The Occurrence of LBP and the Level of Exposure to Possible LBP Contributors among Teenagers

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Abstract— This study determined the occurrence of low back pain (LBP) among 158 teen students of the University of Northern Philippines and correlated this on their exposure level to the possible LBP contributors. Through a descriptive design, a questionnaire was used, and the data was treated with frequency count, mean and multiple regression. Statistics presented that most of the respondents are 16 y.o., males, are normally postured, and yet experienced LBP once in a while, upon getting up from bed, upon standing after long hours of sitting, while carrying heavy backpacks and after strenuous sports. They are moderately exposed to metabolic contributors of LBP and have a very low disability with LBP experience in the activities of daily living (ADL's). Meanwhile, watching tv, fishing, exposure to lipids and carbohydrates, mother's and father's occupation on ADL's were also positively correlated. This study concludes that most of the teens already experienced LBP but with a slight disability on the ADL's and this correlates on their increased exposure to aforementioned contributors. Educators, health workers, and parents must be informed of this to help prevent LBP continue into adult life.

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Index Terms— Health and chemistry, low back pain (LBP), correlation, University of Northern Philippines, Ilocos Sur, Philippines.

1 Introduction

LOW back pain (LBP) is mostly felt by the elderly and very uncommon to the youth. Once a person experiences this type of pain, numerous side effects come into play like inability to walk or sleep comfortably. Bending over may also be a problem, as well as sitting down and getting up from a chair. To the adults, LBP is common since it's associated with geriatric ailments (Huang,[8]).

However, in the case of teenagers, it's a rare occurrence. Reports from the study of Kovacs Foundation, 50% of the boys and 70% of the girls from 14,400 schoolchildren aged 13 to 15 years old had suffered LBP already (reflexology4backpain,[5]). This data is very alarming which gave the researchers the idea to undertake a study on the occurrence of LBP among teenagers and the metabolic chemical and other contributors of this type of pain. The data gathered from this study will serve as baseline information on the prevalence of LBP among teenagers. It may increase the awareness of parents on the occurrence and effects of LBP of their children. Being aware that LBP may be an indication of a grave physiological disorder, the parents may help prevent the onset of disease in their children. To the teenagers, this study will let them understand that being young is not a guarantee that illness will not befall them. Results of the study will also make them understand the chemical contributors and other factors that contribute to the development of LBP among them. This study will also give background information to medical practitioners as well as the DOH on the medical state of teenagers with respect to LBP. The DOH could use this to come out with strategies in developing an effective preventive measure for LBP in teenagers.

2 Objectives

This study determined the occurrence of LBP among teenagers and their level of exposure to possible LBP contributors. Specifically, this study determined the personal profile of the respondents in terms of the following: a. Age, b. Sex, c. Occupation of parents, d. Time of travel from residence to school, and e. Postural habit. It also determined the occurrence, frequency and intensity of low back pain among the respondents. Furthermore, it determined the level of exposure of the respondents to the metabolic chemical contributors and the lifestyle contributors of low back pain. Finally, it evaluated how the back pain affects the respondents' ability to manage their activities of daily living. Then lastly, it determined the relationship between the disability index of LBP of the respondents and the following: profile, occurrence, frequency and intensity of LBP, and exposure to the contributors of LBP.

3 Framework of the Study

Back pain is associated with chronic low back pain in adults, implying that prevention in adolescence may have a positive impact in adulthood. In other words, prevention of back pain in youth may contribute to the prevention of back pain in adulthood (Jackson, [10]).

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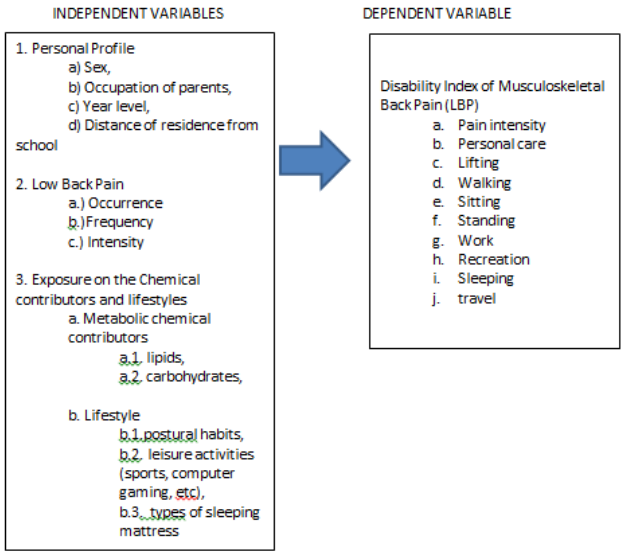

Figure 1. Research Paradigm

Metabolic Chemical Properties in the Body

The metabolic chemical contributing factors to musculoskeletal back pain are lipids or fats, carbohydrates, alcohol, nicotine, and calcium. These substances are obtained from a person's daily dietary intake as well as lifestyle and health practices.

On Lipids. It includes compounds, like fats, cholesterol and etc. A study by Kauppila [10]mentioned that "atherosclerosis-the cholesterol that enters the wall of the artery of the lumbar vessels" contributes to the formation of low-back pain (LBP).

On Carbohydrates. From the article "*Carbohydrates: Good Carbs Guide the Way*" of hsph.harvard.edu - Carbohydrates are found in a wide array of foods. The most available sources are sugars, fibers, and starches. The basic building block of every carbohydrate is a sugar molecule, a simple union of carbon, hydrogen and oxygen. In the bloodstream, it is converted to glucose since the cells are designed to use it as a universal energy source.

An outcome of increased sugar intake which is tracked through the amount of calories, fat content and the amount of carbohydrates in the daily diet is obesity. According to Asher [1] , from the article "Obesity and Back Pain", an increase in body weight leads to an increase of pressure to the spine. He also added that for those who are morbidly obese, the injury to the spine is even greater. The pressure may increase the risk of herniated disk, degenerative disk disease, and back strain (backandneck.about.com, [1]).

Lifestyle Contributors

On Poor Postural Habits. Poor postural habits are brought by prolonged sitting or unsuitable school chairs and tables. Under mechanical cause, faulty posture develops in older children with exaggerated lumbar lordosis (Gellert, [8]).

Gellert [8]studied classroom postures of 41 children; aged 8–12, showed that children who spent more time sitting with the trunk flexed over 45 degrees reported significantly more thoracolumbar pain. He suggested a need to implement movement breaks and alterations of class organization to control prolonged static sitting with poor posture in children.

On Leisure Activities. Flexibility is partly to be blamed for the back pain in teenagers. There is a dramatic loss of flexibility with aging that can be due to failure to maintain an active lifestyle (netplaces.com, [12]). Another risk factor in the development of LBP in adolescents is participation in sports. Fritz *et.al.,*[7], mentioned in their study that both low levels and very high levels of physical activity is being associated with an increased risk of LBP in adolescents.

On Occurrence of Low Back Pain

In a study conducted by Macfarlane [13] on "Epidemiology of Low Back Pain in Children and Adolescents", it was noted that little was known about LBP at young ages and was perceived to be uncommon. He mentioned that a previous history of LBP greatly predicted a future onset. Therefore, to understand LBP in adult, it is essential to examine the disorder at young ages.

Nordin *et.al.,* [15] had mentioned that age, gender, sports activities and family history of LBP associated significantly in non-specific LBP among children. Low back pain among children and teenagers is common and should be recognized.

Breuner [2] highly associated female gender, excessive screen time (more than 2 hours per day), heavy backpacks and a family history of back pain to LBP. The American Academy of Paediatrics recommends that a child's backpack weigh no more than 10% to 20% of a child's weight.

Though LBP is a disturbing problem, especially in younger children, most episodes are not serious and resolve on its own (Nigrovic, [14]). Yet, it was reported that teens suffering LBP repeatedly have more likely of developing chronic LBP in adulthood.

Also an article by Udesky [17] specified factors associated with the onset of back pain in teenagers which are: heavy backpacks, and competitive sports. For adolescents, to avoid acquiring LBP, must select sports that place less stress on the lumbar spine, (Fritz & Clifford, [7]).

Young, Haig and Yamakawa [18] studied on the correlation of back pain to backpack weight. It was suggested that for children with back pain, limit carrying a backpack or reduce its load are the only options.

The findings cited above were all on the occurrence and risk factors on low back pain. Although this study anchored on these aforementioned studies, it dealt not only in the occurrence and risk factors on LBP. What made this study unique is that it also evaluated how the back pain affects the respondents' ability to manage their daily activities.

4 METHODOLOGY

This study employed the descriptive correlational research design since it determined the frequency of the occurrence of low back pain among teenagers. It also described differences of the level of exposure of the teen students to the contributors of LBP and the relationship.

Population and Sample. The population of this study was the UNP students whose ages range from 13-16. Thirty percent (30%) of the total teen population was taken as the sample.

Data Gathering Instrument. The main tool for gathering data was a three –parts checklist questionnaire. The first part was the personal profile of the respondents. The second part was the pain evaluation checklist that was adopted from the Oswestry Disability Index Questionnaire [6].The third focused on the level of exposure of the respondents to the contributors of LBP, and the last part was on the occurrence, frequency and intensity of the respondents' experience on LBP.

The norm of interpretation is a five-point rating scale for the level of exposure to the contributors to the LBP of the respondent

Mean Range	Item Descriptive Rating	Interpretation
4.20 – 5.00	Very much exposed	Very High
3.40 – 4.19	Much exposed	High
2.60 – 3.39	Moderately exposed	Moderate
1.80 – 2.59	Fairly exposed	Low
1.00 – 1.79	Lowly exposed	Very Low

. *For the musculoskeletal back pain (MBP) disability index, t*he researchers adopted the questionnaire from the Oswestry Disability Index Questionnaire [6]. The disability index was calculated by getting the total scores in each of the items that was divided by the number of sections answered and expressed as a percentage disability index.

Score	Percentage	Disability Index	Interpretation of Pain Intensity
46&>	76.67% and above	Complete Disability	Excruciating and Unbearable Pain (EP)
36-45	60.00%-75.00%	Very Severe	Very Severe Pain (VSP)
26-35	43.33%-58.33%	Fairly Severe	Fairly Severe Pain(FSP)
16-25	26.67%-41.67%	Moderately Severe	Moderate Pain(MoP)
6-15	10.00%-25.00%	Mild	Mild Pain (MiP)
1-5	1.67%-8.33%	Slight	Slight Pain (SP)

5 RESULTS AND DISCUSSIONS

The respondents' profile, in terms of age, sex, occupation of parents, time of travel from residence to school and postural habit is presented in table 1.

Table 1 shows that the highest number respondents are 16 years old, males, have mothers who are plain housewives and fathers who work as OFWs and travel 16 minutes or more upon coming to school. Furthermore, the majority of the respondents (119 or 75.3%) have normal posture (75.3%) while 2.5 % of the respondents (4) have scoliosis or family history of scoliosis.

Age	*F*	%
12 years old	2	1.3
14 years old	16	10.1
15 years old	43	27.2
16 years old	49	31.0
17 years old	26	16.5
18 years old	8	5.1
19 years old	14	8.9
Total	158	100.0
Sex	***F***	**%**
Male	86	54.4
Female	72	45.6
Total	158	100.0
Mother's Occupation	***F***	**%**
Merchants	25	15.8
Teaching	18	11.4
Office	20	12.7
Laborer	3	1.9
Farming	8	5.1
Fishing	1	.6
Health Workers	11	7.0
Driver	2	1.3
OFW	19	12.0
Housewife	51	32.3
Total	158	100.0
Father's Occupation	***f***	**%**
No response	1	.6
Merchants	14	8.9
Teaching	5	3.2
Office	17	10.8
Laborer	11	7.0
Farming	22	13.9
Fishing	3	1.9
Health Workers	5	3.2
Driver	24	15.2
OFW	26	16.5
Others	30	19.0
Total	158	100.0
Time of Travel	***f***	**%**
0-5 mins	33	20.9
6-10 mins	46	29.1
11-15 mins	28	17.7
16 mins or more	51	32.3
Total	158	100.0
Postural habit	***f***	**%**
Kyphotic	24	15.2
Lordotic	11	7.0
Scoliotic	4	2.5
Normal	119	75.3
Total	158	100.0

The occurrence, frequency and intensity of low back pain among the respondents is shown in Table 2.

Table 2 shows that most of the respondents experience low back pain when exposed to different situations.

Table 2. Occurrence and Frequency of LBP Experienced by the Respondents

VARIABLE	OCCURRENCE			FREQUENCY		
	Responses	F	%	responses	F	%
A.) upon getting up from bed	Yes	91	57.59	Always	11	12.09
	No	67	42.41	Once in a while	80	87.91
	Total	158	100	Total	91	100
B.)upon standing after long hours of sitting	Yes	126	79.75	Always	17	13.49
	No	32	20.25	Once in a while	109	86.51
	Total	158	100	Total	126	100
C) while carrying heavy backpacks	Yes	124	78.48	Always	32	25.81
	No	34	21.52	Once in a while	92	74.19
	Total	158	100	Total	124	100
D) after strenuous activities/sports	Yes	130	82.28	Always	30	23.08
	No	28	17.72	Once in a while	100	76.92
	Total	158	100	Total	130	100

Table 2 also shows the frequency of LBP experienced by the respondents. The frequency of LBP was taken from the responses of those respondents who had experienced low back pain.

It can be deduced from Table 2 that most of the respondents had experienced low back pain on getting up from bed (91 or 57.59 %). LBP also occurred to them upon standing after long hours of sitting (126 or 79.75%), and while carrying heavy backpacks (124 or 78.48%). They also felt LBP after strenuous activities/sports (130 or 82.28 %). From this number of respondents who claimed to have experienced LBP, the majority of them claimed that they felt LBP once in a while. However, the frequency of those who claimed that they always experience LBP is 11 or 12.9% upon getting up from bed. The rate of occurrence is 17 or 13.49 % upon standing after long hours of sitting, and 32 or 25.81 % while carrying heavy backpacks. Meanwhile, 30 or 23.08% of the occurrence of LBP happened after strenuous activities/sports. Although there is a low percentage of those who claim that they always feel low back pain, this finding is still alarming since teenagers are not supposed to experience low back pain. As Huang [9] claim, unlike adults, kids and teens are much more resilient and flexible and do not suffer the same types of back injuries. In fact, medical studies mentioned it that only few cases were encountered about LBP in children and teens, with even lesser cases in younger ages.

The intensity of LBP experienced by the respondents is presented in Table 3.

Table 3. Intensity of LBP Experience

VARIABLE	INTENSITY OF LBP		
	Responses	F	%
A.) upon getting up from bed	Slight pain	52	57
	Mild pain	22	24
	Moderate pain	16	18
	Very painful	1	1
	Total	91	100
B.)upon standing after long hours of sitting	Slight pain	50	40
	Mild pain	46	37
	Moderate pain	26	21
	Very painful	3	2
	Extremely painful	1	1
	Total	126	100
C) while carrying heavy backpacks	Slight pain	40	32
	Mild pain	32	26
	Moderate pain	44	35
	Very painful	6	5
	Extremely painful	2	2
	Total	124	100
D) after strenuous activities/sports	Slight pain	35	27
	Mild pain	32	25
	Moderate pain	49	38
	Very painful	11	8
	Extremely painful	3	2
	Total	130	100

Most of the respondents who experienced LBP further claimed that the pain that they felt is just slight. Slight pain indicates that these respondents may just be exposed to conditions that have caused it like sleeping on a soft mattress or inactivity. People who are inactive lose flexibility due to the soft tissues and joints shrinking and losing extensibility. When an individual is not active, the muscles are maintained in a shortened position and more likely to stay that way (netplaces.com,[12]). Though LBP is a disturbing problem, especially in younger children, most episodes are not serious and resolve on its own (Nigrovic, [14]).

Table 4. Level of Exposure on Metabolic Chemical Contributors Among Teenagers

FOODS	MEAN	DR
Litson manok	2.98	Moderately exposed
Buttered chicken	2.19	Seldom exposed
Fried chicken	3.27	Moderately exposed
Warek-warek	2.37	Seldom exposed
Pork litson	2.47	Moderately exposed
Bagnet	2.69	Moderately exposed
longganisa	3.13	Moderately exposed
butter	2.05	Seldom exposed
igado	2.65	Moderately exposed
Shrimps	2.60	Moderately exposed
Beef sinanglao	2.54	Moderately exposed
crabs	2.31	Seldom exposed
pinapaitan	2.09	Seldom exposed
Lipids total	2.57	Moderately exposed
Rice (1 serving/meal)	3.31	moderately exposed
Rice (2 servings/meal)	3.15	moderately exposed
Rice (3 servings/meal)	2.50	moderately exposed
Baked macaroni	2.37	seldom exposed
pancit	2.99	moderately exposed
miki	2.70	moderately exposed
Spaghetti	3.01	moderately exposed
noodles	3.11	moderately exposed
Cakes and pastries	3.25	moderately exposed
Soft drinks	3.50	Often
Candies and chocolates	3.16	moderately exposed
Carbohydrates total	3.01	moderately exposed

*Legend: level of exposure
5= very much
4= oftentimes
3= moderately
2= seldom
1= never

The respondents' level of exposure to the different possible contributors of low back pain among teenagers like metabolic chemical contributors and their profile on the life-style contributors is shown in Table 4.

Based on the data entered in Table 4A, the respondents are moderately exposed to metabolic contributors of LBP like lipids ($\bar{x}$ = 2.57) and carbohydrates ($\bar{x}$ = 3.01). This finding is an implication that the low back pain experienced by the respondents may not be contributed by these metabolic substances like lipids and carbohydrates.

Table 4B .
Profile of the Lifestyle Contributors of LBP among Teenagers

VARIABLES	f	%
Basketball		
Not Playing	101	63.9
0-30 mins	19	12.0
31 mins – 1 hr	12	7.6
1:01 hr – 2 hrs	11	7.0
2:01 hrs – onward	15	9.5
Total	158	100.0
Internet surfing		
Not surfing	12	7.6
0-30 mins	18	11.4
31 mins – 1 hr	39	24.7
1:01 hr – 2 hrs	30	19.0
2:01 hrs – onward	59	37.3
Total	158	100.0
Watching TV		
Not Watching	5	3.2
0-30 mins	8	5.1
31 mins – 1 hr	34	21.5
1:01 hr – 2 hrs	33	20.9
2:01 hrs – onward	78	49.4
Total	158	100.0
Playing Soccer		
Not Playing	141	89.2
0-30 mins	7	4.4
31 mins – 1 hr	6	3.8
1:01 hr – 2 hrs	1	.6
2:01 hrs – onward	3	1.9
Total	158	100.0

Table 4B Cont'..
Profile of the Lifestyle Contributors of LBP among Teenagers

VARIABLES	f	%
Biking		
Not Playing	46	29.1
0-30 mins	56	35.4
31 mins – 1 hr	34	21.5
1:01 hr – 2 hrs	14	8.9
2:01 hrs – onward	8	5.1
Total	158	100.0
Fishing		
Not Fishing	136	86.1
0-30 mins	8	5.1
31 mins – 1 hr	8	5.1
1:01 hr – 2 hrs	3	1.9
2:01 hrs – onward	3	1.9
Total	158	100.0
Type of Bed		
Bed w/ no foam	9	5.7
w/ soft foam 1 inch	17	10.8
w/ soft foam 2 inches	34	21.5
w/ soft foam 3inches	69	43.7
w/ firm foam 1 inch	2	1.3
w/ firm foam 2inches	2	1.3
w/ firm foam 3inches	22	13.9
Others	3	1.9
Total	158	100.0

Table 4B presents most of the respondents are not fond of playing basketball (63.9%) and surfing the internet for 2 hours or more (37.3%). They are not so attached to watching television for 2 hours or more (49.4%) and playing soccer (89.2 %). They love biking for 30 minutes (35.4%), and not fond of fishing (86.1%). They sleep on a bed with soft foam over 3 inches thick (43.7%). Only the smallest amount of the respondents' plays basketball for 1 to 2 hours (7.0%), and does not surfs the internet (7.6%). Few of them don't watch the television (3.2%) and plays soccer for 1 to 2 hours (0.6%). Some of them bikes for 2 hours onward (5.1%), and catches fish thru a line (1.9%). Only a little of them sleeps on bed with a soft foam over 1 or 2 inches thick (1.3%). The aforementioned results of the study just portray that teenagers of this present time are already sedentary and preferred to maintain a low profile for physical activity.

Table 5.
Evaluation of Musculoskeletal Back Pain Through Disability Index

VARIABLE	MEAN	DR
Pain intensity	1.85	Low disability
Personal care	1.53	Very low disability
lifting	1.88	Low disability
walking	1.39	Very low disability
sitting	1.46	Very low disability
standing	1.67	Low disability
homemaking	1.53	Very low disability
recreation	1.34	Very low disability
sleeping	1.25	Very low disability
Traveling	1.46	Very low disability
AVE. MEAN	1.53	Very low disability

*Legend: Disability Index of LBP

Mean Range	Item Descriptive Rating	Interpretation
4.20 – 5.00	Very much exposed	Very High Disability
3.40 – 4.19	Much exposed	High Disability
2.60 – 3.39	Moderately exposed	Moderate Disability
1.80 – 2.59	Fairly exposed	Low Disability
1.00 – 1.79	Lowly exposed	Very Low Disability

Table 5 shows the evaluation of low back pain by the respondents through their ability to manage everyday activities that are listed.

Generally, Table 5 shows that respondents' daily activities are least affected by their experience of LBP as evidenced by the very low disability index of 1.53. Although some activities such as tolerance of pain in pain intensity, lifting and standing triggers LBP among the respondents. Lifting and prolonged standing, according to Schmitt [16] , causes LBP since it is worsened by bending and is strained by maintained static positions.

The relationship between the exposure to the contributors of low back pain of the respondents and their ability to manage daily activities is presented in Table 6.

Table 6
The Relationship between the Exposure to the Contributors of Low Back Pain of the Respondents and Their Ability to Manage Daily Activities

VARIABLES	a1		a2		a3		a4		a5		A6		a7		a8		a9		a10		Ave.	
Skeletal deformity	.001		-.137		.111		.010		.022		-.032		**-.193***	$	-.008		-.112		.031		-.052	
basketball	-.089		.062		-.090		-.103		-.061		-.125		-.010		.015		.029		-.024		-.075	
surf	-.025		-.027		.003		-.048		.073		.113		-.095		.109		-.067		-.032		.001	
tv	-.005		.119		.018		**.199***	$	.076		.072		.116		.138		.031		.122		.152	
soccer	.054		.105		-.134		-.105		-.091		-.027		-.148		-.017		-.083		.062		-.061	
bike	.145		.109		-.072		.024		-.069		-.092		.056		.012		-.088		.115		.030	
fishing	.046		.121		-.046		.013		-.013		-.028		-.052		.073		-.019		**.157***	$	.048	
bed	-.070		**-.165***	$	-.096		**-.216****	$	.066		-.040		-.146		-.119		.037		**-.195***	$	**-.169***	$
lipids	.093		**.181***	$	-.065		-.059		.068		.058		.111		.097		.029		.091		.114	
carbohydrates	**.166***	$	.069		.008		-.085		.056		-.044		-.028		**.189***	$	.011		.043		.080	
age	-.102			$	-.051		**-.227****	$	.055		.045		**-.172***	$	-.056		.034		-.061		-.145	
sex	.032		-.089		.155		.141		.099		.093		.111		-.037		-.040		.046		.090	
M occupation	-.014		.030		**.240****	$	**.161***	$	.009		-.044		-.070		.047		-.045		.011		.068	
F occupation	-.026		.051		.072		**.159***	$	-.016		.027		-.007		.150		.052		-.021		.077	
Time of travel	.084		.035		.058		-.057		.137		.048		.008		**.183***	$	.000		.009		.097	

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
=∝ < 0.05
**= ∝> 0.05*
A1= pain intensity; A2 =personal care; A3= lifting; A4= walking; A5=sitting; A6=standing; A7= homemaking; A8= recreation; A9=sleeping; A10= travel

Based on the Table 6, there is a negative significant relationship between skeletal deformity and homemaking (r = -0.193), bed and personal care (r= -.165*), bed and walking (r= -.216**), bed and travelling (r= -.195*), age and personal care (r= -.231**), age and walking (r= -.227**), age and homemaking (r= -.172*). On the other hand, there is a positive significant relationship between watching TV and walking (r=.199*), and also with fishing and travelling (r=.157*). Similarly, lipids and personal care (r= .181*) show positive significant relationship. Likewise, carbohydrates and pain intensity (r=.166*), and carbohydrates and recreation (r= .189*) show positive significant correlation. Also with mother's occupation and lifting (r=.240**), mother's occupation and walking (r= .161*), father's occupation and walking(r=.159*), and father's occupation and time of travel (r= .183*) presents another significant positive correlation.

There is a negative correlation between the possible contributors such as skeletal deformity, bed, and age to activities of daily living (ADL's) such as homemaking, personal care, walking, and traveling. This negative correlation only shows that even in the presence of slight low back pain among the respondents, they still can perform the aforementioned ADL's very well. They can still manage to execute the needed activities effortlessly since their disability index on LBP as shown in Table 5 is on the minimal level.

However, in this study the type of bed is mostly correlated with a negative relationship on many of the ADL's. It has been identified to be the following: bed with no foam at all, bed with soft foam and bed with firm foam. Foams may range from 1- inch thickness, 2-inch thickness, and 3-inch thickness. The bed that most of the respondents lie on is soft foam with 3-inch thickness (Table 4B). According to Breuner [2], discomfort in bed is one of the risk factors associated on the onset of back pain in the teenagers. Discomfort in bed, maybe, is one of the main factors that affect LBP among the respondents in this study.

Regarding age, one large survey by Nigrovic [14] found that 7% of 12-year-olds had experienced at least one episode of low back pain. The cumulative incidence of LBP is increasing to 50% by age 18 years (girls) and 20 years (boys).

There is a positive correlation on the independent variables such as watching TV, fishing, lipids, carbohydrates, mother's occupation, father's occupation with the activities of daily living (ADL's). It simply means that low back pain contributed by the above mentioned independent variables directly affect the respondent's activities of daily living. Prolonged sitting obtained from overexposure on TV watching and fishing can create low back pain among the respondents. According to Nigrovic [14], there is a noted association of low back pain and excessive screen time (more than two hours per day of recreational screen time).

The positive correlation between mother's occupation and lifting simply means that the respondents, whose mothers are housewives, are affected with low back pain and usually complains about it during lifting activities. It has been shown in Table 1, where the highest population for mother's occupation is a housewife. Lifting, from the disability index of LBP which is shown in Table 5, shows the highest mean ($\bar{x}$ = 1.88) of LBP exposure among the activities of daily living.

There is a positive correlation between time of travel and recreation. Since most of the respondents' travel 16 minutes or more from residence to school while carrying their backpack, they can no longer participate well in recreations due to the manifestation of LBP.

6 CONCLUSIONS

Most of the respondents are 16 years old, males, have mothers as plain housewives and fathers who are OFWs and travel 16 minutes or more on coming to school. Furthermore, the majority of the respondents have normal posture.

Majority of respondents had experienced low back pain upon getting up from bed, upon standing after long hours of sitting while carrying heavy backpacks and after strenuous activities of sports. From the respondents who claimed to have experienced LBP, a majority of them claimed that they felt it once in a while.

The respondents are moderately exposed to metabolic contributors of LBP like lipids and carbohydrates.

The respondents' evaluated their experience of LBP as affected by their ADL's as very low disability.

There is a negative significant relationship between skeletal deformity and homemaking, bed and personal care, bed and walking, bed and traveling, age and personal care, age and walking, and age and homemaking. Conversely, there is a positive significant relationship between watching tv and walking, fishing and travelling, and exposure to lipids and personal care. Similarly, the exposure to carbohydrates and pain intensity, and the exposure to carbohydrates and recreation present a positive significant correlation. Likewise, the mother's occupation and lifting, the mother's occupation and walking, father's occupation and walking, and father's occupation and time of travel, show also a positive significant relationship

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