Faculty of Medicine
University of Dhaka

ASSESSMENT OF PHYSICAL HEALTH STATUS AMONG PRIMARY SCHOOL GOING STUDENTS CARRYING HEAVY SCHOOL BAG

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We, the undersigned certify that we have carefully read and recommended to the faculty of Medicine, University of Dhaka, For the acceptance of this dissertation entitled, "**Assessment of physical health status among the primary school going students carrying heavy bag**". Submitted by Rasel Kobir, for the partial fulfillment of the requirements for the degree of Bachelor of Science in physiotherapy (B.Sc. in PT).

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DECLERATION

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent from my supervisor.

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Acronyms

SCMST:	Saic College of Medical Science and Technology
BMRC	: Bangladesh Medical Research Council
CGOP:	Care giver of the participants
MFI:	Monthly family income
KG:	kilogram
PHS:	Physical health status
TNB:	Total number of books
WSB:	Weight of school bag
IRB:	Institutional Review Board
LBP:	Low Back Pain
ECB:	Extra curriculum books
PFS:	Pain feeling surface
QOL:	Quality of Life
SPSS:	Statistical Package of Social Science
BMI:	Body max index
UK:	United Kingdom
WHO:	World Health Organization

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Abstract

Purpose: The purpose of the study was to determine the physical health status among primary school going student carrying heavy school bag,to find out the socio- demographic (age, residential area, marital status, occupation, etc.) information, to survey the percentage of physical and social functioning of the participants, to evaluate the percentage of role physical and role emotional problem , to measure the percentage of vitality, to determine the percentage of pain or discomfort, to identify the percentage of mental health and general health and to mention the health status of the participants.

Methodology: A cross sectional study was conducted with a semi structured questionnaire to collect data from 320 participants, age rang was from 7-14 years. Data was numerically coded and captured in Microsoft Excel 2010, using an SPSS 20 version software program. **Results**: In this research minimum age of the participants was 7 years and maximum age was 14 years. Among the participants, (43.4%) were under 9 years old,(44.4%) were 9-11 years and (12.2%) were more than 11 years old . Among the participants (48.1%) boy and
(51.9%) was girls. Physical health status was detected by a questionnaire both English and Bengali form, Role limitation due to physical health was 8.1%, Energy or fatigue was 58.50%, Emotional well-being was 59.40%, social functioning was 45.00%, Pain was 39.03%, and lastly general health was 51.03%. According to range there physical health was poor and mental health was fair.

Conclusion: The researcher found in this study by exploring it, heavy school bag hampered the physical health of the primary school going students. Awareness should be raised in functional activity. As primary school going students are more affected because of their low weight bearing energy and he are small ages and our culture so should give more emphasis on them to raised awareness.

Key words: Quality of life, Low back pain.

CHAPTER: I INTRODUCTION

1.1 Background

Recently, it is well-noted that a large number of children visit physicians to get treated for their musculoskeletal problems and spinal pain seems to be the most common reasons. Many studies reveal and recommend different school bag weight percentage and carrying methods to avoid bodily stress. School bag loads are reported to cause many problems in children such as body pain, cardio-respiratory changes, postural changes, and balance impairment. The ability to hold and align body segments specifically depends on the ability to fix and restore the center of mass in an optimal position. School bag loads will blunt this ability and sometimes leads to fall and injuries in school children.(Dockrell et al., 2013).

Overall lifetime prevalence of low back pain in children has been reported as high as 65%, and an alarming finding by an Iranian study reported an 86% prevalence of musculoskeletal symptoms among 307 primary school children at the younger ages between 7 and 12 years. Greater understanding of children posture and other underlying factors are needed to guide the decision-making process in child health.(Cho et al., 2013).

Heavy school bags are believed and reported to cause more than musculoskeletal symptoms. Pascoe et al. reported the association of school bag load and educational failure, lack of motivation, lack of learning, and absenteeism.Studies have also shown that more than 50% of the students carry very heavy school loads and 55% of the student carried loads which weigh more than the recommended limit (10–15% of the body weight) to school which may damage the vertebral column and cause musculoskeletal pain. Recent research in primary school children from an urban city in India revealed 60.6% male pupil and 65.7% female children reported musculoskeletal pain,(Aartun et al., 2014).

A cross-sectional descriptive study done in Kampala, Uganda East Africa involving 532 children from six primary schools reported that about 30.8% of the children carried school bags which were more than 10% of their body weight, which was beyond American Public Transportation Association recommendation. About 88.2% of pupils reported having body pain, especially in the neck, shoulders, and upper back. About 35.4% of the children self-reported that carrying the schoolbag was the cause of their musculoskeletal pain. The

prevalence of lower back pain was 37.8%. A Brazilian study done in 2013 showed that the prevalence of musculoskeletal pain was 51% in primary school children, and the most affected areas were legs and spine.(Moore et al., 2015)

It has been shown that the school bag, of approximately more than 15% of the body weight can cause excessive loading on the spine, the upper part of the body (head and cervical spine), and upper limbs that load their weight into thoracic spine. Excessive loading of school bags has detrimental effects of posture. Excess and long-term loading cause's forward head posture, protracted shoulders, and kyphosis. To determine postural changes with school bag, measurement of cranio-horizontal angle, cranio-vertebral angle, and sagittal shoulder posture were taken while loaded in static (standing) and dynamic (walking) postures and it has to be compared when unloaded.(Rai and Agarwal 2012).

Research works to explore a critical school bag load to body ratio that if exceeded affects health is still evolving. The lack of reliable and valid posture measurement instruments which can be applied with confidence in any setting underpins the poor evidence base for the association between posture and pain. Current literature also provides evidence for the etiology of adolescent musculoskeletal pain to be multi-factorial in nature and could be attributed to psychological, social, and environmental factors, which adds to the complexity of determining the risk factors for adolescent musculoskeletal pain.(Moore et al., 2015).

To summarize, the available literature indicated that a large number of school children are carrying heavy school loads and suffer musculoskeletal issues. However, some authors have speculated on the associated impacts on the health and well-being of school children, to our knowledge there is no comprehensive review of the evidence. Efforts have been made to set a safe load limit for students, but universal safe limits remain elusive, due to inconsistent results from scientific articles. The impetus for this review came from lack of consensus regarding standardized data from different groups, evidence-based recommendation of critical backpack load limits for school children, recent increase in visit of school children with musculoskeletal pain to our department of Physiotherapy, University of Gondar Hospital. This systematic review, therefore, was undertaken to, identify, appraise, and collate the research evidence regarding postural changes due to backpack load carriage and critical school bag weight limits for school children's. In order to make recommendations based on the highest level of evidence; this review included only standardized trials.(Dockrell et al., 2013)

1.2 Justification of the study

Although in Bangladesh much study about the child physical assessment have done, study about the physical effect of carrying heavy school bag among primary school going child are very rare . So, it is needed to be investigated. From the present study we will know about the physical health including weight, BMI, effect of carrying heavy school bag. In the primary school going students, a large number of students are affected by low back pain as well as many physical health problem due to heavy school bag. Poor nutrition and poor BMI affects each child differently. In some children, it progresses gradually. So, the physical health problem among primary school going children in rural area is increasing day by day. There is very little information about physical status among the primary school going students in our country. This study will be identifying to determine the physical status. This study will help examine the magnitude of the problem. So, there is a lot of importance to conduct the study. In future, when the result of this study will publish, it will be beneficiary to the children in Bangladesh. As a physiotherapy final year student my concentration centered to evaluate the quality of life and physical health among the participants.

By this study participants also benefited by gaining knowledge about her condition and gain some information about their life style which are responsible or not for their physical functioning, social functioning, general health, and mental health.

There is no alternative to do research as a professional in order to develop the profession. However, for fulfillment the 4th year of B.Sc. in Physiotherapy I have to carry out a research of my interest which accomplish the professional body of interest.

1.3 Research Question

What is the physical health status among the primary school going students those carrying heavy school bag?

1.4 Objectives

1.4.1: General objective

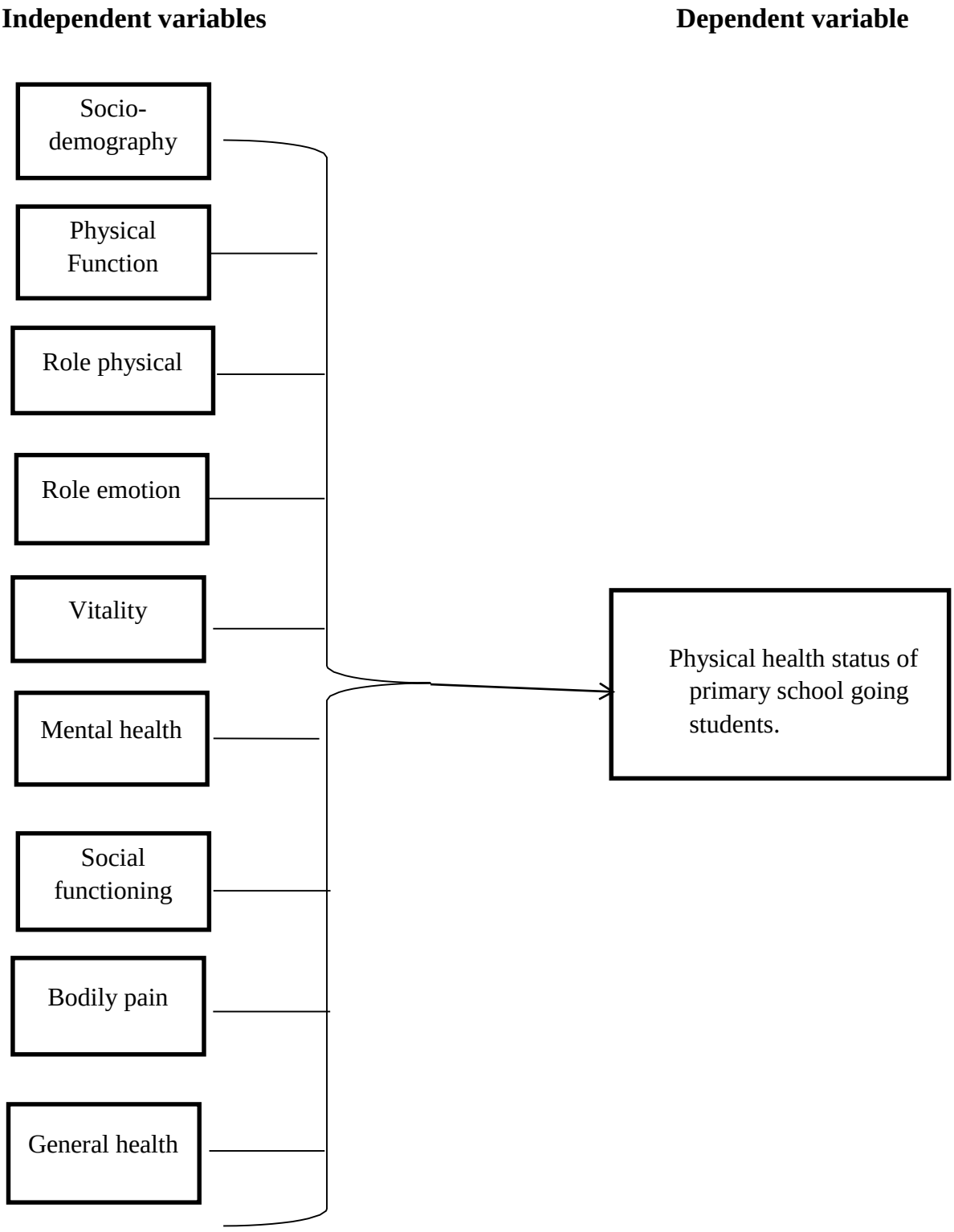
To find out the physical health status among the participant.

1.4.2: Specific objectives

To find out the socio-demographic (age, living area, care giver, family income and etc.) information of the participants

To identify the level of physical functioning, physical role, bodily pain, general health, vitality, social functioning, role emotional, mental health of the participants those carrying heavy school bag.

1.5 Conceptual framework:



1.6 Operational definition

Assessment: Assessment can be defined as the systematic collection, interpretation and use of information about learning.

Physical health: physical health is the condition of person's body, considering everything from the absence of disease to fitness level.

School going: A School is an educational institute designed to provide learning spaces and learning environments for the teaching of students under the direction of teacher. Most countries have systems of formal education, which is commonly compulsory. In this system, students' progress through a series of schools.

CHAPTER: II LITERATURE REVIEW

More than 2.5 million elementary school children carry books bags on their shoulder 5 days in a week for the entire school year. It is known fact that children are the future. Thus the children should be groomed and educated properly. It is estimated that 6.75 million Indian students become sick from sitting and carrying heavy backpacks – children sit up to 10 hours per day. This is the reason why ergonomic standards for the school as place of work and school backpack must be emphatically demanded. Recent worldwide attention has focused on the role of backpacks in the development of children non-specific low back pain. Research have explored whether there is critical backpack weight to body ratio that if exceeded affects health (Moore et al., 2015).

Studies indicate the incidents of backpacks use by school children in the developed countries is at least 90%.The average loads vary greatly between studies the majority of reports indicate that the loads carried by students greater than the recommended limits. The average daily loads of students over a week ranged from 22% body weight to 27.5% body weight with one student who carried 46.2%.In this group 38.8% carried more than 30% of their body weight (Cho et al., 2012).

Voll and Klimt 1977 found that school bags for the 1st graders was one ninth of the body weight, for the 2nd graders it was one eighth, for the 3rd and 4th graders between one eighth and one seventh. More than 50% of the children considered their schoolbags to be very heavy or quite heavy. Backpacks are a convenient way to transport items around, making them popular for military, hiking, and school purposes. Most of the research about backpack loads and their effects on the body have focused on adults, specifically on hiking and military utilization. However, it is critical to understand the effects of increased backpack weight on children on their developing bodies. Backpacks can cause strain if they are overly heavy or worn improperly. Many students are carrying backpacks that are so heavy they are causing back and arm pain. The BBC Health News reported the following “Rucksacks loaded with school books have been linked to higher levels of back pain in a study of Spanish school children. The findings, reported in Archives of Disease in Childhood, said many pupils had "excessively loaded" backpacks. This was linked to higher levels of back pain in the 1,403 school children taking part in the study. The research took place at Hospital Costa in Burela

and University Hospital Son Dureta in Palma. The report's authors said school children should not carry anything which weighs more than 10% of their body weight." The British Columbia Chiropractic Association launched a campaign called "Pack It Right Pack It Light" in year 2009 to educate parents on the hazards of heavy schoolbags (Aartun et al., 2014).

They also mentioned "Just like kids, backpacks come in all types of sizes and fashions, but don't be fooled by the biggest and cheapest pack," said Dr. Don Nixdorf, Executive Director of the BC Chiropractic Association. "Function, form, and comfort take precedence over fashion. The schoolbag is a common cause of backache in school going children. A heavy bag may cause a child to compensate by leaning his body forward and this can strain muscles in his neck, shoulders and back. The child may also find it difficult to put the bag on and take it off, or he falls frequently in school while carrying his schoolbag. .(Rai and Agarwal 2013).

A contributing factor may also lie in the construction of the backpack itself. In military and hiking backpacks there are often internal and/or external frames of support which help to distribute and support the load, whereas school backpacks usually lack this mechanism (Smith et al., 2006).

Children's' school bags are also usually chosen based on aesthetics rather than its ergonomics and are often very simply made of thin fabric straps that provide no additional support. Too much load on the body changes static and dynamic posture as the body tries to overcome the posterior shift in the center of mass. The shift also causes stride length and stride rate to decrease as a means of maintaining stability and accounting for increased energy expenditure (Hong and Cheung 2003). Over time, this change in posture due to increased load may have detrimental consequences on the health of children's' spines which may negatively affect them throughout their lives (Cavallo et al., 2002).

To study the physical stress of school children carrying heavy back packs. It is high time that in India we have to gather information regarding the weight carried by the school. Children from various part of the country both urban and rural school levels. And identify the problem regarding the backpack carried by the school children. This will help the school children, parents and public to realize the real depth of the problem and necessity to make rectification in this issue. So, the need of the study was felt on this issue and observational study was conducted. Descriptive cum experimental and simple random sampling method use for selecting respondents. A total of 100 children from ICSC, CBSC, and UP board school, aged

between 10 to 13 years from the class V to VIII from Lucknow city. The data was collected from their homes. Informed consent was obtained from the children and their parents. In this session the children were given a self-made interview schedule. The interview schedule consist personal details like name, age, class, board, distance of school, mode of transportation, physical characteristics like height, weight and bag weight. The subject weight was measured with a weighing scale. Standard height was measured with measuring tape secured to the wall. The school bag was also weighed.

Low back pain is a remarkable regular issue that a great many people encounter some point in their life. It is a typical condition that influences an expected 70% to 80% of grown-ups at a few focuses amid their lifetimes (Tavafian et al., 2005).

The announced Low back pain is a to a great degree normal issue that the vast majority involvement with some lifetime pervasiveness ranges from 54% to over 80%, and the point commonness rate is around 20% in the overall public, making it the most widely recognized musculoskeletal indication.Since both populace maturing and financial development have happened at a substantially speedier pace in Asian nations, for example, South Korea, LBP is relied upon to end up plainly a noteworthy general medical issue around there. Some pervasiveness information have as of late been accounted for country Asian people group, for example, those in Bangladesh, China, India, The Philippines, Indonesia, and Pakistan, with announced commonness running from 4% to 35 % (Cho et al., 2012).

CHAPTER: III METHODOLOGY

3.1 Study design

The purpose of this study was to find out the causes, limitation, surface and abundance of pain and movement problem to fulfill the aims and objectives of this research.

3.2 Study area

To complete this research the researcher had selected four primary school at the Monirampur upozilla in Jashore district. These school are...

Rajbaria government primary school.

Palashi- Rajbaria government primary school.

Itta government primary school.

United pre cadet school.

3.3 Study population

The study population was primary school going children's .Among the primary school going children, those carrying heavy school bag were selected to this study. All of the participants of this study living in rural area.

3.4 Sampling procedure

Purposive sampling is a type of non-probability sampling in which the researcher consciously selects specific elements or subjects for inclusion in a study in order to ensure that the elements were certain characteristics relevant to the study. It was selected some criteria and according to those criteria participants were selected.

3.5 Inclusion criteria of the study

Only class iii, IV and class V students are selected

Voluntary participation.

First conducting patients.

Age between 7-14 years old.

3.6 Exclusion criteria of the study

Students with little school bag

Student who were not interested.

3.7 Sample size

Sample size is calculated by taking prevalence rate of 80% with added 10% non-responded sample.

The equation of sample size calculation are given below-

$$n= z^2pq/d^2$$

Here,

n= sample size

p = 80% or 0.80 (kamrujjaman et al., 2017)

z = 1.96

q= (1-p) or 0.20

d=0.05

The actual sample size for this study was calculated as 422, but as the study performed as a part of academic research project and there were some limitations. So that 320 student with heavy school bag were taken as the sample for this study.

3.8 Data collection tools

The researcher established aims and objectives of this research using measurement tools, consent paper, socio-demographic informative questionnaire and specific questionnaire for collection of data.

3.9 Measurement tools

A socio-demographical informative questionnaire will develop by researcher to collect data. A standardized questionnaire of 27 items and 6 domains. Height calculating tape and weight measuring scale.

3.10 Data collection procedure

Data was collected through face to face interview with the participants using questionnaire. Also receiving some information from the guardians.

3.11 Data Analysis

Data was analyzed by Microsoft office Excel 2010 using a SPSS 20 version software program. Data was represented by descriptive statistics and inferential statistics. Descriptive statistics had fulfilled the research project with Bar chart, Pie chart and Percentage document. In inferential statistics Chi Square test used to show association between variables.

3.12 Chi Square test

Chi square x^2 test is a nonparametric test of statistical significance for bivariate tabular analysis with a contingency table. Chi square helps us analyze data that come in the form of counts. This test can be applied to nominal or categorical data. The most common application for chi square is to determine whether or not a significant difference exists between the observed counts of cases falling into each category and the expected counts based on the null hypothesis. It is often used to compare two proportions.

3.13 Ethical Consideration

A research proposal was submitted to local ethical Institutional Review Board (IRB) of Saic College of medical science and technology. At first was applying for official permission for the study from the head of the Physiotherapy Department of Saic. Then the head of the Physiotherapy Department of Saic permitted to collect data for the study. World Health Organization (WHO) and Bangladesh Medical Research Council (BMRC) guideline were followed. .

The ethical consideration was making sure by an informed consent letter to the participant. Consent was obtained by providing each participant a clear description of the study purpose, the procedure involves in the study and also informing them that if they wish they can withdraw themselves any time from the study. Participants were explained about her role in the study and it was explained that there is no direct benefit from the study but in future, cases like these may be benefited from it. Participants were also advised that they are free to decline answering any questions during interview. The necessary information had been kept secure place to also ensure confidentiality. They were also assured that it would not cause any harm. Then they signed the consent form.

3.14 Limitation of the study

As a student, the study conducted by our fund / finance so, there might had some limitation of finance aspect within this study. There were less time to carried this study and thus calculated sample couldn't take. This study does not represent whole population within country. This result is a part of our academic study and we are not expert on statistical analysis. So, there might had poor analytic effect.

Chapter IV Result

4.1: Socio-demographic Information.

4.1.1: Age of the participants.

Mean Age= 9.84 years.

Ages are grouped into three categories that found in this study .they are less than 9 years 43.44 %(n=139), 9 to 11 years 44.38 %(n=142) and more than 11 years 12.19 %(n=39).

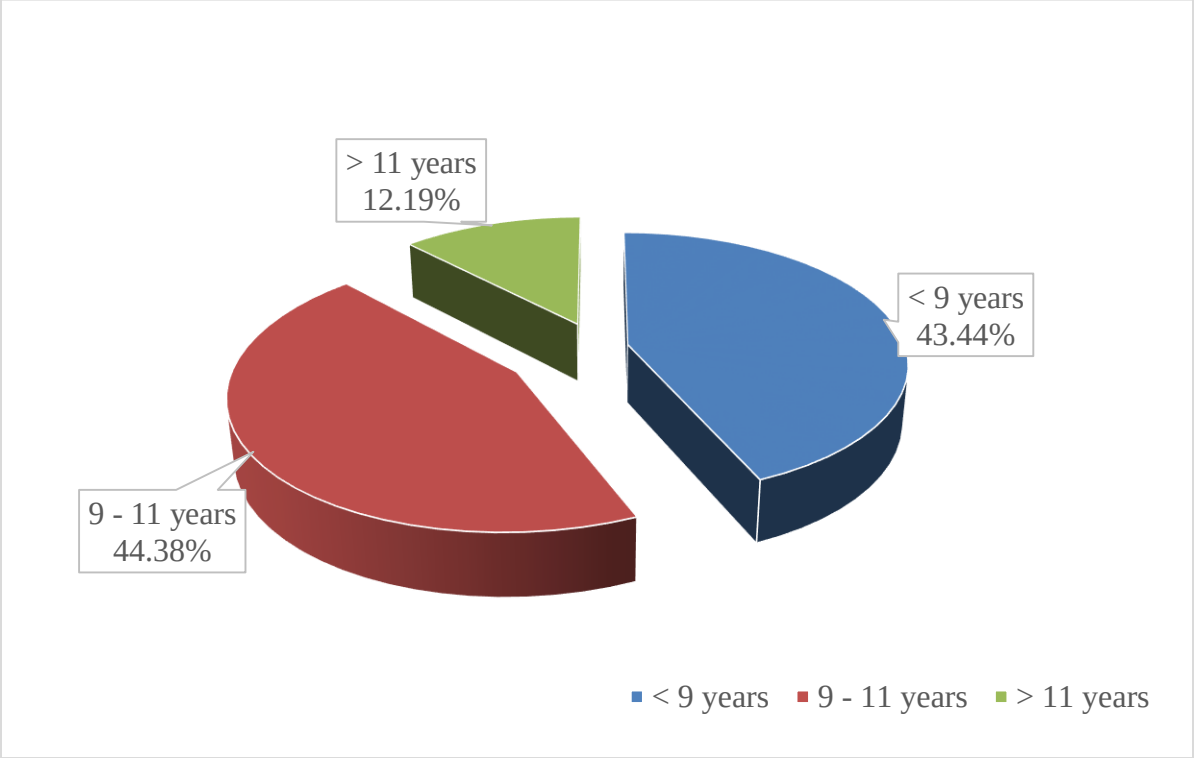


Figure: 01 percentages of age the participants.

4.1.2: Sex of the participants.

Among 320 participants the number of boys are 154 and their percentages is 48.1%. On the other hand, girls are 166 and 51.9%.

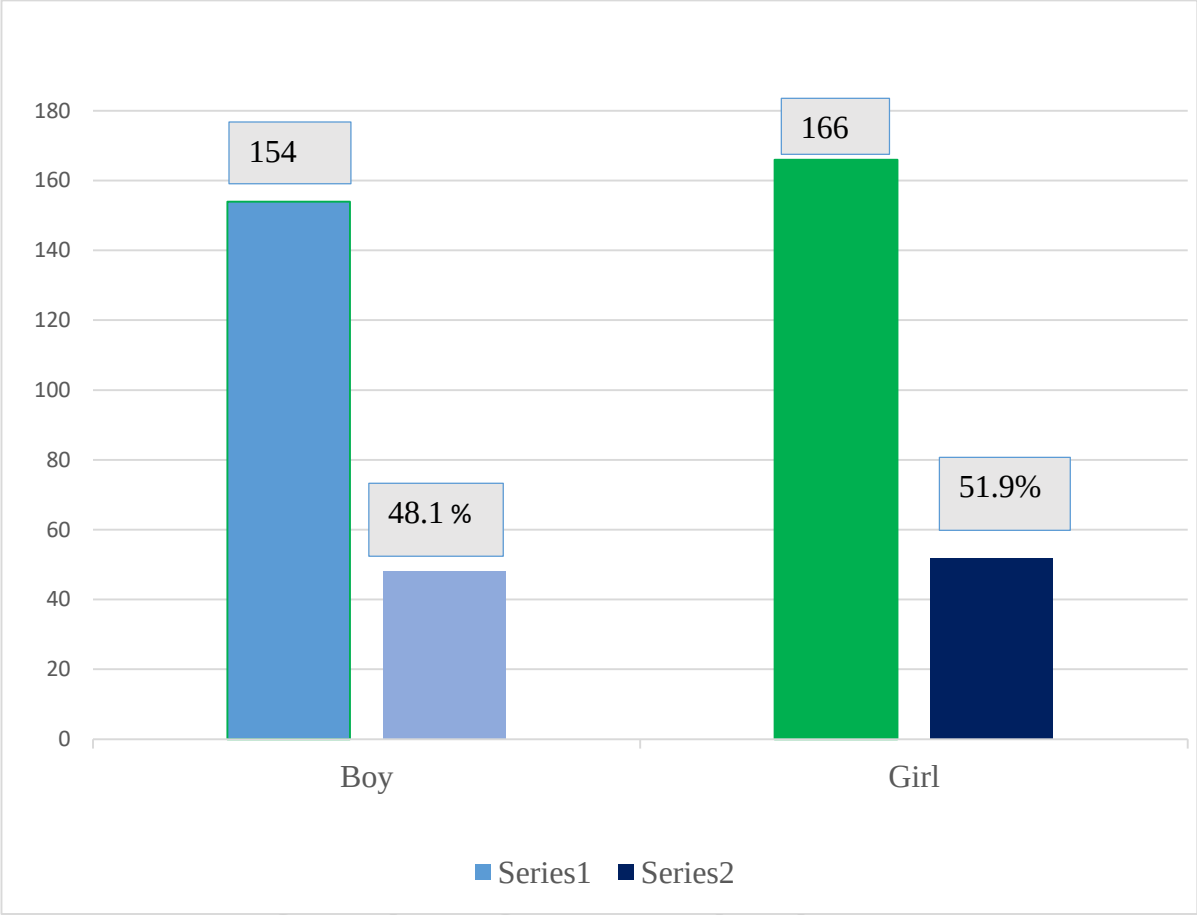


Figure: 02 Percentage of sex of the participants

4.1.3: Education level of the participants.

In this study, 40.94% participants are in class iii (n=131). Class iv (n=110) 34.38% and 24.69% participants are in class v (n=79).

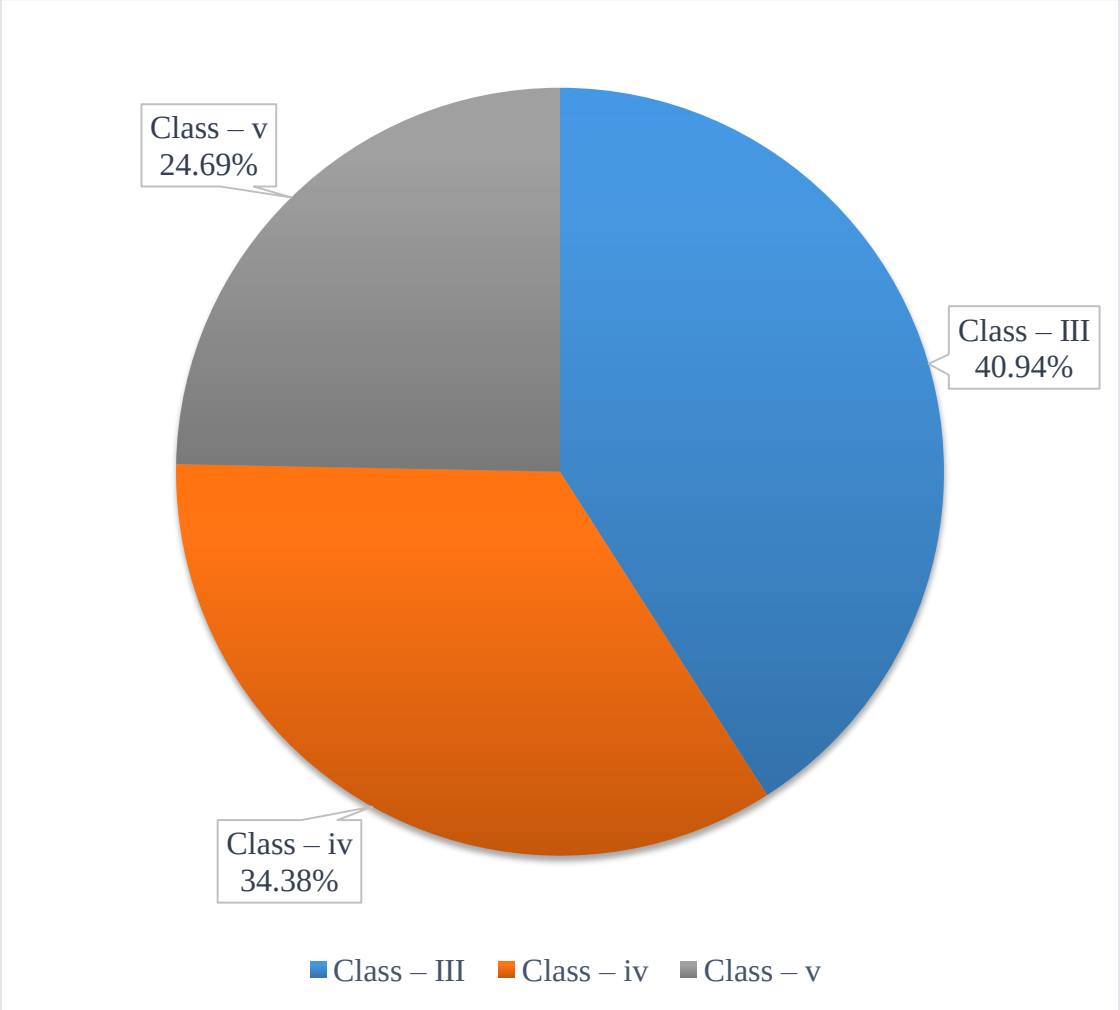


Figure: 03 percentages of class of the participants

4.1.4: Family type of the participants.

In this study, 75% participants are from nuclear family (n=240).Living in extended family 23.13 %(n=74) and living with only grandparents are 1.88 %(n=6).

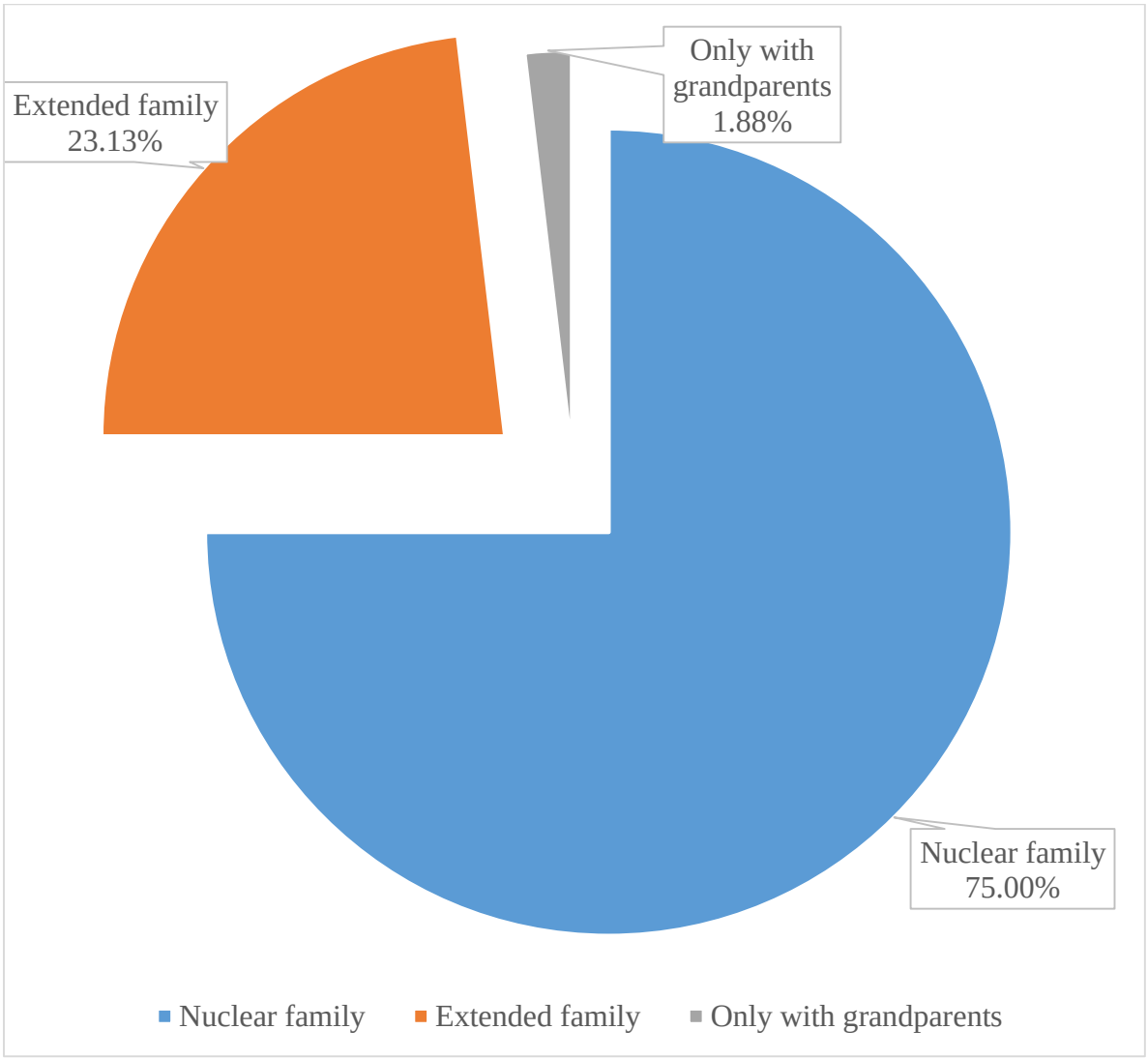


Figure: 04 percentages of family type of the participants

4.1.5: Family member of the participants.

The number of family member grouped into three categories such as less than 5 persons 71 % (n=226) and 5 to 8 persons 23% (n=75) and more than 8 persons 6%(n=19.

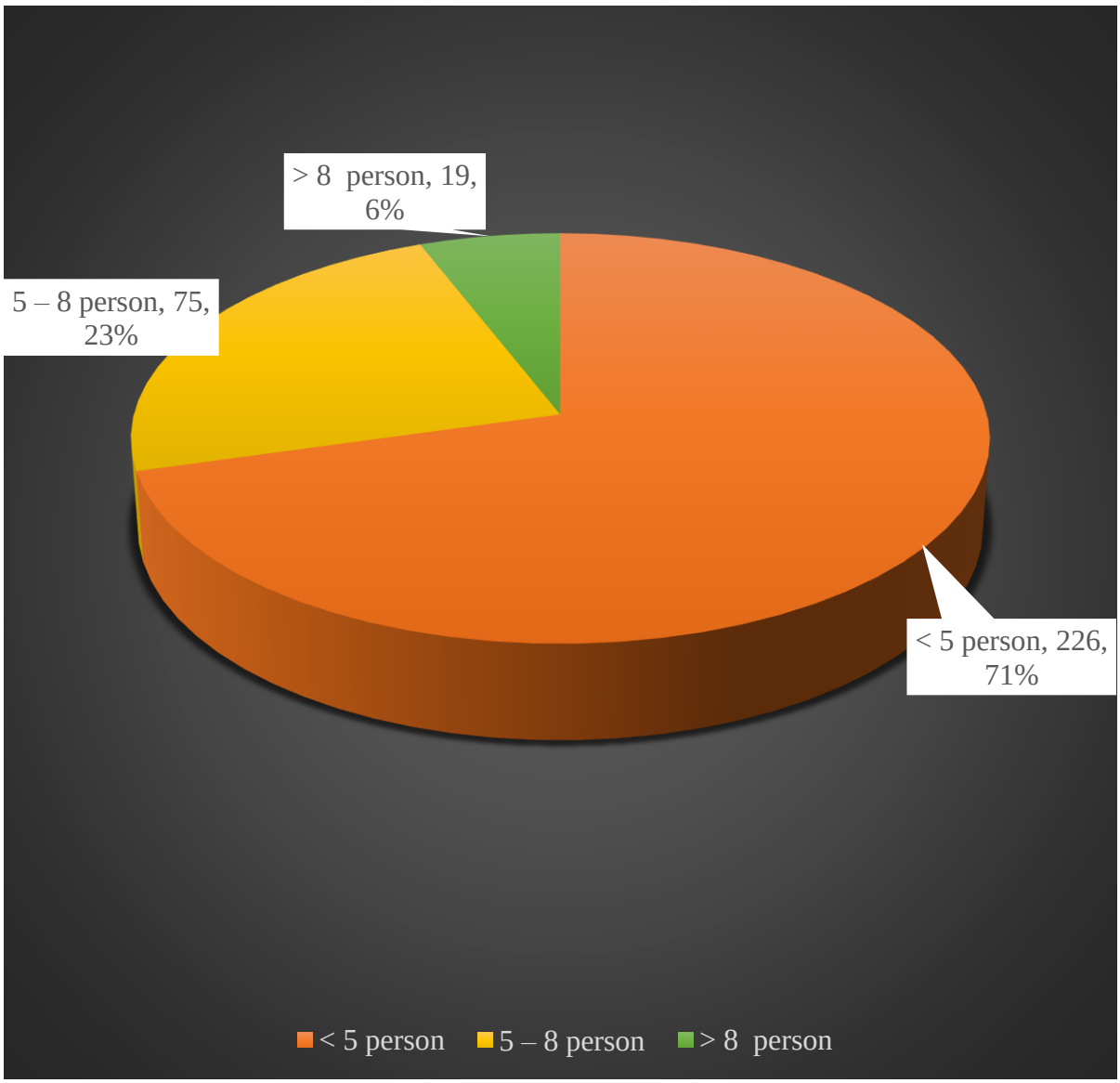


Figure: 05 percentages of family member of the participants

4.1.6: Family income.

Less than 15000 taka 88 %(n=281), 15000 to 25000 9 %(n=28) and more than 25000 taka 3 %(n=11).

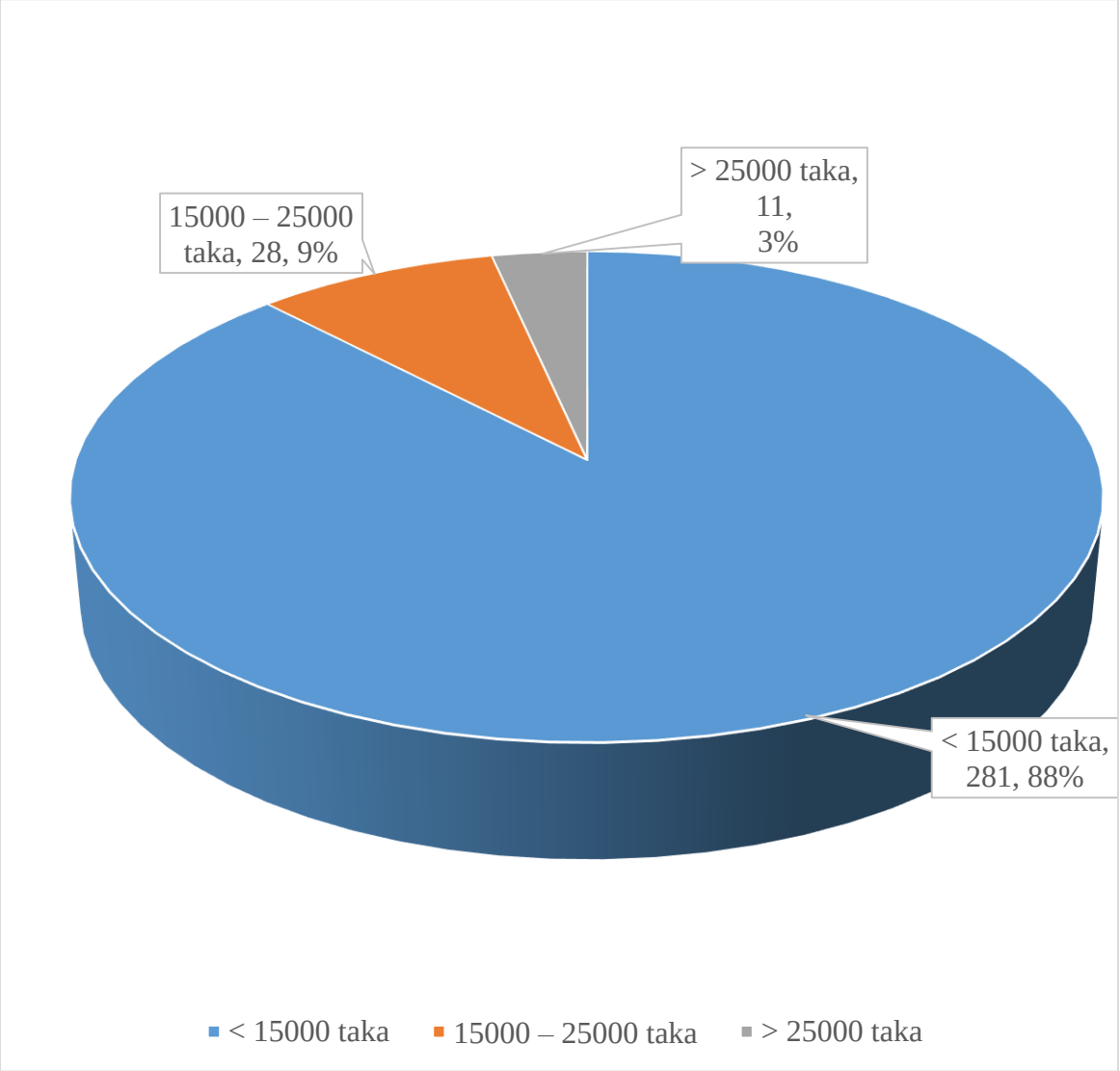


Figure: 06 percentages of family income of the participants

4.2: Care-giver related Information.

4.2.1: Care giver of the participants.

The participants are cared by father 18.13%, by mother 77.19%, by elder brother 3.135, by elder sister and uncle are both .31% and by others only 0.94%

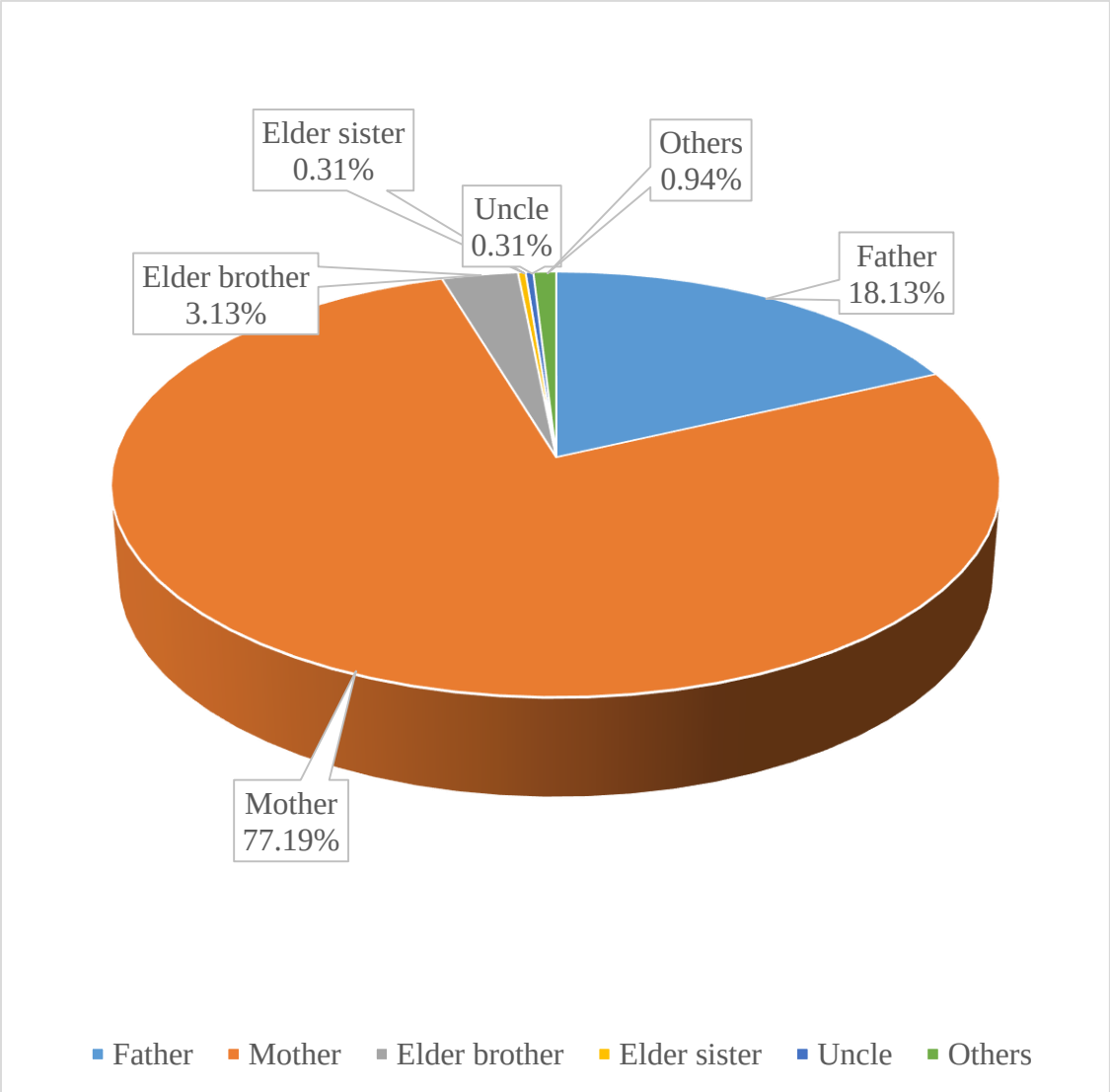


Figure: 08 percentages of care giver

4.2.2: Education level of the care giver.

In this study, the education level of the care giver are PSC=39.38% , JSC=21.56% , SSC=25% , HSC=9.38% , Graduation=3.13% and above graduation =1.56% .

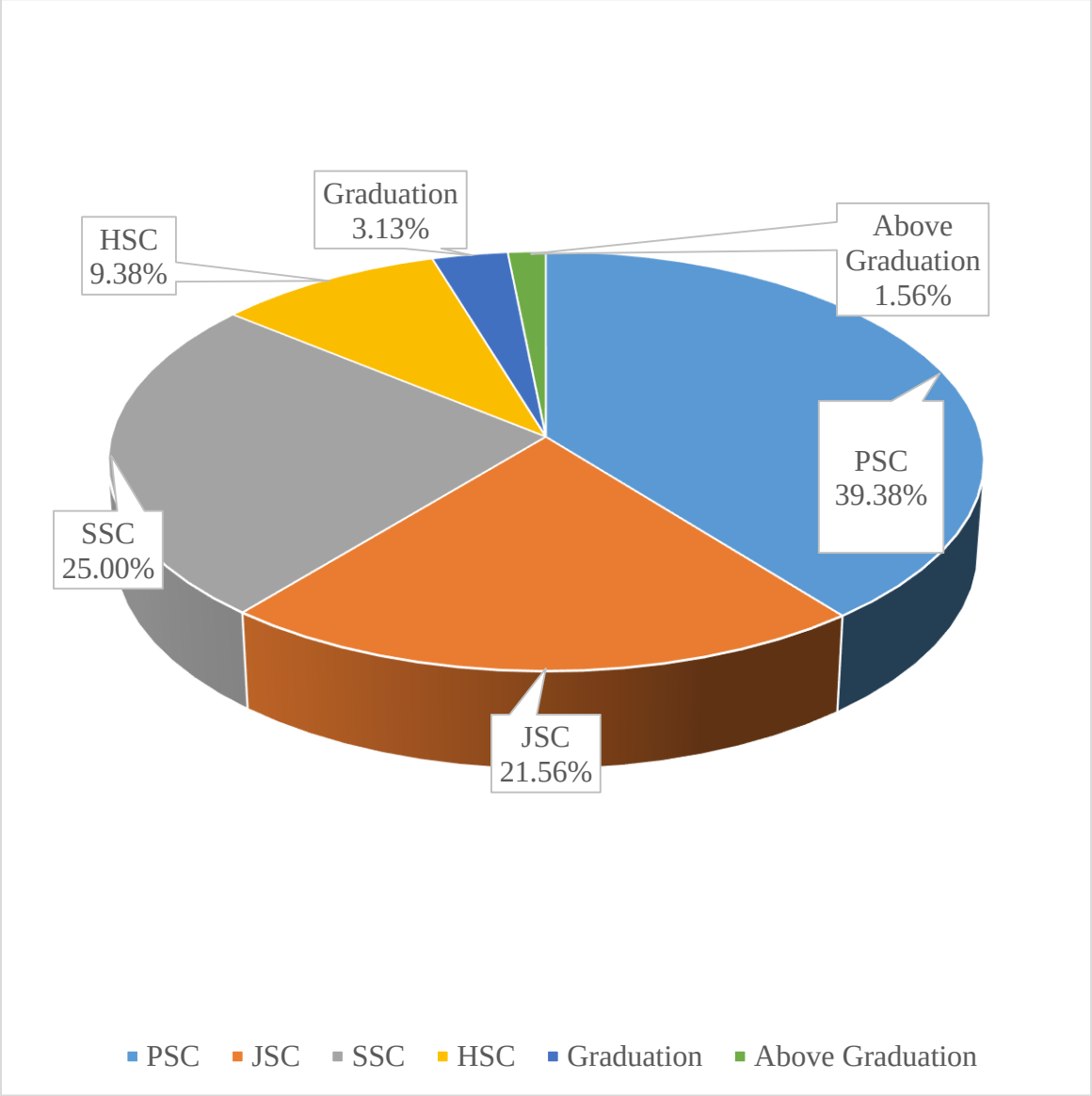


Figure: 09 percentages of care giver

4.2.3: Occupation of the caregiver.

Table: 1 percentage of the occupation of the participants

Occupation	Frequency(n)	Percentage (%)
Employer	13	4.1%
Day labor	17	5.3%
Business	32	10.0%
House wife	221	69.1%
Farmer	26	8.1%
Others	11	3.4%

4.3: General health related Information.

4.3.1: BMI of the participants.

BMI are grouped into three categories such as 39.69% are less than 16(severely underweight), 17.50% are 16 to 18(underweight) and 42.81% are more than 18(normal).

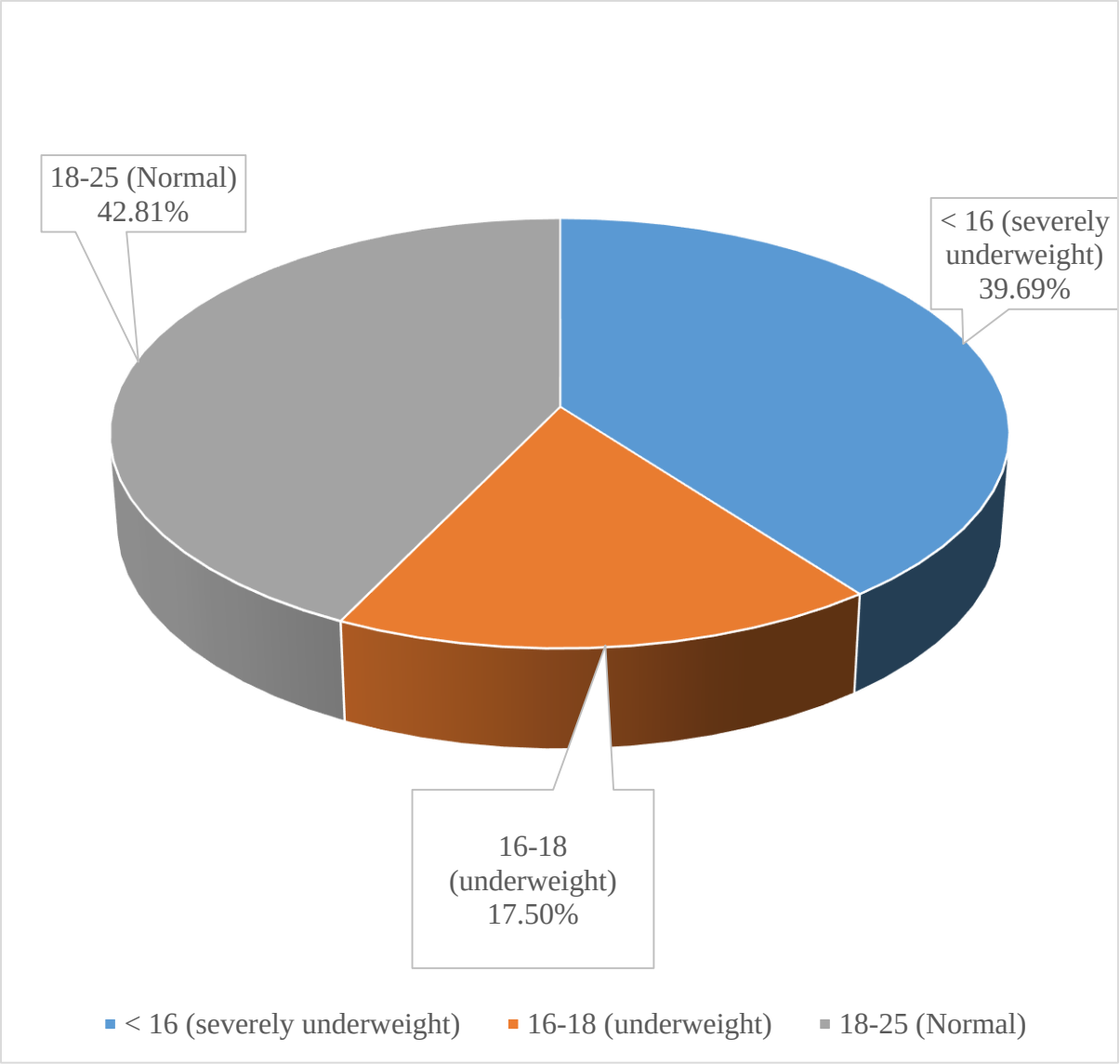


Figure: 11 percentages of BMI

4.3.2: Duration of playing.

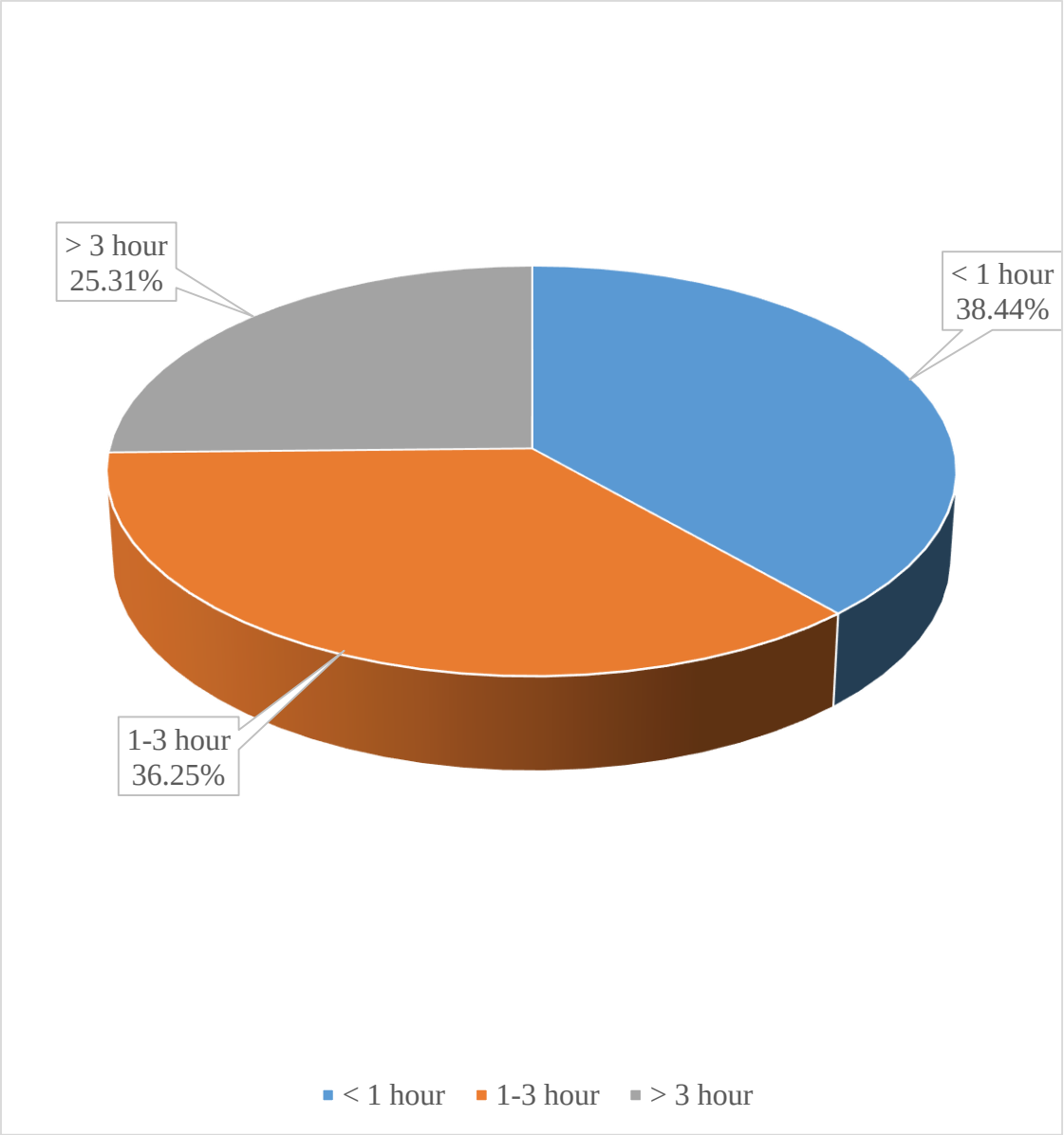


Figure: 13 percentages of regularly playing

4.3.3: Adequate sleeping.

Table: 2 percentage of adequate sleeping of the participants.

In this study 95.3% (n=305) participants are sleeping adequately and 4.7 %(n=15) participants are didn't sleep adequately.

Yes	305	95.3%
No	15	4.7%

4.3.4: Duration of sleeping

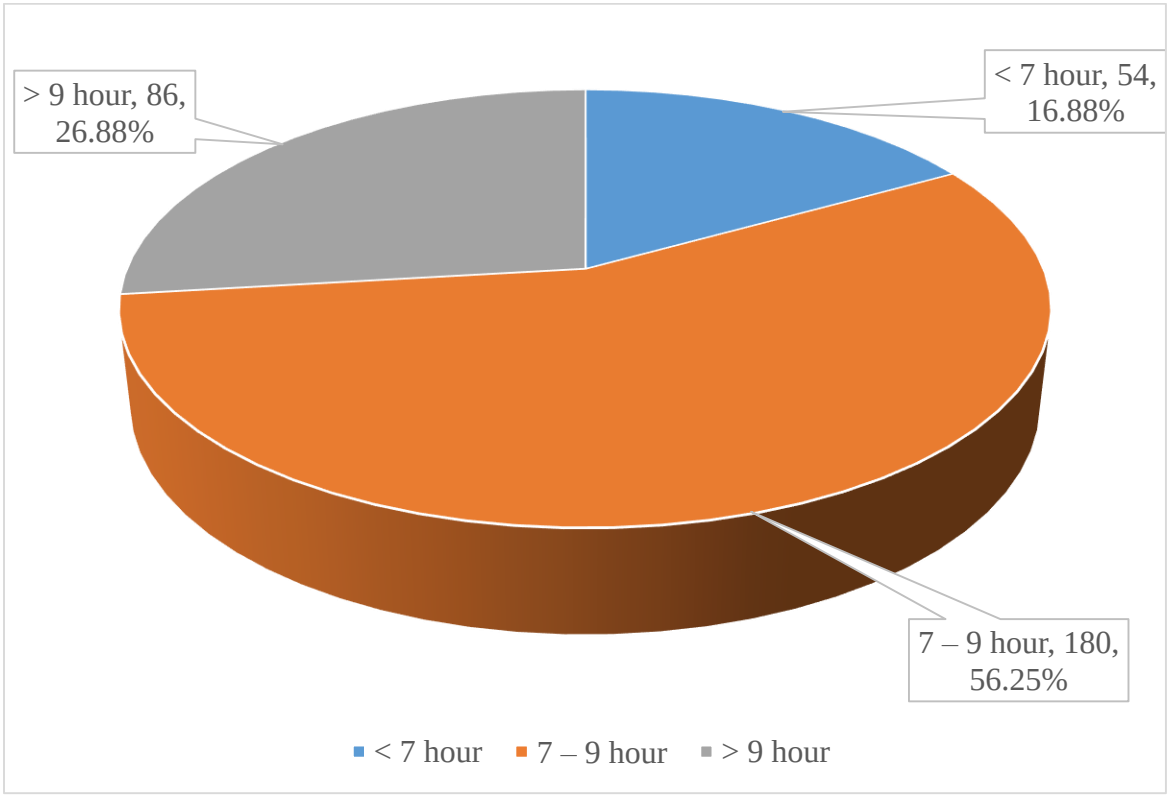


Figure: 15 percentages of sleeping by participants

4.3.5: Regular study duration.

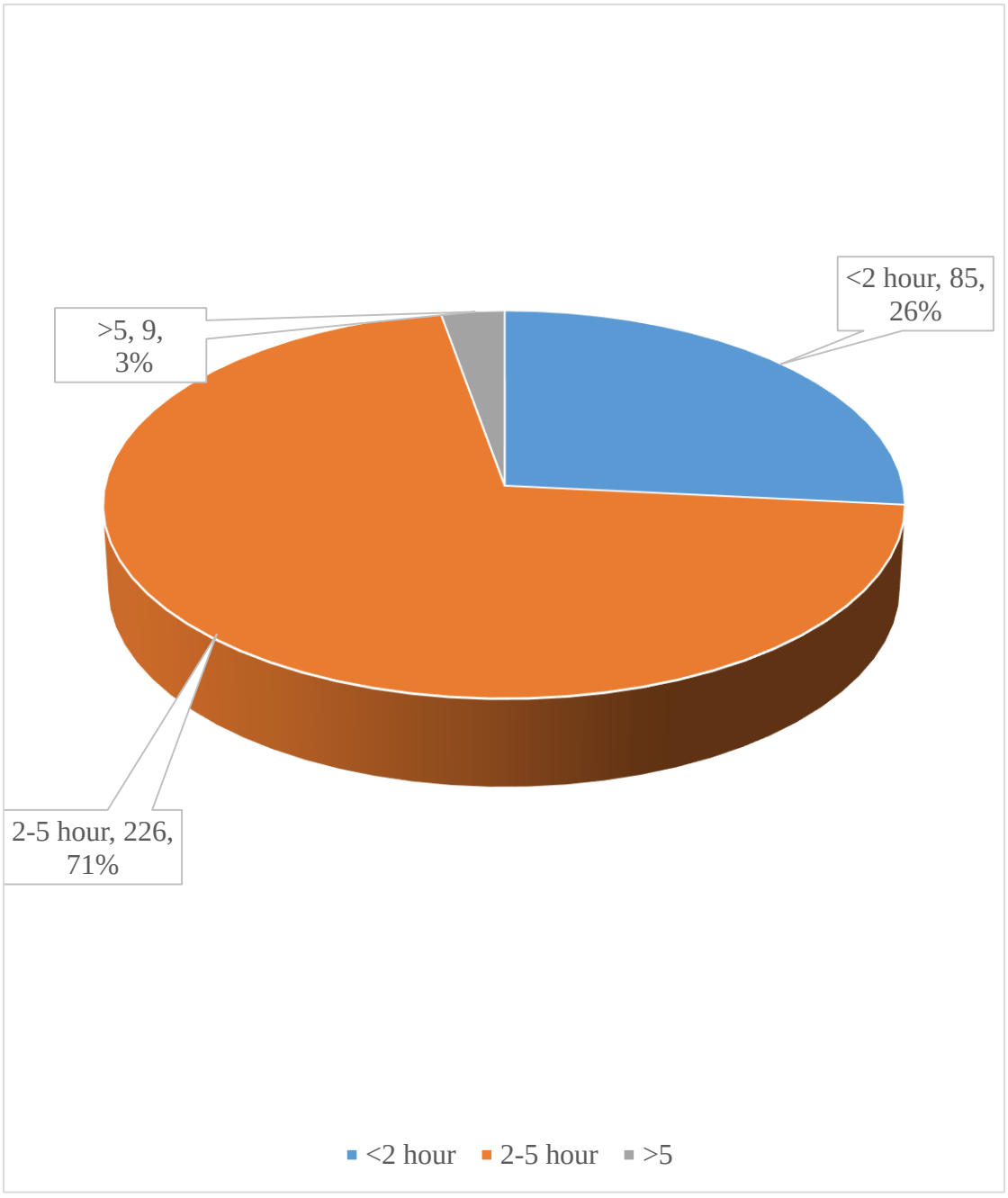


Figure: percentages of regular study duration by participants

4.4: School bag related Information.

4.4.1: Weight of school bag.

The weight of school bag are grouped into three categories such as less than 2 kg 29.69 %(n=95). 2 to 4 kg 65.31 %(n=209) and more than 4 kg 5 %(n=16).

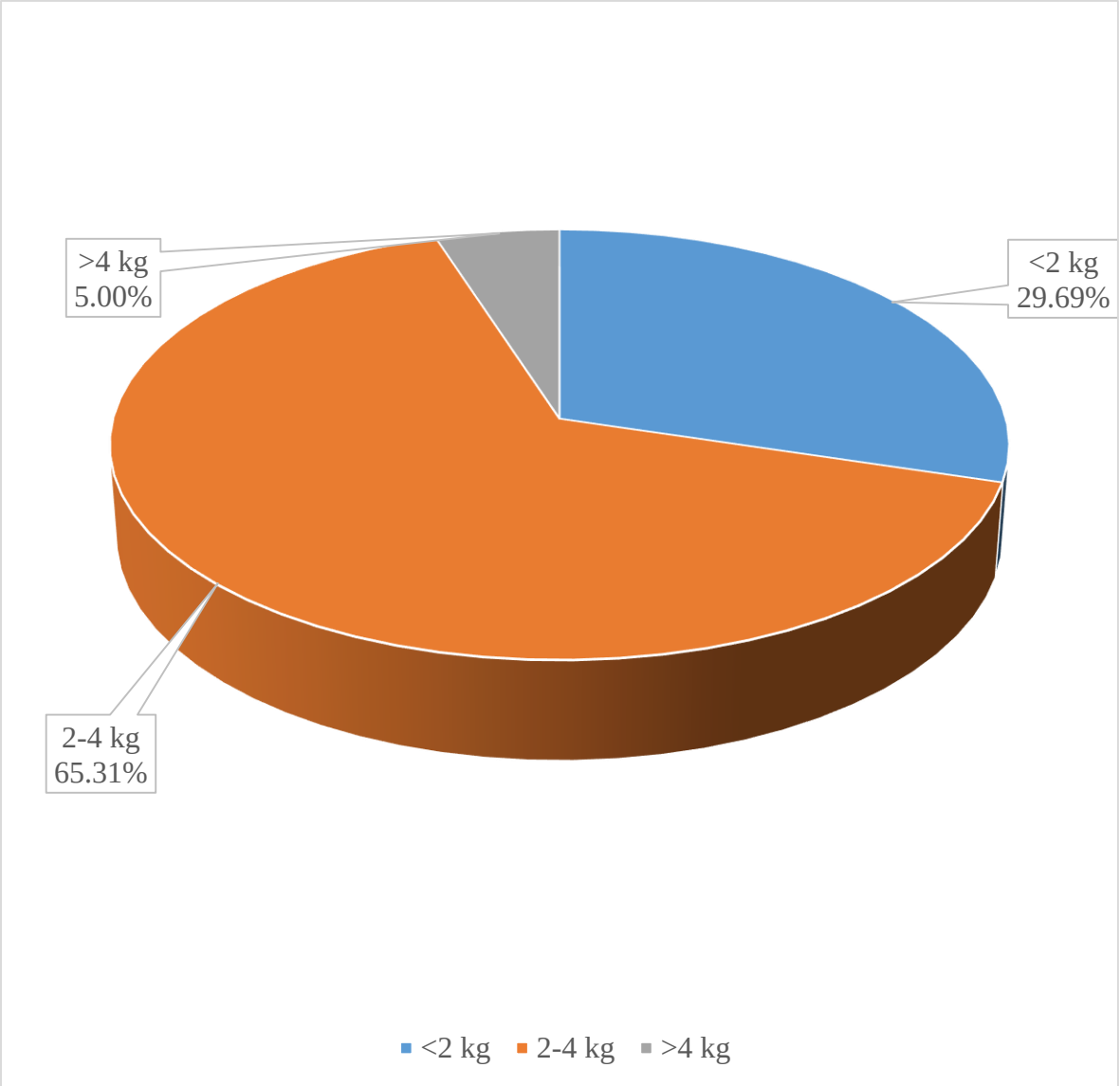


Figure: 17 percentages of weight of school bag

4.4.2: Number of extra-curriculum books

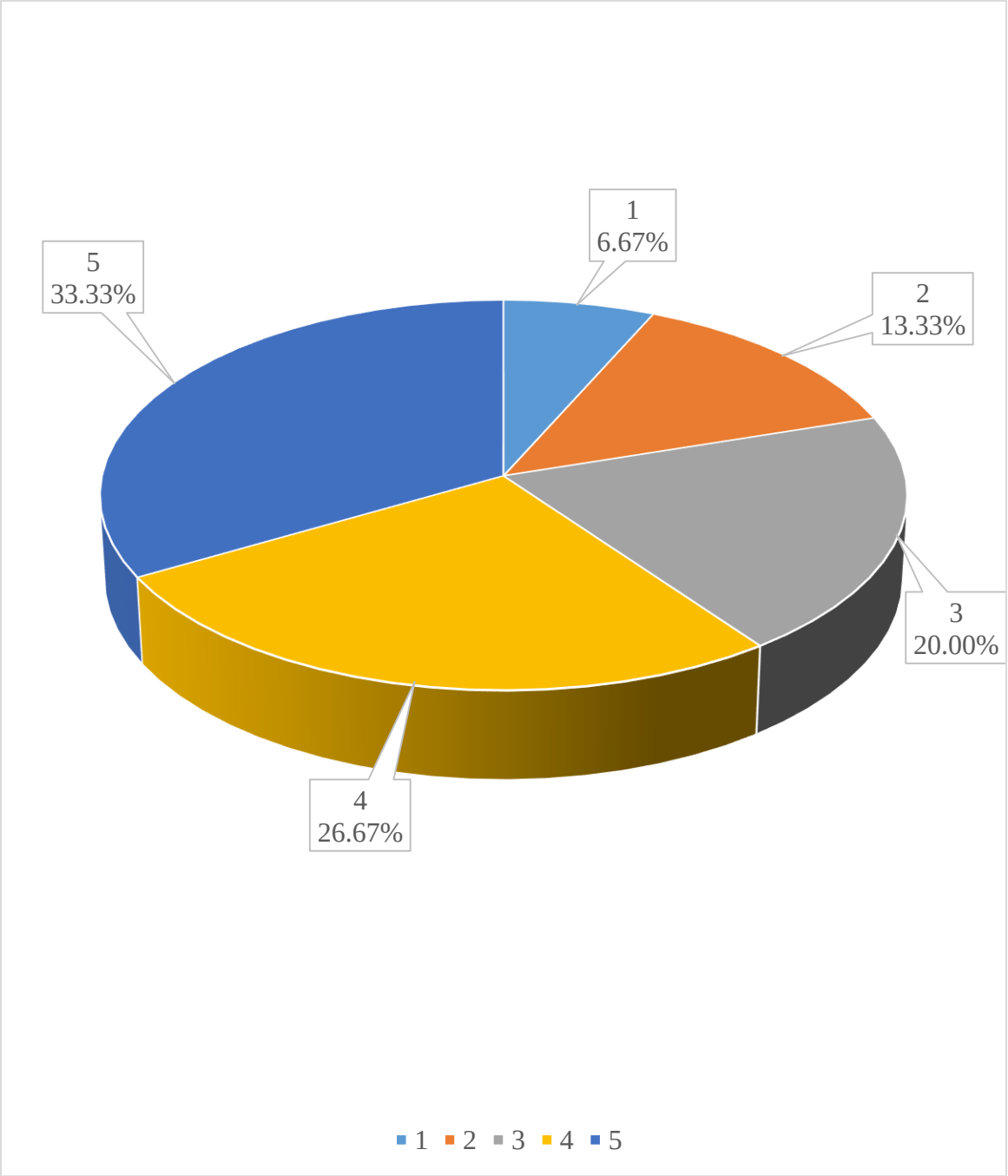


Figure: 20 percentages of extra-curriculum books of the participants

4.4.3: Frightened about which subject.

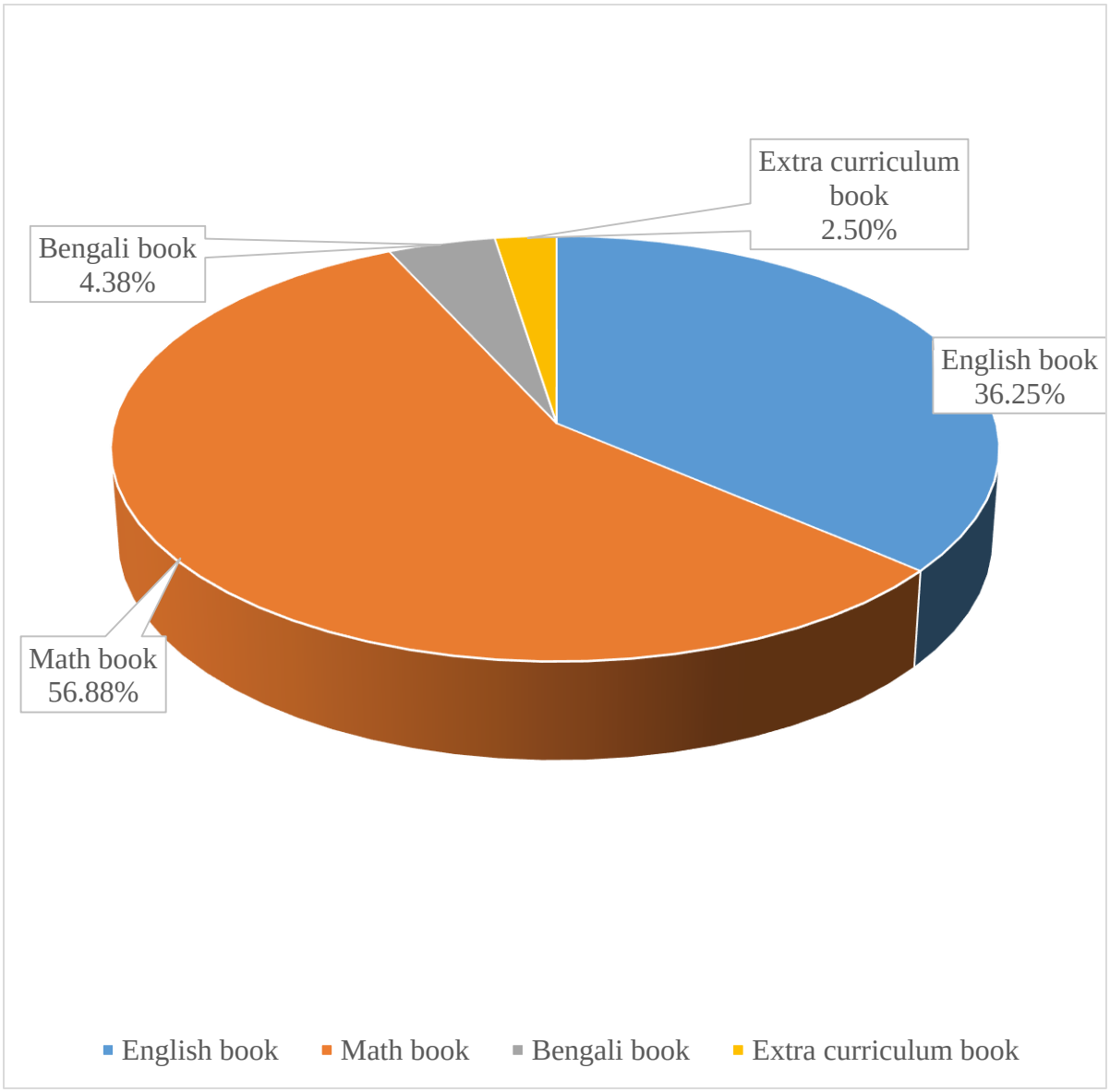


Figure: 21 percentages of frightened subject of the participants

4.5: Pain related Information.

4.5.1: Feeling of pain due to school bag.

In this study 44.1% (n=141) participants are feeling pain and 55.9 %(n=179) participants are not feeling pain.

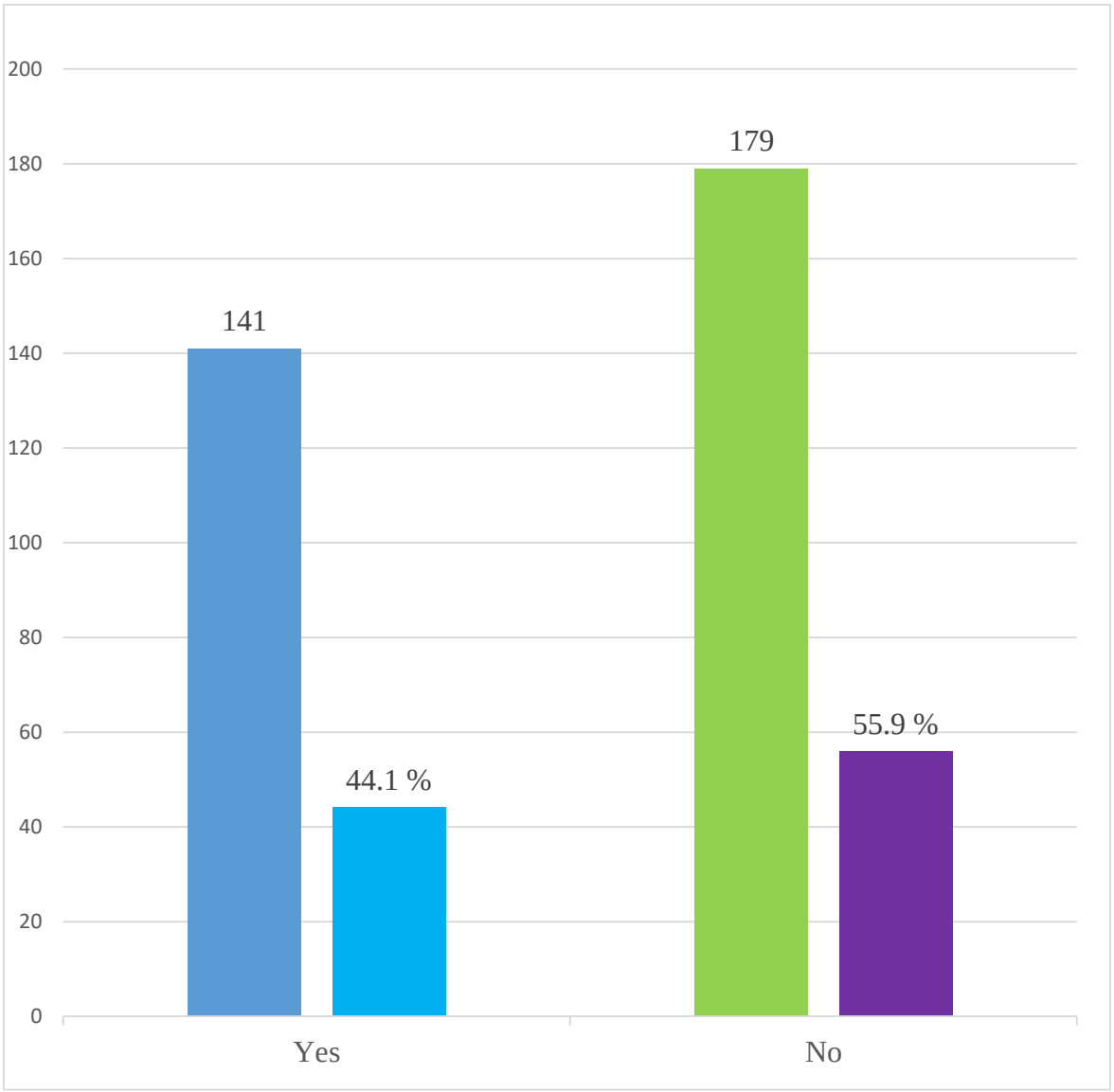


Figure: 22 percentages of feeling of pain by participants

4.5.2: Surface of pain feeling

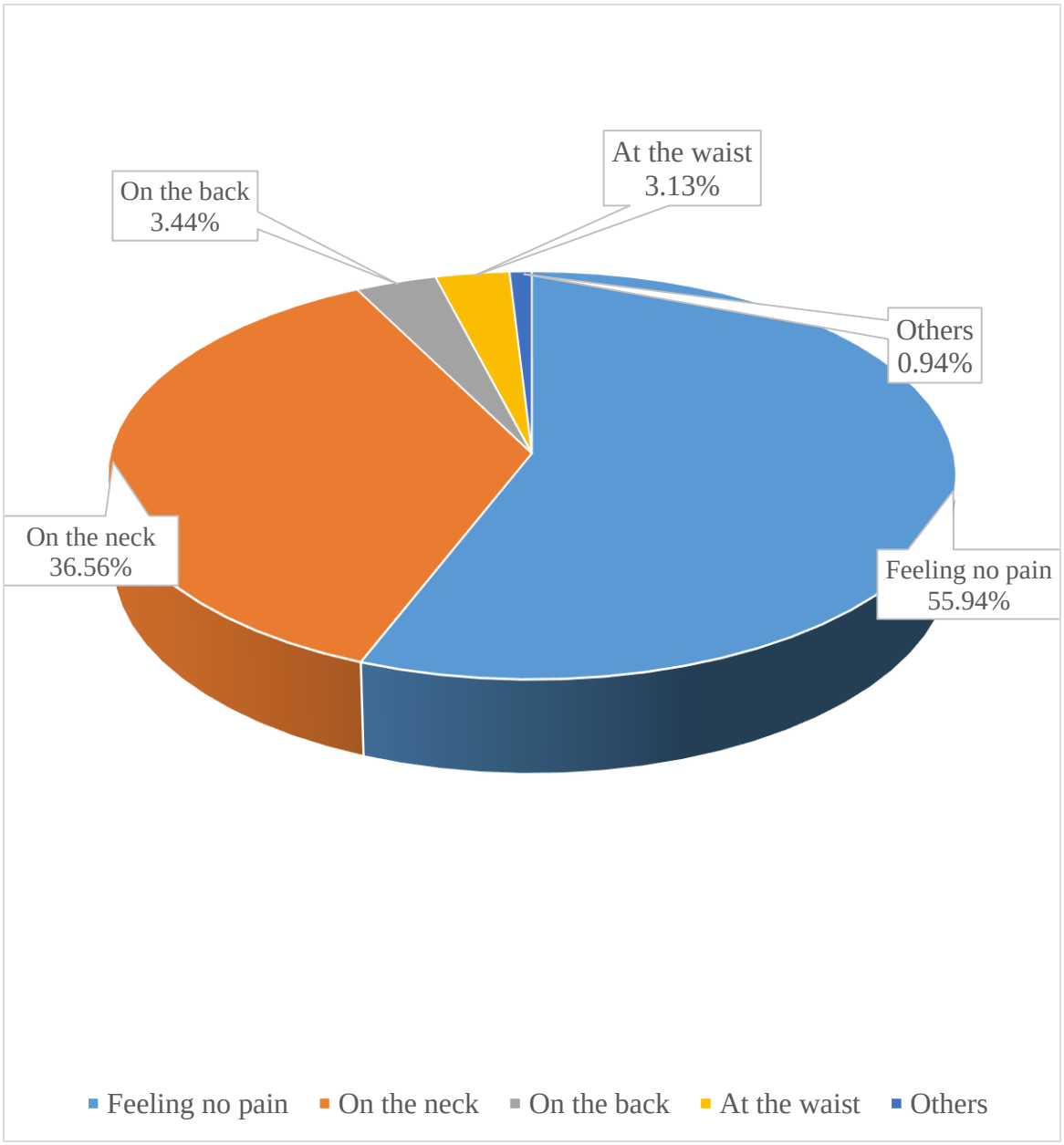


Figure: 23 percentages of pain feeling surface by the participants

4.5.3: Movement problem due to pain.

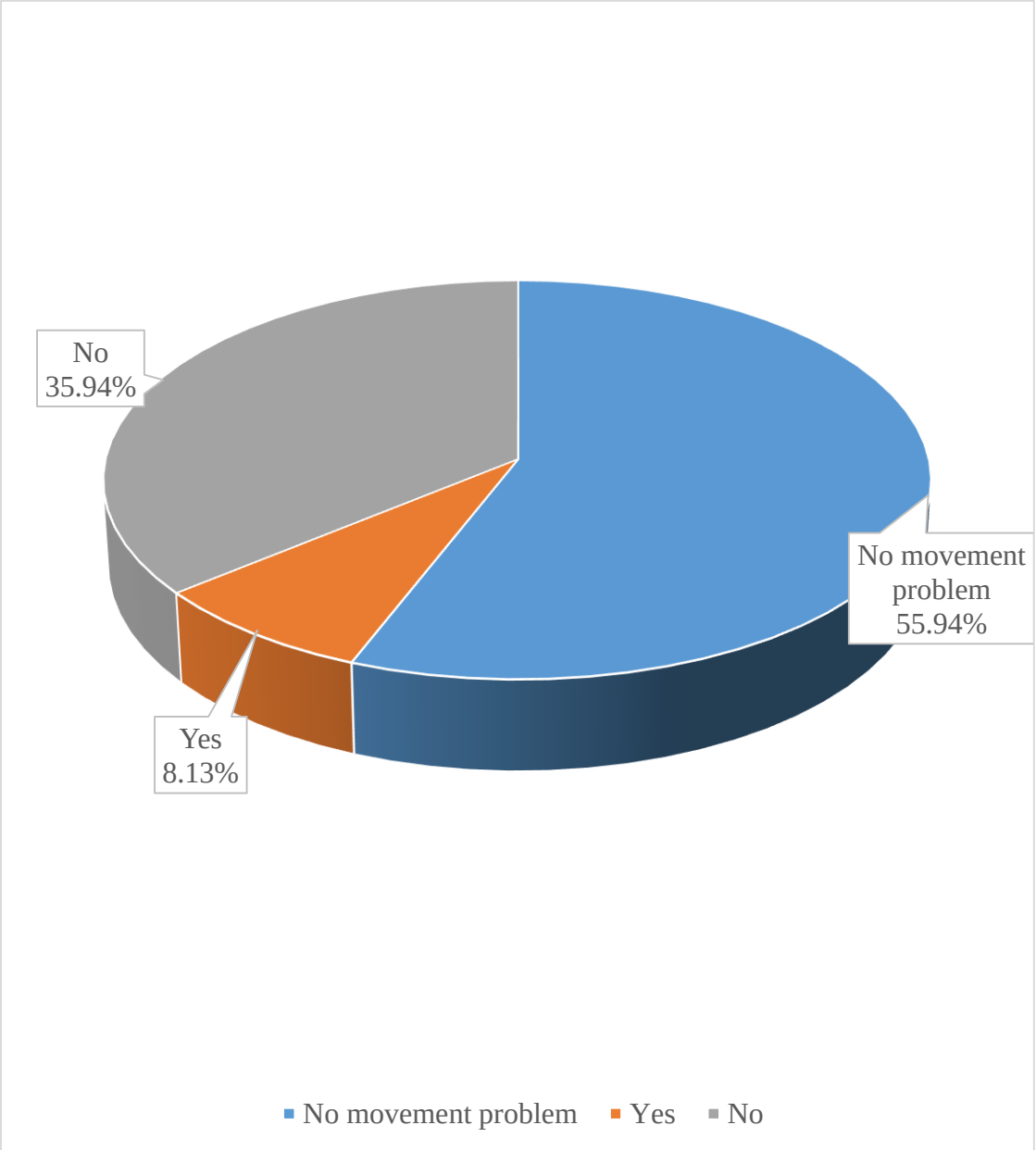


Figure: 24 percentages of movement problem due to pain

4.5.4: Time of feeling pain.

In this study 55.945 (n=179) participants not feeling pain. while 8.44 %(n=27) participants feeling pain in the morning and 8.75 %(n=28) participants feeling pain in the afternoon. While 23.75 %(n=76) participants feeling pain at night and 3.13 %(n=10) participants feeling pain in others time.

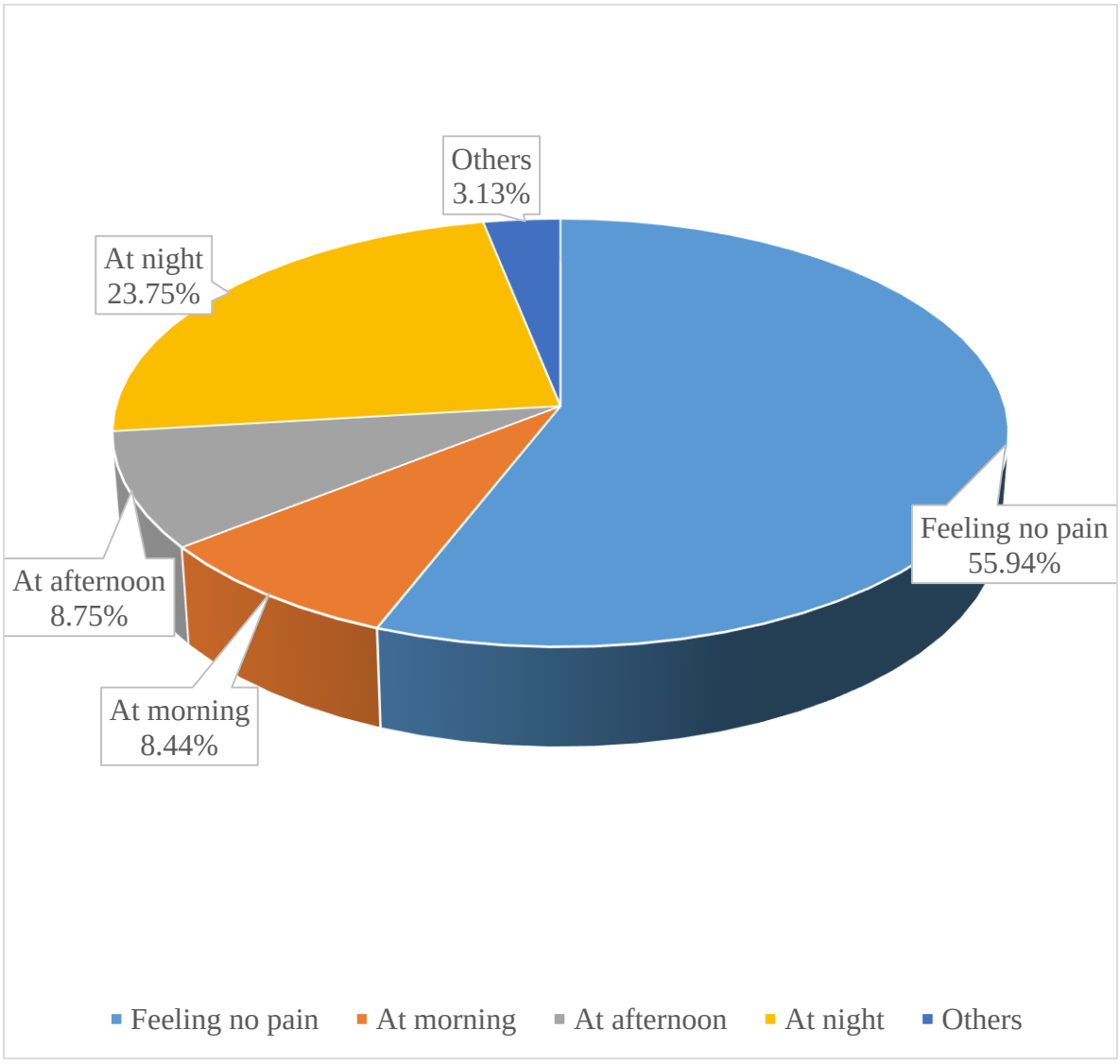


Figure: 25 percentages of time of feeling pain of the participants

Chi-Square Test

4.6.1: Association between sex and pain feeling of the participants.

Table: 3 Association between sex and pain feeling of the participants.

P=0.974>0.05 represent as non-significant and indicated that those was non-significant relation in between sex and pain feeling of the participants.

Sex of the participants	Pain feeling due to school bag			Chi- Square Test
	Yes	No	Total	Chi Value = 0.001
Boy	68	86	154	
Girl	73	93	166	
Total	141	179	320	P Value = .974

4.6.2: Association between BMI and pain feeling of the participant.

Table: 4 Association between BMI and pain feeling of the participants**.**

P=0.683>0.05 represents as non-significant and indicated that those was non-significant relation in between BMI and pain feeling of the participants.

BMI of the participants	Pain feeling due to school bag			Chi- Square Test
	Yes	No	Total	Chi Value = 0.762
< 16	57	70	127	
16-18	27	29	56	
> 18	57	80	137	
Total	141	179	320	P Value = .683

4.6.3: Association between BMI and Movement problem due to pain.

Table: 5 Association between BMI and Movement problem due to pain**.**

P=0.629>0.05 represents as non-significant and indicated that those was non-significant relation in between BMI and movement problem due to pain of the participants.

BMI of the participants	Movement problem due to pain.			Chi- Square Test
	Yes	No	Total	Chi Value = 2.585
< 16	11	46	57	
16-18	7	20	27	
> 18	8	49	57	
Total	26	115	141	P Value = .629

4.6.4: Association between weight of school bag and movement problem.

Table: 6 Association between school bags weight and movement problem.

P=0.239>0.05 represents as non-significant and indicated that those was non-significant relation in between weight of school bag and movement problem of the participants.

Weight of school bag	Movement problem due to school bag.			Chi- Square Test
	Yes	No	Total	Chi Value = 2.859
< 2kg	38	57	95	
2-4 kg	93	116	209	
> 4kg	10	6	16	
Total	141	179	320	P Value = .239

CHAPTER: V DISCUSSION

Three hundred and twenty primary school going children were participants in this study. The minimum among the participants were 7 and maximum age were 14.In this study the participant's education level were class iii, class iv and class v. As the study based on carrying heavy school bag so other class below class iii were not selected. All of the participants were living in rural area (Moore et al., 2015).

Among the 320 participants,43.4% (n=139) were under 7 years old.44.4%(n=142) were between 7 and eleven years old and 12.2% (n=39) were above 11 years old. In this study 154 participants were boys (48.1%) and 166 participants were girls (51.9%).

Most of the participants (n=240) are living in nuclear family 75%. 74 participants are living in extended family 23.13% and only 6 participants are live with only grandparents (1.8%)

Among the 320 participants, 40.94% participants education level in class iii (131).class iv are 110 participants 34.38% and 79 participants are in class v (24.89%). 70.6% participants family member are less than 5 persons. 23.4% participants family member 5-8 persons and 5.9% participants family member more than 8 persons (Dockrell et al., 2013).

Among 320 participants, 87.8% participants family income less than fifteen thousand. 8.8% participant's family income between 15000-25000 thousands. And 3.4% participant's family income more than 25000 thousands.18.13% participants are cared and guided by father. Most of the participants are cared and guided by mother 77.19%

In this study 39.69% participants are severely underweight. 17.5% participants are underweight and 42.81% participants are normal weight. The weight of school bag are less than 2 kg are 29.69%. School bag weight between 2-4 kg are 65.3% and 5% participants school bag weight are more than 4kg.Among 320 participants 44.1%(n=141) participants feeling pain in their body due to carrying school bag (Cho et al., 2012).

In his study, most of the participants were feel pain on the neck 36.6%.Beside, 3.4% participants feel pain on the back of their body.Also 3.1% participants feel pain at the waist and only .9% participants feel pain other region of their body.

Among 320 participants, 8.1% participants facing movement problem due to pain during walking, standing and sitting.Onthe other hand, 35.9% participants did not facing movement problem due to pain.

In this study 8.4% (n=27) participants feeling pain in the morning. 28 participants (8.8%) feeling pain in the afternoon. Most of the participants were feeling pain at night 23.8%(n=76) and only 3.1% participants feeling pain in the other time of the day (Dockrell et al., 2013).

CHAPTER: VI CONCLUSION AND RECOMMENDATION

6.1 Conclusion

From the study it can be concluded that primary school going children are more affected due to carrying heavy bag for many reasons. Household, weight lifting and bending activities are aggravating factors to develop LBP and children are more affected group among all occupation. These data indicate that a combination mind-body intervention for low back pain using physical function, role physical, role emotion, bodily pain, energy, social functioning, mental health and general health. Due to LBP there have a lot of problem in physical function and role emotion. According to participants statement there had also problem in role physical, bodily pain and social functioning and there had a little problem in vitality, mental health, and general health. Most of the participants were worried about their pain. Awareness should be raised in functional activity. As primary school going children are more affected because of their heavy school bag, so , guardians should give more emphasis on them to raised awareness.

6.2 Recommendation

The results of the study explore the PHS of primary school going children with heavy school bag. But further research would need to be carried out considering proof of experimental hypothesis in between carrying heavy school bag and physical health status. Can further be included in such type of research.

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Questionnaires

Assessments of physical health status among primary school going students carrying heavy school bag.

Section: 1 socio-demographic factors

	Question	Response
01	How old are you?	…….years
02	What is your sex?	1.boy 2.girl
03	What class you read in?	……..
04	what type of family you live	1. Nuclear family 2. Extended family 3. Only with grandparents 4. others
05	How many member in your family?	…..persons
06	How much of your family monthly income?	……..
07	Where are you live?	1.Urban 2.Rural

Section: 2 care giver related factors

Serial number	question	response
08	Who is the persons take care you?	1.Father 2.Mother 3.Elder brother 4.Elder sister 5.Grand parents 6.Other
09	Education level of your care giver?	1. PSC 2. JSC

		3. SSC 4. HSC 5. Graduate 6. above graduate
10	Occupation of your care giver?	1.Employer 2.Day labor 3.Business man 4.Housewife 5.Farmer 6.Other

Section:3 general health related factors.

Serial number	Question	Response
11	Height of children?	….cm
12	Weight of children?	…..kg
13	BMI	……
14	Are you playing every day?	1.yes 2.no
15	If yes, how long persist are you playing?	1.less than 1 hour 2.1-3 hours 3.more than 3 hours
16	Are you sleeping well?	1.yes 2.no
17	If yes, how long persist are you sleeping?	1.less than 7 hours 2.7-9 hours 3.more than 9 hours
18	Do you watching television?	1.yes 2.no
19	How much time you spent to watch television	1.less than 1 hour 2.1-3 hours 3.more than 3 hours
20	How much time are you study every day?	1.less than 3 hour 2.3-5 hour

		3. More than 5 hour

Section:4 physical health related factors

Serial number	Question	response
21	Any physical disability?	1.yes 2.no
22	Mental disability?	1.yes 2.no
23	Visual disability(use of goggles)	1.yes 2.no
24	Auditory disability?	1.yes 2.no
25	Any skin disease?	1.yes 2.no

Section:5 schoolbag related factors

Serial number	Question	Response
26	Weight of school bag?	……kg
27	Number of total books?	……
28	Number of English books?	……..
29	Number of math books?	……..
30	Number of Bengali books?	……..
31	Extra curriculum book(out of syllabus)	……..
32	Any frightened about book?	1. English 2. math 3. Bengali

		4. extra curriculum

Section 6: pain related factors

Serial Number	Question	Response
33	Do you feel pain due to carrying heavy school bag ?	1.Yes 2.No
34	Where you feel pain in your body ?	1.Neck 2.On the back 3.on the waist 4.Others
35	Any movement problem due to pain ?	1.Yes 2.NO
36	When you feel pain ?	1.Morning 2.Afternoon 3.Night 4.Others

Consent form

Respondent ID no: | | | |

Dear Participant,

I am Rasel Kobir student of B.Sc in physiotherapy program in the department of physiotherapy SAIC institute of Medical Technology affiliated by UNIVERSITY OF DHAKA conducting the study entitled "assessment of physical health status among the primary school going students carrying heavy school bag" as a part of my thesis work for the partial fulfillment of bachelor degree. There are list of questions you need to fill up which include socio-demographic factors, care giver related factor, general health related factors, physical health related factors and school bag related factor. For spending your valuable time to participate in this self-administered interview which will take around 15-20 minutes. There are list of questionnaire and you need to fill up each answer. The information gained from this questionnaire will be used for academic purpose and will be kept confidential. Your participation in this study is totally voluntarily and you have the right to withdraw from the interview without any clarification at any moments. You can ask any questions to the researcher regarding the study to meet up your query. Looking forward for your nice co-operation.

Declaration of the participant

I have been answer in this survey. The foregoing information has been read to me and that have been answered to my satisfaction. I have noticed that my participation in this study is totally voluntary and I have the right to withdraw from the interview at any clarification. I give my consent voluntarily to be participant in this study.

Guardian signature & Date……

Guardian phone number……

Researcher signature & date……

Gant Chat

Activities/ Month	Dec -18	Jan-19	Feb -19	Mac-19	Apr -19	May -19	Jun-19	July-19	Aug -19	Sep -19	Oct -19	Nov -19
Proposal Presentation	Dec-18											
Introduction	Dec 18-Jan 19											
Literature review	Dec 18-Nov 19											
Methodology			Feb -19									
Data collection				Mac -May 19								
Data analysis							Jun-19					
Result												
1st Progress Presentation								July-19				
Discussion									Aug -19			
Conclusion & recommendation										Sep -19		
2nd Progress Presentation											Oct -19	
Communication with supervision	Dec 18-Nov 19											
Final Submission												Nov -19