



Original Research Article

The relationship of perceived stress and lifestyle choices among Filipino adolescents

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Stress-related problems associated with lifestyle are increasing among Filipino adolescents. Middle school and high school students have been identified as the most vulnerable groups being linked to incidence of chronic diseases and high risk of engagement to negative behaviors. This study aimed to (1) identify the perceived stress between male and female subjects, (2) identify the lifestyle choices between male and female subjects, and (3) determine the relationship of perceived stress and lifestyle choices among adolescents in the Philippines. Standardized questionnaires were used in conducting this study and subjects included 504 adolescents from grade eighth (N=286) and tenth (N=218) students of Sta. Lucia High School. The between group analyses revealed a significant relationship of perceived stress to lifestyle choices of the Filipino adolescents. The results showed that females have a lower perceived stress and chose healthier lifestyle than males. In regression analyses, the correlations between perceived stress and lifestyle choices have significance in the positive items of Perceived Stress Scale (PSS) as the dependent variables of Healthy Lifestyle Personal Control questionnaire (HLPCQ). Female subjects were able to significantly control and manage perceived stress even when exposed to various stressors compared to their male counterparts as well as having healthier lifestyle choices. Perceived stress level of Filipino adolescents has a significant relation to their lifestyle choices. Findings of the study highlight the need to develop and have a proper implementation of school-based healthy lifestyle programs and prevention measures among adolescents.

Key words: Perceived stress, lifestyle choices, adolescents, Filipinos.

INTRODUCTION

Adolescence has been defined as a period of heightened stress (Windle, 2008; Arnett, 2000) and considered as one of the most difficult stages in one's life. In this period, a lot of changes occurred such as physical maturation, drive for independence, peer pressure, salience of social interactions, and brain development (Marcia, 2006; Blakemore, 2008; Casey et al., 2008). Adolescence is also characterized by physical maturation of the brain and body, giving rise to intense psychological and physical change which has been intensified through emotional experiences being argued as the basis of psychopathology and suicidal behavior;

rebellious and risk-taking youth (Burtet al., 2000; Kessler et al., 2005). When reaching the adolescence, one begins to integrate various roles to play in meaningful and constructive ways. As one prepares for adulthood, there is wide variation, however, in adolescent experiences in accomplishing a set of developmental tasks (Wong, 1999).

Stress, in this study, is defined comprehensively as a stimuli, individual processing, and outcome which encompasses physiological (e.g. HPA axis, sympathetic nervous system, and immune system responses) as well as behavioral (e.g. attention,

arousal, and vigilance) that principally processed as stressors (Marlatt et al., 1988; Murphy et al, 1986; Piazza et al., 1990); a well-known risk factor of vulnerability that could be able to disrupt decision making based upon adolescents' unique affective response to their exposure to chronic stressors in such a stressful social encounter (Al'Absi, 2011; Armon et al., 2008; Gulliver et al., 1995; Kosten, 2011; Niaura et al., 2002; Schank et al., 2012; Sinha, 2008). The low levels of global self-esteem among adolescents along with sleep disturbances, and poor social support played a crucial role in the prediction of stress symptoms (Schraml et al., 2011; Singh et al., 2006; Wagner et al., 1999).

There are stressors that affect adolescents such as parents, peers, teachers, and society that exert considerable pressure on the adolescent to grow up during the adolescence stage (Wong, 1999). It was clarified that various stressors in adolescence do not occur at the same time. Rather, adolescents deal with one or two stressful events, which alleviate the stress, then deal with the others. The peak age for stressful situations varies. Coleman's view implies that adolescence is not a relatively short period of time and adolescence is not any more or less stressful than any other developmental stage. Some adolescents may have very difficult and stressful experience, but in general, the majority does not as human behavior depending largely beliefs of how well they can perform in given situations; and that having to cope with reality, people are also motivated to perceive themselves accurately and admit awareness of their undesirable characteristics (Bandura, 2000; Baumeister et al, 2003; Coleman and Hendry, 1999; Cruz et al., 2001). Hence, adolescence seems to represent a series of smoothly evolving changes in development of which for coping, enhancement, and/or conformity motives (Comeau et al., 2001; Jackson and Henriksen, 1997; Kabat-Zinn and Hanh, 2009).

In the Philippines, stress is becoming one of the health risk factors among Filipino adolescents of which comprises 21% of the estimated 103.3 million people living in the country as of the year 2016 (PSA, 2017), the figures have steadily risen that becomes a troubling rate. Young people from ages ten to twenty-four accounted for 30.5% of the population are likely to develop negative behaviors basically from their lifestyle choices starting in adolescence to early adulthood. Positive lifestyle choice such as being physically active reported to have less tiredness and increased concentration during the day as well as significantly lower anxiety and fewer depressive symptoms (Brand et al., 2010; McDade, 2001; McDade et al., 2011; Ogena, 2004). High school students who are suffering from stress and practicing unfavorable lifestyle, specifically in the chronic stage resulted to have poor performances in most of the learning tasks and cannot easily adapt old information to new problems as negative school behaviors remain a significant health problem (Barnes et al., 2003; Barnes, et al., 2001; Brown and James, 2000; Brown et al., 1999; Casanova-Rosado et al., 2005; Fuligni and Hardway, 2006; Kassel et al., 2003).

Previous studies have shown that adults with stress levels performed 50% lower than those with low stress in life and following the Pacific trend, Philippines is one of the countries of which low pay become the primary cause of stress. Along with stress (56%), there are following lifestyle choices that give impact to the health and well-being such as lack of physical activity (52%), being overweight/obese (40%), tobacco use (33%), and lack of sleep (33%). Stressors were investigated to be producing more withdrawal symptoms, including increased craving, negative affect symptoms, somatic symptoms, and lack of alertness. Cognitive avoidance strategies, impulsivity, and impaired inhibitory control appear to influence the strength of attentional biases and subjective craving characterizing negative behaviors; to act rashly when distressed, explained significant variance in symptom level of these behaviors (Beckham et al., 1996; Field and Cox, 2008; Wiers et al., 2007). Such behaviors that taken root in adolescence is difficult and challenging to change later in life. The effects of stress are not limited in the learning process of an individual, it is also the focal point of depression and when develop to severe stage due to prolonged stress could lead students to plan, have an attempt, and the execution of suicide.

Filipinos in general however, are exposed rarely to mental health issues and it usually takes a high profile case before citizens begin talking about suicide and depression. Suicide is the second leading cause of death globally among people 15 to 29 years of age. Males have the higher rate of suicide than females from the estimated number which was about 2,558 (550 female, 2009 male) according to the global report on preventing suicide by WHO (WHO, 2014). This is in contrast with previous studies of gender differences in mental health that consistently find females to have higher levels of depressive symptoms than males. There is now convincing evidence from stress analyses and investigations of gender roles that the interplay among stressful experiences as well as various responsibilities of adult roles has been significantly associated with these differences (Avison and McAlpine, 1992).

In this study, the disposition of an individual is significantly influenced by their stress level, lifestyle choices, and environment. However, there is a need for better data, and more importantly, a national prevention program for adolescents.

Given the above findings, the objectives of the current study were: (1) identify the perceived stress between male and female subjects, (2) identify lifestyle choices between male and female subjects and (3) determine the relationship of perceived stress and lifestyle choices among adolescents in the Philippines.

Based on the information gathered from identifying the stress level of the Filipino high school students of Sta. Lucia, practical measures and school-based programs can be designed for increasing the psychological well-being of adolescents, which may help prevent stress-related problems and negative behaviors later in life as well as modify lifestyle choices affecting the overall health.

Table 1. Sociodemographic and Health-Related Characteristics of Filipino Adolescents (N=504)

Characteristics	Frequency	Percentage (%)	Mean
Gender			
Male	252	50	
Female	252	50	
Age (Years)			
12-13	90	17.9	
14-15	227	45	
16-17	180	35.7	
18-19	7	1.4	
School Year Level			
Eighth Grade	286	56.7	
Ninth Grade	218	43.3	
Family Economic Status			
Average	388	77	
Living with			
Both Parents	381	77	
Satisfaction			
School Life (Satisfied)	423	84	
Happiness			
Rate (Good)	480	95.2	
Health			
Rate (Good)	438	86.9	
Smoking	11	2.2	
Drinking Alcohol	96	19.5	
Mean Score (SD)			
PSS			31.29 (5.48)
HLPCQ			59.94 (8.40)

MATERIALS AND METHODS

The study was performed in Pasig City, one of the cities of the National Region of the Philippines. The education system of the country is being managed and regulated by the Department of Education (DepEd) for primary and secondary levels. The Schools Division Superintendent develops and maintains an educational program that will meet the overall objectives of the needs of the individual students as assigned by the DepEd.

After approval by the officer-in-charge of Schools Division Superintendent last December of 2016, the data took place over the course of four days in January, 2017. Prior to the data collection, the teachers as well as the principal along with the schools division representative of the subjects were informed in writing and verbal through phone calls about the study's aims and procedures as being approved by the Philippines Division Superintendent. In addition, in an effort to increase participation, the respondents were both grade eighth and tenth which presentations would be from middle school and high school respectively, and officially junior high schoolers in the Philippines K-12 education curriculum of which 77% comes from average family economic status (Table 1).

The sample included 504 eighth (N=286) and tenth (N=218) graders, of whom 252 were males (50%) and 252

were females (50%). The average age of the participants was 16 years (\pm one year). The data collection was organized in collaboration of the school guidance staff. During a designated class session, group of participants specifically from the same section gathered in the multi-purpose hall and all of the participating students answered the questionnaires individually and being assisted by the staff when needed. The average completion time for the questionnaires was approximately 40 minutes for each respondent.

Measures

Several scales were utilized in the gathering of data in this present study. In order to determine the degree to which situations in one's life are considered stressful of the subjects, the Perceived Stress Scale 14 (PSS-14) (Cohen et al., 1983) was utilized in our study. It is a self-reported 14-item measure for use with community samples with at least a junior high school education. The PSS indicates the. For this scale, respondents rate the frequency of their feelings and thoughts over the previous month on a five-point Likert-type scale (from 0=never to 4=very often). There are seven positive items stated in numbers 4, 5, 6, 7, 9, 10, and 13. The scores for these numbers are obtained by reversing the scores, e.g. 0=4, 1= 3, 2 =2, 3=1, and 4=0. The negative

Table 2. PSS Score Range and Coding Number

Score range	10~19	20~29	30~39	40~49
Coding number	1 (2.4%)	2 (31.3%)	3 (60.3%)	4 (6.0%)

Table 3: Perceived Stress Level between Gender Comparisons for the Study's Outcome

	Male	Female
Total Mean PSS (Min-Max)	50.32 (18 - 65)	40.16 (18 - 52)
Mean PSS (Positive Items)	2.24	2.29
Mean PSS (Negative Items)	2.21	2.24

items stated are in numbers 1, 2, 3, 8, 11, 12, and 14. All the scores across 14 items will be added and ranges from 0-56, with higher scores indicating higher level perceived stress. In addition, the internal consistency of this 14-item scale in this study was also satisfactory, which was determined to be 0.67 through Cronbach's alpha coefficient.

The Healthy Lifestyle and Personal Control Questionnaire (HLPCQ) (Darviri et al., 2014) was also utilized, which contains 26 items that respondents were asked to indicate the frequency of adopting 26 positively stated lifestyle habits using a Likert-type scale (1=Never, 2=Sometimes, 3=Often and 4=Always). An increased score denotes healthier lifestyle in terms of diet, daily routine, exercise, social support and positive thoughts. The internal consistency of this scale was determined using Cronbach's alpha coefficient which was found to be satisfactory (0.75). HLPCQ items were derived from our experience with stress management as well as health promotion interventions.

Data Analysis

Descriptive analyses were used to calculate the means, standard deviations (SD), and frequencies (%). Also, a simple frequency analysis for both males and females was carried out and the Pearson correlation coefficient to determine the association of two corresponding variables. T-test was used to analyze the means of two populations and Cronbach's alpha values were calculated to assess internal consistency of the measurement tools. Statistical analyses were performed using the SPSS 23 for Windows statistical software.

RESULTS

In total, 504 subjects were being assessed for this study. A majority of participants were 16 years of age mostly coming from average family economic status (77%). In addition, 75.6% of the respondents are living with both parents. In the school life satisfaction, 84% responded satisfied and 95.2% of the subjects responded good for the

item about happiness.

The overall health rate was good (86.9%). However, some students had been engaged into negative behaviors such as smoking (2.2%) and drinking alcohol (19.5%). The mean perceived stress of subjects was 31.29 and the mean healthy lifestyle was 59.94 (Table 1).

The result showed the perceived stress among Filipino adolescents is the third range (30-39) that obtains the percentage of 60.3 (Table 2) denoting a high level of perceived stress as categorized in the four score ranges of PSS. It also has significance in correlation to the lifestyle control of the subjects.

In the positive items of PSS, females have a higher mean (2.29) than male counterparts (2.24). In the negative items, male subjects have lower perceived stress (2.21) than female counterparts (2.24) in exception of item number 6 (2.51) (Appendix 1) as in the ability to handle personal problems. These results indicated that the stress level of males have a longer mean range than female counterparts. Female subjects have a shorter range of perceived stress showing a high control of it than males and that female subjects could manage well the stress in their adolescent stage (Table 3).

In finding lifestyle patterns of Filipino adolescents, the result of the total mean of HLPCQ (Table 4) showed that female subjects have a higher mean score range than male subjects. The mean of both daily routine (2.12) and exercise (2.9) showed that female subjects were higher than males. However, the mean in diet (2.46) and social support (2.27) were significantly similar for both the female and the male subjects.

The respondents of this study have the same mean scores in the two items regarding the avoidance of eating packaged or fast food (2.61) and care about meeting and discussing with family on daily basis (2.12) (Appendix 2).

The eight HLPCQ items were identified to have a significant relationship with the perceived stress of subjects. Two items which were sharing problems or worries with others (.005) and concentrating on positive thoughts during difficulties (.002) have significant difference among male and female adolescents according to

Table 4. Healthy Lifestyle and Personal Control between Gender Comparisons for the Study's Outcome

	Male	Female
Total Mean HLPCQ (Min-Max)	59.40 (33 - 80)	60.49 (35 - 81)
Mean Diet	2.46	2.42
Mean Daily Routine	1.96	2.12
Mean Exercise	2.7	2.9
Mean Social Support and Positive Thoughts	2.27	2.21

Table 5. Correlation between perceived stress score range and lifestyle control for the study's outcome

Items	Probability of Significance
Avoid eating when stressed or disappointed	.424
Avoid binge eating when out with friends	.013
Sleep in a regular time	.466
Exercise in a regular manner	.997
Share personal problems and worries to others	.005*
Concentrate on positive thoughts during difficulties	.002*
Meeting and discussing with family on daily basis	.160
Balance one's time between work or studies, personal life and leisure	.297

*Significant difference according to stress score at the significance level of 5%

Table 6: Regression Analysis between HLPCQ and PSS(positive or negative) for the Study's Outcome

ANOVAa		Sum of Squares	df	Mean Square	F	Sig.
Model						
1	Regression	160.966	1	160.966	14.804	.000b
	Residual	4381.839	403	10.873		
	Total	4542.805	404			
a. Dependent Variable: PSS_positive_sum						
b. Predictors: (Constant), HLPCQ_sum						

ANOVAa		Sum of Squares	df	Mean Square	F	Sig.
Model						
1	Regression	7.948	1	7.948	.669	.414b
	Residual	4790.457	403	11.887		
	Total	4798.405	404			
a. Dependent Variable: PSS_negative_sum						
b. Predictors: (Constant), HLPCQ_sum						

the stress range scores (Table 5) at the significance level of 5%.

By regression analysis, there was a significant relationship between HLPCQ and positive items of PSS, but not with negative items of PSS about the Filipino adolescents (Table 6).

DISCUSSION

In this concept of the study, gathered data have been documented with beneficial findings for identifying the differences between female and male subjects regarding

their perceived stress level and lifestyle choices as well as the significance level of perceived stress in relation to their chosen lifestyle.

As stated in the introduction, females have higher depressive symptoms from stress analyses than male counterparts (Avison and McAlpine, 1992). However, the result of this study showed that female Filipino adolescents have shorter range of perceived stress denoting a lower level than males. Also this result showed that females have healthier lifestyle choices than males. Because males generally are more likely than females to report current and frequent smoking (Bobo and Husten, 2000) having the high risk of developing negative behavior.

In identifying differences of lifestyle choices, both males and females have very similar results in terms of diet and social support. This result means that female subjects were significantly higher in daily routine such as following a schedule daily and doing exercises in a regular manner. Lifestyle interventions are recommended in order to address to keep adolescents healthy life (Comeau et al., 2001). Especially the lack of physical activity, being overweight, engage in smoking, lack of sleep, drinking alcohol and even drug use should be avoided to maintain their healthy life until they become adults (Wiers et al., 2007).

In determining the relationship between perceived stress and lifestyle choices, sharing of personal problems and worries to others as well concentrating on positive thoughts during difficulties were related significantly. This is despite the fact that Filipino adolescents were exposed to many problems from family, financial, peers, and even school environment (Bulo and Sanchez, 2014).

During the study, all respondents were in favor for these diagnostic tools relating to their perceived stress and lifestyle choices of which reported that healthy lifestyle choices including social and mental balance enable to decrease their level of stress. The increase self-awareness among Filipino adolescents could help them manage their stress specifically in school and family related issues. Lifestyle choices of Filipino adolescents represented by high school students have significance in developing stress and by coping stress in a way of sharing problems and worries to others as well as concentrating on positive thoughts in times of difficulties. We found that these patterns in which stress and other factors such as development of negative behaviors can be attributed to lifestyle and the decision-making and behavior determines the individual's quality of life.

CONCLUSION

Although the home environment, external environment and mental health were all positive, the stress felt by the adolescents is high. But, female subjects significantly were able to control and manage perceived stress even when exposed to various stressors compared to their male counterparts. That means that female adolescents have healthier lifestyle choices than males in their life. Also perceived stress level of Filipino adolescents has a significant relation to their lifestyle choices as it affects in their health and wellbeing.

Further discussion will focus on how perceived stress and lifestyle choices affect the quality of sleep and the emotional aspect of Filipino adolescents. We recommend educational programs on how to manage stress and suppress negative behaviors as well as health promoting activities improve adolescents' health by empowering them to have a control over their lives linking to daily health-related lifestyle choices are recommended as well as bigger samples in various high schools coming from three main

lands of the country (Luzon, Visayas, and Mindanao) and other additional sociodemographic variables which are related to stress perception.

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Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this manuscript.

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Appendix 1: PSS Data

	Gender	N	Mean	SD	Standard error of mean
PSS1	1	252	2.05	.882	.056
	2	252	2.23	.770	.048
PSS2	1	252	2.11	.866	.055
	2	252	2.21	.778	.049
PSS3	1	252	2.15	1.040	.066
	2	252	2.38	.927	.058
PSS4	1	252	2.10	.918	.058
	2	252	2.25	.820	.052
PSS5	1	252	2.17	.837	.053
	2	252	2.31	.777	.049
PSS6	1	252	2.52	1.047	.066
	2	252	2.51	.908	.057
PSS7	1	252	2.21	.851	.054
	2	252	2.28	.738	.046
PSS8	1	252	2.09	.934	.059
	2	252	2.11	.818	.052
PSS9	1	252	2.12	.993	.063
	2	252	2.23	.838	.053
PSS10	1	252	2.02	.916	.058
	2	252	2.19	.817	.051
PSS11	1	252	2.08	1.061	.067
	2	252	2.21	.917	.058
PSS12	1	252	2.50	1.012	.064
	2	252	2.58	.887	.056
PSS13	1	252	2.39	.969	.061
	2	252	2.41	.830	.052
PSS14	1	252	2.05	.948	.060
	2	252	2.16	.889	.056

Gender: 1=Male, 2=Female; N= number of respondents

Appendix 2: HLPCQ Data

	Gender	N	Mean	SD	Standard error of mean
HLPCQ1	1	252	1.84	.874	.055
	2	252	1.91	.858	.054
HLPCQ2	1	252	2.13	.932	.059
	2	252	2.00	.938	.059
HLPCQ3	1	252	2.92	.862	.054
	2	252	2.78	.918	.058
HLPCQ4	1	252	2.56	.852	.054
	2	252	2.69	.831	.052
HLPCQ5	1	252	1.95	.950	.060
	2	252	1.75	.942	.059
HLPCQ6	1	252	2.35	.836	.053
	2	252	2.52	.785	.049
HLPCQ7	1	252	2.57	.783	.049
	2	252	2.51	.744	.047
HLPCQ8	1	252	2.61	.804	.051
	2	252	2.61	.763	.048
HLPCQ9	1	252	2.71	.784	.049
	2	252	2.63	.781	.049
HLPCQ10	1	252	2.85	.948	.060
	2	252	2.75	.923	.058
HLPCQ11	1	252	2.55	.843	.053
	2	252	2.51	.786	.050
HLPCQ12	1	252	2.01	.908	.057
	2	252	2.10	.857	.054
HLPCQ13	1	252	2.06	.922	.058
	2	252	2.10	.896	.056
HLPCQ14	1	252	1.51	.739	.047
	2	252	1.80	.902	.057
HLPCQ15	1	252	2.16	.875	.055
	2	252	2.58	.859	.054
HLPCQ16	1	252	2.22	.859	.054
	2	252	2.33	.936	.059
HLPCQ17	1	252	1.87	.831	.052
	2	252	2.06	.902	.057
HLPCQ18	1	252	1.85	.822	.052
	2	252	1.98	.901	.057
HLPCQ19	1	252	1.98	.851	.054
	2	252	2.04	.903	.057
HLPCQ20	1	252	2.98	.923	.058
	2	252	3.13	.780	.049
HLPCQ21	1	252	2.38	.892	.056
	2	252	2.65	.821	.052
HLPCQ22	1	252	2.48	.946	.060
	2	252	2.29	.919	.058
HLPCQ23	1	252	2.06	.864	.054
	2	252	1.92	.834	.053
HLPCQ24	1	252	2.67	.855	.054
	2	252	2.63	.775	.049
HLPCQ25	1	252	2.12	.855	.054
	2	252	2.12	.878	.055
HLPCQ26	1	252	1.84	.892	.056
	2	252	1.91	.855	.054

Gender: 1=Male, 2=Female; N= number of respondents