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Health and Academic Performance of University Students: Direct and Mediating Effect of Social Capital

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Abstract

The purpose of this study is to study the impact of social capital on psycho-social health, psycho-social wellbeing and physical health of university students. The main focus is on the social correlates of psycho-social health, psycho-social wellbeing and physical health of students. This study is based on primary data that is collected from university students of a university. First, this study examines whether social capital affects different dimensions of health of university students. Second, it investigates whether any relationship exists between academic performance of university students and all other variables of the study. Third, it examines whether social capital mediates the relationship between different dimensions of health and academic performance of university students. Social capital is found to be significant for academic performance and it also mediates the relationship between academic performance and psycho-social health, psycho-social wellbeing and physical health.

Keywords: social capital, neighborhood social capital, perceived social support, perceived stress, general social trust, psycho-social health, psycho-social wellbeing, physical health, satisfaction with life, subjective happiness

1. Introduction

Human relations encompass many layers. These layers range from weak ties like association with religious or welfare organizations; to social ties like close relatives, friends; to intimate relations like spouse, siblings etc. These three layers of social ties are named as “belongingness-bonding-binding” (Lin et al., 1999) respectively. Involvement in weak ties does not require strong person-to-person connections. However, it endows with a sense of social identity and belongingness, which is argued as being significant to support psychological well-being (Durkheim, 1951; Faris & Dunham, 1939). Belongingness, bonding and binding may influence mental health independently but Lin et al. (1999) proposed that each inside layer is dependent on the external layers and each external layer can establish linkages of inside layer. Putnam (2000) divided social capital into two types, i.e. bridging and bonding social capital, and proposed distinct definitions. Notion of social capital roots back to the work of Durkheim (1951, 1964). The work of Bourdieu (1986), Coleman (1988) and Putnam (1995b) later constructed it as an idea which has the potential

to get associated with health and well-being. Many research studies had been conducted in the last decade which linked social capital with health, both physical and psychological.

Cohen and Wills (1985) presented two models, i.e. main effect model and the stress-buffering model, in order to describe the way social relations affect the health of those involved in the relations. The proposition of the stress-buffering model is that social relationships have constructive effect only for those who are in stress. On the other hand, the main effects model suggests that social ties cast positive effects on individuals whether they are in stress or not. These models help in explaining the impact of particular facets of social ties on a person's psychological health. It has been proposed that social networks, which are structural facets of social relations, may function through main effects model while perceived support which makes functional feature of social relations may work via stress-buffering mechanism. The perceived accessibility of support augments the stress handling capabilities of an individual and therefore provides safeguard against the influence of stress. On the other hand, integration in social networks is assumed to have direct impact on health and wellbeing of individual irrespective of the existence of stressful or tensed situations (Berkman & Glass, 2000).

Research in health and behavior defined social capital as, "the sum of durable, trustworthy, reciprocal, and resource-rich network connections, which are used as an asset to empower a society and its members" (Yamaguchi, 2013). Many research studies discussed the association between social capital and psychological wellbeing of children, adolescents and adults; and find positive association between the two (Coleman, 1988; Dorsey & Forehand, 2003; Furstenberg & Hughes, 1995; Keating, 2000; Cooke et al., 2007). According to Helliwell & Putnam (2004), ties among family, friends and neighbors; and connections in workplace, at religious centers and in virtual communities embodies social capital.

Taking care of the wellbeing and health of young people is indispensable for the future generation to be successful and productive. During the significant life stage of young people, community and family relationships play vital role in their development in emotional, physical and social aspects. The central idea is that social capital has value which affects the individuals positively and creates value for them in different ways. Social connections are among the most strongly associated factors to subjective wellbeing. People are less likely to suffer from sadness, low self-esteem and loneliness, which have close friends, sociable neighbors and helpful co-workers (Helliwell & Putnam, 2004). Proponents of social capital have stated strong correlations between social capital and social outcomes like better educational performance, lower crime rates, improved public health, enhanced child welfare, etc. (Helliwell & Putnam, 2004). In this paper, both psycho-social health and psycho-social wellbeing are taken at individual level. Psycho-social health comprises of mental health, health risk behaviors, behavioral issues and developmental issues; and psycho-social well-being constitutes emotional wellbeing, and social wellbeing (Kerri et al., 2013). Emotional well-being is taken as 'subjective wellbeing' in research literature (Helliwell & Putnam, 2004). Yamaguchi (2013) defined psychological well-being as emotional status or distress and problem behaviors. Psychological well-being enables the individual to maintain optimum psychological and emotional health.

Many research studies has taken neighborhood (El-Dardiry et al., 2012; Ziersch et al., 2005) and social support (El-Dardiry et al., 2012) as indicators of social capital. Social

support is also taken as a dimension of social capital. Shumaker & Brownell (1984) gave definition of social support as "an exchange of resources between two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient". According to Islam et al. (2006), trust is one of the four concepts of social capital. As social trust is taken as an indicator of social capital by many researchers therefore in this study, it is also taken as one of the dimensions of social capital. Helliwell & Putnam (2004) defined social trust as "the belief that others around you can be trusted".

Effects of social capital are not indiscriminately distributed among the population rather it varies with gender, age and status of the individual. Social relations play more critical role at certain life stage than other. Age, gender, education, employment and marital status are among those factors of an individual that are found to be able to predict subjective wellbeing (Clark et al., 2003). Research studies, in last decade of previous century, in US and Europe concluded that happier people are those who are married, educated, in a job and have higher income (Oswald 1997). Very few studies have been conducted to investigate the relationship of social capital with psychological health, psychological wellbeing and physical health of university students. No such work is done in the context of Pakistan. This study will fulfill the gap to identify the specific features of social capital which maintain or improve psychological health, well-being and physical health of university students, in the context of Pakistan. . Two models are developed for investigating direct and mediating effect of social capital. First model (Figure 1) is developed for identifying the direct effect of different dimensions of social capital on psycho-social health, psycho-social wellbeing and physical health.

1.1 Research Objectives

The main objectives of this study are to:

- Identify the impact of social capital on university students' psycho-social health, well-being and physical health.
- Compare data of students from different gender, age, city (city they belong to) for different variables of the study.
- Identify the factors affecting university students' psycho-social health, well-being, physical health and academic performance.
- Examine the mediating role played by social capital for different dimensions of health of university students.

1.2 Research Questions

- How is social capital related to psycho-social health, wellbeing and physical health?
- Do individual characteristics affect the psycho-social health, well-being and physical health of university students?
- What impact does social capital; psycho-social health; psycho-social wellbeing and physical health have on academic performance of students of university?

Does social capital mediates the relationship between different dimensions of health and academic performance of university students.

2. Literature Review

In many studies, it is reported that there exists positive relationship between social capital and psychological wellbeing (Coleman, 1988; Putnam, 1995a, 2000; Yamaguchi, 2013). Veenstra (2000) stated that social interactions are also influenced by the individual characteristics of individuals who are participating in social capital. Kawachi & Berkman (2001) also stated that social ties and mental health are associated with each other and this association is established in literature. There is need to clarify the mechanism through which specific features of social capital maintain or improve psychological well-being. De Silva et al., (2005) reviewed studies which were conducted on the relationship between mental illness and social capital. Studies where social capital is taken at individual level showed that there exists an inverse relationship between social capital and mental illness. On the other hand, less evidence was established for an inverse relationship between social capital and mental disorders when combined measures of social capital were taken.

Yusoff & Othman (2011) mentioned social support as one of the factors that improve psychological adjustment of the individual. Miville & Constantine (2006) carried out a study on Mexican-American students of college and reported that satisfaction with social support was found to have negative correlation with augmented use of health specialist. A study carried out by Jou & Fukada (1996) on Japanese students stated that dissatisfaction with social support is negatively related to physical and mental health. El-Dardiry et al. (2012) conducted a cross-sectional survey in Greece to observe the relationship between social capital and quality of life and self-perception of children. They reported that high social support from parents and neighborhood is linked with positive self-perception and positive emotions of children. Social support is taken as one of the dimensions of social capital in this study. We come up with three hypotheses in order to find the impact of social support on psycho-social health, psycho-social wellbeing and physical health.

- **H_1a:** Social Support is positively related to general health (psycho-social health) and negatively related to perceived stress (psycho-social health) of university students.
- **H_1b:** Social Support is positively related to psycho-social wellbeing (Satisfaction with life and subjective happiness) of university students.
- **H_1c:** Social Support is positively related to physical health of university students.

Singh et al. (2008) carried out a cross-sectional survey in US to make an estimation of the impact of social capital and neighborhood safety on obesity among children and adolescents (10-17 year olds). He reported that lower level of neighborhood social capital is linked to improved chances of being obese. This relationship is found to be strong for 10 to 11 years old in comparison to adolescents. Cattell (2001) carried out a study in East London on two poor neighborhoods to investigate how participating in social networks generate benefits for psychological wellbeing of the individuals. Many direct measures of social capital were identified such as perceived social support and support within neighborhood and families. Åslund et al. (2010) also conducted a study to examine the impact of neighborhood social capital and general social trust on musculoskeletal pain, and depression. He reported that low neighborhood social capital brought with it twice the odds of having musculoskeletal pain, and depression. Following three hypotheses are developed for finding out the impact of neighborhood social capital.

- **H_2a:** Neighborhood social capital is positively related to general health (psycho-social health) and negatively related to perceived stress (psycho-social health) of university students.
- **H_2b:** Neighborhood social capital is positive related to psycho-social wellbeing (Satisfaction with life and Subjective Happiness) of university students.
- **H_2c:** Neighborhood social capital is positively related to physical health of university students.

Helliwell & Putnam (2004) reported in their study that the link between social capital and subjective well-being is very strong and that they are linked to each other through many autonomous channels and in many diverse forms. Ties with family, friends, neighbors and workplace colleagues, civic engagement, trust and trust-worthiness: all are independently and strongly related to subjective wellbeing (happiness and life satisfaction), directly and indirectly (through their impact on health). Helliwell & Putnam (2004) also stated in their study that high level of social trust often brings forth positive feelings which influence the social capital which in turn influence the cumulative outcomes.

Helliwell (2006) summarized results of previous studies and stated that different measures of social capital, especially trust, have significant effect on subjective well-being. Results of researches in many countries showed that the pattern of subjective wellbeing is U-shaped over the life of an individual. Helliwell (2006) stated that trust can be a consequence or a facilitator of social capital. Life satisfaction is linked to different forms of trusts and to the networks or interactions which generate or support trust. He mentioned later in the study that there is an issue of personality differences which affects trust and life satisfaction; and these differences largely remained unmeasured. Åslund et al. (2010) identified in their study that people with low general social trust had more than thrice the chances of developing depression and more than twice the chances of having musculoskeletal pain. General social trust is taken as another dimension of social capital. The hypotheses developed for identifying the effect of general social trust are,

- **H_3a:** General social trust is positively related to general health (psycho-social health) and negatively related to perceived stress (psycho-social health) of university students.
- **H_3b:** General social trust is positive related to psycho-social wellbeing (Satisfaction with life and Subjective Happiness) of university students.
- **H_3c:** General social trust is positively related to physical health of university students.

Zajacova et al. (2005) examine academic performance by three measures. These three measures include grades of high school, cumulative result of first year and status in third semester. Here we have incorporated few changes. Instead of cumulative result of first year, result for immediately passed semester will be included. Second model (Figure 2) is developed to find out direct effect of social capital on academic performance of university students and whether social capital mediates the relationship between psycho-social health, psycho-social wellbeing, physical health and academic performance of students. Hypotheses regarding the impact of social capital on academic performance of university students and its mediating role are as under.

- **H_4a:** General health (psycho-social health) is positively related and perceived stress (psycho-social health) is negatively related to academic performance of university students negatively.
- **H_4b:** Psycho-social wellbeing (Satisfaction with life and Subjective Happiness) is positively related to academic performance of university students.
- **H_4c:** Physical health is positively related to academic performance of university students.
- **H_4d:** Social capital is positively related to academic performance of university students.
- **H_4e:** Social capital mediates the relationship between different dimensions of health (Psycho-social health, Psycho-social wellbeing and physical health) and academic performance of university students.

Yamaguchi (2013) conducted a study to investigate the impact that social capital casts on psychological wellbeing of adolescents in US. He also took individual and family characteristics as independent variable to examine their impact along with social capital. He reported that social capital contributes significantly to the psychological well-being of adolescents and it's most important forms in which it affects the most are sharing feelings and discussing problems with family, friends, and coworkers and having parents around (Yamaguchi, 2013).

Although, in the presence of other variables, effects of education get shrink or absent but it might act through its effect on social capital and therefore education has always been considered as an important correlate of happiness (Helliwell & Putnam, 2004). The correlation between unemployment and happiness is strongly negative (Helliwell & Putnam, 2004). Oswald (1997) stated that there exists curvilinear correlation between age and happiness. Among young and old people, happiness level is high while it is lower among the middle-aged. Effect of social capital on mental health varies by gender. It is extensively documented in literature that psychological distress is higher among women in comparison to men (Wethington et al., 1987; Åslund et al., 2010) and it can be partly attributed to the gender differences in social networks connection and participation (Wethington et al., 1987).

Belle (1987) observed gender differences regarding the impact of social capital. She reported that women participation in social networks is different from men in three ways. First, women have higher tendency to preserve more psychologically close relationships as compare to men. Second, during stress times, they activate and assemble more social support than men. Third, in comparison to men, they offer more recurrent, more valuable and effective support to others than do men. When traumatic events affect those who are emotionally closed or are loved ones, women are more susceptible to the "contagion of stress" (Belle, 1982) due to their tendency to get involved in intimate social relations. Putting it another way, women endure more sufferings and stress due to others' problem. According to Belle (1982), stressful elements of social networks affect women's mental status more as compare to supportive elements of social networks. Keeping in view above discussion, following hypotheses have been developed.

- **H_5a:** Individual characteristics affect the psycho-social health, wellbeing and physical health of university students.

- **H_5b:** Individual characteristics affect academic performance of university students.

Åslund et al. (2010) took living conditions of an individual in two forms in his study i.e. single-family house and multi-family house. He reported that individual living in single-family houses were socio-economically better-off which was correlated with higher level of neighborhood social capital and social trust. Yamaguchi (2013) also stated in his study that family structure in the form of living arrangement does affect the psychological wellbeing of adolescents. He mentioned that mother's education casts positive impact on the socio-emotional adjustment and the psychological well-being of adolescents. Moreover, Employment offers way-in to different social networks which effects psychological wellbeing of adolescents positively (Yamaguchi, 2013). In this study, we will find out the impact of family characteristics on academic performance of university students directly and indirectly. For this purpose, following hypothesis has been constructed.

- **H_5c:** Family characteristics affect academic performance of university students.

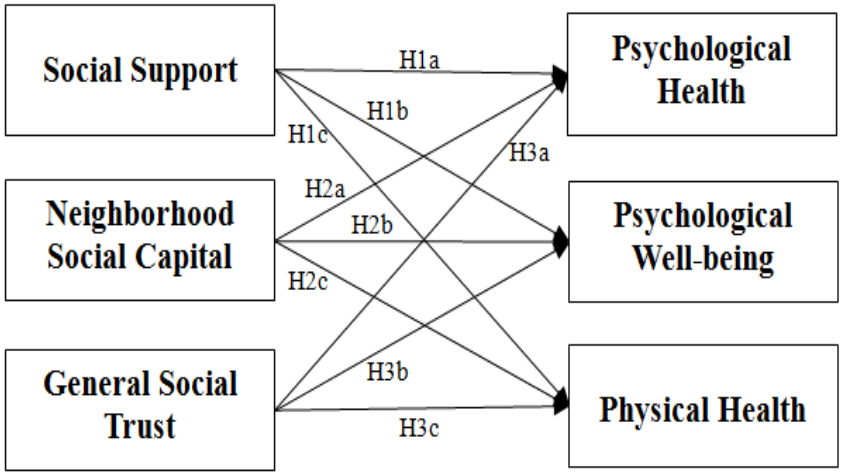

Figure 1: Model 1

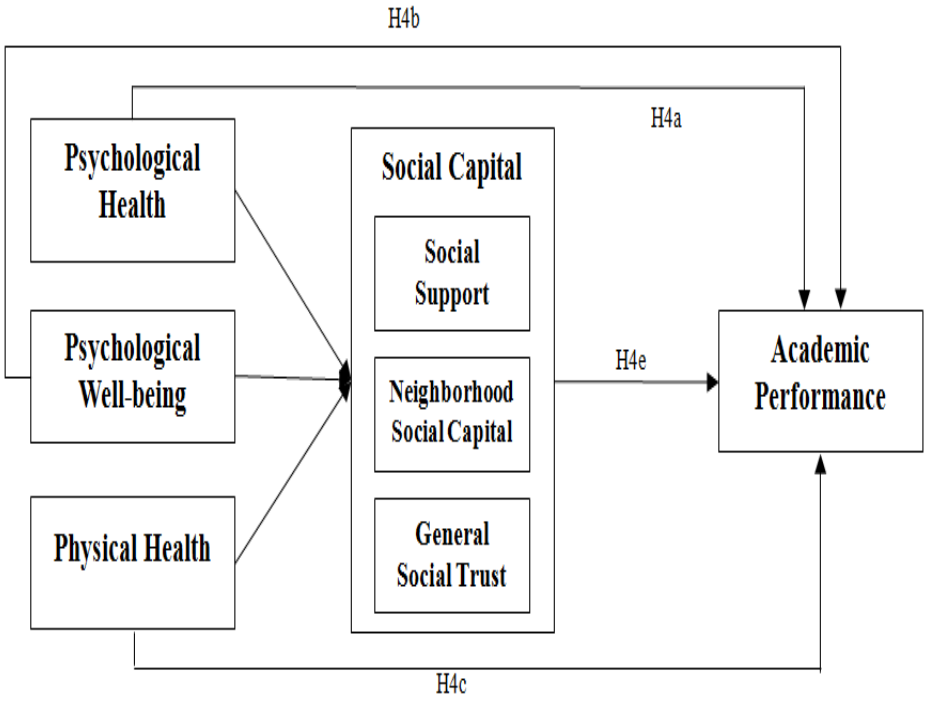

Figure 2: Model 2

3. Data Collection, Measurement and Analysis

This is cross-sectional study which is based on primary data that is collected from students of public sector university of Pakistan. Data is collected through purposive non-probability sampling from 181 undergraduate students of various faculties of university on self-administered questionnaire. This sampling technique is used where sample is confined to certain type of people who either have the required information or they match the criteria laid down by the researcher (Sekaran & Bougie, 2010). We need to take sample of students who were registered in undergraduate programs. Graduate program students are older and they might be employed which changes their social capital setting altogether. We restrain from taking those under graduate students in sample who were employed as this increases their opportunity of having broader social capital. Measures for variable of this study have been adopted from previous valid and reliable research studies. Reliability of the questionnaire is re-established by running reliability test. Value of Cronbach's Alpha is 0.971 which is ideal and shows that the questionnaire is reliable for this study.

Details of theses measure is as under.

3.1 Individual and Family Characteristics

Age, gender and city (city student belong to) are taken as individual characteristics in this paper. Data for city is taken by two response choices; Local Citizen (1) and Belong to some other city (2).Three questions are posed in questionnaire for family characteristics. First, father is working or not; second, mother is working or not; and third, family structure.

Question for family structure is posed with two response choices i.e. Joint family (1) and Single family (2).

3.2 Measures of Variables

Different measures are used to devise the questionnaire. These measures are tested as reliable and valid by many research studies.

3.2.1 Social Capital

Social capital is independent variable. It is measured through three dimensions namely perceived social support, neighbourhood social capital and general social trust.

Perceived Social support: It ismeasured by using the scale developed by Zimmet et al. (1988). This scale consisted of 12 items which are measured on a likert scale of seven response choices: Very strongly disagree (1), Strongly disagree (2), Mildly disagree (3), Neutral (4), Mildly agree (5), Strongly agree (6), Very strongly agree (7).

Neighbourhood social capital: To measure neighbourhood social capital, a scale with seven items is adopted (Åslund et al., 2010). This scale has four response choices: Stronly Disagree (1), Disagree to some extent (2), Agree to some extent (3), Strongly Agree (4).The items 2, 3 and 7 in the scale were reversed while measurig the variable.Chronbach's alpha α of neighbourhood social capital is 0.71 (Åslund et al., 2010) which shows the internal consistency of the scale.

General Social Trust: To measure general social trust, scale of six items used by Åslund et al. (2010) is adopted. This scale also has four response choices as neighbourhodd social capital: Stronly Disagree (1), Disagree to some extent (2), Agree to some extent (3), Strongly Agree (4). The items 2, 4 and 5 were reversed while measurig the variable. Chronbach's alpha α of general social trust is 0.73 (Åslund et al., 2010) which shows the internal consistency of the scale.

3.2.2 Psycho-Social Health

It is measured with the help of two scales i.e. general health and perceived stress.

General Health: General Health Questionnaire (Goldberg & Williams, 1988) comprises of 12 items. Six items were positive questions (1, 3, 4, 7, 8 and 12) which showed positive mental health and remaining six (2, 5, 6, 9, 10 and 11) were negative questions measuring negative mental health. Positive questions are measured through four response choices: Much less than usual (0), Less than usual (1), Same as usual (2), Better than usual (3). Four response choices for negative questions are: Not at all (0), No more than usual (1), Rather more than usual (2), Much more than usual (3). Scores of negative questions were reversed while computing results for the variable.

Perceived Stress: Perceived stress(Cohen et al., 1983) measures stress level as it is perceived by the repondent. It consists of four items with five response choices: Never (0), Almost never (1), Sometimes (2), Fiarly often (3), Very often (4). The highest score on the scale shows higher stress level.

3.2.3 Psycho-Social Wellbeing

It is measured through two dimensions namely, satisfaction with life (Diener et al., 1985) and subjective happiness (Lyubomirsky & Lepper, 1999).

Satisfaction with life: This scale consists of five items with seven response choices on likert scale: Stronly Disagree (1), Disgree (2) Slightly Disagree (3), Neither agree nor disagree (4), Slightly Agree (5), Agree (6), Strongly Agree (7).

Subjective happiness: This scale consists of four items with seven response choices. Response choices for first item range from "Not a very happy person" (1) to "A very happy person" (7). For second item, reponse choices range from "Less happy" (1) to "More happy" (7). While for 3rd and 4th item, reposnse choices range from "Not at all" (1) to "A great deal" (7).4th item is a negative question so it is reversed while measuring the results for the variable.

3.2.4 Physical Health

It is measured by adopting the seven item scale from Weinstein (1987). First item measures self-rated absolute health status with five response choices: are Poor (1), Fair (2), Good (3), Very good (4), Excellent (5). Second item measures self-rated comparative health status with five response choices: Much below average (1), Below average (2), Average (3), Above average (4), Much above average (5). Remaining five items measure self-rated health status transition. First three of these five items have five response choices: Much worse (1), Worse (2), Same (3), Better (4), Much better (5). Last three of these five items have different five response choices: Not at all (1), Not much (2), Somewhat (3), Much (4), Extremely (5).

4. Results and Discussion

Analysis is done with the help of SPSS. Normality check of the data showed normal population for some variables and non-normal for others. As normal distribution is unchanged in linear transformations so normality can be checked for standardized and unstandardized residual. For this purpose, 1 sample KS test is run. Sig value is 0.677 ($p>0.05$) for both unstandardized and standardized residuals which demonstrate that the errors (standardized and unstandardized residuals) are normally distributed and population is normal. Scatter plot (Appendix B) of error against predictors is constructed to find out if the error is heteroscedastic. Plot shows that there is no trend in the data so error is homoscedastic and the relationship is linear for dependent variable. So, there is no heteroscedasticity as variance of the error term does not differ across observations and is constant.

Descriptive statistics is applied on all the variables. Spearman Correlation, Multivariate Regression and Linear Regression are used to test the hypotheses. Overall descriptive statistics of the variables are given in Table 1. Two groups are made on the basis of Age to compare means values. Age 1 is the group in which students of age 18-21 are included while group 2 is mentioned as Age 2 including students above the age of 21. Two other groups are made on the basis of cities to which students belong. City 1group includes those students who live in the city of university where it is located while students belonging to other cities are included in group City 2.

Mean values of social support for all the groups and overall shows that respondents mildly agree that they have social support (Table 1). This value is higher for males as compare to females. It is consistent with literature that males have higher social support as compare to females. Mean value for social support is higher for Age 2 group as compare to Age 1 group which means social support increases with age. Respondents residing in the city

where university is located have higher mean value for social support as compare to those students who do not belong to the city of the university.

Results shows that respondents do not have strong neighborhood social capital (Mean=2.56). Mean value shows that on the average respondents agree to some extent that they have neighborhood social capital. Females (2.58) show higher neighborhood social capital as compare to males (2.55). Students included in group Age 2 (2.69) group have higher neighborhood social capital as compare to those included in group Age 1 (2.42). Comparison of two city group shows that local residents of Lahore (2.60) have higher neighborhood social capital as compare to those who belong other cities (2.52).

Overall, mean value of general social trust (2.43) shows that on the average respondents disagree to some extent that they have trust on others. This shows that respondents do not trust others much. Gender comparison shows that males (2.50) possess higher social trust as compare to females (2.35). Comparison based on age shows that higher the age the less the respondent will trust others. City comparison shows that respondents living in Lahore trust others more than those who belong to other cities.

Table 1: Descriptive Analysis of University Students in Pakistan

	Overall	Male	Female	Age 1	Age 2	City 1	City 2
Social Support	4.85	4.93	4.75	4.79	4.91	4.96	4.70
Neighbourhood.SC	2.56	2.55	2.58	2.42	2.69	2.60	2.52
General Social Trust	2.43	2.50	2.35	2.45	2.42	2.49	2.36
General Health	2.41	2.35	2.50	2.45	2.38	2.51	2.28
Perceived Stress	2.33	2.34	2.30	2.38	2.29	2.33	2.34
Satisfaction with Life	4.77	4.56	5.05	4.76	4.78	4.89	4.61
Subjective Happiness	5.03	4.88	5.24	4.99	5.08	5.16	4.86
Physical Health	3.80	3.77	3.84	3.79	3.81	3.91	3.64

Mean value of general health (2.41) shows that health status of respondents' lies in the category of "same as usual" so they have same health status when comparing with previous health status. Males and females show difference but it is not much visible. Age comparison shows almost same general health status. Possible explanation is that age groups in this study are not very far from each other and all respondents are young university students so the difference is not much visible. Local respondents of Lahore shows higher general health status as compare to those who live in Lahore in hostels. This might be due to the fact that hostel negatively affect the health of students.

Perceived stress level is not much higher overall. Mean value of perceived stress (2.33) shows that students are sometimes in stress and do not remain in stress often. Results for different group comparison are quite similar. It might be due to the reason that students are in academic stress which remains almost same for all groups of students. As students move to university level, they become prone to suffer stress sometimes. Stress is also found, in literature, to get amplified as students move from high school to college (Towbes & Cohen, 1996).

Mean value for satisfaction with life (4.77) shows that respondents are closer to being slightly agreed that they are satisfied with life. Gender comparison shows visible difference. Males (4.56) respondents are less satisfied with their lives as compare to females (5.05). Higher the age of the respondents the higher the respondents will be satisfied with life. Local residents of Lahore (4.89) are more satisfied with life as compare to the other group (4.61).

Overall results of subjective happiness (5.03) display that respondents are closer to being happy than being not happy. Females (5.24) are found to be happier with their life as compare to males (4.88). Respondents included in group Age 1 (4.99) are less happy than those included in Age 2 (5.08). City comparison shows that local residents of Lahore are happier as compare to the other group. Possible explanation is that local residents are living with their families and therefore are satisfied and happier in their lives.

Table 2: Spearman Correlation

	SS	NSC	GST	G H	P.S	S L	S H	P H
Social Support(SS)	1.000							
Neighborhood SC	.305**	1.000						
General Social Trust (GST)	.472**	.357**	1.000					
General Health(GH)	.322**	.213**	.522**	1.000				
P. Stress (P.S)	-.340**	-.149*	-.182*	-.137	1.000			
Satisfaction with Life(SL)	.535**	.202**	.295**	.404**	-.230**	1.000		
Subjective Happiness(SH)	.449**	.180*	.238**	.264**	-.197**	.624**	1.000	
Physical Health(PH)	.417**	.143	.303**	.313**	-.225**	.481**	.635**	1.000
*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).								

Results for Physical health (3.80) depicts that the respondents consider themselves in better physical health status. Although difference is less visible, but females (3.84) consider themselves in better health as compare to males (3.77). The higher the age of the respondents the better is his or her physical health. Local students have better health status than those living in Lahore temporarily.

In order to measure the initial relationship regarding social capital, psycho-social health, psycho-social wellbeing and physical health of university students, Spearmen correlation (Table 2) is utilized. Spearmen correlation offers preliminary information about the inter-relationship between variables of interest when variables are non-normal. On the whole, almost all the relationships are found to be significant except for two i.e. perceived stress and general health; physical health and neighborhood social capital.

Social support has positive and significant correlation with all other variables except perceived stress level were correlation is significant but negative ($b=-.340$, $p<0.01$). It is

also found in literature that social support is negatively correlated with perceived stress (Friedlander et al., 2007; Dzulkifli & Yasin, 2009) and is positively correlated with mental and physical health (Dzulkifli & Yasin, 2009). Neighborhood social capital (NSC) is also significantly correlated with all variables except physical health. Neighborhood social capital is also negatively correlated to perceived stress. General social trust (GST) is also positively correlated with all variables and negatively correlated to perceived stress. It is strongly correlated with general health ($b=.522$, $p<0.001$).These results are consistent with literature which states that strong positive correlations exist between social capital and improved public health. (Helliwell & Putnam, 2004). Satisfaction with life is found to be strongly correlated with subjective happiness ($b=.624$, $p<0.01$) and social support ($b=.535$, $p<0.01$). Subjective happiness is also strongly correlated with physical health ($b=.635$, $p<0$).

Although correlation has found preliminary relationships but causation is still to be found. In order to investigate this causation multivariate regression (Table 3) is run taking dimensions of social capital as independent variables (i.e. social support, neighborhood social capital, general social trust) and dimensions of psycho-social health (General Health, Perceived Stress), psycho-social wellbeing (Satisfaction with life, Subjective Happiness) and physical health as dependent variables. Age and gender are also incorporated. All variables are independent in rows and all variables are dependent in columns.

Matrix plot (Appendix A) is constructed to check the behavior of the variables. The plot shows that the variables have linear trend i.e. effect of each predictor on response variable is linear. Linear regression can be run for each dependent variable separately but multivariate test performs an additional test to check the overall significance of the model. Table 3 contains Wilks' Lambda which tells the overall significance of the model. Values of Wilks' Lambda display that all the predictors are overall significant for the models except age.

Table 3 shows that results for age are not significant for any of the dependent variables. Gender is found to be highly significant for general health (-.199), satisfaction with life (-.586) and subjective happiness (-.435). These results are for male respondents as males were taken as 1 and females were taken as 0. Therefore if the respondent is female, she will be having high general health, satisfaction with life and subjective happiness. These results show that gender do not affect the perceived stress and physical health of students. These results partially accept Hypothesis 5a which states that individual characteristics affect the psycho-social health, wellbeing and physical health of university students.

Table 3: Multivariate Regression Analysis

	General Health	Perceived Stress	Satisfaction with Life	Subjective Happiness	Physical Health
Intercept	1.415	3.422	2.559	3.025	2.545
Age	-.072	-.066	-.021	.033	.031
Gender	-.199***	.100	-.586***	-.435***	-.136
Social Support	.052	-.168***	.421***	.332***	.232***
Neighborhood social Capital	.039	-.038	.067	.148	-.078
General Social Trust	.358***	-.054	.150	.089	.148*

Overall significance of Multivariate Regression models (Wilks' Lambda)

Effect	**Value**	**F**	**Sig.**
Intercept	.387	54.118	.000
Age	.990	.336	.891
Gender	.891	4.168	.001
Social Support	.752	11.272	.000
Neighborhood Social Capital	.979	.744	.592
General Social Trust	.846	6.210	.000

*. Correlation is significant at the 0.1 level (2-tailed).
**. Correlation is significant at the 0.05 level (2-tailed).
***. Correlation is significant at the 0.01 level (2-tailed).

Social support is found to be significant with all the dependent variables except for general health. Social support is negatively related to perceived stress (b=-.168, p<0.01).Therefore, Hypothesis 1a is partially accepted while Hypotheses 1b and 1c are fully supported. Results are consistent with literature as it is reported in many studies that there is a positive relationship between social capital and psychological wellbeing (Coleman, 1988; Putnam, 1995a, 2000; Yamaguchi, 2013). Beta co-efficient of general health is not very high and its significance is also very low (p<0.1). On the whole, it can be said that the higher the level of social support the higher is the level of psychological health, psychological wellbeing and physical health. It is consistent with literature which says that social support can improve outcomes of health (Berkman, 1995). Results for perceived stress are also in line with literature as social support is reported to be negatively related to stress and therefore higher social support decreases stress (Dunn, 2001).Neighborhood social capital is found to be significant with none of the variables. It rejects Hypothesis 1a and 1b and 1c.The insignificance of neighborhood social capital for dimensions of individual health is in line with literature where neighborhood associations have been found to show weak impact on health in general (Ziersh et al. 2005).General social trust is significant only with general health (b=.358, p<0.01) and physical health (b=.148, p<0.1). It is also reported in literature that people with low general social trust had more than thrice the chances of developing depression (Åslund et al., 2010). Results for general social trust partially accept Hypothesis 3a, reject Hypothesis 3b and fully support Hypothesis 3c.

To find out the impact of Individual characteristics, family characteristics, social capital, psycho-social health, psycho-social wellbeing, and physical health on academic performance of university students, linear regression is run for six different models. Results

of these models are shown in (Table 4). Values of Durbin Watson are around 2 for each model which show that the residuals from the linear regression are independent. So there is no autocorrelation in the residuals. In model 1, regression is run on individual and family characteristics of respondents. Only two variables are significant. Gender is significant at 0.01 with negative beta co-efficient (-2.917). It shows that females have higher academic performance as compare to male students. City is significant at 0.1 with negative beta co-efficient (-2.311). It shows that students who belong to other cities demonstrate higher academic performance as compare to the students who are local residents of Lahore. This result partially supports Hypothesis 5b while 5c is rejected.

Model 2 is run for academic performance with dimensions of psycho-social health, psycho-social wellbeing and physical health. All the variables are found to be significant with academic performance except subjective happiness and physical health. Therefore, Hypothesis 4a is supported; Hypothesis 4b is partially supported while Hypothesis 4c is rejected. Perceived stress is displaying a significant relationship (-3.014) and is negatively related to academic performance. Stress is found to be significant with academic performance in many research studies (Pritchard & Wilson, 2003; Struthers et al, 2000).

Table 4: Linear Regression - Academic Performance (CGPA) As Dependent Variable

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	76.262	61.913	46.845	63.872	53.592	53.935
Age	2.061			1.531	.882	.842
Gender	-2.917**			-1.603	-4.214***	-3.530***
City	-2.311*			-.846	-1.083	-.840
Father - Working	-.391			-2.372	-3.992**	-3.889**
Mother - Working	1.354			.378	-.475	-.560
Family Structure	-.090			-.227	-.783	-.752
General Health		2.938**		3.033**		2.074
Perceived Stress		-3.014***		-2.891***		2.040
Satisfaction with Life		1.466**		1.302**		3.641
Subjective Happiness		.287		.349		.527
Physical Health		1.009		1.049		-1.199
Social Support			2.511***		2.668***	.866***
Neighborhood SC			2.811**		2.076*	-.282*
General Social Trust			3.292***		4.065***	.442***
Durbin Watson	2.323	2.030	1.957	2.079	1.966	1.906
Adjusted R-Square	.025	.204	.309	.203	.358	.360
R-Square	.057	.226	.320	.252	.390	.410
ANOVA (sig)	0.109	.000	.000	.000	.000	.000

*. Correlation is significant at the 0.1 level (2-tailed).
**. Correlation is significant at the 0.05 level (2-tailed).
***. Correlation is significant at the 0.01 level (2-tailed).

In model 3, regression is run only for three dimensions of social capital. Results show that all three dimensions (Social support, neighborhood social capital and general social trust) are highly significant with academic performance. Their beta coefficients show positive relationships. Therefore, Hypothesis 4d is accepted. Social support is found to be significant for academic performance in many research studies (Silbereisen & Todt, 1994; Steinberg & Darling, 1994). In model 4, all the variables of model 1 and model 2 are included. Here all the variables of model 1 show insignificant results while dimensions of psycho-social health, psycho-social wellbeing and physical health show significant results

as they did in model 2. There is no visible increase or decrease in their beta coefficients as well.

Model 5 is run with all the variables included in model 1 and model 3. This model displays that Father-Working shows a significant relationship (b=-3.992, $p<0.05$) with academic performance while it was insignificant in model 1. All the dimensions of social capital show significant results. Beta co-efficient displays a decrease for neighborhood social capital (b=2.076) but increases for social support (b=2.668) and general social trust (4.065).

Model 6 is the final model and it is run by incorporating variables included in all the previous five models. In this model, only gender and Father-Working shows significant results among the variables of model 1. All the dimensions of social capital remain significant. Psycho-social health, psycho-social wellbeing and physical health become insignificant which shows that their relationship with academic performance is mediated by social capital. So, the results support Hypothesis 4e.

5. Conclusion

Among individual characteristics, only gender is found to be significant with academic performance of students. Academic performance is high among females and students who are not local residents of Lahore city. Social capital is significant for academic performance and it also mediates the relationship between academic performance and psycho-social health, psycho-social wellbeing and physical health. Psycho-social health is found to be highly significant for academic performance. One dimension of psycho-social wellbeing (Subjective happiness) is insignificant for academic performance of university students. This study gives a view of social capital that undergraduate university students develop during university studies and how this social capital affects different dimensions of their health and academic performance. Social capital works better for female students then male when it comes to their health and especially academic performance. Social capital mediates the relationship of academic performance of female students. This might explain that social capital helps male students in other ways but not in their academic performance. This is in the context of Pakistan which could differ slightly or strikingly in other settings.

Social support is found to be highly significant with different forms of health of students except general health for which it shows insignificant results. Neighborhood social capital is significant with none of the variables. Reason behind could be that people are getting less involved in their neighborhood which reduces the chance of getting affected by it. General social trust is significant only with general health and physical. It is quite interesting result that social trust is not found to be significant for other dimensions of psycho-social health and psycho-social wellbeing. Further research can be conducted to find out the impact of culture and religion on the variables of this study which might be the reason of contradictory results. Such future research can add value to the results of this study.

6. Limitations of the Study

This study has certain limitations. Only students of one university are taken as our study population which limits the generalizing of the results. Some of the results in this study are contradictory with literature which might be due to the reason that there exist many factors which affect students of a university such as culture (Khan et al., 2013), study environment and religion (Khan et al., 2013)which are not taken into consideration in this study.

Another limitation, also mentioned in literature, is social desirability biasness (Akram & Qayyum, 2014). Respondents might have filled the questionnaire the way they believe the researcher would like them to. Therefore, their responses might not represent their true feelings. Another very important limitation is the cross-sectional design of the study which does not allow us to make inference about the causality path between social capital and the different dimensions of health and wellbeing. This limitation is also identified in many other studies conducted to investigate the impact of social capital on individual wellbeing (Caughy et al. 2003; Curtis et al. 2004; El-Dardiry et al., 2012). Therefore future research should be carried out with longitudinal studies.

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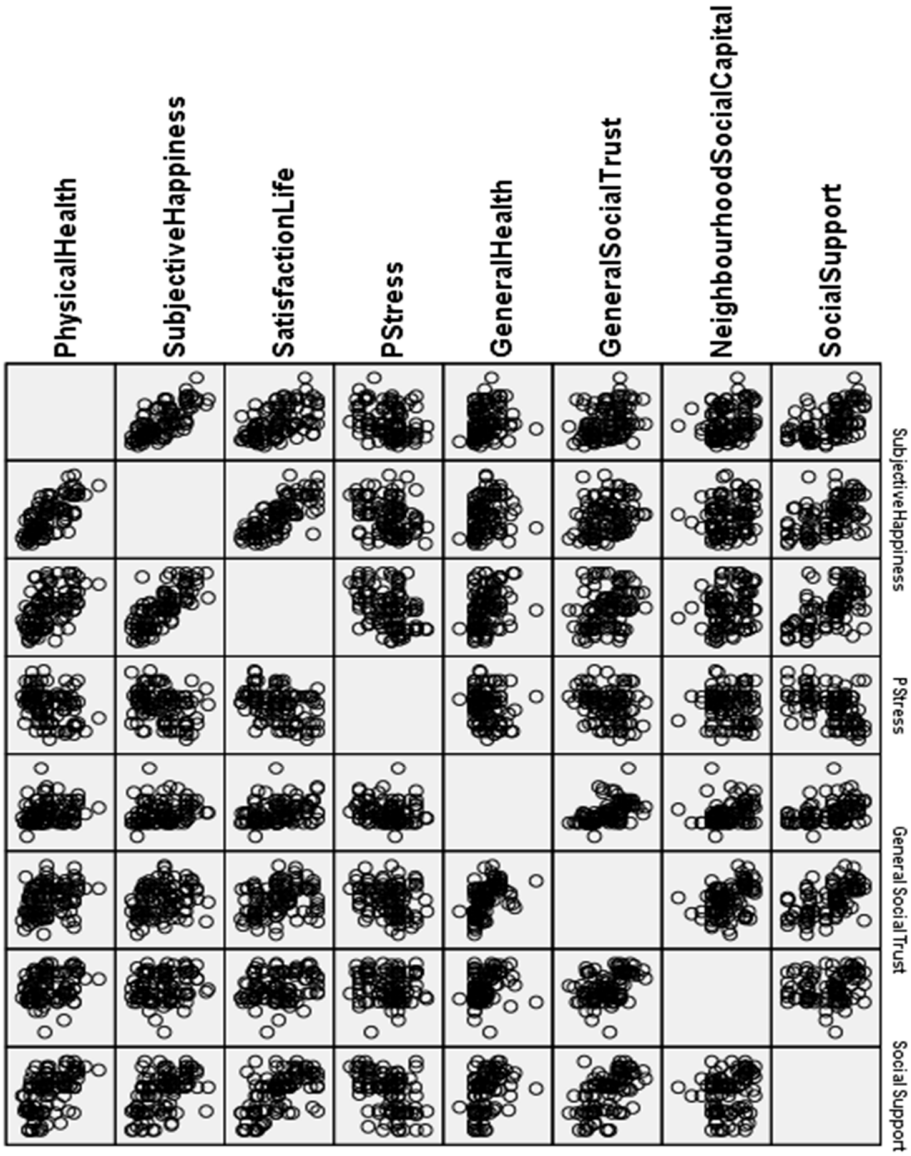
Appendix

Appendix A: Matrix Plot



Appendix B: Scatter Plot