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Original Research

Personality traits of pharmacy and medical students throughout their course of studies

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ABSTRACT[*]

Background: Pharmacists and medical doctors are two professional groups that very often receive their education and practice in the same environment. However, their approach to patient care and collaboration tends to be different and this may lead to both frustration and conflict which may adversely affect patient care. Personality has been identified as a psychological issue that could contribute to conflict in a work situation.

Objective: To study the personality traits of a cohort of students studying pharmacy and medicine at the University of Malta in their first and final year.

Methods: The Gordon Personal Profile – Inventory was administered to a cohort of pharmacy and medical students in their first year and once again administered to the same cohort who completed their course of study in their final year. Basic demographic data was also collected.

Results: In first year the most pronounced traits for both student groups were those of Emotional Stability and Personal Relations. Over a period of five years, there were shifts in personality traits. In their final year pharmacy students were characterized by high scores for Cautiousness and Personal Relations while medical students exhibited medium scores in Cautiousness and Emotional Stability.

Conclusion: The changes in personality traits over the duration of the course were not radical changes but rather that of traits becoming more pronounced.

Keywords: Personality Assessment; Personality; Social Behavior; Self Concept; Students, Pharmacy; Students, Medical; Longitudinal Studies; Malta

INTRODUCTION

Pharmacists and medical doctors are two professional groups that very often receive their education and practice in the same environment. However, their approach to patient care and collaboration tends to be different.[1] This at times could lead to both frustration and conflict which may adversely affect patient care.[2] Personality has been identified as a psychological issue that could contribute to conflict in a work situation.[3] Little has been done to study the work-related personality traits of pharmacy and medical students throughout their course of studies.

Personality Traits

The Trait Approach was put forward and developed by Cattell[4] in the United States and by Eysenck[5] in the United Kingdom. The theories developed by these two psychologists now form the foundation of various personality tests such as the Five Factor Model (NEO PI-R)[6] the 16 Personality Factor Questionnaire (16PF)[7], The California Psychological Inventory (CPI)[8], Myers-Briggs Type Inventory (MBTI)[9] and the Gordon's Personality Profile Index (GPP-I).[10] These tests are used to explore underlying personality traits which a person has. They can be used for several purposes, such as, recruitment, counselling, predictors of work performance and educational outcomes. They could also be used by educational institutions to understand their student population and to analyse and evaluate their programmes and the impact these courses have on students' development.[11]

Personality and Pharmacy Students

A number of studies examining personality traits of pharmacy students have been conducted with most of the pioneering work having been done in the United States. Lowenthal[12] found that students and practicing pharmacists tended towards introversion and sensing on the extravert/introvert and sensing/intuitive preferences but found that students were more people-oriented and open when compared to pharmacists. These finding were confirmed by Shuck and Phillips[13] in a longitudinal study were pharmacy students obtained higher score on Introversion, Sensing, Feeling and Judging. The findings also suggested that over the years students obtained a higher score towards feeling on the thinking/feeling scale. Similarly a study carried out in the United Kingdom, found a preference for Sensing, Thinking and Judging.[14] Previous studies by the authors found that first year pharmacy students were characterised by strong traits of Original Thinking, Personal Relations and

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Vigor, however they had low scores on assertiveness.[15]

Personality and Medical Students

There is an extensive body of literature which studies the personality of medical students, using a variety of instruments since a number of medical schools apply the above mentioned tests as part of the admissions process.[16,21] This readily available data has primarily been studied in relation to academic performance[16-18] and career interest.[19-21] However, studies which primarily focus on characterizing the students in terms of their personality traits are limited. A study conducted in the United States using the Comrey Personality Scales showed that personality traits are primary predictors of clinical performance and personal suitability.[22] A Belgian study found that students choosing to study medicine were amongst those who scored the highest on extraversion and agreeableness using the NEO PI-R.[23] In Malaysia fifth year students, once again using the NEO PI-R scored lower on neuroticism and higher on conscientiousness when compared to all other years implying that the fifth year students were more stable emotionally, less impulsive, more disciplined and efficient.[24]

To our knowledge there is no longitudinal study which investigates personality traits of both pharmacy and medical students at the beginning of their first year and at the end of their fifth and final year. The overall aim of this paper is to study the personality traits of a cohort of students studying pharmacy and medicine within the Faculty of Medicine and Surgery at the University of Malta. Our specific objectives were (i) To compare the personality traits of first year pharmacy and medical students, who completed their respective courses; (ii) to investigate any changes in personality which could occur while they were following their respective courses; (iii) to determine their personality traits at the end of their fifth and final year.

METHODS

The study was carried out at the Faculty of Medicine and Surgery within University of Malta. To date, this is the only institution which is responsible for the teaching and training of all pharmacy and medical students in Malta. This study utilizes data from a longitudinal study looking at personality traits using the Gordon Personal Profile Index (GPP-I) Global Edition[10] of a cohort of pharmacy and medical students who commenced their respective courses in October 2007 and fished their course in June 2012.

Data Collection Instrument

The GPP-I global edition in the English language was administered to students.[10] This is a validated instrument and can be used to measures personality traits in various areas such as Industrial research, consumer behaviour military research, health –related research and educational research. It is comprised of two instruments – (i) The Gordon Personal Profile (GPP) which measures Ascendency, Responsibility, Emotional Stability, and Sociability and (ii) the Gordon Personal Inventory (GPI) measuring Cautiousness, Original Thinking, Personal Relations and Vigor. The score range for each trait on the GPP is 0-36, while the score range for each trait for the GPI is 0 to 40. Correlation studies between the GPP-I and other instruments measuring personality have demonstrated that the observed relationships are consistent with definition of the GPP-I scales.[10] The GPP-I has been used in various other papers related to personality traits of pharmacists, pharmacy and medical students.[15,25-27]

Data Collection

In Phase 1, data was collected from students in the first semester of the first year (Time 1). In Phase 2 data was collected during the last semester of their fifth and final year (Time 2). Ethical approval for the study was obtained from The University of Malta Research Ethics Committee. Students were invited to participate in the study during a lecture. A member of the administrative staff distributed and collected the GPPI booklets. To ensure student confidentiality of student responses each booklet was given an office number by the same individual before being passed on to the principal investigator. The conversion information was stored by the same member of administrative staff. At no point in time could any individual student be identified by the investigators. In the first year the purpose of the study was explained and the students were informed that they would once again be invited to repeat the same process during their final year. In the final year the students were once again invited to answer the GPPI during a lecture. Students were informed that participation was voluntary in both instances and that failure to participate would not influence their studies in any way. Participants were also told that they were free to stop their participation at any point in the research process. Demographic data relating to gender, age, parents' occupation, course of study selected was also collected. The data used in the present study is only from those who answered the GPPI both in the first year and final year of the course.

Statistical Analysis

The raw data was scored using the appropriate GPP-I scoring keys. The data were analysed using SPSS Version 17 (SPSS Chicago, IL). Student t-tests were carried out as a first descriptive comparison of the means between the two cohorts of students and similarly separate paired t-tests were used to compare the various means at the start and end of each respective course. Further in depth analysis to study these issues, including any interactions between the two effects: difference in traits between students in the two courses and difference within subjects resulting from repetitive measures of the traits at the beginning and end of course. Therefore for each of the scores, a mixed between-within subjects analysis of variance was conducted.

Table 1. Study Sample Characteristics				
Characteristic	**Pharmacy first year (%)**	**Pharmacy final year (%)**	**Pharmacy first year (%)**	**Pharmacy final year (%)**
Gender				
Male	6 (16.2)		32 (52.5)	
Female	31(83.8)		29 (47.5)	
Mean age (years)	18.2	22.5	18.3	22.5
Age range (years)	17-21	22-25	17-23	22-27
Course choice				
First choice	30 (81.8)		61 (100)	
Second choice	7 (18.9)		-	
Father's occupation				
Professional, managerial, administrative	14 (38.8)		40 (65.6)	
Higher clerical, clerical, supervisor, skilled craftsmen, technicians, owner/manager of small business	8 (21.6)		8 (13.1)	
Skilled manual workers and foremen	7 (18.9)		5 (8.2)	
Semi- skilled, unskilled, labourers, casual workers, and persons whose income is provided by the state	8 (21.6)		8 (13.1)	
Mother's occupation				
Professional, managerial, administrative	10 (27.0)		23 (37.7)	
Higher clerical, clerical, supervisor, skilled craftsmen, technicians, owner/manager of small business	2 (5.4)		7 (11.5)	
Skilled manual workers and foremen	7 (18.9)		6 (9.8)	
Semi- skilled, unskilled, labourers, casual workers, and persons whose income is provided by the state	1 (2.7)		2 (3.3)	
Housewife	17 (45.9)		23 (37.7)	

A similar analysis was carried out by trying to fit a linear mixed-effect model to the data for each of the trait scores. This was carried out using the lmer() function in the lme4 package of the R statistical software. For each of the trait scores the following four models were fitted. Here, "score" refers to the particular score for both first year and final year of the course, "course" refers to either the pharmacy or the medicine course and "time" refers to whether the score was registered at the beginning of the first year or the end of the final year. The variable "student" is a distinct index number given to all subjects and that part of the model written as "(...|student)" measures the random effect due to variability between subjects. The anova() command in R was used to assess the relative fit of the three models. It resulted that the more complex models did not improve the fit in any significant way for any of the scores, therefore model 1 was accepted for each of them. The model used, therefore, did not contain any interaction between variables "time" and "course" (the term time*course) and assumed only a random intercept (the term (1|student). In order to add an overall multivariable picture of how the pharmacy and medicine cohorts were positioned relative to the traits being studied, a multiple correspondence analysis (MCA) at the beginning and at the end of the course was conducted. Two plots which indicated the proximity of the two categories of students with the various levels of scores the traits of the GPPI were obtained. Each score for each trait was regrouped into three categories Low, Medium and High. The Low level contained the students who were in the lower quartile of the range of scores for the particular trait, the Medium level contained those students whose score was in the inter-quartile range while the High level contained those who were in the upper quartile. The FactoMineR package of R was used to carry out the MCA. We extracted two dimensions for these categorical scores at the start of the courses, and also two dimensions for the second set of scores. We then plotted the categories of the different traits as well as the two categories of students, pharmacy and medicine, along these two dimensions obtaining the results shown in Figures 2 and 3.

Table 2: Mean (SD) GPP-I scores of Pharmacy and Medical Students in their First and Final Year				
GPP-I Trait	**Pharmacy**		**Medicine**	
	First year	Final year	First year	Final year
Ascendency (A)	19.3 (5.7)	20.4 (6.4)	23.0 (6.1)	22.5 (5.3)
Responsibility (R)	24.2 (5.1)	26.5 (4.1)**	22.9 (5.2)	24.2 (5.5)*
Emotional Stability (ES)	18.8 (5.9)	20.4 (5.4)	20.3 (6.0)	20.3 (6.0)
Sociability (S)	21.0 (5.9)	21.3 (7.6)	21.4 (6.2)	22.0 (5.6)
Cautiousness (C)	23.9	25.9 (5.6)	22.8 (5.8)	24.3 (5.2)*
Original Thinking (OT)	24.1(4.1)	25.9 (4.7)	23.0 (5.6)	26.0 (5.6)***
Personal Relations (PR)	21.7(5.9)	22.6 (5.0)	19.8 (5.7)	20.1 (5.8)
Vigor (V)	24.1(4.6)	25.9 (5.0)*	22.9 (5.2)	24.3 (5.5)*
Significance level of paired t-test between first and final year within each course *p<0.05; **p<0.01;***p<0.001				

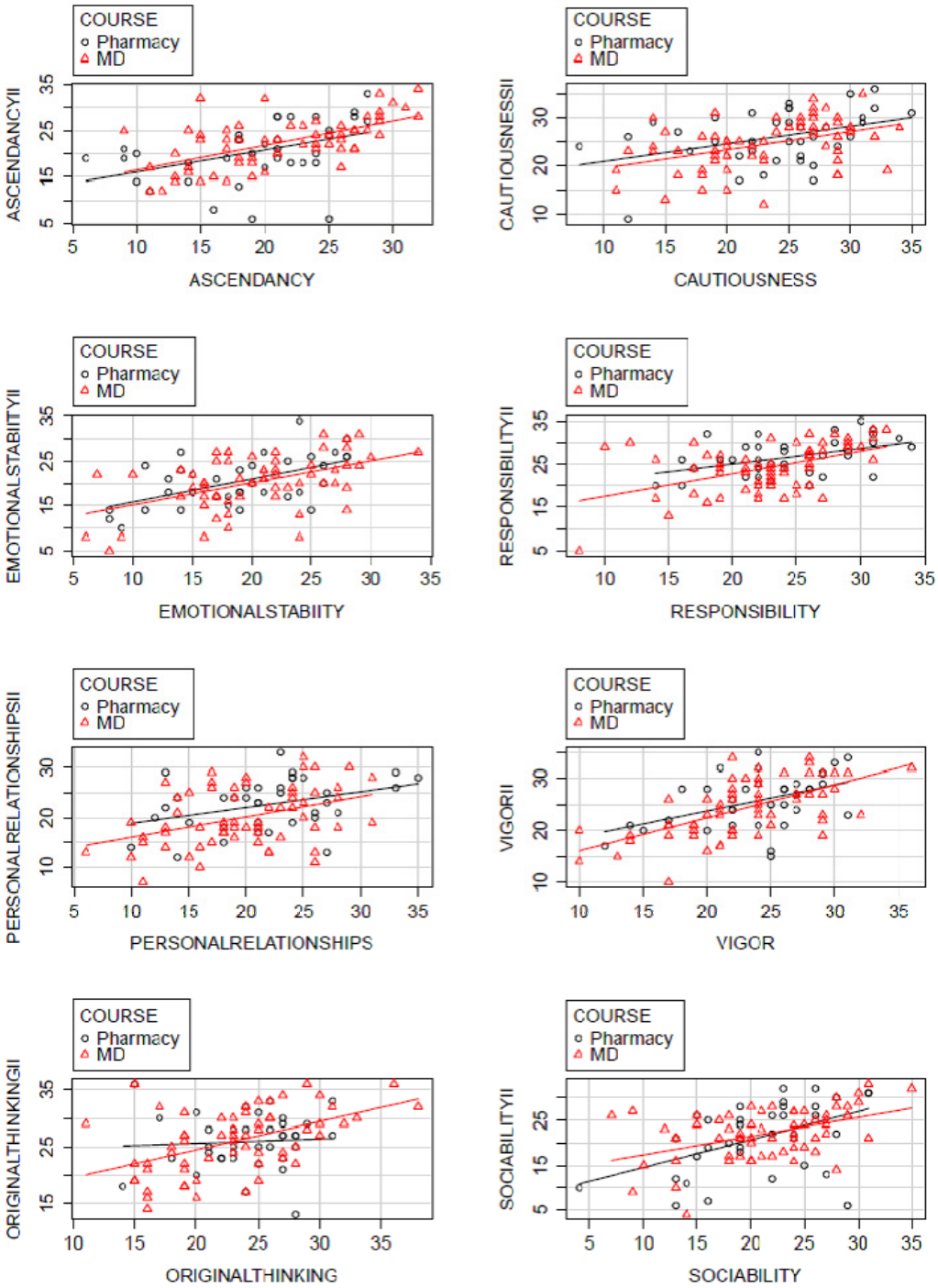

Figure 1. Scatterplots depicting the different traits for the pharmacy and medical course.

RESULTS

A total of 98 students answered the GPPI both in first year and in the fifth and final year, with 40.6% being pharmacy students (Table 1). All pharmacy students who participated in the first year (n=37) and were still following the course, completed the GPPI in their final year, while 61 out of the 70 medical students who participated in the first year also chose to participate in the final year. When comparing mean values for the traits between pharmacy and medical students in their first year (Table 2), we find that there was a tendency for pharmacy students to achieve higher mean scores on all the traits in the Inventory with the trait of Responsibility achieving the highest score. These differences in scores were not statistically significant ($p>0.05$). When looking at the courses over time, using separate paired t-tests, pharmacy students registered an increase in traits of Responsibility ($p=0.007$) and in the Vigor ($p=0.044$) while medical students registered increases in the scores for Responsibility ($p=0.049$), Cautiousness ($p=0.049$), Original Thinking ($p<0.0005$) and Vigor ($p=0.021$).

The scatter plots (Figure 1) give an initial idea of the picture which the mixed effects data offers. Each graph plots, for one trait, the scores obtained by

Table 3. GPP I Traits showing significant shifts over time for combined scores of pharmacy and medical students (traits at year 1 compared to traits at year 5)

GPP-I Trait	p-value*	Partial eta-square (effect size)[37]
Ascendancy	0.05	0.04 (small to moderate)
Responsibility	0.001	0.11 (moderate to large)
Cautiousness	0.006	0.08 (moderate)
Original thinking	≤0.0005	0.01 (large)
Vigor	0.002	0.09 (moderate)

*Wilkis' Lambada

each student in the first year and at the end of the final year for both medicine and pharmacy. Regression lines are also shown. With the possible exception of Original Thinking, the regression lines for the two courses and for all traits are almost parallel, indicating that the change in scores over the five years was not much different between the two courses, that is, there was no interaction between the two effects time and course. The steepness of the regression and the intercept on the vertical axis is an indication of how much the scores changed over the five years of the course. A gradient larger than 1 and a positive value of the intercept indicate a tendency for the second score to be higher than the first. A mixed between-within subjects analysis of variance was conducted, in order to ascertain whether these visual differences were significant. This analysis demonstrated that for each of the traits, no significant interactions between course and passage of time was registered. The significant main effects registered for time were an increase in score for Ascendancy, Responsibility, Cautiousness, Original Thinking and Vigor, as illustrated in Table 3. The significant main effects which were registered due to the course variable were higher mean scores for pharmacy students than medical students for Responsibility (Wilks Lambda p=0.05; partial eta- square=0.04, indicating a small to moderate effect size) and Personal Relationships (Wilks Lambda p=0.03; partial eta-square=0.05, again indicating a small to moderate effect size).

The analysis reported above fitted a linear mixed-effects model to the data and produced the results presented in Table 4. In this table, the value of the Intercept represents the baseline mean score for the particular trait. The coefficients for the variable Time shows that the trait mean scores of both student groups increased significantly from the baseline score for Ascendency, Responsibility, Original Thinking and Vigor from the beginning till the end of the course. Taking Responsibility as an example, the sample mean score was 24.51 which increased by a 1.174 from first to final year. The coefficients for the variable Course demonstrates that score for Responsibility and Personal Relations was respectively 1.83 and 2.21, the scores being lower for medical students compared to pharmacy students.

The MCA produced the plots displayed in Figures 2 and 3 and provides another way of looking at the data. These plots indicate the positioning of the pharmacy and medical students vis-a-vis the levels of the scores at the start and end of the two courses and therefore give an overall view of this positioning involving all the traits.

The plots show that both pharmacy and medical groups are close to the origin of both plots. This indicates that these dimension (and hence the trait scores on which they are based) do not discriminate so strongly between these two groups of students. This broadly agrees with our previous statistical results where we found only a few traits exhibiting significant differences between the two groups of students.

DISCUSSION

The results present a rather comprehensive personality study of the student cohort. The participation rate was high giving a good picture of both pharmacy and medical students. Issues related to choice of course, satisfaction and attrition of pharmacy cohort have been discussed in another paper.[24] There was no significant attrition in the medical course over the five year period. Interestingly the results indicate that there are differences in personality traits between groups and over time.

Personality profile on entry

When looking at mean scores of the GPPI traits in the two groups, medicine and pharmacy at the beginning of the course (Table 2) and using Multiple Correspondence Analysis (MCA) (Figure 2) we found the trait of Emotional Stability to be High for pharmacy and Medium for medical students. This is a desirable trait for students as this indicates individuals who have relatively low anxiety states and which will enable them to perform better in the course. Studies have shown a positive correlation between emotional stability and academic performance.[28,30] The trait of Personal Relations

Table 4. Results of the linear mixed-effects model

	Intercept	Coefficient of variable - TIME	Coefficient of Variable - COURSE
Ascendency (A)	19.26	1.17 (p=0.039)	ns
Responsibility (R)	24.51	1.74 (p=0.00089)	-1.83 (p=0.044)
Emotional Stability (ES)	19.30	ns	ns
Sociability (S)	20.88	ns	ns
Cautiousness (C)	24.06	1.74 (p=0.00490)	ns
Original Thinking (OT)	23.77	2.54 ($p=1.1x10^{-5}$)	ns
Personal Relations (PR)	21.92	ns	-2.21 (p=0.023)
Vigor (V)	24.23	1.54 (p=0.0013)	ns

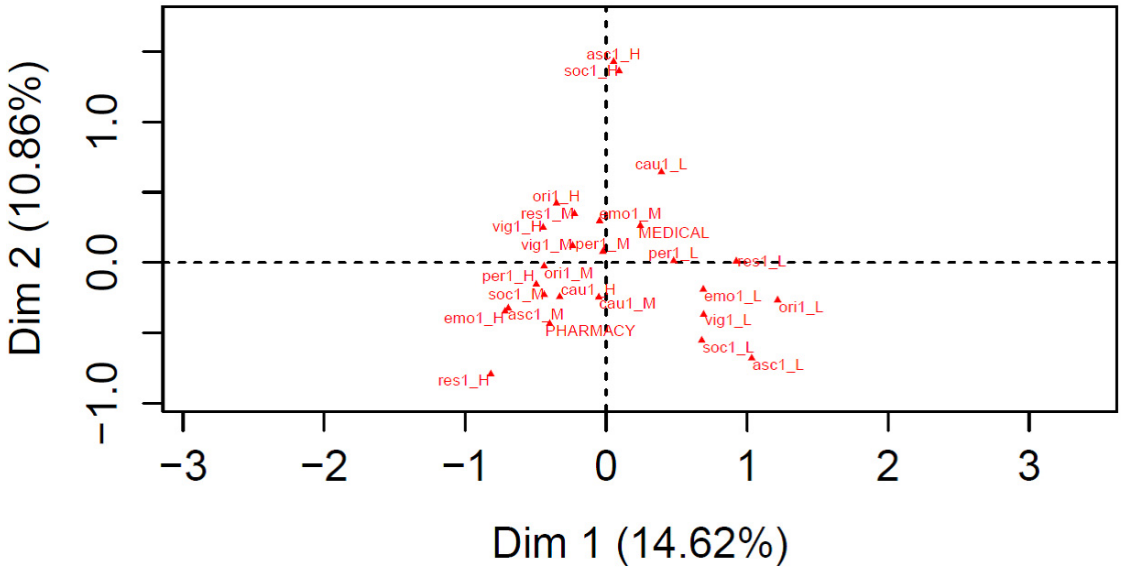

Figure 2. Positioning of courses with respect to traits at the start of the course (multiple correspondence analysis factor map).

once again High for pharmacy students and Medium for medical students is associated with individuals who have faith and trust in people and who are tolerant, patient and understanding. These are traits which are highly desirable in individuals who have made a career choice to engage in a patient oriented profession as it predisposes them to being caring individuals. Leivens[23] who studied incoming medical students in Belgium found that they tended to achieve high scores in agreeableness, which incorporates the facets of trust, straightforwardness, altruism, compliance, modesty and tender mindedness. This study supports the scores of Personal Relationships identified in the present study. Belgian medical students were however also high scorers on extraversion, warmth, gregariousness, assertiveness, activity, excitement seeking and positive emotions. In the present study pharmacy students also were high scorers in the trait of cautiousness. This trait has been found to be present in both pharmacy students and pharmacists in various studies.[15,26,27]

Personality traits over the five-year period

The trait activation theory[31] may shed some light on the results we obtained. This theory postulates that personality traits that are important for clinical performance may not be highly evident in the preclinical phase for medical students, in this case the first two years of the course, but may manifest themselves in the clinical years when they are required. Results from in-depth analysis show that there were some changes in the personality trait scores of the whole group of students from the start to the end of the course. However, this was not a radical change but was more of a trait becoming more pronounced. When comparing the mean scores for each group over time (Table 3) there is a significant increase in 4 trait scores for medical

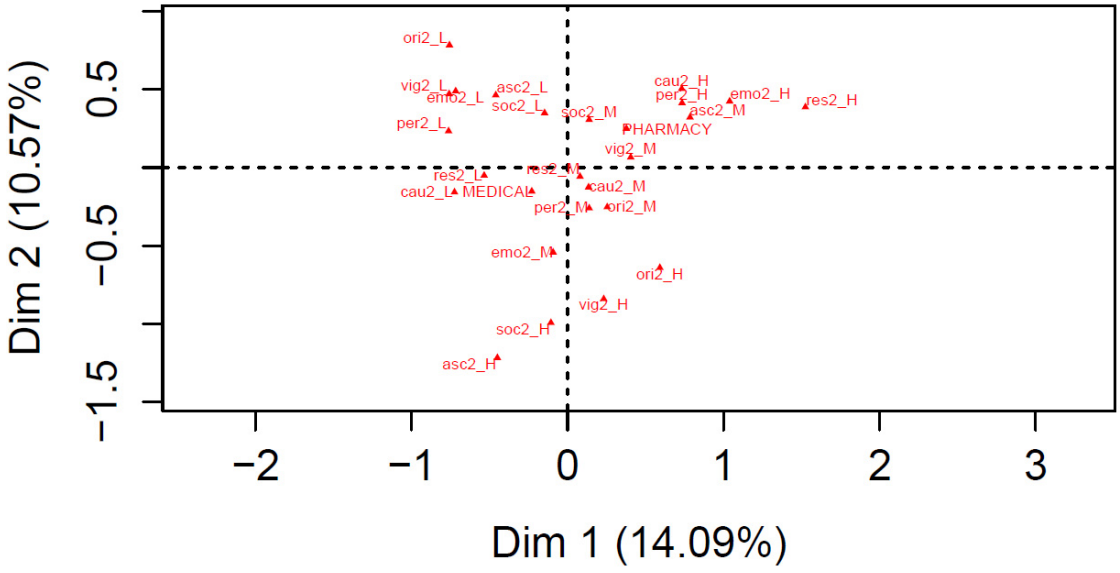

Figure 3. Positioning of courses with respect to traits after the course (multiple correspondence analysis factor map).

students (Responsibility, Cautiousness, Original Thinking, Vigor) and in two traits in Pharmacy (Responsibility and Vigor).[32,33] In the case of pharmacy students the change in course content is much more gradual and pharmacy students engage with patients from their very first year. This could explain why pharmacy students registered significant changes in only two traits as opposed to a significant increase in four traits as in the case of medical students.

However, the scatter plots (Figure 1) which take into account the scores obtained by each student, rather than the means, indicate that there is not much difference between the profile of the individual students following pharmacy and those following medicine over the 5 year period. The mixed between-within analysis of variance (Table 3), while highlighting the traits in which there is an increase in score over time, identified that for Course the main effects were an increase in Responsibility and Personal Relations for pharmacy students as compared to medical students. Furthermore trait score of Responsibility was 1.83 times higher for pharmacy than for medical students and the trait score of Personal Relations was 2.21 times higher for pharmacy students as compared to medical students.

These changes are of note considering that personality is seen as being relatively stable over time.[34] There are varying views as to how personality changes over the life course and at which age bracket personality becomes 'set in stone'.[34] When studying young adulthood, personality theorists have argued that this is a time during which the individual undergoes significant changes in life, such as moving away from home, engaging in full time employment, entering a committed relationship and changes are likely.[35] However these changes are likely to occur once a student graduates or finishes his or her formal studies. A longitudinal study conducted in college students in the United States, did not find any noteworthy impacts on personality traits when comparing traits at the start and end of course.[36] Within our sample the effect of the significant changes mentioned above are rather limited as well. In the case of Maltese students, since Malta is a small island, for reasons related to convenience, economics and culture, the vast majority of students live with their parents and therefore are not exposed to the same experiences and challenges as their counterparts in the rest of Europe and the United States. It could therefore be argued that one would be expected to find less impact on personality traits in the present study as compared to studies conducted in other countries. Nevertheless some significant changes were registered within this cohort of students. It is therefore plausible to contend that the course did influence the personality traits especially for pharmacy students.

Personality profile in final year

The results of the present study as depicted in the MCA Map (Figure 3) confirm the analysis and illustrate some shifts in personality traits occurring between the first and fifth year for both groups. Final year pharmacy students were found to be associated with high scores in Cautiousness and high in Personal Relations, both these traits being related to conscientiousness and agreeableness when considering the big five personality traits. It is also interesting that the course had a significant small to moderate positive effect on the traits of Responsibility and Personal Relations. A possible contributing factor to these findings is that pharmacy students attend community pharmacy practice from the very first year of their course and in addition to being exposed to interacting with patients from a very early stage they also interact with their supervising pharmacist and other pharmacy staff who work together to see to patients needs and are involved in the management of the pharmacy. When looking at the trait of responsibility and rank order of traits we find that Responsibility achieved the highest score in the pharmacy cohort in first year, then again in fifth year. It is the highest scored trait for pharmacists in Malta[26] and also the highest scored trait registered by pharmacists in a study conducted in the United States.[27] The order of traits is very similar for fifth year pharmacy students, Maltese pharmacists and US pharmacists, with Cautiousness placing second in both the present study and the study on Maltese pharmacists[26] and third for US pharmacists.[27] Ironically, the trait of Responsibility shifted from medium to low for medical students. The GPPI manual describes individuals who have low scores in this trait as finding it difficult to complete tasks that they do not find interesting and may exhibit behaviour that may at times be unreliable This is a finding which through experience we know is true and has therefore to be addressed. It is very encouraging that the score on the trait of cautiousness increased in medical students depicting them as being moderately careful before taking decisions. Cautiousness is a facet of the conscientiousness factor, a very important trait in the caring professions.

The study has some limitations which need to be addressed. The GPP-I was not standardized or tested for validity and reliability in the Maltese population. This has to be kept in mind when interpreting results. It is possible that the numbers used are small, however as explained we utilised the entire cohort of students within the Faculty of Medicine and Surgery. We tried to conduct analysis that would allow one to infer that changes were due to the course, yet we cannot exclude that some shift in the traits were due to factors not related to the course of study but to developmental changes and maturation.

CONCLUSIONS

On entry into the respective courses, students exhibited traits which were beneficial to them as students such as Emotional Stability, and Personal Relations, traits desirable for individuals who engage in patient oriented professions. Over a period of five years, from the first year to the final year there were shifts in personality traits, with some of the traits becoming more pronounced.

Before entering the profession pharmacy students exhibited a profile characterised by high scores in Cautiousness, which is highly associated with pharmacists, as well as Personal Relations. Medical students maintained their medium scores in Emotional Stability and also reported medium scores in Cautiousness, the latter trait increasing significantly from the first to the final year for medical students. While the results of this study may not be directly applicable to other institutions, it clearly shows that the course may well have an impact on the personality of the student. We believe that results from personality profiles, should not only be used as a counselling tool prior to career selection or used to compliment cognitive assessment as part of the admission procedure but should also be used by educators to implement programmes that would enhance desirable traits which promote inter-professional collaboration.

CONFLICT OF INTEREST

None.

RASGOS DE PERSONALIDAD DE ESTUDIANTES DE FARMACIA Y MEDICINA A LO LARGO DE LOS AÑOS DE ESTUDIO

RESUMEN

Antecedentes: Farmacéuticos y médicos son dos grupos profesionales que frecuentemente reciben su educación y práctica en el mismo entorno. Sin embargo, su abordaje de la atención al paciente y la colaboración tiende a ser diferente, y esto puede llevar tanto a frustración como a conflictos que pueden afectar negativamente la atención al paciente. Se ha definido la personalidad como un aspecto psicológico que podría contribuir a crear conflictos en una situación laboral.
Objetivo: Estudiar los rasgos de personalidad de una cohorte de estudiantes de farmacia y medicina en la Universidad de Malta en su primer y último año.
Métodos: Se administró el Gordon Personal Profile - Inventory a una cohorte de estudiantes de farmacia y medicina en su primer año, y de nuevo se administró a la misma cohorte que completó los estudios en el último año. También se recogieron los datos demográficos básicos.
Resultados: En el primer año, los rasgos más pronunciados para ambos estudiantes eran los de Estabilidad Emocional y Relaciones Personales. Durante el periodo de cinco años hubo cambios en los rasgos de personalidad. En su año final, los estudiantes de farmacia se caracterizaron por alta puntuación de Precaución y de Relaciones Personales, mientras que los estudiantes de medicina presentaron puntuaciones medias en Precaución y en Estabilidad Emocional.
Conclusión: Los cambios en los rasgos de personalidad mientras a lo largo de la duración de la carrera no fueron radicales, pero determinados rasgos se convirtieron en más pronunciados.

Palabras clave: Determinación de la Personalidad; Personalidad; Conducta Social; Autoimagen; Estudiantes de Farmacia; Estudiantes de Medicina; Estudios Longitudinales; Malta

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