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Exploring the relationship between music genre preferences and medical specialty selections

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Abstract

Introduction: Music preferences have been linked to personality traits, which in turn may influence career choices. This study explores the potential relationship between music genre preferences and medical specialty selections among residents at Padjadjaran University, Indonesia.

Methods: A cross-sectional survey was conducted among all residents trained in urology, ophthalmology, and anatomic pathology. Data collected included demographic characteristics, music genre preferences, and work habits related to music. Independent t-tests are used when data are normally distributed, whereas Kruskal-Wallis tests are used when data are not normally distributed.

Results: The study included 125 residents (19 pathology anatomy, 33 urology, 73 ophthalmology). Pop was the most preferred music genre across all specialties (48% in urology, 61% in ophthalmology, 52% in pathology anatomy). However, secondary preferences varied: rock (21%) was the second most popular among urology residents, jazz (10.9%) and indie (10.9%) among ophthalmology residents, and classical music (26%) among pathology anatomy residents. Demographic differences were noted, with pathology anatomy residents being older and urology residents having a higher proportion of males. Ethnic distribution was relatively consistent across specialties, primarily mixed ethnicity, Sundanese, and Javanese.

Conclusion: While pop music was the predominant preference across all specialties, secondary music preferences varied, potentially reflecting different personality traits associated with each specialty. The study's findings are limited by its single-institution sample and cross-sectional design, necessitating further research with larger, more diverse populations to explore the underlying mechanisms linking music preferences to medical specialisation choices.

Keywords: *Music Preferences, Medical Specialty Selection, Personality Traits*

Practice Highlights

- Personality traits could predict specialty preferences among medical students.
- Music genre preferences are associated with personality traits, thus are drawn to particular type of music.
- Residents in different specialties distributed music genres differently.

I. INTRODUCTION

The notion that music genres reflect and influence personality traits is a topic of much debate and interest. Research has shown a correlation between musical preferences and personality traits, with certain genres being associated with specific characteristics (Andrews et al., 2022; Wang et al., 2024). For example, music in slow tempo and music in minor keys were significantly predicted by emotional stability and optimism, whereas music in fast tempo and music in major keys was significantly predicted by openness to experiences, introversion, and gender (Dobrota & Reić, 2014;

Upadhyay et al., 2017). Some evidence suggests that individuals drawn to certain music genres may exhibit personality profiles that align with specific career paths. For instance, individuals who prefer classical music tend to score higher in openness and introversion—traits associated with analytical or solitary professions—while those who enjoy rock or pop may display extraversion and sensation-seeking behaviors, often linked to high-energy or interactive professions (Rentfrow & Gosling, 2003; Schäfer & Mehlhorn, 2017). Moreover, individuals with high levels of achievement tend to prefer music that reflects their professional identity, indicating a potential association between occupational roles and musical preferences (Knox & McDonald, 2017).

Similarly, in the field of medicine, there is a growing interest in understanding how personality traits may influence medical residency preferences. Studies suggest that certain personality types may be drawn to specific medical specialties, and this alignment could impact their satisfaction and performance within that field. This intersection of music, personality, and medical career choices highlights the complex ways in which our preferences and personalities shape and reflect our identities and professional paths.

Culture and environment have a profound effect on a person's personality (Smaldino et al., 2019; Triandis & Suh, 2002). Culture provides a framework within which individuals develop beliefs, values, and behaviours that are in harmony with their societal norms. It shapes personality through language, customs, and social norms, which guide an individual's actions and interactions. Environment, encompassing family dynamics, social relationships, and educational experiences, also plays a pivotal role in molding personality traits. As individuals navigate through different environmental contexts, their personalities adapt and evolve, reflecting the dynamic interplay between their innate dispositions and external influences. This complex interconnection suggests that personality is not a static entity but a fluid construct that changes over time, influenced by the cultural and environmental landscapes we inhabit.

Indonesia's rich of cultures is indeed a testament to its diversity, with over 300 ethnic groups calling it home. This multicultural environment offers a unique blend of traditions, languages, and beliefs, which can significantly shape an individual's personality. Exposure to diverse cultural practices and values can foster open-mindedness, adaptability, and a complex worldview. Research suggests that multicultural experiences can enhance creativity, reduce stereotypes, and provide a broader perspective on life. Moreover, individuals who navigate multiple cultures may develop a multicultural identity, integrating different cultural influences into their personal identity, which can contribute to their overall well-being and social harmony.

The exploration of a potential correlation between musical preferences and medical specialty choice in Indonesia is indeed a fascinating subject. Since music has been noted to affect personality, which in turn influences the choice of medical specialisation, Indonesia is a multicultural country, and this correlation is intriguing. As a result, this study aims to determine if there is a distribution difference between music genre preferences and healthcare specialisations in Indonesia.

II. METHODS

This research employed a cross-sectional study design, with total sampling of all Padjadjaran University resident utilising a comprehensive survey administered to all residents. The study population comprised residents specialising in three distinct medical disciplines: urology, ophthalmology, and anatomic pathology. All residents in urology, ophthalmology, and anatomic pathology were eligible to be included. Exclusion criteria included incomplete responses or refusal to provide consent. This selection allowed for a comparative analysis across specialties with varying degrees of procedural and cognitive demands. In this study we utilised total sampling, all eligible residents during the study period were invited to participate. The survey instrument was designed to collect a range of demographic and preference-based data. Participants were asked to provide information regarding their age, current year of residency training, and their preferred music genres. Crucially, the survey also explored the residents' work habits related to music, specifically inquiring whether they typically worked with or without background music and their preferred music genre. The survey also collected information on spouse employment status, which was divided into two groups: physicians and non-physicians.

Statistical analysis was performed to assess the difference between groups within the collected data. The independent t-test was employed to analyse continuous data that demonstrated a normal distribution. For continuous data that did not meet the assumptions of normality, the non-parametric Kruskal-Wallis test was utilised. In all statistical analyses, a significance level (p-value) of 0.05 was established as the threshold for statistical significance, indicating a 5% risk of concluding a relationship exists when it does not. All participants have given informed consent before any data were collected.

III. RESULTS

A total of 125 residents participated in this study. Nineteen pathology anatomy residents, 33 urology resident and 73 ophthalmology residents were included. The descriptive statistic of age and sex are presented in Table 1. Marital status and ethnicity are presented in Appendix 1.

		Pathology Anatomy (n = 19)	Urology (n = 33)	Ophthalmology (n = 73)	p-value
Age					
	Mean ± SD	33.16 ± 3.11	30.09 ± 2.11	30.51 ± 2.55	0.002*
	Median (Range)	34.00 (29-39)	30.00 (27-37)	30.00 (26-36)	
Sex					
	Male	4 (21.1%)	26 (79.8%)	22 (30.1%)	<0.01
	Female	15 (78.9%)	7 (21.2%)	51 (69.9%)	

*Kruskal Wallis Test

Table 1. Age, sex, ethnicity and marital status of the residents

In male resident population, distribution between married and not married is quite equal between specialty (Figure 1). In urology, married male residents is 58%, while it is 68% and 50% in ophthalmology and pathology, respectively. There is sharp difference in female urology resident compared to other specialties. There are only 14% female urology residents who is married, while in ophthalmology and pathology is 63% and 67%, respectively.

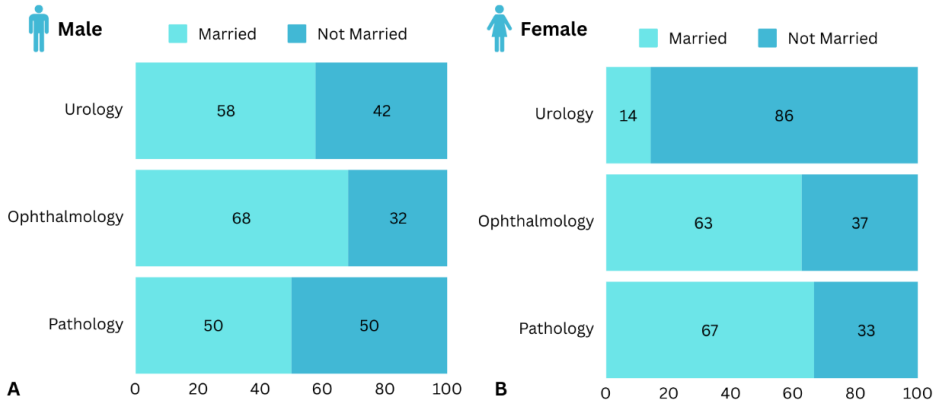

Figure 1. Marital status proportion in male (A) and female (B) residents

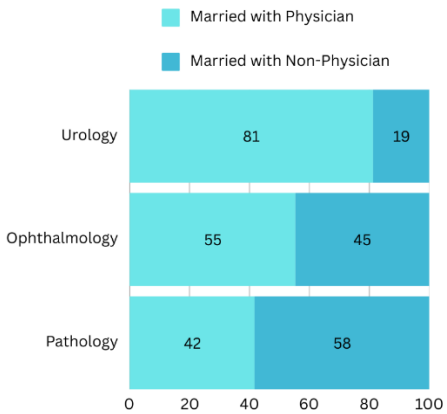

Figure 2. Proportion of married residents with physician spouse

In urology, 81% of residents also married to physicians, while it is only 55% in ophthalmology and 42% in pathology (Figure 2).

Most residents in urology (69.70%) and pathology (73.68%) reported that they were listening to musical background while working (Figure 3). While only 38.36% in ophthalmology that worked with musical background.

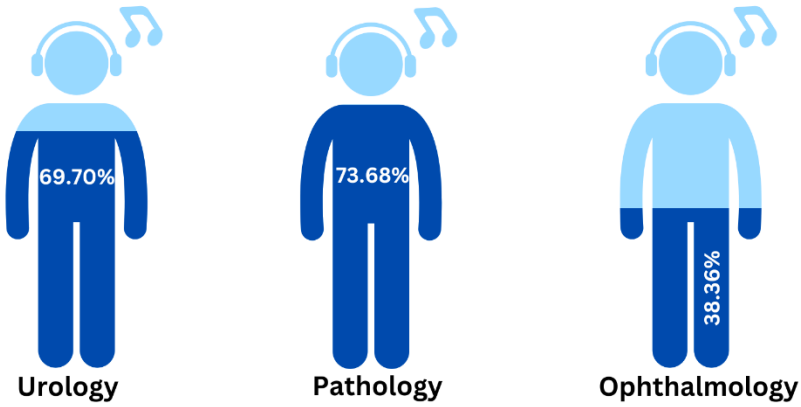

Figure 3. Comparison between residents working with musical background and those without

In those three specialties, most of the residents prefer pop music compared to others. A total of 48.48%, 52.63%, and 61.64% residents in urology, pathology and ophthalmology prefers pop music (Figure 4). Rock music was the 2nd most popular music among urology residents (21.21%), while it is classical music in pathology residents (26.32%).

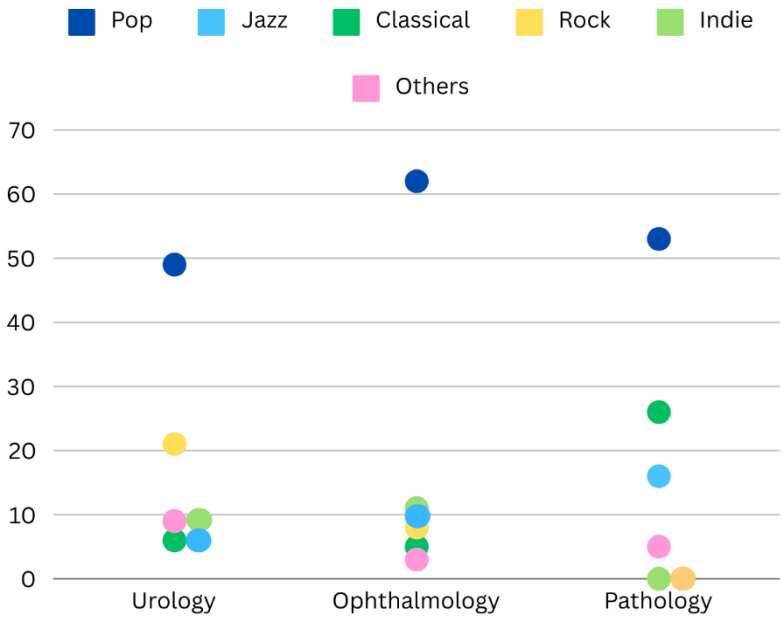

Figure 4. Residents' music genre preference (in percentage)

IV. DISCUSSION

This study explored the relationship between music genre preferences and medical specialty selections among residents at Padjadjaran University. There is a higher median age among pathology anatomy residents than among urology and ophthalmology residents, and there is a greater proportion of males in the urology department (Table 1). In spite of this, all residents from the three departments belong to the same generation (Juekiewicz, 2023). As residents in the same generation (generation Y), they are influenced by similar external influences, values, and ethical principles which influence their music genre preferences (Juekiewicz, 2023; Krumhansl, 2017).

Given that Indonesia is composed of multiple ethnic groups, and ethnicity could influence music genre preference, we found that the top three ethnic groups that reside in the three departments are somewhat similar, namely mixed ethnicity, Sundanese, and Javanese (Table 1). This percentage ranking differs from that of the Badan Pusat Statistik (BPS), which indicates that the top three groups by population are Java (40.22%), Sundanese (15.5%), and Batak (3.58%) (Badan Pusat Statistik [BPS], 2010).

Since music serves as a connection function between people, we evaluate the marital status of the residents (Bamford et al., 2024). In urology, 52% of residents are married, while in pathology and anatomy, 37% and 36%

are married, respectively (Table 1). While females comprise only 21% of urology residents, the majority of them are unmarried (86%), which is compared to only 33% and 37% of female pathology anatomy and ophthalmology residents who are unmarried, respectively (Figure 1).

Eighty-one percent of urology residents are married to a physician compared to 55% of ophthalmology residents and 42% of pathology anatomy residents (Figure 2). Study by Dutta RR, et all showed that only 26.1% of physician married with physician (Dutta et al., 2024). However, the study did not compare the percentage of physicians who are married to other physicians in each specialty.

Compared with urology residents (69.7%) and pathology anatomy residents (73.68%), only 38.36% of ophthalmology residents listen to music while working (Figure 3).

Pop genre is the most preferred genre among three groups of residents, comprising 48% of residents in the urology and 61% of residents in the ophthalmology groups, as well as 52% of residents in the pathology anatomy groups (Figure 4). This finding is similar to a study by Krumhansl that the pop genre is the most preferred genre for individuals born between 1940 and 1999 (Krumhansl, 2017). However, the second most preferred genre among urology residents is rock (21%), while jazz (10.9%) and indie (10.9%) are the second most preferred genres in ophthalmology, and classical music (26%) is the second most preferred genre in pathology anatomy. The difference in genre music preference can also be observed in the third to last rank on the list (Figure 4).

The variation in secondary music genre preferences among specialties may be partially explained by psychological theories of personality, particularly the Five-Factor Model (FFM), which posits five broad domains of personality: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Prior research has shown that individuals who prefer classical music tend to score high in openness and introversion—traits often linked to reflective and analytical disciplines such as pathology. In contrast, rock and pop fans tend to exhibit higher levels of extraversion and openness to experience, traits more commonly observed in high-intensity, procedurally driven fields like urology (Rentfrow & Gosling, 2003; Schäfer & Mehlhorn, 2017). However, in our study, most residents prefer pop music.

From a sociological perspective, medical specialties may be seen as “occupational subcultures” (Becker, 1963), each with distinct values, stress profiles, and interaction patterns. These subcultures attract individuals whose identities align with the implicit norms of the field (Light, 1979), potentially explaining the alignment between music preference and specialty. For example, the high-paced, team-intensive nature of urology might attract residents who identify with more energetic and expressive music like rock. Conversely, fields like pathology, which involve solitary analysis, may appeal to those who appreciate structured and introspective genres like classical music.

This study has several limitations that affect generalisability of the findings. While the study used a total sample of residents from three departments, the number of residents from each specialty varies, with 19 respondents from pathology anatomy, 33 respondents from urology, and 73 respondents from ophthalmology. In addition, the study's sample was drawn exclusively from residents of one university.

Despite its limitations, this study presents several strengths that contribute to its value. The study explores a unique and interesting relationship between music genre preferences and medical specialty selection, particularly within the Indonesian cultural context. This area is relatively understudied and by focusing on medical residents, a specific population facing unique career pressures, the research addresses a relevant and understudied group. Furthermore, we acknowledgment of Indonesia's diverse cultural influences, highlighting the potential impact of environment on both musical tastes and professional choices. We hope that this study will open avenues for further research and raising awareness about the potential influence of external factors like music on medical professionals.

V. CONCLUSION

This cross-sectional study explored the relationship between music genre preferences and medical specialty selections among residents at Padjadjaran University in Indonesia. While the study revealed variations in music preferences distribution across different specialties, pop being the most favored genre and different preference in second to last rank.

We found that there are differences in demographic distributions, particularly age and gender, among the resident groups, it is important to acknowledge the limitations of the study's design. The use of a single-institution sample and the cross-sectional methodology limit the generalisability of the findings and preclude the

establishment of causal relationships. Nevertheless, the study offers a preliminary investigation into the potential interplay between musical tastes and career choices within the medical field, raising intriguing questions for future research.

Further studies with larger and more diverse samples, are needed to expand upon these findings, and to explore the underlying mechanisms that might link music preferences to medical specialisation.

Notes on Contributors

ATS contributed to the conceptualisation, data curation, methodology, formal analysis, project administration, validation, investigation, funding acquisition, resources, visualisation, software, supervision, writing of the original draft, review and editing.

AK contributed to the methodology, formal analysis, resources, visualisation, software, supervision, writing of the original draft, review and editing.

AY contributed to the investigation, visualisation, software, supervision, writing of the original draft, review and editing.

Ethical Approval

This study was performed under the ethical approval from Hasan Sadikin Hospital Ethical Committee (Approval Number: DP.04.03/D.XXIV.16/14527/2024). This study is in line with the 1964 Declaration of Helsinki and existing ethical standards.

Data Availability

The data supporting this study are available upon reasonable request to Corresponding Author.

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Declaration of Interest

The authors declare no relevant financial or non-financial competing interest from any party.

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Appendix 1. Ethnicity and marital status of the residents

	Pathology Anatomy (n = 19)	Urology (n = 33)	Ophthalmology (n = 73)	p-value
Ethnicity				
Mixed Ethnicity	7 (37%)	8 (24%)	18 (25%)	
Sundanese	4 (21%)	7 (21%)	18 (25%)	
Javanese	4 (21%)	4 (12%)	17(23%)	
Chinese	1 (6%)	4 (12%)	4 (5%)	
Dayak	1 (5%)	0 (0%)	0 (0%)	
Betawi	0 (0%)	0 (0%)	0 (0%)	
Buginese	0 (0%)	2 (6%)	1 (1%)	
Muna	1 (5%)	0 (0%)	0 (0%)	
Melayu	0 (0%)	2 (6%)	1 (1%)	
Balinese	0 (0%)	0 (0%)	1 (1%)	
Batak	1 (5%)	3 (9%)	5 (7%)	
Aceh	0 (0%)	0 (0%)	2 (3%)	
Padang	0 (0%)	3 (9%)	2 (3%)	
Banjar	0 (0%)	0 (0%)	1 (1%)	
Marital Status				
Married	7 (37%)	17 (52%)	26 (36%)	0.288
Not Married	12 (63%)	16 (48%)	47 (64%)	