**Tutorial CMED 305: Data interpretation - Key**

**EXERCISE I:**

The data shown in the table 1 are taken from a survey done on married women 15-45 yrs of age in a semirural village of Pakistan; to evaluate the relationship between monthly household income and maternal characteristics.

Q1. What Summary statistics can be described from the attached table 1?

**Mean, and standrad deviation, aslo Median**

Q2. What is the total number of women who participated in the survey ?

**1111**

Q3. Interpret the maternal characteristics given in the table 1; which ones are significant and which ones are not ?

* **Mean age of the participants was 29.28 [standard deviation (SD) 5.4] years, with a significant difference by**

**income. Mean crowding index for participant’s nuclear family was 5.0 (SD 2.0) in the higher income group which was not significantly different from the lower income group [4.9 (SD 1.9)] (P = 0.10).Mean gravidity and parity were significantly greater for the higher income group compared to the lower income group. Anthropometric indicators showed a better nutritional status for the higher income group compared to the lower income group, as expected. Most of the women (53.4%) in the higher income group used natural gas for cooking and most (62.2%) in the lower income group uses wood (P < 0.001). In addition, frequency of cooking was also greater in the high income group (P = 0.048). A significantly greater number of households possessed animals in the high income group (36%) than the lower income group (30%) (P = 0.03).**

* **Smoking in past pregnancy was greater in women in the higher income group but did not differ for reported current smoking status (P = 0.68). Current spousal smoking was greater in the higher income group (21.6%) compared to the lower income group (15.2%) (P = 0.007); reported use by other family members was also greater in the higher income group (11%) than the lower income group (7.5%) (P = 0.06). More participants in the higher income group lived in houses made of a mix of straw and bricks and those made only with bricks than participants from the lower income group who lived in houses made of straw and a mix of straw and bricks. There were more fishermen in the lower income group (80.7%) than the higher income group (75.4%) (P = 0.04). Participants were asked about their current and past occupation, whether they were working in 2005 or had worked for money during the past pregnancy. Reported duration of daytime rest by the women ranged from none to 3 hours; women in the high income group had significantly longer daytime rest than the low income group.**
* **When p <0.05, the charachteristics are statistically signifficantly differ between two income groups.**

Q4. What is the relationship between maternal height and monthly household income?

* **There is no statistically signifficant difference between maternal height and monthly household income.**
* **As heights do not differ in both groups it means that income groups do not differ by chronic malnutriton.**



Q5. Interpret the graph given below

|  |  |
| --- | --- |
|  | Q5a. What variable is on Y axis? **Mean Gravidity**  Q5b. What variable is on X axis? **Maternal age**  Q5c. What type of a relationship is seen in the graph?  **Correlation between…maternal age and mean HH income**  Q5d. Explain the relationship.  **Maternal age and gravidity were significantly correlated.**  **With increase in mean monthly income there is increase in maternal age.** |

**EXERCISE II:** Following tables are taken form a study titled: School absenteeism among children living with smokers; a survey done in USA in 2005; hypothesizing that children living in homes with smokers will have more illness and school absenteeism compared to children living in homes without smokers. **Q6. Interpret the results in the following tables.**

*(TSE=Tobacco smoke exposure)*

**Exercise II:**

Q6a. Explain the significant relationships in Table 2 and Table 3 under Exercise II.

* **The likelihood of missing any school was higher for those living in homes in which there was 1 person who smoked in the home (OR: 1.68 [95% CI: 1.20 –2.34]) than in homes where no one smoked indoors. The number of days a child was absent from school was significantly higher for those living in homes in which smoking took place than for those living in smoke-free homes, and greater numbers of household smokers led to increased absenteeism. Children living with exactly 1 person smoking in the home missed 1.06 (95%: CI 0.54 –1.55) additional school days per year, and those living with 2 smokers missed 1.54 (95% CI: 0.95–2.12) more days of school per year than they would have if they lived in smoke-free homes. Among children living with exactly 1 or with at least 2 smokers, 24% (95% CI: 14 –32) and 34% (95% CI: 24–43), respectively, of school days missed were attributable to residents’ smoking.**
* **Living with a smoker was associated with both of measures of respiratory infection. The likelihood that a child had more than 2 ear infections in the previous 12 months increased with the number of residents smoking in the household, and was significantly higher among children with at least 2 people who smoked in the home (OR: 2.65 [95% CI: 1.36 –5.16]).**

Q6b. Explain the insignificant relationships in Table 2and 3.

* **The number of TSE attributable days a child was absent from school was not significantly different for those living in homes in with 1 smoker than for those living in smoke-free homes.**
* **Reports of a chest infection in the 2 weeks before the interview were similar for children with 0 or 1 residents smoking in the home. An apparent relationship between living with 1 person smoking in the home and fair or poor selfreported health status was not statistically significant at the P < 0.05 level (OR: 2.11 [95% CI: 0.93– 4.79]). We were unable to detect any relationship between household smoking and prevalent asthma or asthma attacks among children with asthma. As hypothesized, we found no association between household smoking and whether the child had an episode of vomiting/diarrhea in the 2 weeks before the interview.**





Q7. Please read the following table taken from a case control study and explain the significant & insignificant relationships

* **Unsafe storage of both chemicals and medicines was 3.5 times odds of unintentional poisoning. Poisoning was significantly associated with storage of kerosene and petroleum oils in soft drink bottles (mOR=4.3, 95% CI 2.6 to 7.1), and child’s behaviour reported as aggressive by parents (mOR=6.6, 95% CI 3.9 to 11.3). Both previous poisoning and medicine users at home were 5 and 1.5 times more likely to be associated with poisoning, respectively. Mother’s education level <10 years (mOR=2.4, 95% CI 1.2 to 4.8) and no formal education (mOR=3.8, 95% CI 1.9 to 7.3) were significantly associated with childhood poisoning event.**

|  |
| --- |
|  |

Q8. Make a 2x2 table for age groups at cutoff of 36 months and calculate OR

|  |  |  |
| --- | --- | --- |
|  | Cases | Controls |
| ≤ 36 months old | 85 | 264 |
| > 36 months old | 35 | 96 |

**OR = 0.88 (95%CI = 0.55 - 1.43) p = 0.59**