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Cross-Sectional Study of Empathy Among Healthcare and Non-Healthcare Students in Cyberjaya

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Abstract

Introduction: Empathy is a key psychological quality in current and future healthcare provider's performance. Thus, fostering empathy in healthcare students has become a crucial component of their curriculum.

Objective: This study attempted to compare empathy levels between healthcare and non-healthcare students and identify associated factors.

Methods: The questionnaires used to collect the data which included the Toronto Empathy Questionnaire (TEQ), the Rosenberg Self-Esteem Scale and a self-reported sociodemographic inventory were completed by 311 students within Cyberjaya by convenience sampling. Descriptive statistics, independent t-test, linear regression, ANOVA were conducted for data analysis with significant p-value of <0.05.

Results: The mean empathy score for healthcare students was significantly higher compared to non-healthcare students ($p = 0.043$). Empathy was also seen to be significantly associated with gender, female, family background and self-esteem ($p<0.05$). There was no significant difference in self-esteem between healthcare and non-healthcare students.

Conclusion: Hence, it is evident that students of healthcare studies exhibit more empathy compared to non-healthcare regardless of the multiple factors explored in this paper. Nevertheless, empathy prevails as an important value to be considered by healthcare educators to instill this value in those majoring in this field to create a warmer and more welcoming healthcare industry for the people.

Keywords: empathy, healthcare students, non-healthcare students, Toronto empathy scale, Rosenberg self-esteem scale.

Introduction

Empathy, according to Stocks, Lishner et al. (2011), is a category of emotional response that is felt on behalf of others. Barnett and Mann (2013) defined empathy as a cognitive and emotional understanding

of another's experience that results in an emotional response consistent with a belief that others are deserving of compassion and respect and have intrinsic worth. Viewed as a crucial trait for health care practitioners, empathy is needed to understand and encourage others' health, as well as to build treatment relationships (Burhans & Alligood. 2010). Patient's satisfaction, adherence to treatment regimens, factual history-taking, accurate diagnoses, optimal resource use, and the reduction of patient litigation could all be gained from an empathic approach to patient care (Ahrweiler, Neumann et al. 2014). These are one of the many reasons why healthcare providers are taught empathy early on in their undergraduate education. Therefore, it would be unsurprising if healthcare providers and students have higher empathy than other non-healthcare cohorts.

Self-esteem is another psycho-cognitive element that helps the patient-healthcare provider relationship in addition to empathy (Ohlén & Segesten, 1998). Based on Alkhateeb (2014), self-esteem refers to an individual's favorable perception, positive and negative feelings about themselves and their personal values. Self-esteem has been associated with academic success, with high self-esteem being linked to better problem-solving abilities and the ability to manage stress, whilst low self-esteem has been linked to poor academic performance and health (Huang, 2011). This finding is significantly important for healthcare students as they experience a great deal of stress and are at risk of burnout (Youssef, Nunes et al. 2014).

Empathy and self-esteem are both known to be the important psychological components in current and future healthcare providers' performance. Research on empathy has only been widely conducted in the fields of healthcare discipline, while there have been little studies on the relationship between the two components. Kim (2018) researched nursing students, whereas Huang, Thai, et al. (2019) studied medical students. Empathy and self-esteem were found to be significantly correlated in both the research. However, these solely pertain to healthcare students as it appears to be the least studied among non-healthcare students. Therefore, this study aims to determine, compare, and associate the levels of empathy and self-esteem between healthcare and non-healthcare students and identify associated factors.

METHODOLOGIES

This cross-sectional study was conducted in Cyberjaya from September 2021 to July 2023 which included all Malaysian university students aged 16 to 30 who are studying in Cyberjaya, excluding those who are visually impaired. A total of 311 participants made up the study's sample size.

By using a convenience sampling method, the respondents were required to complete an online validated questionnaire that was shared over various social media platforms. The questionnaire was divided into three sections including personal identification and sociodemographic characteristics, Toronto Empathy Questionnaire, and Rosenberg Self-esteem Scale. Jeffrey's Amazing Statistics Program (JASP) was used to conduct the statistical study. The data was analyzed using descriptive statistics, independent t tests, linear regression, and ANOVA. All the data was considered statistically significant if the p value is less than 0.05.

Ethic Approval

Ethical approval for this study was obtained from the University of Cyberjaya Research Ethics Review Committee (CRERC). (Ref No: UOC/CRERC/ER/423). Data privacy and confidentiality was maintained, and the data collected were analysed by the researchers purely for the purpose of the study.

RESULTS AND DISCUSSION

The response rate of our questionnaire was a total of 311 respondents accounting for 130% for our healthcare group and 100% for our non-healthcare group.

Table 4.1 Sociodemographic characteristics among university students in Selangor.

Sociodemographic variables	**Academic Background**		**Total Frequency n (%)**
	Frequency n (%)		
	Healthcare	**Non-Healthcare**	
Academic background	176 (56.59)	135 (43.41)	311 (100)
Gender			
Female	131 (74.43)	80 (59.26)	211 (67.84)
Male	45 (25.67)	55 (40.74)	100 (32.16)
Age			
18-21	20 (11.37)	26 (19.26)	46 (14.8)
22-26	143 (81.25)	106 (78.52)	249 (80.06)
27-31	13 (7.39)	3 (2.22)	16 (5.14)
Race			
Malay	81 (46.03)	51 (37.78)	132 (42.44)
Chinese	50 (28.41)	43 (31.85)	93 (29.904)
Indian	36 (20.46)	34 (25.19)	70 (22.51)
Other	9 (5.12)	7 (5.19)	16 (5.15)
Academic Standing			
<2.50	0 (0.00)	2 (1.48)	2 (0.64)
2.50 – 3.00	39 (22.16)	11 (8.15)	50 (16.08)
3.01 – 3.50	82 (46.59)	50 (37.04)	132 (42.44)
>3.50	55 (31.25)	72 (53.33)	127 (40.84)
Family History			
Live with parents	155 (88.06)	119 (88.15)	274 (88.10)
Live with a single parent	14 (7.96)	12 (8.89)	26 (8.36)

Other	7 (3.98)	4 (2.96)	11 (3.54)
Pet			
Yes	93 (52.84)	71 (52.59)	164 (52.73)
No	83 (47.159)	64 (47.41)	147 (47.27)

Table 4.1 shows that majority of our respondents consist of females (67.84%), aged between 22-26 years old (80.06%), were of Malay ethnicity (42.44%), living with their parents (88.1%) and owns a pet (52.73%). Respondents in the non-healthcare background mostly have an exceptionally good academic standing of more than CGPA 3.5, 72 (53.33%) while in the healthcare group, most respondents have a CGPA of 3.01 – 3.50, 82 (46.59%).

Table 4.2 Empathy levels among healthcare and non-healthcare students.

Academic Back-ground	**Empathy Levels**					
	Mean	**SD**	**Se**	**t**	**df**	**p**
Healthcare	47.682	7.277	0.548	2.036	309	0.043
Non healthcare	45.807	8.953	0.771			

Based on Table 4.2, the mean score of empathy is 47.7 for the healthcare group which is significantly higher than the mean score of 45.8 for the non-healthcare group ($p<0.05$), indicating that the healthcare students recorded a higher level of empathy. Equivalent results were obtained by Wilson, Prescott et al. (2012), who revealed a statistically significant difference between the higher mean empathy scores of nursing and pharmacy students compared to law students. As empathy plays a significant role in health professions and is taught early on in their undergraduate education, students of the healthcare field are expected to have a greater sense of empathy than their counterparts who do not intend to provide healthcare in their future careers.

Table 4.3 Association between sociodemographic factors and empathy.

Empathy						
Sociodemographic variables	**Healthcare**		**Non-Healthcare**		**Statistical test**	
	Mean	**(SD)**	**Mean**	**(SD)**	**F**	**P**
Gender						
Female	48.405	7.526	46.900	7.444	7.689	0.006
Male	45.578	6.096	44.218	10.654		
Age						
18-21	45.900	6.447	45.462	6.470	1.200	0.303
22-26	47.678	7.557	46.028	9.443		
27-31	50.462	4.115	41.000	11.269		
Race						

Malay	48.198	6.585	48.020	7.564	1.870	0.135
Chinese	46.200	6.908	44.535	8.410		
Indian	48.194	8.332	44.412	7.431		
Other	49.222	10.414	44.286	21.156		
Academic Standing						
<2.50	0.00	0.00	46.000	1.414	0.533	0.646
2.50 – 3.00	47.308	7.561	43.455	6.832		
3.01 – 3.50	47.573	7.462	47.140	7.231		
>3.50	48.109	6.895	45.236	10.303		
Family History						
Live with parents	48.000	7.135	46.059	7.119	12.910	< .001
Live with a single parent	47.786	6.192	49.833	7.697		
Other	40.429	9.519	26.250	28.147		
Pet						
Yes	47.699	7.947	45.563	9.353	1.193	0.276
No	47.663	6.493	46.078	8.553		

Table 4.3 illustrates that empathy was significantly associated with gender, female in both healthcare and non-healthcare groups as well as family history for living with parents and other in the healthcare group but living with a single parent in the non-healthcare group. It is evident that gender is a significant determinant of empathy levels in individuals from our study. As mentioned in previous research, women tend to have a more in depth understanding on emotional status (Chen, Lew et al. 2007) and better in building relationships with people (Newton, Barber et al. 2008). However, in contrast with other studies (Kar and Reddy, 2015; Hamed, Alahwal et al., 2015), our results revealed that family background plays an essential role in empathy. Yoo, H., Feng, X. & Day, R.D. (2013) stated that the quality of parent child relationship are important determinants of empathy levels where parental psychological control by maintaining a balance of connectedness is associated with empathy.

Table 4.4 Self-esteem levels among healthcare and non-healthcare students.

Academic Background	**Self-Esteem score**					
	Mean	**SD**	**Se**	**t**	**df**	**p**
Healthcare	26.443	5.910	0.445	1.314	309	0.190
Non healthcare	25.533	6.232	0.536			

Based on Table 4.4, there is minimal difference between the mean score (26.443) of the healthcare group and the mean score (25.533) of the non-healthcare group. However, when compared, the healthcare group self-esteem is still higher even though there was no significant association (p>0.05). Previous studies

among nursing (lacobucci, Daly et al., 2013) and engineering students (Chilca, L. 2017) have yielded similar findings. Given the possibility of subjective bias in this study, it cannot be concluded that the participants' scores accurately reflect their actual level of self-esteem. There are relatively few studies on the relationship between academic background and self-esteem. Thus, our study serves as a springboard for further discussion of these findings.

Table 4.5 Association between empathy and self-esteem levels.

Self Esteem	**Empathy Score**							
	N	**Mean**	**SD**	**Se**	**F**	**df**	**p**	**(95% CI)**
Low Self-Esteem	47	44.447	8.356	1.219	5.028	1	0.026	0.349-5.356
Normal to high self esteem	264	47.299	7.978	0.491				

Table 4.5 demonstrates that there is a significant correlation between self-esteem and empathy levels (p=0.026). This is in accordance with other studies conducted by Kim (2018) and Sa, Ojeh et al. (2019) who reported a significant relation between self-esteem and empathy among students under health professional programs. However, this finding was at odds with another research on Chinese medical students (Hanlong, 2012). Nevertheless, it does not dismiss the necessity for supportive environments and programs aimed at nurturing students' self-esteem as higher self-esteem does improve empathy (Murray, S.L., Holmes, J.G. & Collins, N.L., 2006).

CONCLUSION

In conclusion, the findings of this cross-sectional study provide insights into the degrees of empathy exhibited by students majoring in healthcare and non-healthcare disciplines. The findings suggest that empathy is not restricted to any fields of study and that demographic considerations have only a moderate impact on empathy scores. The study hints at other paths such as to scale up the study population to attain more generalizable data and conducting longitudinal research, to study the shifts in their levels of empathy throughout the course of their education. These attempts would contribute to a greater knowledge of empathy in student populations and inform the creation of interventions to foster empathy within educational environments. Both healthcare providers and their patients could benefit from additional study and intervention in this area, to foster a better quality of care provided to patients by examining the link between empathy and patient outcomes.

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