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# Musical Attitudes and Correlations with Mental Health in a Sample of Musicians, Non-Musicians and Immigrants: A Pilot Study. Implications for Music Therapy

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## Abstract

A sample of 81 subjects (of which 22 were females, 17 musicians and 9 immigrants) accepted to take part in the study and were asked about their music attitudes and self-administered SCL90-R questionnaire (Symptom checklist 90 revised), developed by Leonard Derogatis. Data analysis showed that musical attitudes, use of music (recreational/instrumental versus non instrumental/emotional), music complexity and music preferences strongly vary between musicians and non-musicians and correlate with mental status, while no statistically significant difference was found between Italian and immigrant participants and for parameters like gender and age, thus suggesting that music may be a universal factor and that only musical training makes the difference. Musicians tend to have higher SCL90-R values than non-musicians, especially with a statistically significant difference in the depression, anxiety and phobic traits sub-scales. We speculate that these traits of a particularly vulnerable and sensitive personality may have led the subject to wish to become a professional musician, using music as a kind of auto-medication. Here in this manuscript, we discuss further research and clinically relevant implications for music therapy.

**Keywords:** Music psychology; Music therapy; Psychometric scale

## Introduction

Music represents the most popular and important leisure activity in the nowadays society [1]. Over the last decades, researchers have widely investigated people's musical preferences as an individual difference variable linked with personality traits [2-6], also from a developmental perspective [7]. Experimental findings and results have supported the hypothesis that people prefer listening to music that reflects their personality traits [8,9]. Music has been studied using an array of interdisciplinary approaches and has been broadly linked to a variety of psychological functions: it seems to exert its effect on emotions [10,11] modulating above all the limbic and paralimbic pathways [12], memory [13], attention [14], intelligence [15] and cognition [16] stimulating neuroplasticity [17].

Recently, studies have investigated the differences between musicians and non-musicians in terms of neuroanatomical [18], physiological [19,20] and neuropsychological [21-23] differences. Little is known instead about differences in terms of music preferences [24] and mental health. Some scholars have claimed that musicians tend to be more neurotic and even more religious than non musicians [25,26] but these findings should be investigated in more depth.

## Material and Methods

All the subjects that accepted to take part in the study gave their informed consent. Using a written structured questionnaire, they were asked in the first part about their general demographic parameters (gender, age, self-reported nationality, profession and income) and in the second part were asked to provide the title of only one favourite song – we meant a song they used to listen to regularly in the last two weeks. It is well-known in fact that music preference can vary according to many factors, even though stability tends to increase in the adults.

As far as profession is concerned, for musician we meant a person who makes music as a job, not a person generally interested or skilled in music.

Musical style and genre of the chosen song was classified using one of these 8 macro-genres: rock, pop, funky, jazz, popular music (musica cantautoriale in italian), dance, and classical. Music labelling was performed by two independent reviewers and in case of disagreement a third reviewer and a musician (who did not take part into this study) managed to come to a solution by discussion. In all the cases, Cohen's kappa coefficient were high (>95%) and satisfactory.

Another parameter we investigated was the use of music [1,27]: subjects had to choose between recreational/instrumental and non instrumental/emotional options. For recreational/instrumental use we meant that music was used most of the time during parties, as a background or anyway not to modulate/enhance one's own emotions (which was the case of non instrumental/emotional use).

Subjects were self-administered SCL90-R (Symptom checklist revised 90), developed by Derogatis, and data were analyzed and scored according to the reference Manual [28].

Statistical analysis (ANOVA-one way, Fisher's exact test, Cohen's kappa coefficient) was carried out with proper software, namely SPSS 18.0 (IBM Corp.) and values less than 0.05 were considered statistically significant.

## Results

81 subjects accepted to take part into the study. The sample had

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a mean age of 29.49 ± 9.01 years, with an age range of 18-54 years, females were 22 (27.16 % of the total population), while musicians were 17 (20.99% of the total population), and immigrants 9 (11.11 % of the total population), properly classified as immigrants according to their self-reported nationality.

SCL90-R scores of musicians were generally higher than non musicians obtained values, and depression, anxiety, phobic traits sub-scales were different between the groups in a statistically significant way (p-value 0.033, p-value 0.000, p-value 0.000, respectively), as shown in table 1. Age difference between musician sample and non musician sample was not statistically significant (p-value 0.070).

Comparing SCL90-R scores of musicians and immigrants, the same trend as described before was observed, but in this case only anxiety and phobic traits sub-scales exhibited a statistically significant difference. Interestingly in this case depression sub-scale was not statistically significant, as can be seen in table 2.

From table 3, we can see that the most listened musical genre is pop music, thus confirming other studies [1]. But if we compare the music preferences among the group, we can observe that the musicians have music preferences which are different from those of non-musicians in a statistically significant way (classical music p-value 0.001, jazz p-value 0.005), while there are no differences between Italians and immigrants. Immigrants and musicians show some different music preferences (rock p-value 0.028).

| SUB-SCALE | MUSICIAN | NON-MUSICIAN | p VALUE |
|---|---|---|---|
| **GSI** | 51.79 ± 9.97 | 47.81 ± 9.49 | 0.132 |
| **SOM** | 52.20 ± 11.82 | 48.81 ± 9.13 | 0.206 |
| **OC** | 50.55 ± 8.58 | 48.56 ± 9.82 | 0.449 |
| **INT** | 50.95 ± 9.91 | 48.28 ± 8.13 | 0.254 |
| **DEP** | 49.20 ± 8.99 | 44.63 ± 7.36 | 0.033* |
| **ANX** | 55.82 ± 8.85 | 46.46 ± 8.33 | 0.000* |
| **HOS** | 45.70 ± 12.16 | 50.56 ± 9.96 | 0.092 |
| **PHOB** | 51.79 ± 8.27 | 44.93 ± 5.83 | 0.000* |
| **PAR** | 54.55 ± 11.96 | 51.36 ± 8.85 | 0.225 |
| **PSY** | 50.31 ± 10.66 | 48.39 ± 10.59 | 0.509 |

* Statistically significant, being *p*-value < 0.05
GSI Global Score Index; SOM somatization; OC obsessive-compulsive; INT interpersonal; DEP depression; ANX anxiety; HOS hostility;: PHOB phobic behavior; PAR paranoid ideation; PSY psychoticism

**Table 1:** Sub-scales scores for musicians, non-musicians and corresponding p-values obtained with ANOVA-one way.

| SUB-SCALE | MUSICIAN | IMMIGRANT | p VALUE |
|---|---|---|---|
| GSI | 51.79 ± 9.97 | 49.08 ± 9.53 | 0.510 |
| SOM | 52.20 ± 11.82 | 47.34 ± 8.93 | 0.292 |
| OC | 50.55 ± 8.58 | 50.04 ± 9.94 | 0.892 |
| INT | 50.95 ± 9.91 | 49.00 ± 6.46 | 0.600 |
| DEP | 49.20 ± 8.99 | 45.44 ± 6.25 | 0.276 |
| ANX | 55.82 ± 8.85 | 46.83 ± 8.83 | 0.021* |
| HOS | 45.70 ± 12.16 | 49.27 ± 9.40 | 0.452 |
| PHOB | 51.79 ± 8.27 | 45.51 ± 4.69 | 0.047* |
| PAR | 54.55 ± 11.96 | 52.32 ± 9.64 | 0.635 |
| PSY | 50.31 ± 10.66 | 52.08 ± 9.73 | 0.682 |

* Statistically significant, being p-value < 0.05
GSI Global Score Index; SOM somatization; OC obsessive-compulsive; INT interpersonal; DEP depression; ANX anxiety; HOS hostility; PHOB phobic behavior; PAR paranoid ideation; PSY psychoticism

**Table 2:** Sub-scales scores for musicians, immigrants and corresponding p-values obtained with ANOVA-one way.

From tables 4 and 5, we observe that gender and age have no effect on music preferences in a statistical significant way. As far as use of music is concerned, 17 subjects (20.99% of the total population) chose non instrumental/emotional option and if we compare among the groups, we find statistically significant difference between non-musicians and musicians (p-value 0.000), between migrants and musicians (p-value 0.015), but again not between migrants and Italians.

## Discussion

The current study attempts to study correlations between music (musical attitudes, use of music, music complexity, and music preferences) and mental health. This topic is of great importance in the frame of music therapy.

Some scholars emphasized that in order to fully exploit music benefits only theory-driven theory should be designed and used in clinical practice and that the lack of theoretical study can lead to the failure of the therapeutic project [29,30].

Studying musicians' personality could foster further development in both music therapy research and music therapy applications and help us to understand why and how music therapy is really effective.

From our experimental findings, music is a universal factor [31]: in our sample we found no statistically significant differences for age, gender and nationality among the groups. Different preferences between musicians and non-musicians may reflect a different sensibility and personality trait, as can be seen from higher SCL90-R scores and statistically significant difference for depression, anxiety, phobic sub-

| MUSICAL GENRE | SAMPLE | MUSICIAN | NON MUSICIAN | IMMIGRANT |
|---|---|---|---|---|
| ROCK | 22 (27.16 %) | 2 (11.76 %) | 20 (31.25 %) | 5 (55.56 %) |
| POP | 31 (38.27 %) | 4 (23.53 %) | 27 (42.19 %) | 1 (11.11 %) |
| POPULAR | 9 (11.11 %) | 2 (11.76 %) | 7 (10.94 %) | 1 (11.11 %) |
| CLASSICAL | 4 (4.94 %) | 4 (23.53 %) | 0 | 1 (11.11 %) |
| JAZZ | 5 (6.17 %) | 4 (23.53 %) | 1 (1.56 %) | 0 |
| FUNKY | 2 (2.47 %) | 0 | 2 (3.12 %) | 0 |
| DANCE | 6 (7.41 %) | 0 | 6 (9.38 %) | 1 (11.11 %) |
| PUNK | 2 (2.47 %) | 1 (5.88 %) | 1 (1.56 %) | 0 |

**Table 3:** Music preferences among musicians, non musicians, immigrants.

| MUSICAL GENRE | MALES | FEMALES |
|---|---|---|
| ROCK | 18 (30.51 %) | 4 (18.18 %) |
| POP | 19 (32.20 %) | 12 (54.55 %) |
| POPULAR | 7 (11.86 %) | 2 (9.09 %) |
| CLASSICAL | 3 (5.08 %) | 1 (4.55 %) |
| JAZZ | 5 (8.47 %) | 0 |
| FUNKY | 2 (3.39 %) | 0 |
| DANCE | 5 (8.47 %) | 1 (4.55 %) |
| PUNK | 0 | 2 (9.09 %) |

**Table 4:** Gender influence on music preference.

| MUSICAL GENRE | 18-26 YEARS | 27-54 YEARS |
|---|---|---|
| ROCK | 15 (32.61 %) | 7 (20.00 %) |
| POP | 15 (32.61 %) | 16 (45.71 %) |
| POPULAR | 4 (4.94 %) | 5 (14.29 %) |
| CLASSICAL | 3 (6.52 %) | 1 (2.86 %) |
| JAZZ | 3 (6.52 %) | 2 (5.71 %) |
| FUNKY | 1 (2.17 %) | 1 (2.86 %) |
| DANCE | 4 (4.94 %) | 2 (5.71 %) |
| PUNK | 1 (2.17 %) | 1 (2.86 %) |

**Table 5:** Age influence on music preference.

scales. We speculate that this could have motivated the person to wish to become a musician: music as auto-medication, as a kind of self-administered therapy. Musicians in fact use music to modulate and enhance their feelings and emotion and prefer well-structured and complex music such as jazz and classical music, suggesting that complex music can strengthen their personality, feeding and spiritually nourishing them.

This could help to select and design music therapy programs *ad hoc*. Moreover, these programs can be extended also to immigrants with mental difficulties currently in Italy, since there are no limitations, music being a universal value and language.

Further research is needed in order to establish and find other potential link and correlation useful in music therapy clinical routine practice.

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