Original Research Article

Academic Resilience of Healthcare Professional Students in Pakistan: Need of the Hour

Abstract

Introduction: Due to the challenging and competitive academic environment throughout the world, the mental health of students enrolled in healthcare professions is largely affected resulting in burnout and poor quality of life. Lack of academic counseling and poor teaching strategies further aggravates this situation leading to development of poor resilience among healthcare students. The inability to cope with academic stress can provoke serious consequences which needs to be addressed. **Objective:** The present study was designed to assess academic resilience and its associated factors among healthcare professional students in Pakistan. **Methodology:** A descriptive cross-sectional study design was used. A pre-validated questionnaire i.e. Connor-Davidson Resilience Scale (CD-RISC) was self-administered to a sample of 382 healthcare professional students selected using convenience sampling technique for measuring resilience. After data collection, data was cleaned, coded and entered in SPSS. **Results:** The results of the current study highlighted that mean scores of resilience of different healthcare professional students were: Medicine students (70.22, ±13.73), followed by the pharmacy students (66.61, ±15.48) and then nursing students (65.86, ±15.76). **Conclusion:** The present study concluded moderate academic resilience among students of different healthcare profession. Medicine students were found most resilient, followed by pharmacy and nursing students. Educators and educational institutions must assess and build resilience among healthcare students by identifying the factors to ensure success in this competitive healthcare environment.

Keywords: Academic stress, Coping skill, Resilience, Healthcare professional students, Pakistan.

1.0 INTRODUCTION

The profession of healthcare is becoming more demanding and challenging for students over the course of time. Healthcare students experience relatively more academic stress than students of non-healthcare professions due to various reasons, including adapting to new

clinical practice settings, high pressures of good academic performance, challenging clinical trainings, multidimensional curricula and being exposed to scenarios involving management of difficult patient cases (Martin & Marsh, 2006). They are involved daily in practicing the theoretical knowledge in clinical settings to prove themselves as competent and trained healthcare professionals which put them under immense pressure leading towards psychological distress, depression, suicidal ideation and reduced motivation for learning (Tempski et al., 2015). This calls for learning of various coping strategies for managing daily academic stress in order to reduce adversity experienced and burnout. One of such coping strategy is known as resilience that can help to reduce the negative consequences of burnout and academic stress. Resilience is defined as an ability to overcome stress and adversities and cope to become mentally stronger from past experiences. It is also defined as "the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress". Academic resilience has been reported as an important phenomenon for student retention and growth during their academic studies and has also been linked with increased academic success (Masud et al., 2019). In the ever-changing healthcare profession, students need to develop abilities to adapt to stressful environments, acquire new clinical skills and acquire good grades to excel. The development of ability of resilience can help students encounter such stresses. Academic resilience is not a fixed trait and can be developed in students with the help of targeted strategies. The ability of resilience is developed, when individuals are exposed to risk factors such as traumatic experiences (binti Ahmad & bin Khairani, 2018). Certain internal as well as external protective factors influence the ability of developing academic resilience. The external protective factors include social support and classroom opportunities available, support from family and self-confidence. Internal protective factors include specific qualities and characteristics of the student associated with better psychological outcomes. Such factors also include development of strong communication skills, self-awareness, critical problem-solving skills and developing focused objectives (Jowkar, Kojuri, Kohoulat, & Hayat, 2014).

Healthcare students with better academic resilience easily adapt to stress due to tough healthcare studies and are less subject to academic exhaustion. A study conducted in India reported that problem solving skills, improved relationship with others and less academic stress can have a positive impact on resilience. Excessive exposure to stressful environments, higher academic stress and poor coping and emotional bouts can lead to reduced academic resilience among students (Faye et al., 2018). Peer social support improved the resilience and well-being of both nursing students and medical students in China (Zhao, Guo, Suhonen, & Leino-Kilpi, 2016). Medical students with higher resilience levels had relatively better quality of life and adaptation to the educational environment in Brazil (Tempski et al., 2015).

Due to the challenging and competitive academic environment throughout the world, the mental health of students enrolled in healthcare professions is largely affected resulting in burnout and poor quality of life. The tough medical education curriculum, clinical trainings, ward rotations and high academic pressure leads to severe psychological distress and promotes unhealthy habits to cope up this stress (Wasson et al., 2016). Fear of academic failure and poor academic competence further increases this pressure leading to mental consequences. Exposure of a student to such stressors including limited resources, greater academic competition and high

expectations of the family of a student may lead to decreased well-being, increased tobacco use, anxiety, depression, suicidal thoughts and ultimately affecting the physical and mental health of a student (Yasien, Nasir, & Shaheen, 2016). Lack of academic counseling and poor teaching strategies further aggravates this situation leading to development of poor resilience among healthcare students. The inability to cope with academic stress can provoke serious consequences which needs to be addressed. Certain students face high levels of psychological distress and anxiety symptoms due to the academic pressure whereas some students adapt to the stressors and develop academic resilience. Despite of the importance of resilience in academics, no study till date has assessed the academic resilience of students of different healthcare professions in Pakistan. Therefore, the present study was designed to assess academic resilience and its associated factors among healthcare professional students in Pakistan. The results of the study will help universities to design interventions focusing on building resilience behaviours. The data will also assist higher education authorities to redesign curriculum according to student resilience capacity.

2.0 METHODOLOGY

A descriptive cross- sectional study design was used. Study site for this research included different public and private universities and healthcare institutions located in twin cities i.e. Islamabad (Federal Capital) and Rawalpindi (Twin city) of Pakistan. Study respondents included undergraduate and post-graduate students of medical, nursing and pharmacy schools.

Raosoft® sample size calculator was used to determine the sample size for this study which came to be 382 to achieve 95% confidence interval with 5% margin of error. Convenience sampling technique was used and all the respondents available at the time of data collection and willing to participate were selected.

A pre-validated questionnaire Connor-Davidson Resilience Scale (CD-RISC) was used to assess academic resilience among healthcare professional students. The CD-RISC comprise of 25 questions with a 5-point Likert scale for scoring as: Not true at all (0), Rarely true (1), Sometimes true (2), Often true (3) and True nearly all of the time (4). The scale assesses resilience of respondents over the past one month. The total score ranges from 0-100, higher scores reflect greater resilience among respondents. Pilot testing was conducted on 10% of the sample size to check the reliability of tool. The Cronbach alpha value for the tools was found to be 0.79. Data was collected during February – April 2021 with the help of self-administered questionnaire which was collected back on the same day to avoid biasness. Data was cleaned, coded and analyzed statistically using SPSS 21.

3.0 RESULTS & DISCUSSION

Out of 382 respondents, 31.4% (n=120) were males while 68.6 % (n=262) were females. Of the total respondents 21.4% (n=82) were medicine students, 52.3% (n=200) were pharmacy students and 26.1% (n=100) were nursing students. Regarding the study course, 57.3 % (n=219) were undergraduate, 22 % (n=84) were graduates and 20.7 % (n=79) were post graduates. Of the total respondents 50.3 % (n=192) were enrolled in public sector while 49.7 %

(n=190) were studying in private sector. Results showed that 14.4 % (n=55) had cGPA less than 3, 35.6 % (n=136) had cGPA between 3.0-3.5 and 35.9% (n=137) had cGPA between 3.5- 4.0. A detail description is given (Table 1).

Table 1 Demographic Characteristics of Respondents

Indicator	n (%)
Gender	
Male	120 (31.4)
Female	262 (68.6)
Profession	
Doctor	82 (21.4)
Pharmacist	200 (52.3)
Nurse	100 (26.1)
Age of student	
17-19	70 (18.3)
20-22	145 (38.0)
23-25	80 (20.9)
26-28	73 (19.1)
>29	12 (3.1)
Study Course	
Undergraduate	219 (57.3)
Graduate	84 (22)
Post Graduate	79 (20.7)
Cumulative GPA of student	
<3.0	55 (14.4)
3.0-3.5	136 (35.6)
3.5-4.0	137 (35.9)
Medium of schooling	
English	345 (90.3)
Urdu	37 (9.7)
Sector of University	
Public	192 (50.3)
Private	190 (49.7)
Setting	
Rural	84 (22)
Urban	294 (77)
Socioeconomic group of students	
<30,000	161(42.1)
<60,000	85(22.3)
<80,000	58(15.2)
<1, 00,000	37(9.7)
>1, 00,000	33(8.6)

The results of the current study highlighted that 23.17% (n=19) of the medicine students were able to adapt to changes while 47.5% (n=95) of the pharmacy students had one relationship for coping stress. On the other hand, 55% (n=55) of the nursing students believed that fate helped when there was no clear solution for problems. Majority of the pharmacy students 60% (n=120) agreed that most things always happened due to a reason whereas 45 % (n=37) of the medicine students agreed that they could always achieve their goals even if obstacles were present. Moreover, 29.2% (n=29) of the nursing students agreed that they always thought themselves as a strong person while dealing with the challenges of life (Table 2).

Table 2 Assessment of Academic Resilience among students from Different Healthcare Professions in Pakistan

Indicator	Profession	Not true at all n (%)	Rarely true n (%)	Sometimes true n (%)	Often true n (%)	True nearly all the time n (%)	p Value
I am able to adapt when changes occur	Doctor	9(10.97)	1(1.21)	25(30.48)	28(34.14)	19(23.17)	**0.008**
	Pharmacist	6(3)	15(7.5)	53(26.5)	77(38.5)	49(24.5)	
	Nurse	4(4)	11(11)	39(29)	28(28)	18(18)	
	Total	19(4.97)	27(7.06)	117(30.62)	133(34.81)	86(22.51)	
I have at least one close and secure relationship that helps me when I am stressed	Doctor	5(6.09)	10(12.1)	20(24.3)	17(20.7)	30(36.5)	**0.018**
	Pharmacist	15(7.5)	15(7.5)	37(18.5)	38(19)	95(47.5)	
	Nurse	11(11)	20(20)	10(10)	15(15)	44(44)	
	Total	31(8.1)	45(11.7)	67(17.5)	70(18.3)	169(44.2)	
When there is no clear solution to my problems, sometimes	Doctor	1(1.2)	2(2.4)	6(7.3)	9(10.9)	64(78.0)	**0.034**

fate or God can help	Pharmacist	3(1.5)	7(3.5)	12(6)	41(20.5)	137(68.5)	
	Nurse	0(0)	8(8)	8(8)	29(29)	55(55)	
	Total	4(1.0)	17(4.4)	26(6.8)	79(20.6)	256(67.0)	
I can deal with whatever comes my way	Doctor	2(2.4)	3(3.6)	24(29.2)	33(40.2)	20(24.3)	0.409
	Pharmacist	9(4.5)	20(10.0)	52(26.1)	72(36.1)	46(23.1)	
	Nurse	6(6)	10(10)	35(35)	31(31)	18(18)	
	Total	17(4.4)	33(8.6)	111(29.1)	136(35.6)	84(22.0)	
Past successes give me confidence in dealing with new challenges and difficulties.	Doctor	1(1.2)	7(8.5)	14(17.0)	22(26.8)	38(46.3)	0.758
	Pharmacist	4(2.0)	11(5.5)	33(16.5)	69(34.6)	82(41.2)	
	Nurse	3(3)	10(10)	18(18)	27(27)	42(42)	
	Total	8(2.0)	28(7.3)	65(17.0)	118(30.9)	162(42.5)	
I try to see humorous side of things when I am faced with problems	Doctor	5(6.0)	15(18.2)	23(28.0)	19(23.1)	20(24.3)	0.106
	Pharmacist	17(8.5)	25(12.5)	63(31.5)	67(33.5)	28(14)	
	Nurse	6(6)	15(15)	21(21)	32(32)	26(26)	

	Total	28(7.3)	55(14.3)	107(28.0)	118(30.8)	74(19.3)	
Having to cope with stress can make me stronger	Doctor	2(2.4)	3(3.6)	16(19.5)	35(42.6)	26(31.7)	0.080
	Pharmacist	14(7)	18(9)	46(23)	77(38.5)	45(22.5)	
	Nurse	7(7)	12(12)	12(12)	36(36)	33(33)	
	Total	23(6.0)	33(8.6)	74(19.3)	148(38.7)	104(27.2)	
I tend to bounce back after illness, injury, or other hardships	Doctor	7(8.6)	7(8.6)	13(16.0)	37(45.6)	17(20.9)	0.468
	Pharmacist	13(6.5)	17(8.5)	51(25.6)	69(34.6)	49(24.6)	
	Nurse	6(6)	6(6)	27(27)	32(32)	29(29)	
	Total	26(6.8)	30(7.8)	91(23.9)	138(36.3)	95(25)	
Good or bad, I believe that most things happen for a reason	Doctor	1(1.2)	4(4.8)	10(12.1)	18(21.9)	49(59.7)	**0.01**
	Pharmacist	1(0.5)	4(2)	23(11.5)	52(26)	120(60)	
	Nurse	0(0)	19(19)	8(8)	18(18)	55(55)	
	Total	2(0.5)	27(7.0)	41(10.7)	88(23.0)	224(58.6)	
I give my best efforts no matter the outcomes may be	Doctor	3(3.6)	3(3.6)	11(13.4)	27(32.9)	38(46.3)	0.226
	Pharmacist	6(3.0)	7(3.5)	40(20.1)	68(34.1)	78(39.1)	

	Nurse	2(2)	11(11)	19(19)	31(31)	37(37)	
	Total	11(2.8)	21(5.5)	70(18.3)	126(33.0)	153(40.1)	
I believe, I can achieve my goals, even if there are obstacles	Doctor	0(0)	5(6.0)	13(15.8)	27(32.9)	37(45.1)	**0.006**
	Pharmacist	6(3)	12(6)	30(15)	86(43)	66(33)	
	Nurse	2(2.0)	17(17.1)	15(15.1)	25(25.2)	40(40.4)	
	Total	8(2.0)	34(8.9)	58(15.2)	138(36.2)	143(37.5)	
Even when things look hopeless, I don't give up	Doctor	3(3.6)	3(3.6)	12(14.6)	34(41.4)	30(36.5)	0.108
	Pharmacist	7(3.5)	15(7.5)	44(22)	87(43.5)	47(23.5)	
	Nurse	2(2.0)	11(11.1)	23(23.2)	30(30.3)	33(33.3)	
	Total	12(3.1)	29(7.6)	79(20.7)	151(39.6)	110(28.8)	
During time of stress/crises, I know where to turn for help	Doctor	2(2.4)	6(7.3)	12(14.6)	26(31.7)	36(43.9)	0.080
	Pharmacist	7(3.5)	25(12.5)	35(17.5)	70(35)	63(31.5)	
	Nurse	7(7.0)	16(16.1)	23(23.2)	22(22.2)	31(31.3)	
	Total	16(4.1)	47(12.3)	70(18.3)	118(30.9)	130(34.1)	
Under pressure, I stay focused and think clearly	Doctor	11(13.4)	9(10.9)	33(40.2)	20(24.3)	9(10.9)	**0.026**

	Pharmacist	31(15.6)	32(16.1)	51(25.7)	66(33.3)	18(9.0)	
	Nurse	17(17.1)	17(17.1)	23(23.2)	22(22.2)	20(20.2)	
	Total	59(15.5)	58(15.3)	107(28.2)	108(28.4)	47(12.4)	
I prefer to take the lead in solving problem rather than letting others make all the decisions	Doctor	4(4.8)	12(14.6)	19(23.1)	26(31.7)	21(25.6)	0.921
	Pharmacist	13(6.6)	32(16.3)	55(28.0)	56(28.5)	40(20.4)	
	Nurse	5(5.0)	12(12.1)	29(29.2)	28(28.2)	25(25.2)	
	Total	22(5.8)	56(14.8)	103(27.3)	110(29.1)	86(22.8)	
I am not easily discouraged by failure	Doctor	4(4.8)	12(14.6)	19(23.1)	26(31.7)	21(25.6)	0.858
	Pharmacist	14(7)	33(16.5)	48(24)	67(33.5)	38(19)	
	Nurse	7(7.0)	11(11.1)	22(22.2)	33(33.3)	26(26.2)	
	Total	25(6.5)	56(14.6)	89(23.3)	126(33.0)	85(22.3)	
I think of myself as a strong person when dealing with life challenges and difficulties	Doctor	4(4.9)	7(8.6)	17(20.9)	25(30.8)	28(34.5)	0.805
	Pharmacist	6(3)	20(10)	40(20)	69(34.5)	65(32.5)	
	Nurse	5(5.0)	14(14.1)	24(24.2)	27(27.2)	29(29.2)	
	Total	15(3.9)	41(10.7)	81(21.3)	121(31.8)`	122(32.1)	

I can make unpopular or difficult decisions that affect other people, if it is necessary	Doctor	10(12.1)	10(12.1)	24(29.2)	17(20.7)	21(25.6)	0.097
	Pharmacist	30(15)	40(20)	56(28)	52(26)	22(11)	
	Nurse	18(18.1)	20(20.2)	24(24.2)	19(19.1)	18(18.1)	
	Total	58(15.2)	70(18.3)	104(27.2)	88(23.0)	61(16.0)	
I am able to handle unpleasant or painful feelings like sadness, fear and anger	Doctor	5(6.0)	8(9.7)	23(28.0)	21(25.6)	25(30.4)	0.505
	Pharmacist	10(5.0)	25(12.5)	46(23.1)	72(36.1)	46(23.1)	
	Nurse	8(8)	12(12)	17(17)	35(35)	28(28)	
	Total	23(6.0)	45(11.8)	86(22.5)	128(33.5)	99(25.9)	
In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	Doctor	3(3.6)	11(13.4)	29(35.3)	24(29.2)	15(18.2)	0.657
	Pharmacist	8(4.0)	25(12.5)	76(38.1)	68(34.1)	22(11.0)	
	Nurse	6(6)	15(15)	34(34)	27(27)	18(18)	
	Total	17(4.4)	51(13.3)	139(36.4)	119(31.2)	55(14.4)	
I have a strong sense of purpose in life	Doctor	1(1.2)	6(7.3)	23(28.4)	20(24.3)	32(39.0)	0.169
	Pharmacist	14(7)	24(12)	38(19)	65(32.5)	59(29.5)	

	Nurse	3(3.0)	9(9.0)	21(21.1)	32(32.3)	34(34.3)	
	Total	18(4.7)	39(10.2)	82(21.5)	117(30.7)	125(32.8)	
I feel in control of my life	Doctor	4(4.8)	7(8.5)	24(29.2)	26(31.7)	21(25.6)	0.433
	Pharmacist	18(9)	32(16)	60(30)	54(27)	36(18)	
	Nurse	4(4.0)	17(17.1)	29(29.2)	27(27.2)	22(22.2)	
	Total	26(6.8)	56(14.6)	113(29.6)	107(28.0)	79(20.7)	
I like challenges	Doctor	3(3.6)	13(15.8)	22(26.8)	25(30.4)	19(23.1)	0.135
	Pharmacist	21(10.5)	30(15)	61(30.5)	58(29)	30(15)	
	Nurse	14(14.1)	14(14.1)	26(26.2)	20(20.2)	25(25.2)	
	Total	38(9.9)	57(14.9)	109(28.6)	103(27.0)	74(19.4)	
I work to attain my goals, no matter what roadblocks i encounter along the way.	Doctor	0(0)	4(4.8)	19(23.1)	29(35.3)	30(36.5)	0.190
	Pharmacist	8(4)	25(12.5)	45(22.5)	75(37.5)	47(23.5)	
	Nurse	4(4.0)	11(11.1)	22(22.2)	31(31.3)	31(31.3)	
	Total	12(3.1)	40(10.4)	86(22.5)	135(35.4)	108(28.3)	
I take pride in my achievements.	Doctor	3(3.7)	7(8.6)	11(13.5)	23(28.3)	37(45.6)	**0.001**

	Pharmacist	7(3.5)	24(12.1)	39(19.7)	63(31.9)	64(32.4)
	Nurse	11(11)	11(11)	21(21)	11(11)	46(46)
	Total	21(5.5)	42(11.1)	71(18.7)	97(25.6)	147(38.8)

Chi Square Test (p ≥ 0.05)

The results of the current study highlighted that mean scores of resilience of different healthcare professional students were: Medicine students (70.22, ±13.73), followed by the pharmacy students (66.61, ±15.48) and then nursing students (65.86, ±15.76). A detailed description is given in (Table 3).

Table 3 Mean score of Resilience among Different Healthcare Profession Students

in Pakistan

Profession	Mean (± S.D)
Doctor	70.22 (±13.73)
Pharmacist	66.61 (±15.48)
Nurse	65.86 (±15.76)

Mann-Whitney and Kruskal Wallis tests were used to assess differences among mean academic resilience scores and demographic variables. A significant difference ($p \leqq 0.05$) was observed in different level of study course of healthcare professionals, postgraduate students had relatively higher academic resilience than other respondents. However, no significant difference ($p \geq 0.05$) in resilient score was observed in relation to gender, age, profession, professional year, cumulative GPA of the student, medium of schooling, university sector, socioeconomic group and setting of residence (Table 4).

Table 4 Comparison of Resilience Scores of Different Healthcare Students according to Different Demographic Variables

Demographics	n	Mean score	Test statistics	P value
Gender				
Male	111	194.46	12492.00[a]	0.114
Female	251	175.77		
Profession				
Doctor	79	203.40	4.77 [b]	0.092
Pharmacist	188	177.99		
Nurse	95	170.24		
Professional Year				
1st Year	82	134.68		
2nd Year	53	136.80	2.055 [b]	0.726
3rd Year	34	157.09		
4th Year	35	138.37		
5th Year	76	142.92		
Age of student				

17-19	68	158.15		
20-22	138	186.61		
23-25	76	181.51	7.272 [b]	0.201
26-28	66	195.49		
>29	12	152.58		
Study Course				
Undergraduate	209	177.3		
Graduate	90	168.48	6.082 [b]	**0.048**
Post Graduate	83	207.53		
Cumulative GPA of student				
<3.0	53	138.55	3.998 [b]	0.135
3.0-3.5	126	151.54		
3.5-4.0	131	166.16		
Sector of University				
Public	180	182.45	16209.500 [a]	0.866
Private	182	180.56		
Setting				
Rural	279	181.42	10484.000 [a]	0.510
Urban	79	172.71		
Socioeconomic group of student				
<30,000	155	179.31	0.600 [b]	0.963
<60,000	80	181.81		
<80,000	52	178.98		
<1,00,000	36	167.97		
>1,00,000	32	171.83		

Mann-Whitney Test ($p \geq 0.05$)[a]; Kruskal Wallis Test ($p \geq 0.05$)[b]

3.1 Impact of Demographic Characteristics on Academic Resilience

The concept of academic resilience has gained immense importance during the last decade in various professions. Resilience is an essential attribute for an individual dealing with stressful situations because it helps to adapt and cope with challenges successfully (binti Ahmad & bin Khairani, 2018). Academic stress among healthcare students affect the quality of life and high level of resilience can help in coping up with this stress (Oke, Ayodele, Aladenusi, & Oyinloye, 2016). The results of the present study reported moderate academic resilience among healthcare professional students. Male students were found relatively more resilient as compared to females. This might be due to the fact that males more easily adapt changes when occur and are usually able to stay focused under pressure and are more confident in their ability to achieve their goals while females are generally more emotional and affected more deeply

after experiencing traumatic events. These study findings are in line with findings of other studies conducted in Europe and Turkey where male students demonstrated higher resilience scores in case of challenges as compared to female students (Bahadir-Yilmaz & Oz, 2015; Erdogan, Ozdogan, & Erdogan, 2015). The process of resilience is complex and is developed slowly over the course of time by facing and overcoming various adversities (Leysa & Malnegro, 2016). The results of the current study reported that the respondents with age between 26-28 years had higher resilience as compared to other age groups. This might be due to the fact that older students are more adapted to academic stress and have developed better coping strategies than younger ones. Similar results were reported in a study conducted in UK (Lundman, Strandberg, Eisemann, Gustafson, & Brulin, 2007). Students enrolled in healthcare professions face difficulties in coping up during their studies due to working in a tough clinical practice environment (Lucio, Hunt, & Bornovalova, 2012). The results of the present study showed that respondents studying in higher professional years had better resilience scores as compared to the newly enrolled students. A study conducted in USA reported similar results where medical students of first professional year had poor resilience and higher burnout levels (Small-Jordan, 2020). Developing resilience is considered as an essential strategy for reducing psychological trauma and improving professional training (Tempski et al., 2015). The results of the present study reported that postgraduate healthcare students were more resilient as compared to undergraduate students. The high level of resilience among postgraduate students reflects their dedication towards their studies. The successful completion of their undergraduate degree may assist them in developing coping skills to withstand adversity and meet the demands of postgraduate study. Similar findings were reported in a study conducted in Hong Kong which reported that postgraduates had significantly higher levels of resilience than undergraduates (Chow & Choi, 2019). The results of the present study reported that cGPA of students had no impact on resilience level. In contrary to these findings, a study conducted in USA reported higher resilience among students with a higher GPA (Lee, 2009).

3.2 Academic Resilience among Different Healthcare Professions

Healthcare education is a demanding experience that encourages students to grow personally and professionally. Resilient healthcare professionals are compassionate with themselves throughout the process (Malkoc & Yalcin, 2015). The current study highlighted that students becoming doctors were more resilient as compared to students becoming pharmacists and nurses. This might be due to the fact that medicine students tough clinical practice curriculum helps them to adapt more quickly and develop resilience. Similar results were observed in a study conducted in Turkey where medicine students had higher resilience scores than pharmacy and dentistry students (Bahadir-Yilmaz & Oz, 2015).

4.0 CONCLUSION

The present study concluded moderate academic resilience among students of different healthcare profession. Medicine students were found most resilient, followed by pharmacy and nursing students. Post Graduate students were more resilient as compared to Graduate and Undergraduate respondents. Respondents studying in higher professional years were found to be more resilient than the newly enrolled students. Educators and educational institutions must assess and build resilience among healthcare students by identifying the factors to ensure

success in this competitive healthcare environment. Educational institutions should implement appropriate instructional strategies and train teachers to teach students about their innate resilience and promote meaningful and healthy interactions through activities.

STUDY LIMITATIONS

The present study was conducted in universities situated in twin cities of Pakistan and the results may not be generalizable to the whole country. Time and financial constraints were few of the hurdles faced during data collection. Covid 19 pandemic also effected the process of data collection.

CONSENT

Informed and verbal consent for participation in study was also taken from respondents. The respondents were ensured for the privacy of information verbally as well as informed consent were signed by the respondents.

ETHICAL APPROVAL

Research approval for the current study was obtained from Ethical Committee of Hamdard Institute of Pharmaceutical sciences (Ref. No. HU/IC/ERC2021/319). For data collection, approval was taken from Head of Department of different public and private universities.

REFERENCES

Bahadir-Yilmaz, E., & Oz, F. (2015). The Resilience Levels Of Fırst-Year Medıcal, Dentıstry, Pharmacy and Health Scıences Students. *International Journal of Caring Sciences, 8*(2), 385.

binti Ahmad, N. S., & bin Khairani, A. Z. (2018). *Assessing Resilience among Malaysian University Undergraduates.* Paper presented at the 3rd ASEAN Conference on Psychology, Counselling, and Humanities (ACPCH 2017).

Chow, S. K. Y., & Choi, E. K. Y. (2019). Assessing the Mental Health, Physical Activity Levels, and Resilience of Today's Junior College Students in Self-Financing Institutions. *International journal of environmental research and public health, 16*(17), 3210.

Erdogan, E., Ozdogan, O., & Erdogan, M. (2015). University students' resilience level: The effect of gender and faculty. *Procedia-Social and Behavioral Sciences, 186*, 1262-1267.

Faye, A., Tadke, R., Gawande, S., Kirpekar, V., Bhave, S., Pakhare, A., . . . Nadpara, J. (2018). Assessment of resilience and coping in undergraduate medical students: A need of the day. *Journal of Education Technology in Health Sciences, 5*(1), 36-44.

Jowkar, B., Kojuri, J., Kohoulat, N., & Hayat, A. A. (2014). Academic resilience in education: the role of achievement goal orientations. *Journal of advances in medical education & professionalism, 2*(1), 33.

Lee, D. D. (2009). Impact of resilience on the academic achievement of at-risk students in the upward bound program in Georgia.

Leysa, A. O., & Malnegro, F. A. (2016). Exploring the Predictors and Outcomes of Academic Resilience among College Students. *Educational Measurement and Evaluation Review, 7*(1), 1-1.

Lucio, R., Hunt, E., & Bornovalova, M. (2012). Identifying the necessary and sufficient number of risk factors for predicting academic failure. *Developmental Psychology, 48*(2), 422.

Lundman, B., Strandberg, G., Eisemann, M., Gustafson, Y., & Brulin, C. (2007). Psychometric properties of the Swedish version of the Resilience Scale. *Scandinavian Journal of Caring Sciences, 21*(2), 229-237.

Malkoc, A., & Yalcin, İ. (2015). Relationships among Resilience, Social Support, Coping, and Psychological Well-Being among University Studentss. *Turkish Psychological Counseling & Guidance Journal, 5*(43).

Martin, A. J., & Marsh, H. W. (2006). Academic resilience and its psychological and educational correlates: A construct validity approach. *Psychology in the Schools, 43*(3), 267-281.

Masud, S., Mufarrih, S., Qureshi, N., Khan, F., Khan, S., & Khan, N. (2019). Academic Performance in Adolescent Students: The Role of Parenting Styles and Socio-Demographic Factors–A Cross Sectional Study from Peshawar, Pakistan. *Frontiers in psychology, 10*, 2497.

Oke, K., Ayodele, K., Aladenusi, O., & Oyinloye, C. (2016). Academic Motivation, Satisfaction, and Resilience as Predictors of Secondary School Students' Academic Confidence in Ogun State, Nigeria. *Journal of Research & Method in Education, 6*(6), 59-64.

Small-Jordan, D. (2020). *JaQuan's Seat at the Table: Breaking Down the Barriers to Academic Success.* Walden University.

Tempski, P., Santos, I. S., Mayer, F. B., Enns, S. C., Perotta, B., Paro, H. B., . . . Baldassin, S. (2015). Relationship among medical student resilience, educational environment and quality of life. *PLoS One, 10*(6), e0131535.

Wasson, L. T., Cusmano, A., Meli, L., Louh, I., Falzon, L., Hampsey, M., . . . Davidson, K. W. (2016). Association between learning environment interventions and medical student well-being: a systematic review. *Jama, 316*(21), 2237-2252.

Yasien, S., Nasir, J. A., & Shaheen, T. (2016). Relationship between psychological distress and resilience in rescue workers. *Saudi medical journal, 37*(7), 778.

Zhao, F., Guo, Y., Suhonen, R., & Leino-Kilpi, H. (2016). Subjective well-being and its association with peer caring and resilience among nursing vs medical students: A questionnaire study. *Nurse education today, 37*, 108-113.