

The Relationship of Personality and Wellness in Pharmacy Students

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Abstract

Objectives. To identify and assess the sense of wellness and balanced lifestyle Samford University McWhorter School of Pharmacy students have during their enrollment and what personality traits, living arrangements, or age ranges may play a role.

Methods. An electronic survey was sent out to current students in their first- through third-year enrolled in Samford University's McWhorter School of Pharmacy to assess their personality traits and wellness.

Results. There were observable trends in the analyses that were not statistically significant. Extraverts showed greater overall wellness when compared to introverts. Sensing and feeling individuals showed slightly higher wellness ratings than their counterparts. Individuals who lived with a roommate and/or spouse showed to have the greatest wellness among all other living arrangements. Other demographic factors and personality traits showed well-balanced distribution.

Conclusion. Correlations were observed between the wellness of Samford University McWhorter School of Pharmacy students and their personality traits. The biggest observable difference was between extroverts/introverts and wellness.

Keywords: Wellness, personality, traits, pharmacy

1. Introduction

The Myers-Briggs Type Indicator (MBTI) is an assessment tool that is used to categorize individuals by personality traits and overall psychological types¹¹. The assessment is made up of over one hundred questions that the participant swiftly answers with the first thought that comes to mind. Once the participant completes the assessment, they are assigned the following traits: introvert (I) or extrovert (E), sensing (S) or intuition (N), thinking (T) or feeling (F), and judging (J) or perceiving (P). After the participant is assigned their traits and types (four traits combined), inferences can be made about their personality and how they handle situations as well as their daily lives. This assessment is primarily used to analyze how people interact with and understand each other, especially in the workplace.

Prior studies¹ have used these personality traits to outline how individuals handle stress and maintain wellness. Wellness is defined as the balance-point between an individual's resources and the challenges he or she faces^{2,10}. However, a person can be in a state of "well-being" but not "wellness" because they are only at a balance point and not in a true state of overall wellness. In pharmacy school, students are faced with balancing multiple academic tasks and assignments along with their personal life. This can be difficult for students because it may be the first time they are living on their own or faced with adversity of this magnitude. Certain personality traits are more adept at maintaining an overall positive wellness in their life while others struggle⁴. Their actions and daily activities can be related back to MBTI types based on their behavior.

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A very notable difference in how individuals may approach their own wellness is in their personality trait of “introverted” or “extroverted”. Extraverts are much more sociable and include group activities as a major part of their own wellness because it is their preferred outlet from stress and a source of happiness. Introverts on the other hand, typically prefer isolation or time away from others to recharge and escape outside stressors. Current studies⁶ show introverts to have a more balanced sense of wellness because they always make time for themselves, whereas extroverts have a more slanted wellness based primarily on emotional needs and less towards personal and intellectual needs. However, some studies have shown an extraverted personality type to include more wellness-based activities such as exercise in their daily lifestyle because of social interactions. Contrastingly, introverts who may not practice certain wellness activities, such as exercise, were less likely to complete those activities in the studies⁶.

People with a “sensing” personality trait rely primarily on concrete facts and their five senses. These individuals have shown to be more likely to reach out to their support system (friends, family, etc.), while people with an “intuition” personality trait are less likely. This is presumed because people with an intuition personality type would rather resolve problems themselves and are more likely to remember patterns than facts. This means if an intuitive individual has dealt with significant adversity before they are more likely to use past experiences (patterns) to help them through the process as opposed to a sensing individual who would reach out immediately because of what they are feeling in that moment². Because of this, more intuitive individuals predominately scored lower on scales assessing wellness, regardless of being an introvert or extrovert⁹.

“Feelers” are defined as people who are concerned with values and what is best for all those involved. “Thinkers” are defined as people who stay true to basic principles and make logical decisions based on pros and cons. Feelers were shown to have more extreme differences in wellness, while thinkers maintained a relatively consistent sense of wellness⁶. In general, thinkers have a better overall wellness because they do not experience such extreme highs and lows⁶. This is likely due to thinkers staying relatively consistent in situations based on their principles, whereas feelers may make extreme sacrifices for others in certain situations, resulting in feelings of depression or anxiousness.

The authors did not locate any studies published on pharmacy students’ personality traits and their overall wellness. Pharmacy school is one of many graduate programs that provide a unique challenge and stressful experience for students; many studies suggest that students develop psychological disorders such as anxiety or depression as a result². Being able to identify personality traits that are more susceptible to these trends and have a lower state of wellness can be a key factor in improving student mental health and productivity in pharmacy school and other graduate programs.

2. Methods

A cross-sectional Qualtrics online survey was designed to collect data to assess the stress and wellness of McWhorter School of Pharmacy students. The survey included seven multiple choice demographic questions and 53 questions of varying options that assessed personality traits, stress, and wellness (as well as other factors assessed by other investigators). The questions were sent to the Institutional Review Board at Samford University and received exempt status. The survey was then sent out via an email link to full-time students enrolled in the graduating classes of 2021 to 2023 at McWhorter School of Pharmacy to participate in the survey. The survey was open for four weeks, with three reminders. The responses were collected anonymously through the “anonymize response” feature in Qualtrics.

Demographic questions such as age and gender were included to ensure the responses were representative of the student population, as well as provide data that could be used for analyses. The personality questions contained in the survey were based on the MBTI and were piloted in advance: they appear to accurately determine an individual’s personality type/traits. Subsequent questions—on wellness, depression, resilience, and Gallup Strengths—were developed based on general principles in the literature for the other investigators’ research questions. Those questions also were piloted. The survey was voluntary but was incentivized by a drawing for one of five \$20 Amazon.com gift cards or a hand sanitizer gift set. Once participants completed the survey, they were linked to a separate survey to enter an optional drawing for the gifts. Access to the second survey data was restricted to the faculty investigator to protect the anonymity of the participant list.

The results of the primary survey were provided to the investigators. An initial review was conducted in Qualtrics to eliminate incomplete responses. The complete responses were then exported to Microsoft Excel and IBM’s Statistical Package for the Social Sciences (SPSS) for further analysis. A total of 179 students completed the survey, which was approximately 50% of the target population. Tests used for data analysis included sample t-tests and Chi-square tests to determine significance, independence, and p-values.

3. Results

There were 179 total responses to the survey consisting of 122 females and 57 males. There were 24 students age 18-21, 104 students age 22-25, 28 students age 26-29, and 17 students 30 years and older. Of the 179 responses, the recorded wellness scores ranged from 25 to 41 and the average wellness score was 32.72, which would be categorized as a C wellness rating.

Of the total 179 responses, 32 were categorized as extroverts and 147 were categorized as introverts. Extroverts' wellness rating ranged from A to C and introverts' wellness rating ranged from B to D. The frequency of wellness ratings for introverts/extroverts is listed in Table 1 below.

Table 1: Frequency of Reported Wellness Ratings of Introverts/Extroverts in Samford University McWhorter School of Pharmacy Students

Personality Trait	Wellness Rating			
	A	B	C	D
Extroversion	0.5% (1)	7.8% (14)	9.5% (17)	0.0% (0)
Introversion	0.0% (0)	35.8% (64)	41.9% (75)	4.5% (8)
Total	0.5% (1)	43.6% (78)	51.4% (92)	4.5% (8)

A = wellness score of 41 or greater

B = wellness score of 34-40

C = wellness score of 27-33

D = wellness score of 20-26

Of the total 179 responses, 76 were categorized as having a “sensing” personality trait and 103 were categorized as having an “intuitive” personality trait (these are dichotomous traits). Sensing individuals had a wellness rating that ranged from A to D and intuitive individuals had a wellness rating that ranged from B to D. The frequency of wellness ratings for sensing/intuitive personality traits are listed below in Table 2.

Table 2: Frequency of Reported Wellness Ratings of Sensing/Intuitive Individuals in Samford University McWhorter School of Pharmacy Students

Personality Trait	Wellness Rating			
	A	B	C	D
Sensing	0.5% (1)	19.0% (34)	22.3% (40)	0.5% (1)
Intuition	0.0% (0)	24.6% (44)	29.1% (52)	4.0% (7)
Total	0.5% (1)	43.6% (78)	51.4% (92)	4.5% (8)

A = wellness score of 41 or greater

B = wellness score of 34-40

C = wellness score of 27-33

D = wellness score of 20-26

Of the total 179 responses, 106 were categorized as having a “feeling” personality trait and 73 were categorized as having a “thinking” personality trait. Feeling individuals had a wellness rating that ranged from A to D and thinking individuals had a wellness rating that ranged from B to D. The frequency of wellness ratings for sensing/intuitive personality traits are listed below in Table 3.

Table 3: Frequency of Reported Wellness Ratings of Feeling/Thinking Individuals in Samford University McWhorter School of Pharmacy Students

Personality Trait	Wellness Rating			
	A	B	C	D
Feeling	0.5% (1)	24.6% (44)	31.3% (56)	2.8% (5)
Thinking	0.0% (0)	19.0% (34)	20.1% (36)	1.7% (3)
Total	0.5% (1)	43.6% (78)	51.4% (92)	4.5% (8)

A = wellness score of 41 or greater

B = wellness score of 34-40

C = wellness score of 27-33

D = wellness score of 20-26

Of the total 179 responses, 23 were categorized as living with a parent(s) or guardian(s), 121 were categorized as “living with a roommate(s) &/or spouse”, and 35 were categorized as “alone or as a single parent”.

Both “Individuals living with a parent(s) or guardian(s)” or “alone or as a single parent” had a wellness rating that ranged from a B to a D and “individuals living with a roommate(s) &/or spouse” had a wellness rating that ranged from an A to a D. The frequency of wellness ratings based on current living arrangements is listed below in Table 4.

Table 4: Frequency of Reported Wellness Ratings Based on Current Living Arrangements in Samford University McWhorter School of Pharmacy Students

Living Arrangements	Wellness Rating			
	A	B	C	D
With Parent(s) or Guardian(s)	0.0% (0)	3.4% (06)	8.4% (15)	1.1% (2)
With Roommate(s) &/or Spouse	0.5% (1)	31.8% (57)	33.0% (59)	2.3% (4)
Alone or As a Single Parent	0.0% (0)	8.4% (15)	10.0% (18)	1.1% (2)
Total	0.5% (1)	43.6% (78)	51.4% (92)	4.5% (8)

A = wellness score of 41 or greater

B = wellness score of 34-40

C = wellness score of 27-33

D = wellness score of 20-26

Of all the comparisons, none yielded a statistically significant result when conducting a Chi-square test. The closest p-value was from the comparison between introverts and extroverts seen below in Table 5. The value did not reach the target goal of ≤ 0.05 and therefore is not statistically significant.

Table 5: Statistical Analysis of Wellness Ratings Comparing Introverts/Extroverts in Samford University McWhorter School of Pharmacy Students.

Test Type	p-value*
Pearson Chi-Square Test (2-sided)	0.095
Likelihood Ratio (2-sided)	0.085

N=179

4. Discussion

One hundred and forty-seven of the 179 responders were categorized as introverts and only 32 were categorized as extroverts. Based on previous studies, it is hypothesized that while introverts have a more consistent sense of wellness, they are more likely to have a lower overall wellness rating due to their lack of interactions with a support system. This hypothesis is supported by the data provided in Table 1. Though there were fewer extraverts in the study, they had a higher average wellness rating and did not have a rating recorded lower than a C. Oppositely, the results showed that introverts had a lower average wellness rating and did not have a single rating that was recorded higher than a B. The data was heavily skewed towards introverts and it is unclear if there was a misinterpretation of the E/I questions or if the results were affected by the COVID-19 stay-at-home orders in place during the survey.

When comparing sensing to intuitive personality traits, this was the most balanced category in terms of results, with 46% of sensing individuals and 42.7% of intuitive individuals having a wellness rating of a B or higher. This result was surprising because, based on previous studies⁸, intuitive individuals scored significantly lower than their sensing counterparts. This was believed to be due to sensing individuals being more aware of their own stress and likely to reach out to their support system and intuitive individuals being more likely to work through their own problems. However, this was not the case in this study.

The results for feelers versus thinkers were also similar. Roughly 42.5% of feelers had a wellness rating of a B or higher and 46.6% of thinkers had a wellness rating of a B or higher. Feelers had a lower overall average wellness rating but did not completely follow the trends outlined by prior studies. Previous studies⁶ suggest that feelers think more of how an action impacts another individual than themselves and it results in a more extreme variance in wellness, compared to a thinker who makes primarily logical decisions, regardless of those impacted. Feelers did have more A and D wellness ratings, but it was hypothesized that thinkers would only have B or C ratings since they are typically more consistent.

Most participants categorized themselves as “living with a roommate(s) &/or spouse”, accounting for 67.6% of the total number of participants. This group had the greatest percent of members with a wellness rating of B or higher at 47.9% and the group categorized as “living with a parent(s) or guardian(s)” had the lowest percent of members with a wellness rating of B or higher at 26.1%.

The group categorized as “living alone or as a single parent” had 42.8% of participants with a wellness rating of a B or higher. These results show that even if a support system is available through someone you live with, it does not guarantee a higher wellness rating.

The study had enough participants to make reasonable conclusions based on the results, which was a strength. The survey was online and easily accessible for the participants because it was not limited by location. The window to complete the survey was open four weeks, which gave responders adequate time to respond even if they were on a clinical rotation. The length of the survey made it manageable for the survey to be completed in a reasonable amount of time and was incentivized to help promote full completion and response to the survey.

One weakness in this study was the response bias. When looking at the results it is apparent that the data is heavily skewed towards females and students between the ages of 22-25. However, this is likely because that demographic is representative of students enrolled in pharmacy schools^{3,5}. While this data may not be as applicable to other professions or demographics, it is representative of most pharmacy schools. If a future study were conducted, it would be important to have a more diverse demographic subject group and conducted at other pharmacy schools or healthcare divisions if possible so more inferences and applications could be made in using the study.

Another weakness in the study was the lack of statistical significance. While there were trends present or inferences that could be made when looking at the results of the survey, none of the research questions yielded a p-value ≤ 0.05 when conducting a Chi-square test. Only one of the comparisons yielded a value near the target goal, which was comparing introverts versus extroverts. Studies have shown a strong link between the two personality traits and wellness. However, from a statistical perspective the null hypothesis was accepted in each case, meaning there is no difference between any of the groups outlined in the research questions.

A potential weakness was the wording and number of questions used to assess personality traits. While the questions were based on MBTI questions, the results received from the survey were divergent from pharmacy students' aggregate official MBTI assessment results over the last several years. As previously mentioned, there was a heavy bias towards introverts rather than extroverts we did not expect. One potential cause could have been the COVID-19 environment students were in (largely online classes at home). Students' responses may have been atypical as compared to pre-COVID conditions. The isolated and stressful environment likely lowered the respondents' wellness ratings and may have caused them to either adapt or change their daily routine and activities. A larger sample size of both categories in an environment without a pandemic should help further illuminate and support this expected trend.

5. Conclusion

Wellness represents an important component in mental health and observing it has led to improvements in individual's productivity and outlook in the workplace in previous studies^{3,7,9}. While this study was not able to provide statistical justification to assertions made between personality and wellness, it did provide insight on what trends to expect when looking at traits such as extroversion versus introversion. More studies need to be conducted to further assess the connection between personality traits and wellness to further assess the potential implications on learning, productivity, and mental health. This data could be used to adjust curriculum in pharmacy schools or anticipate potential stressors for individuals based on their personality traits or type.

6. References

- Abdullahi, A.M., Orji, R., Rabi, A.M., & Kawu, A.A. (2020). Personality and subjective well-being: Towards personalized persuasive interventions for health and well-being. *Online journal of public health informatics*, 12(1). doi:10.5210/ojphi.v12i1.10335
- Bart, R., Ishak, W.W., Ganjian, S., et al. (2018). The assessment and measurement of wellness in the clinical medical setting: A systematic review. *Innovations in clinical neuroscience*, 15(9-10), 14-23.
- Boult, M. J. L., Thompson, R. C., & Schaubhut, N. A. (2017). *Well-Being and MBTI personality type in the workplace: An international comparison*. Retrieved on February 23, 2021 from https://ap.themyersbriggs.com/content/Research%20and%20White%20Papers/MBTI/White_Paper_Well-being_and_MBTI_Personality_Type_in_the_Workplace.pdf
- Ferguson, E. (2013). Personality is of central concern to understand health: Towards a theoretical model for health psychology. *Health psychology review*, 7(Suppl1), S32. doi:10.1080/17437199.2010.547985
- Grabenstein, J. D. (2016). Trends in the numbers of U.S. colleges of pharmacy and their graduates, 1900 to 2014. *American journal of pharmaceutical education*, 80(2). doi:10.5688/ajpe80225

- Jinkerson, J., Masilla, A., & Hawkins, R.C. (2015). Can MBTI dimensions predict therapy outcome: Differences in the thinking-feeling function pair in CBT. *Research in psychotherapy: Psychopathology, process, and outcome*, 18(1). doi:10.4081/ripppo.2015.167
- Löckenhoff, C.E., Duberstein, P.R., Friedman, B., & Costa, P.T. (2011). Five-factor personality traits and subjective health among caregivers: The role of caregiver strain and self-efficacy. *Psychology and aging*, 26(3), 592-604. doi:10.1037/a0022209
- Schommer, J., Tieger, P., Olson, A., & Brown, L. (2017). Applying personality type theory to develop individualized wellness plans for reducing chronic diseases. *Innovations in pharmacy*, 8(1). doi:10.24926/21550417.1328
- Sperandeo, R., Messina, G., Iennaco, D., et al. (2020). What does personality mean in the context of mental health? A topic modeling approach based on abstracts published in PubMed over the last 5 years. *Frontiers in psychiatry*, 10, 1. doi:10.3389/fpsy.2019.00938
- Srivastava, K., & Das, R. (2015). Personality and health: Road to well-being. *Industrial psychiatry journal*, 24(1):1. doi:10.4103/0972-6748.160905
- Storm, Susan (2015, August 5). *How each Myers-Briggs® type reacts to stress (and how to help!)*. Retrieved on March 16, 2020 from <https://www.psychologyjunkie.com/2015/08/02/how-each-mbti-type-reacts-to-stress-and-how-to-help/>