option. A total of 349 medical students were involved in the study. More than half (51%) of the medical students had heard about the music therapy. However, majority (56.7%) of the medical students had lower mean knowledge (low knowledge) on the application of music therapy in specific medical condition and quality of life. The major source of information is internet. There is also higher interest (83.4%) on music therapy training and education among the study participants. Majority (75.4%) of the medical students were show interest in referring patients to a music therapy. The mean knowledge of the medical students was significantly associated to age, ethnicity and level education in medical school. Therefore, effort should be done to in cooperate the music therapy in formal curriculum of medical education and also continues professional development program is need for medical practitioners to ensure the integration of music therapy program on medical system in the country.

Keywords: Music therapy; Knowledge; Medical students; Jimma university

Background
Music therapy is one type of complementary and alternative medicine therapy. It is gaining increasing recognition for its benefit in medical settings. It has been defined by the World Federation of Music Therapy as the professional use of music and its elements, to intervene in the medical, educational and everyday environments with individuals, groups, families or communities seeking to optimize their quality of life and improve their physical, social, communicative, emotional conditions, intellectual, and spiritual health and wellness’ research, education, clinical education and practice in music therapy are based on professional standards according to cultural, social and political contexts [1].

Music therapy is an allied health profession and one of the expressive therapies, consisting of a process in which a music therapist uses music and all of its facts-physical, emotional, mental, social, aesthetic, and spiritual-to help clients improve their physical and mental health [2,3]. Music therapists have an ethical and professional responsibility to provide the highest quality care possible to their patients [4]. Music therapy has been shown to be an efficacious, non-invasive and valid treatment option for medical patients with unique outcomes possible [5]. Music therapy can be used to address patient needs related to respiration, chronic pain, physical rehabilitation, diabetes, headaches, cardiac conditions, surgery, and obstetrics, among others. Out of these, the three common areas in which music therapy is used widely are pain management (most common), the reduction of anxiety, and the treatment of depression; each of which are common acute and chronic medical conditions [6].

Music therapy is part of various services that provided in patient care in a wide variety of medical settings such as hospitals, cancer treatment centers, rehabilitation centers, skilled and intermediate care facilities, hospices and more [7-11].

Despite the increasing use of medical music therapy, many medical practitioners seem to remain largely uninformed of the efficacy and applications of music therapy to meet patient needs. A positive perception and understanding results in increased referrals to the music therapist, and more opportunities for direct patient care. Contrarily, if the medical practitioners do not have an adequate understanding of the music therapist’s role or capabilities, they can easily create a barrier between the patient and music therapist because of medical practitioners have a powerful impact on the kinds of treatments their patients choose [6].

Understanding the knowledge of medical practitioner regarding music therapy is paramount in successful integration of music therapy into the treatment team. However, there is no evidence on the music therapy knowledge among medical practitioner in Ethiopia. Hence, this study was done to fill these information gaps.

Methods and Materials
Study design and population
This institutional based cross-sectional study was carried out between August and September 2016 among Jimma University Medical Students using a self-administered questionnaire. The study includes a randomly selected medical student from 1st to 6th year.

Data collection process
The questionnaire used was prepared by the researcher after detail review of the relevant international literature, and finalized following

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a pilot application prior to data collection. Students completed the questionnaires during class hours after obtaining necessary permits from the official faculty administrations. The questionnaire was verbalized in English language and was not translated to other languages as English is the medium of instruction at universities in Ethiopia.

The questionnaire consisted of three parts. The first part consisted of questions on socio-demographic characteristics of the students, second part on the knowledge and the last part was on the practice of the study respondent on the music therapy.

To ensure quality of the study, trained data collector administered data collection. The completeness each part of the questionnaire used were check by principal investigator.

**Sample size**

The sample size was calculated using a sample size determination formula for a single population proportion with the following assumptions: 50% expected prevalence of knowledge and practices of the study participants at 95% confidence level with 5% degree of desired precision. The final calculated sample size was 384. However, only 349 randomly selected voluntary medical students of Jimma University in Ethiopia were included in the study. The study participants were from first year to internship level (fifth and sixth years).

**Data management and analysis**

The collected data were entered to Microsoft Excel and then, cleaned. The clean data were transported and analyzed using SPSS version 20. The data were analyzed using descriptive statically tool and presented using table. The strength of association between dependent and independent variables was assessed using multiple regression model at 95% confidence interval.

**Ethical issue**

The study protocol was approved by Jimma University Institutional Research Review Committee. Official permission was obtained from School of the Medicine. Informed consent was also obtained from the study participants before administering the data collection. The data were collected kept confidential.

**Results**

**Socio-demography of the study participants**

A total of 349 medical students were participated in this study with respondent rate of 91.0%. More than half of 189 (54.2%) the respondents were urban dwellers before joining the university, and 201 (57.6%) protestant followers. Majority 271 (77.7%) of the respondents were in the age group of less than or equal to 24 years old, with the mean and Median age of 22.97 and 23.0 years, respectively. Great majority 327 (93.7%) were single marital status. Two hundred sixteen (61.9%) participants were on medical intern study level (Table 1).

**Source of information and knowledge of music therapy**

Half of respondents were heard about the music therapy. The Internet was found to be the most commonly used source of information on music therapy from the ten options provided in the questionnaire, followed by Television/Radio and books. However, few 6 (1.7%) report the contribution of medical school (Table 2).

Majority of the study respondents were known as music therapy is attributed to the presence limited knowledge on music therapy among medical students. Students with less than mean knowledge score (bad knowledge) on the application of music therapy in medicine and quality of life (Table 3).

**Particles of medical students on music therapy**

Majority of the study participants were show interest in refer patients to a music therapy but they intention to support the program is decline because their knowledge gaps on the area and its application in medical practices. In addition, lack of music therapy course in the education system of medicine in the institute is one of the major hindrances for the support of the program. However, most of the responds has high interest in education and training on music therapy (Tables 4 and 5).

**Factor affecting the music knowledge among medical students**

The knowledge of the medical students was determined by age, ethnicity and level of education of the student in medical school when controlling their confounding variables. Where the study participant with more than 24 year olds [AOR=0.367 (95% CI, 0.21-0.64)] had less mean knowledge than their counter part. The oromo [AOR=0.14 (95% CI, 0.029-0.69)], Amhara [AOR=0.18 (95% CI, 0.036-0.88)], and Tigreay [AOR=0.07 (95% CI, 0.01-0.44)] ethnic groups study participants had mean knowledge comparing to the Somali ethnic students. In contrary medical Intern [AOR=0.34 (95% CI, 0.21-0.57)] study participants had mean knowledge that shows low contribution medical education level on the music knowledge.

**Discussion**

Music therapy has been shown to be an efficacious and valid treatment option for medical patients with a variety of diagnoses. Music is a form of sensory stimulation, which provokes responses due to the familiarity, predictability, and feelings of security associated with it. Inspite of music therapy has limited side effect on the patients and more economical to be practical in developing countries like Ethiopia, it practices is reserved to palliative care for patients who have an incurable illness in Africa [12]. The level of incorporation of music therapy in modern medicine influenced by the knowledge of health care provider to refer patient to the music therapy center and promote its implementation as part of health care system. Accordingly, the aim of this explorative study mainly focuses on the knowledge and practices of medical students of Jimma University in Ethiopia.

More than half of the medical student’s participants in the study heard about the music therapy. However, majority of the participants had less than mean knowledge score (bad knowledge) on the application of music therapy in medicine and quality of life. This observed because of lack of formal course in the curriculum of medicine in the study instruction. This is clearly found as medical school has low contribution as sources of information and the major sources of information is internet in present study. This similar with other studies done in different countries [13-16].

Majority of the medical students had low understanding on the contribution music therapy on improving pain, anxiety, nausea, restless, agitation, distress, relaxation, spiritual comfort, self-expression, autonomy, communication, socialization and self-expression. This could be attributed to the presence limited knowledge on music therapy among the study participants. Surprisingly, majority of the study respondents...
were reported as music therapy is helpful for patient condition and safe. They also showed higher interest in referring patients to a music therapy but their intention to support the program is declining because of their knowledge gaps on the area and its application in medical practices. In addition, lack of music therapy course in the education system of medicine in the institute is one of the major hindrances for the support of the program.

Most of the medical students had high interest in music therapy education and training. This support report from other studies [13,14].

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**Table 1:** Socio-demography of the study participants (n=349).

| Variable                  | Frequency | Percentage |
|---------------------------|-----------|------------|
| **Sex**                   |           |            |
| Male                      | 263       | 75.4       |
| Female                    | 86        | 24.6       |
| **Age (Mean=22.97 and median=23.0)** |           |            |
| <or=24                    | 271       | 77.7       |
| >24                       | 78        | 22.3       |
| **Address before university** |           |            |
| Rural                     | 160       | 45.8       |
| Urban                     | 189       | 54.2       |
| **Ethnic**                |           |            |
| Somali                    | 13        | 3.7        |
| Oromo                     | 152       | 43.6       |
| Amhara                    | 121       | 34.7       |
| Tigreay                   | 23        | 6.6        |
| other                     | 40        | 11.5       |
| **Religion**              |           |            |
| Muslim                    | 38        | 10.9       |
| Orthodox                  | 201       | 57.6       |
| Protestant                | 90        | 25.8       |
| Catholic                  | 12        | 3.4        |
| other                     | 8         | 2.3        |
| **Marital status**        |           |            |
| married                   | 12        | 3.4        |
| Single                    | 327       | 93.7       |
| Divorced                  | 8         | 2.3        |
| Windowed                  | 2         | 0.6        |
| **Level of year**         |           |            |
| 1st year                  | 6         | 1.7        |
| 2nd year                  | 24        | 6.9        |
| 3rd year                  | 31        | 8.9        |
| 4th year                  | 72        | 20.6       |
| 5th & 6th year            | 216       | 61.9       |

**Table 2:** Source of information on music therapy knowledge among Medical students of Jimma University, Ethiopia (n=349).

| Source of information         | Frequency | Percentage |
|-------------------------------|-----------|------------|
| Personal experience using music therapy | 10        | 2.9        |
| Family and friends            | 9         | 2.6        |
| Newspapers/Magazines          | 16        | 4.6        |
| Television/Radio              | 53        | 15.2       |
| Internet                      | 55        | 15.8       |
| Books                         | 21        | 6.0        |
| Journals                      | 7         | 2.0        |
| Medical school (University)   | 6         | 1.7        |
| Other health care professionals | 1        | 0.3        |
| Not heard music therapy       | 171       | 49.0       |
Music therapy would help the patient’s condition

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 248       | 71.1       |
| No                                      | 101       | 28.9       |

Music therapy is safe

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 224       | 64.2       |
| No                                      | 126       | 35.8       |

Music therapy can be used to address or improve pain

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 93        | 26.6       |
| No                                      | 256       | 73.4       |

Music therapy can be used to address or improve anxiety

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 188       | 53.9       |
| No                                      | 161       | 46.1       |

Music therapy can be used to address or improve nausea

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 52        | 14.9       |
| No                                      | 297       | 85.1       |

Music therapy can be used to address or improve restless

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 132       | 37.8       |
| No                                      | 217       | 62.2       |

Music therapy can be used to address or improve agitation

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 113       | 32.4       |
| No                                      | 236       | 67.6       |

Music therapy can be used to address or improve distress

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 170       | 48.7       |
| No                                      | 179       | 51.3       |

Music therapy can be used to address or improve relaxation

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 142       | 40.7       |
| No                                      | 207       | 59.3       |

Music therapy can be used to address or improve spiritual comfort

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 101       | 28.9       |
| No                                      | 248       | 71.1       |

Music therapy can be used to address or improve self-expression

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 95        | 27.2       |
| No                                      | 254       | 72.8       |

Music therapy can be used to address or improve socialization

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 96        | 27.5       |
| No                                      | 253       | 72.5       |

Music therapy can be used to address or improve overall quality of life

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 67        | 19.2       |
| No                                      | 282       | 80.8       |

Music therapy can be used to address or improve family support

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 51        | 14.6       |
| No                                      | 298       | 85.4       |

Music therapy can be used to address or improve communication

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 104       | 29.8       |
| No                                      | 245       | 70.2       |

Music therapy can be used to address or improve autonomy

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Yes                                     | 61        | 17.5       |
| No                                      | 288       | 82.5       |

Mean knowledge

| Variable                                | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Good (> mean knowledge)                 | 151       | 43.3       |
| Bad (< mean knowledge)                  | 198       | 56.7       |

Table 3: Music therapy knowledge among Medical students of Jimma University, Ethiopia (n=349).

This could be a great opportunity to incorporate the music therapy in the national health system through continues professional development program.

The age is significantly associated with the mean knowledge of the study participants where medical students more than 24 year olds had 0.37 less good mean knowledge. This could be associated to the higher
use of internet services among the younger which is major sources of information in the present study. The presence of mean knowledge significant difference on the of the music therapy among the ethnic groups of the study participants will need further study.

Surprisingly, the Medical Intern Students had 0.34 less likely had good mean knowledge than Pre Medical Intern. This observed difference could be attributed to medical intern had more knowledge and practices in medicine and they had less likely to support music therapy where they did not have formal education in the medical school.

Concussion

More than half of the medical students had heard about the music therapy. However, majority of the medical students had low mean knowledge on the application of music therapy in specific medical condition and quality of life. The major source of information is internet and the medical school has low contribution on the knowledge and practices of music therapy. There is also higher interest on music therapy training and education among the study participants. The mean knowledge of the medical students was affected by age, ethnicity and level education in medical school.

Therefore, effort should be done to in cooperate the music therapy in formal curriculum of medical education and also continues professional development program is need for medical practitioners to ensure the integration of music therapy program on medical system in the country.

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| Variable               | Good knowledge, n% | COR(CI)      | P-value | AOR(CI)      | P-value |
|-----------------------|--------------------|--------------|---------|--------------|---------|
| Sex                   |                    |              |         |              |         |
| Male                  | 146(55.5)          | 1            |         |              |         |
| Female                | 52(80.5)           | 1.23(0.75-2.01) | 0.421  |              |         |
| Age                   |                    |              |         |              |         |
| <or=24                | 170(62.7)          | 1            |         |              |         |
| >24                   | 28(35.9)           | 0.33(0.20-0.56) | 0.000* | 0.367(0.21-0.64) | 0.000* |
| Address before university |                |              |         |              |         |
| Rural                 | 92(57.5)           | 1            |         |              |         |
| Urban                 | 106(56.1)          | 0.94(0.62-1.44) | 0.790  |              |         |
| Ethnic                |                    |              |         |              |         |
| Somali                | 11(84.6)           | 1            |         |              |         |
| Oromo                 | 78(51.3)           | 0.19(0.04-0.89) | 0.035* | 0.14(0.029-0.69) | 0.016* |
| Ahmara                | 71(58.7)           | 0.26(0.05-1.22) | 0.087  | 0.18(0.036-0.88) | 0.035* |
| Tigeray               | 9(39.1)            | 0.01(0.12-0.65) | 0.015* | 0.07(0.01-0.44) | 0.004* |
| Other                 | 29(72.5)           | 0.48(0.10-2.52) | 0.385  | 0.43(0.08-2.37) | 0.335  |
| Religion              |                    |              |         |              |         |
| Muslim                | 25(65.8)           | 1            |         |              |         |
| Orthodox              | 119(59.2)          | 0.75(0.36-1.56) | 0.104  |              |         |
| Protestant            | 45(50.0)           | 0.52(0.23-1.14) | 0.330  |              |         |
| Catholic              | 6(50.0)            | 0.52(0.14-1.94) | 0.149  |              |         |
| Other                 | 3(37.5)            | 0.31(0.06-1.51) | 0.448  |              |         |
| Marital status        |                    |              |         |              |         |
| Single                | 189(57.8)          | 1            |         |              |         |
| Other                 | 9(40.9)            | 0.50(0.21-1.22) | 0.128  |              |         |
| Level of education    |                    |              |         |              |         |
| Pre-Medical Intern    | 93(69.9)           | 1            |         |              |         |
| Medical Intern        | 105(48.6)          | 0.41(0.26-0.64) | 0.000* | 0.34(0.21-0.57) | 0.000* |

COR=Crude Odds Ratio; AOR=Adjusted Odds ratio; CI=Confidence interval; 1=Reference; *=statistically significant

Table 5: Factor affecting on music knowledge among Medical students of Jimma University, Ethiopia (n=349).

Author’s Contribution
KNA conceived and designed the protocol, supervise the data collection, contributed for data analysis, and wrote the paper. I read and approved the final paper.

Disclosures and Ethics
I declare there is no conflict of interest and the study was conducted after obtaining ethical approval and permission from concerned bodies.

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