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EMPIRICAL REPORT

Attitudes of Medical Students in Malta Toward Psychiatry and Mental Illness

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Abstract

Objective The study aimed to explore the attitudes of medical students in Malta toward psychiatry and mental illness. It looked at the effect of sex, clinical exposure, and experience with mental illness on students' attitudes.

Methods A questionnaire containing the ATP 30 and MICA-2 scales was distributed to all medical students in Malta in a cross-sectional study. Factor analysis was followed by reliability testing using Cronbach Alpha. Factor scores were achieved using the regression method. The independent sample *t* test and the Mann–Whitney *U* test were used to check for relationships between factor scores and variable of interest. Following this, the means and medians of factor scores for each group were calculated and compared.

Results Three hundred ninety-six students (51%) answered the questionnaire. Males had more positive attitudes toward psychiatry as a career choice ($p = 0.01$) and more positive attitudes toward the importance of psychiatry ($p = 0.00$). Those with clinical exposure to psychiatry had more negative attitudes toward the efficacy of psychiatry and psychiatrists ($p = 0.00$). Having experience with mental illness in some form was associated with decreased appeal in psychiatry as a career ($p = 0.01$ for personal experience, $p = 0.01$ for relatives, $p = 0.00$ for friends).

Conclusions The factor structures obtained using ATP 30 and MICA-2 scales in this study are different from those found in the original literature. Having undergone psychiatry rotations had no significant impact on the attitudes toward psychiatry as a career choice but led to more negative attitudes toward the efficacy of psychiatry and psychiatrists.

Keywords Medical students · Malta · Career · Mental illness · Psychiatry

Despite the increasing importance of psychiatry, recruitment into psychiatry remains a global problem, with the World Psychiatric Association (WPA) stating that there are only a few countries in which it is not an issue [1]. The World Health Organization has set a global target of one psychiatrist per 100,000 inhabitants for each country. Some countries, such as the USA, most of Europe, and China comfortably exceed this target, whereas rates are as low as 0.2 per 100,000 in Africa and Southeast Asia, with some countries having no psychiatrists at all [2]. It has been reported that many persons suffering from mental illness (MI) in low- and middle-income countries do not get treatment due to a considerable shortage of psychiatrists [3–5].

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Eurostat data shows that in 2017, Malta had 10.68 psychiatrists per 100,000 inhabitants. This is the sixth lowest from the countries with available statistics, ranking above Turkey, Bulgaria, North Macedonia, Poland, and Spain. For comparison, the UK, whose educational and healthcare systems serve as a model for Malta, had 18.04 psychiatrists per 100,000 inhabitants [6]. A report published by the Maltese Association of Psychiatry in 2018 states that Malta should have 40–60 psychiatrists working in general adult mental health in the National Health Service as recommended by the Royal Australian and New Zealand College of Psychiatrists [7], whereas at the time of writing, there were 15 consultant general psychiatrists and 10 resident specialists. In 2017, each psychiatrist saw 750 patients in 1 year, which they deemed "an excessive number of patients per consultant," impacting their ability to provide adequate care and leading to doctor burnout [8].

The attitudes of medical students toward psychiatry and mental illness form the foundations of their actions as medical

doctors as well as influence their choice of specialty. A systematic review of 32 papers among 22 different countries indicated that there are mixed attitudes toward psychiatry. Despite the fact that attitudes were overall found to be quite positive, psychiatry as a career choice was rated poorly among students [9]. These findings were echoed in a cross-sectional study across 4 European countries [10]. An Australian survey of 655 students from 6 different medical schools identified psychiatry as the least respected specialty [11]. In a pilot study, it emerged that medical students in China have negative perceptions of psychiatry with regard to the ability to help patients, lifestyle factors, interesting work, financial reward, and prestige [12].

Characteristics that are related to a more positive attitude toward psychiatry and mental illness include being a female [10, 13–15] and having personal experience with mental illness, either personally or through relatives or friends [13, 14, 16, 17]. Some studies showed that those having clinical exposure through psychiatry rotations had more positive attitudes toward psychiatry and mental illness [10, 18–20], while others showed that exposure leads to more negative attitudes [13, 21] or has no effect [12, 17].

This study aimed to explore the attitudes of medical students in Malta toward psychiatry and mental illness, as these had never been previously investigated. Furthermore, we wanted to determine whether there is a relationship between attitudes and sex, clinical exposure to psychiatry through a clinical rotation, experience with mental illness either personally or through relatives and friends, and working or volunteering with psychiatric patients. Our main hypotheses were that medical students in Malta will have overall positive attitudes toward psychiatry and mental illness, similar to students in other European countries with more positive scores achieved by females; that psychiatry as a career will be viewed poorly by medical students, considering the relatively low numbers that pursue a career in psychiatry; and that students who have had exposure to psychiatry and mental illness in some form have more positive attitudes.

Methods

Sample

An online questionnaire was sent to all medical students at the University of Malta ($n = 778$) between March and May 2019. The medical course in Malta spans over 5 years with the first 2 years being preclinical and the last 3 years being clinical years. Psychiatry rotations are done over a 6-week period during the first semester of the fourth year. This means that first-, second-, and third-year students will not have had any formal psychiatry training, whereas fourth and fifth years will have had clinical exposure to psychiatry.

Design

The questionnaire consisted of demographic questions along with two scales; the Attitudes Toward Psychiatry-30 Scale (ATP 30) [22] and the Mental Illness: Clinicians' Attitudes Scale (Medical Student Version) (MICA-2) [23]. The ATP 30 consists of 30 questions and is scored on a 5-point Likert scale where 1 represents *strongly agree* and 5 represents *strongly disagree*, with some items being reverse-scored. The total score is calculated by adding the scores of the 30 questions. The MICA-2 consists of 16 questions and is scored on a 6-point Likert scale where 1 represents *strongly agree* and 6 represents *strongly disagree*, with some items also being reverse-scored. The total score is calculated by adding the scores of the 16 questions. Both scales possess face validity as well as concurrent and construct validity [22, 24]. They were chosen since they are well-established, considered to be reliable, and used consistently in literature related to attitudes toward psychiatry. The scales were used for the first time on the Maltese population.

Analysis

The data was analyzed using IBM SPSS version 25. Since the scales had never been used before on the Maltese population, factor analysis was conducted to identify the factor structures underlying the two different scales and to check whether the resulting structures match those found in the literature. Pearson correlation coefficients were used.

For each questionnaire, the determinant of the correlation matrix was worked out to test for any possible multi collinearity between the questions, and the Kaiser-Meyer-Olkin (KMO) test was used to test for sampling adequacy. Bartlett's test of sphericity was employed to assess whether the correlation matrix is significantly different from the identity matrix. To proceed with factor analysis, KMO must be > 0.5, the determinant needs to be larger than 0.0001, and p value resulting from Bartlett's test of sphericity needs to be smaller than 0.05. After successfully checking the determinant of the correlation matrix and carrying out the KMO and Bartlett's test of sphericity, it was established that, for both questionnaires, there was no problem of multicollinearity, there was sampling adequacy, and the correlation matrix is significantly different from the identity matrix.

MICA-2: Determinant 0.074, KMO 0.748, Bartlett's p value < 0.05.

ATP 30: Determinant 0.001, KMO 0.849, Bartlett's p value < 0.05.

Horn's parallel analysis was used to decide how many factors were influencing the resulting responses obtained on ATP 30 and MICA-2 scales. Horn's parallel analysis

suggested 4 factors for MICA-2 and 6 factors for ATP 30. However, on testing for reliability using Cronbach alpha, not all factors were deemed to be reliable (CA > 0.6). The following are the factors retained and corresponding Cronbach alpha values:

For MICA-2:

1. Disclosure of mental illness (CA = 0.981)
2. Psychiatry compared with other medical specialties (CA = 0.611)

For ATP-30:

1. Efficacy of psychiatry and psychiatrists (CA = 0.834)
2. Appeal of psychiatry as a career choice (CA = 0.650)
3. Psychiatrists, psychiatric illness, patients, and their treatment (CA = 0.745)
4. Importance and role of psychiatry (CA = 0.609)

The factor structures obtained using ATP-30 and MICA-2 scales in this study are different from those found in the original literature [23, 24]. The scores obtained on the ATP-30 and MICA-2 scales could thus not be categorized into positive, negative, or neutral attitude and used for subsequent hypothesis testing. Instead, once factors were established, factor scores were achieved, for each of the 6 retained factors, using the regression method. Each of these scores was checked for normality using Shapiro-Wilk normality test. The latter was done on a group basis.

The independent sample *t* test was used to check for whether there was a significant difference in the mean score of a factor due to a variable of interest when the scores were normal. The nonparametric Mann–Whitney *U* test was used if normality was violated. Following this, the means and medians of factor scores were obtained for each group. Since scores ranged from 1 to 5 and 1 to 6 for ATP 30 and MICA-2, respectively, where 1 is *strongly agree*, a lower mean or median score signifies a more positive attitude.

Ethical Considerations

This study has been approved by the University of Malta Faculty Research Ethics Committee. All data was collected anonymously and voluntarily, with the right to withdraw at any point without penalty or impact on students' academic evaluation. No deception or coercion was employed to recruit participants. Contacts to the University counseling services were provided in case the participants experienced harm at any point throughout the study, although this was not foreseen.

Results

The questionnaire was answered by 396 students (51%), of which 41% were males. From the sample, 37.3% had clinical exposure to psychiatry (fourth and fifth years), while 62.7% had no exposure (first, second, and third years). Maltese students made up 86.4%, while the rest were from the UK (5.6%), Oman (2.3%), Kuwait (2.3%), Saudi Arabia (1.3%), Greece (0.5%), Serbia (0.3%), the USA (0.3%), and India (0.3%). The sample was representative of the target population in terms of sex, year of study, and country of origin.

Sex was found to have an effect on the appeal of psychiatry as a career choice and the importance and role of psychiatry. Males had more positive attitudes toward psychiatry as a career choice (median males = 0.05, median females = 0.22, p = 0.01) and more positive attitudes toward the importance of psychiatry (median males = − 0.96, median females = 0.23, p = 0.00).

Those that had undergone their psychiatry teaching and rotations, that is, the group with clinical exposure, answered that they are more likely to disclose a mental health problem to colleagues or friends (median exposure group = − 0.18, median no exposure group = 0.11, p = 0.01). However, students without exposure to psychiatry had more positive attitudes toward the efficacy of psychiatry and psychiatrists (median exposure group = 0.30, median no exposure group = − 0.13, p = 0.00). No other significant differences were found between the clinical exposure and no clinical exposure group.

Having suffered from a mental illness at some point in one's life was related to the appeal of psychiatry as a career choice. Those who claimed to have suffered from mental illness had a more negative attitude toward psychiatry as a career (median suffered from mental illness = 0.32, median have not suffered from mental illness = 0.06, p = 0.01).

With regard to exposure to mental illness through a relative or friend, participants who did not have a relative or friend who has suffered from mental illness had more positive attitudes toward psychiatry as a career (median relative suffered = 0.21, median no relative suffered = 0.00, p = 0.01, median friend suffered = 0.22, median no friend suffered = − 0.08, p = 0.00). This group also had more positive attitudes toward the importance and role of psychiatry (median relative suffered = 0.17, median no relative suffered = − 0.13, p = 0.03, median friend suffered = 0.20, median no friend suffered = − 0.18, p = 0.00). However, those who did have a relative or friend who has suffered from mental illness had better views regarding psychiatry as compared with other medical specialties (median relative suffered = − 0.24, median no relative suffered = − 0.13, p = 0.03, median friend suffered = − 0.24, median no friend suffered = − 0.03, p = 0.00).

Experience with working or volunteering with psychiatric patients led to more negative views on the efficacy of psychiatry and psychiatrists (median experience group = 0.23,

median no experience group = − 0.07, $p = 0.02$) and on the importance and role of psychiatry (median experience group = 0.36, median no experience group = − 0.02, $p = 0.01$). Furthermore, the group with experience with working or volunteering with psychiatric patients had less appeal toward psychiatry as a career choice (median experience group = 0.37, median no experience group = 0.04, $p = 0.00$). This group comprised of clinical and nonclinical students who had experience with psychiatric patients outside of the prescribed clinical rotations.

Discussion

Interestingly, males had more positive attitudes toward psychiatry as a career choice and more positive attitudes toward the importance of psychiatry. This contrasts starkly with published research, which consistently found females to have more positive attitudes [10, 13–15]. This could be due to the fact that psychiatry is associated with a leadership role, which in Malta has traditionally been assigned to males, thus making psychiatry more appealing to males as a career choice and consequently more important. There was no statistically significant difference between males and females regarding attitudes to disclosure of mental illness, despite the fact that gender tendencies would suggest that females would be more likely to disclose a mental health problem [25].

Those students that had undergone their psychiatry teaching and rotations answered more likely to disclose a mental health problem to colleagues or friends. This is very positive and could be due to the increased awareness about mental illness including its treatability and a greater sense of social acceptance. Those without exposure to psychiatry had more positive attitudes toward the efficacy of psychiatry and psychiatrists, which may indicate that exposure negatively impacts students' perceptions of psychiatry and psychiatrists. This could be due to a problem with the teaching program or with the rotations themselves. Malta's main psychiatric hospital is notoriously old and outdated and deals largely with chronic cases, so students who only had exposure in this setting may not have seen many patients recovering during their limited stay, thus questioning the efficacy of psychiatry. Further research may benefit from subcategorizing the group with clinical exposure according the subspecialty of psychiatry they were exposed to and seeing whether any differences emerge.

Some studies reported more positive attitudes after clinical exposure [10, 18–20], while others showed that exposure leads to more negative attitudes [13, 21] or has no effect [12, 17]. This variation may indicate that the effect of clinical exposure is context-dependent and influenced by the nature and quality of the exposure. There was no statistically significant effect of exposure to psychiatry on its appeal as a career choice.

In our study, having suffered from a mental illness at some point in one's life was related to the appeal of psychiatry as a career choice. Contrary to our hypothesis, those who claimed to have suffered from mental illness had a more negative attitude toward psychiatry as a career. This could be due to a negative experience with a psychiatrist responsible for their care or simply more exposure to the profession. It could also be that exposure to psychiatry may be triggering for students dealing with mental health problems, such that pursuing it as a career would be out of the question.

With regard to exposure to mental illness through a relative or friend, participants who did not have a relative or friend who has suffered from mental illness had more positive attitudes toward psychiatry as a career. It is possible that their experience with dealing with loved ones was negative and so discouraged them from considering psychiatry as a viable career choice. The group with no relative or friend with mental illness also had more positive attitudes toward the importance and role of psychiatry. However, those who did have a relative or friend who has suffered from mental illness had better views regarding psychiatry as compared with other medical specialties. This set of results is quite contradictory and may suggest mixed attitudes toward psychiatry and psychiatrists.

Contrary to our hypothesis, having experience working or volunteering with psychiatric patients had a negative influence on one's views on the efficacy of psychiatry and psychiatrists and the importance and role of psychiatrists. Again, this could be due to a negative experience while working at Malta's psychiatric hospital.

The main limitation to this study is that overall positive or negative attitudes could not be calculated from the ATP 30 and MICA-2 scales due to the incoherent factor structure when applied to our sample. This made it difficult to compare with established research and required modification of the original hypotheses. The fact that the questionnaire was distributed online means that the sample was not a true random sample but a convenience sample. The analysis above assumes a random sample. However, the sample population is representative of the target population in terms of year of study, sex, and country of origin, so the statistical analysis being used in this study can still be considered to be meaningful.

In conclusion, having undergone psychiatry rotations had no significant impact on the attitudes toward psychiatry as a career choice but led to more negative attitudes toward the efficacy of psychiatry and psychiatrists. Sex was influential in terms of attitudes toward psychiatry as a career choice and attitude toward the efficacy of psychiatry and psychiatrists, with males showing more positive attitudes than females. The results obtained warrant a qualitative study to better understand medical students' attitudes toward psychiatry,

especially with regard to the effect of clinical exposure. A follow-up study into what percentage of this cohort of students eventually pursues a career in psychiatry would also be very insightful.

Compliance with Ethical Standards

Disclosures On behalf of all authors, the corresponding author states that there is no conflict of interest.

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