# Chapter 3

## Preliminary Data Analysis

In this chapter we describe the preliminary analysis of the questionnaire responses

obtained from the students in our study. These participants comprised 244 secondary

school students in Pattani province. In this chapter the frequency distributions of

variables are shown, and then the associations between these variables are presented.

### 3.1 Description of the variables

The role of the variables may be classified as either determinants or outcomes. These

variables and their roles and data types are listed in Table 3.1.

| Variable | Role | Type |
|---|---|---|
| Subject number | Identifier | |
| Gender | Determinant | Nominal (2) |
| Age group | Determinant | Ordinal (2) |
| Ethnicity | Determinant | Nominal (2) |
| Punishment | Determinant | Binary (2) |
| School type | Determinant | Nominal (2) |
| Father's occupation | Determinant | Nominal (3) |
| Mother's occupation | Determinant | Nominal (3) |
| Marital status of parents | Determinant | Nominal (2) |
| Parental violence | Determinant | Nominal (3) |
| Physical bullying | Outcome | Binary |

Table 3.1: Variables and their role and data type

The outcome of interest in this study is the physical bullying behaviour, which is of

binary data type. However, it can be classified as an ordinal outcome if an assumption

is made about the severity levels of different kinds of violence.

## 3.2 Distributions of determinants

The frequency distributions of the students' characteristics are shown in Table 3.2.

| Determinants | Category | Count | Percent |
|---|---|---|---|
| Gender | Boys | 118 | 48.4 |
| | Girls | 126 | 51.6 |
| Age group | 12-13 years | 90 | 36.9 |
| | 14 + years | 154 | 63.1 |
| Ethnicity | Malay or Chinese | 189 | 77.5 |
| | Thai | 55 | 22.5 |
| Punishment | Yes | 57 | 23.4 |
| | No | 187 | 76.6 |
| School type | Rural | 85 | 34.8 |
| | Urban | 159 | 65.2 |

Table 3.2: Frequency distributions of the characteristics of students

Table 3.2 shows that slightly more than half (51.6%) of the students were girls. All students were categorized into one of the age groups: 12-13 years (36.9%) and 14 years or above (63.1%). With respect to their ethnicity, most students (77.5%) were of Malay or Chinese ethnicity. The majority (76.6%) of the students reported never having been punished by their parents, although 23.4% of students reported that they had been punished by parents so severely that they would never forget it. Nearly two-thirds (65.2%) of students came from schools in the Pattani urban area.

The frequency distributions of the family environments of students are shown in Table 3.3.

| Determinants | Category | Count | Percent |
|---|---|---|---|
| Father's occupation | Business/Government | 96 | 39.3 |
| | Employee | 89 | 36.5 |
| | Other | 59 | 24.2 |
| Mother's occupation | Business/Government | 96 | 39.3 |
| | Employee | 90 | 36.9 |
| | Other | 58 | 23.8 |
| Marital status of parents | Married | 201 | 82.4 |
| | Other | 43 | 17.6 |
| Parental violence | Never | 151 | 61.9 |
| | Emotional violence | 64 | 26.2 |
| | Physical violence | 29 | 11.9 |

Table 3.3: Frequency distributions of the family environments of students

Table 3.3 shows the frequency distributions of the family environments of students. The results show that more than one-third (39.3%) of fathers were business or government employees and so were a similar percent of mothers. 36.5% of fathers were employees in private businesses and the rest were categorized as "other", which included unemployed. For the determinant "mother's occupation", more than one-third (36.9%) were employees in private businesses and the rest were categorized as "other", which includes unemployment and housewives. Most parents (82.4%) were married. Overall, 61.9% of all students had never witnessed violence from their parents, whereas 26.2% of the students admitted having witnessed emotional violence between parents and a further 11.9 % admitted having witnessed physical violence between their parents.

## 3.3 Distributions of outcome variable

The role of the outcome may be classified as bullying and victims. The frequency distributions of physical bullying behaviour categorized by two different period of time are shown in Table 3.4.

| Bullying | Victim | | | | Total |
|---|---|---|---|---|---|
| | None | Previous month | Previous six months | Both (2 period) | |
| None | 188 | 1 | 8 | 2 | 199 |
| Previous month | 5 | 1 | 2 | 1 | 9 |
| Previous six months | 9 | 1 | 11 | 1 | 22 |
| Both (2 period) | 4 | 1 | 2 | 7 | 14 |
| Total | 206 | 4 | 23 | 11 | 244 |

Table 3.4: Association between physical bullying and being a victim

Table 3.4 shows the association between physical bullying and being a victim. Of the 244 students who took part in the study, most students 188 reported that they had never been involved in physical bullying either as a bully or a victim. The remaining 56 did report their involvement in a situation in which physical bullying occurred: 18 of the students reported that they had physically bullied, 11 students indicated being a victim and 27 students admitted that they had both a bully and a victim.

For further analysis the outcome "physical bullying" was classified into just two categories. The first category "not physical bullying" included students who reported being neither a victim nor a bully as well as those who reported being only a victim (188 and 11, respectively). The second category included students who had admitted to physical bullying and those who reported both bullying and being a victim of physical bullying (18 and 27, respectively). After combining these categories, it was

found that 45 (18.5%) of students reported that they had physically bullied another student during either the previous six months or during the previous month.

Table 3.5 shows the characteristics of bullying compared between boys and girls.

| Bullying | All students (n = 45) % | Boys (n = 22) % | Girls (n = 23) % |
|---|---|---|---|
| **Attacking weapons** | | | |
| - Never attacking | 82.2 | 72.7 | 91.3 |
| - Knife/gun | 6.7 | 13.6 | 0.0 |
| - Knife/wood | 4.4 | 9.2 | 0.0 |
| - Wood | 6.7 | 4.5 | 8.7 |
| **Location** | | | |
| - Classroom | 17.8 | 13.6 | 21.7 |
| - Rest room | 35.6 | 31.8 | 39.1 |
| - Outside school | 31.1 | 36.4 | 26.1 |
| - Other | 15.5 | 18.2 | 13.1 |
| **Time** | | | |
| - Before School | 4.4 | 9.1 | 0.0 |
| - During lessons | 11.1 | 13.6 | 8.7 |
| - At lunch time | 26.7 | 27.3 | 26.1 |
| - After School | 48.9 | 40.9 | 56.5 |
| - Setting time on holiday | 8.9 | 9.1 | 8.7 |
| **Reason** | | | |
| - Pay back or revenge | 55.6 | 54.5 | 56.6 |
| - Provoked or Persecuted | 24.4 | 27.3 | 21.7 |
| - Other | 20.0 | 18.2 | 21.7 |
| **Frequency** | | | |
| - Once or twice a month | 20.0 | 36.4 | 4.3 |
| - Once or twice a term | 48.9 | 27.3 | 69.6 |
| - Several times a term | 31.1 | 36.3 | 26.1 |

Table 3.5: Characteristics of bullying compared between boys and girls

The use of a weapon in bullying is considered especially serious. Table 3.5 data shows that approximately 27% of school boys in the age group sampled, reported having used a knife/gun or wooden weapons in their bullying (13.6% a gun or knife). No girls reported using a knife or gun but 8.7% reported having bullied with a wooden weapon.

The data on location of bullying show that bullying was reported to have occurred mainly in the "rest room" (35.6%). The second and third most frequent places of bullying were "outside school" (31.1%) and the "classroom" (17.8%). Few students reported having been bullied in other parts of the school such as the activities room, sports stadium, or behind the building.

Most of the students who were bullies reported bullying to have occurred mainly after school (48.9%). The second and third most frequent time in which students admitted having been bullied were at lunch time (26.7%) and during lessons (11.1%). Both boys and girls bullies reported "after school" as being the most likely time for bullying to occur (40.9% of boys and 56.5% of girls). The main reasons of being bullies were "pay-back" or "revenge" (55.6%) and "provoked" (24.4%).

Boys who were bullies were more likely than girls to report bullying more than twice a term (36.4% and 26.1%, respectively). This evidence that they report doing this more frequently than do girls might explain why boys were more likely to be victims.

**3.4 Association between outcome variable and categorical determinants**

Table 3.6 shows the statistical significance of the associations between the outcome and the determinants.

| Determinants | Chi-squared | df | p-value |
|---|---|---|---|
| Gender | 0.006 | 1 | 0.937 |
| Age group | 13.147 | 1 | **0.000** |
| Ethnicity | 5.353 | 1 | **0.020** |
| Punishment | 0.961 | 1 | 0.327 |
| School type | 7.073 | 1 | **0.007** |
| Father's occupation | 0.541 | 2 | 0.763 |
| Mother's occupation | 0.043 | 2 | 0.978 |
| Marital status of parents | 0.804 | 1 | 0.369 |
| Parental violence | 11.516 | 2 | **0.003** |

Table 3.6: Associations between outcome and determinants

Since all of the variables are categorical, Pearson's chi-squared test was used to determine the association in each case. Table 3.6 shows that the variables most statistically significantly were age group, ethnicity school type and parental violence, respectively.

Graphs of estimated odds and 95% confidence intervals can be used to represent the proportions of physical bullying in the two groups. The plots of physical bullying behaviour categorized by four different variables are shown in Figures 3.1 – 3.4.
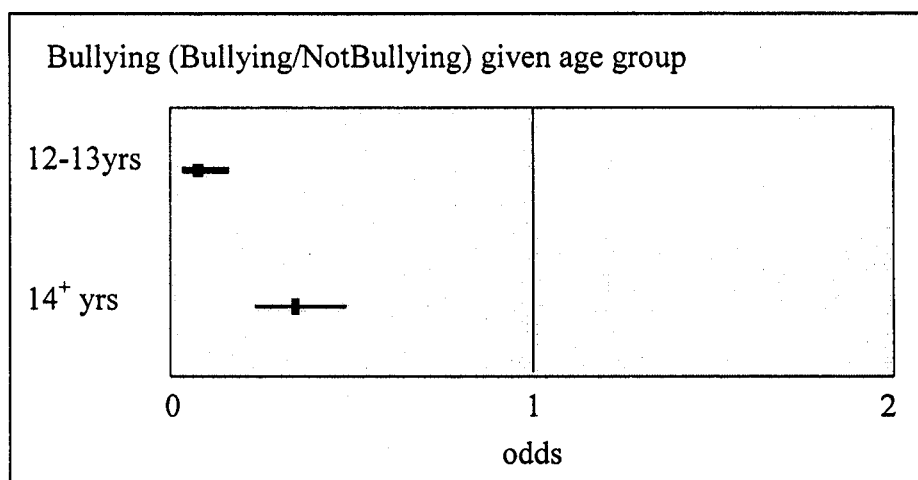


Figure 3.1: Odds of physical bullying, by age group

Figure 3.1 shows the estimated odds plots of students who physically bullied others for the student's aged 12 to 13 years and aged 14 years or over. The plot shows that the odds of being a bully was statistically significantly higher for students aged 14 years or over with 25.4% (95% CI: 18.7-32.9), followed by students aged 12 to 13 years with 6.5% (95% CI: 2.9-14.5).
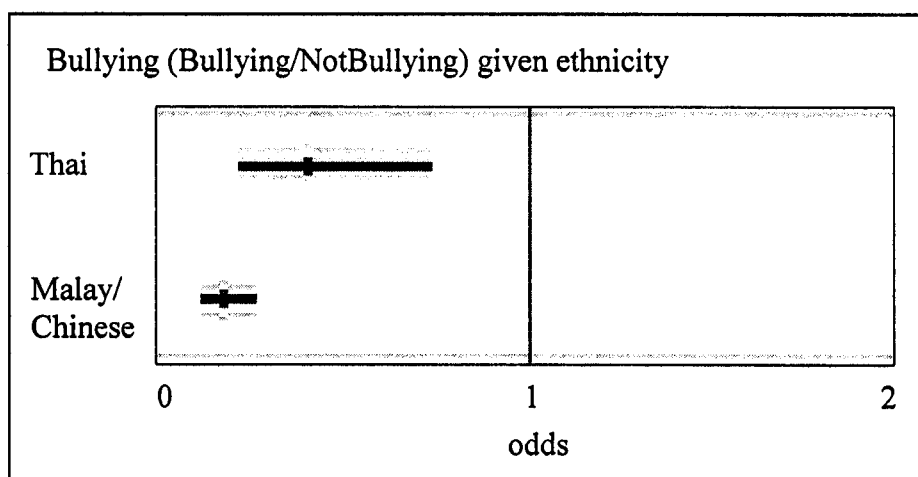


Figure 3.2: Odds of physical bullying, by ethnicity

Figure 3.2 shows the estimated odds plots of students who physically bullied others for the student's Thai and Malay or Chinese ethnicity. The plot shows that the odds of being a bully was non-statistically significantly higher for Thai ethnicity with 29.1% (95% CI: 18.7-42.5), followed by students with Malay or Chinese ethnicity with 15.3% (95% CI: 10.7-21.3).
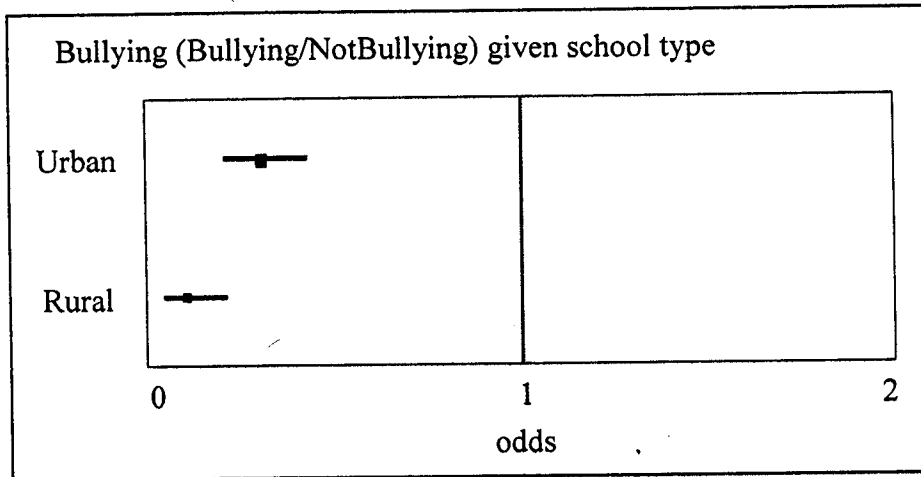
Figure 3.3: Odds of physical bullying, by school type

Figure 3.3 shows the estimated odds plots of students who physically bullied others by urban area and rural area. The plot shows that the odds of being a bully was non-statistically significantly higher for students who came from urban schools with 23.1% (95% CI: 17.4-30.6), followed by students whose from rural schools with 9.1% (95% CI: 4.8-18.0).
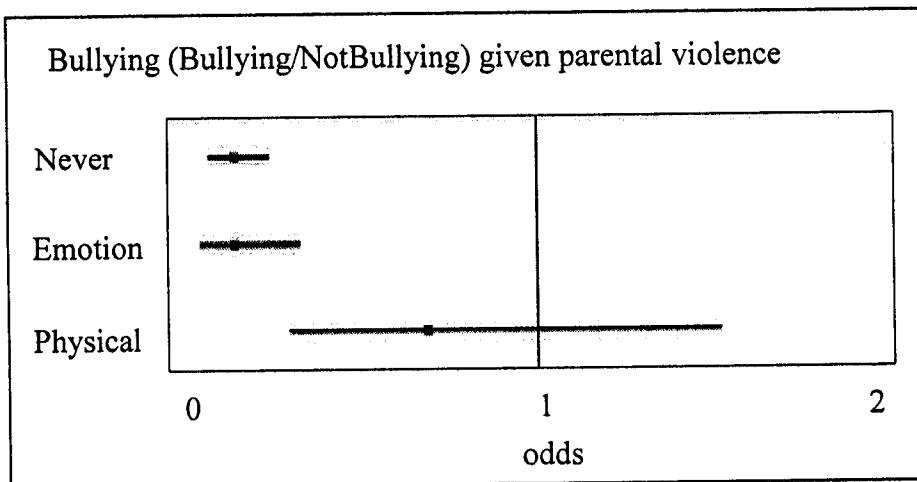


Figure 3.4: Odds of physical bullying, by parental violence

Figure 3.4 shows the estimated odds plots of students who physically bullied others for the students who had never witnessed violence and having witnessed violence between their parents. The plot shows that the odds of being a bully was not

statistically significantly different between students who had never witnessed violence at 15.3% (95% CI: 9.9-21.9) and those who reported having witnessed emotional violence between their parents at 16.0% (95% CI: 8.3-27.0), respectively. However, the plot shows that the odds of being a bully was higher for students who admitted having witnessed physical violence between their parents at 41.5% (95% CI: 24.8-60.0). But not statistically significantly differences if compared to the odds of those who reported having witnessed emotional violence.