Topic: **BASIC TECHNIQUES FOR ANALYSING CATEGORICAL DATA**

Var. 1.

When studying the incidence of osteochondrosis of the lumbosacral spine of drivers of urban transport in Orenburg, the data presented in the table were obtained.

**The number of patients with osteochondrosis of the lumbosacral spine department among drivers of urban vehicles, depending on the length of service**

|  |  |  |
| --- | --- | --- |
| ***Work experience as a driver*** | ***Examined*** | ***Number of patients with osteochondrosis*** |
| 1- 9 years | 2964 | 520 |
| 10 – 19 years | 1629 | 440 |
| 20 and more years | 250 | 165 |
| ***Total*** | ***4843*** | ***1125*** |

1. Calculate the total and group (depending on the work experience as a driver) indicators of the disease rate of osteochondrosis of the lumbosacral spine of the drivers of urban transport.

2. Calculate the structure of the incidence of drivers’ osteochondrosis of the lumbosacral spine, depending on the length of service.

3. Calculate the minimum and maximum possible incidence of drivers of urban vehicles lumbosacral osteochondrosis.

4. Determine the reliability of differences in the incidence of drivers who have worked for 1-9 years and 20 years or more.

5. On the basis of the data obtained, make a conclusion.

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Var. 2.

In the study of occupational injuries at the helium plant, the data presented in the table were obtained.

**The number of cases of industrial injuries among management personnel and workers in the helium plant**

|  |  |  |
| --- | --- | --- |
| ***Employee category*** | ***Number of employees*** | ***Number of cases of industrial injuries*** |
| Administrative staff | 206 | 2 |
| Workers | 1602 | 17 |
| ***Total*** | ***1808*** | ***19*** |

1. Calculate the total and group (depending on the category of workers) indicators of occupational injuries at the helium plant.

2. Calculate the structure of industrial injuries, depending on the category of workers.

3. Calculate the minimum and the maximum possible level of industrial injuries in the workers of the helium plant.

4. Determine the reliability of differences in levels of occupational traumatism among workers and management personnel.

5. On the basis of the data obtained, make a conclusion.

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Var. 3.

In studying the hospitalized morbidity of women of reproductive age in Orenburg, the data presented in the table were obtained by gynecological diseases.

***The number of cases of hospitalization of women with gynecological diseases in different age groups***

|  |  |  |
| --- | --- | --- |
| ***Age*** | ***Number of patients*** | ***Number of hospitalized*** |
| Up to 30 years | 1210 | 47 |
| 30 - 49 years | 1740 | 110 |
| 50 years and over | 380 | 30 |
| ***Total*** | **3330** | **187** |

1. Calculate the total and group (depending on age) indicators of the level of hospitalization of women with gynecological diseases.

2. Calculate the structure of hospitalized gynecological incidence, depending on age.

3. Calculate the minimum and the maximum possible level of hospitalization of women with gynecological diseases in Orenburg.

4. Determine the reliability of the differences in the levels of hospitalization of women in the age groups "up to 30 years" and "30-49 years."

5. On the basis of the data obtained, make a conclusion.

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Var. 4.

In the analysis of postpartum complications, the women presented in the perinatal center of Orenburg the data presented in the table were received.

***The number of cases of postpartum complications in women of different age groups***

|  |  |  |
| --- | --- | --- |
| ***Age*** | ***Number of women discharged from maternity ward*** | ***Number of cases of postpartum complications*** |
| Up to 20 years | 458 | 29 |
| 20 – 29 years | 845 | 92 |
| 30 – 39 years | 240 | 35 |
| ***Total*** | **1543** | **156** |

1. Calculate the total and group (depending on age) indicators of the frequency of postpartum complications.

2. Calculate the structure of postpartum complications depending on age.

3. Calculate the minimum and maximum possible level of postpartum complications.

4. Determine the reliability of differences in postpartum complications in the age groups "20-29 years" and "30-39" years.

5. On the basis of the data obtained, make a conclusion.

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Var. 5.

In the study of the frequency of complications in type II diabetes mellitus, depending on the duration of the disease, the data presented in the table were obtained.

**The number of cases of complications of type II diabetes mellitus depending on the duration of the disease**

|  |  |  |
| --- | --- | --- |
| ***Duration of the disease*** | ***Number of patients*** | ***Number of complications*** |
| Up to 5 years | 863 | 384 |
| 5 - 10 years | 405 | 237 |
| More than 10 years | 219 | 211 |
| ***Total*** | **1487** | **832** |

1. Calculate the total and subgroup indicators of the frequency of complications.

2. Calculate the structure of complications depending on the duration of diabetes mellitus.

3. Calculate the minimum and maximum possible levels of complications of diabetes in all patients.

4. Determine the reliability of differences in the incidence of complications in people with diabetes 5-10 years and more than 10 years.

5. Based on the findings, draw a conclusion.

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Var. 6.

When studying the level and structure of postoperative complications in the surgical hospital, the data presented in the table were obtained.

***Number of cases of postoperative complications***

|  |  |  |
| --- | --- | --- |
| ***Bed profile*** | ***Number of operated patients*** | ***Number of cases of postoperative complications*** |
| general surgery | 1280 | 18 |
| purulent surgery | 845 | 17 |
| ***Total*** | **2125** | **35** |

1. Calculate the total and group (depending on the profile of beds) indicators of the frequency of postoperative complications.

2. Calculate the structure of postoperative complications depending on the profile of the beds.

3. Calculate the minimum and maximum possible level of postoperative complications in the surgical hospital.

4. Determine the reliability of differences in postoperative complications in the department of general and purulent surgery.

5. On the basis of the data obtained, make a conclusion.

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Var. 7.

When examining the satisfaction of the adult population of Orenburg with the provision of outpatient care, the following data were obtained, presented in the table.

***Distribution of patients who are satisfied with the provision of outpatient care according to age***

|  |  |  |
| --- | --- | --- |
| ***Age*** | Covered by research | The number of patients satisfied with health care |
| Working age | 188 | 148 |
| Retirement age | 48 | 28 |
| ***Total*** | **236** | **176** |

1. Calculate the general and group (depending on the age) indicators of satisfaction of the population of Orenburg with providing outpatient care.

2. Calculate the structure of patient satisfaction, depending on age.

3. Calculate the minimum and maximum possible level of satisfaction of patients in Orenburg with providing outpatient care.

4. Determine the reliability of differences in levels of satisfaction of patients of working age and retirement age.

6. On the basis of the data obtained, make a conclusion.

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Var. 8.

In a selective study of the incidence of the rural population of the Sol-Iletsky district with diseases of the digestive organs, the data presented in the table were obtained.

***The number of cases of diseases of the digestive system in the adult population of the Sol-Iletsky district in terms of sex***

|  |  |  |
| --- | --- | --- |
| ***Sex*** | ***Covered by research*** | ***Number of cases of diseases of the digestive system*** |
| Male | 480 | 20 |
| Female | 679 | 70 |
| ***Total*** | **1159** | **90** |

1. Calculate the total and group (depending on sex) rates of the incidence of diseases of the digestive system.

2. Calculate the structure of the incidence of diseases of the digestive system, depending on sex.

3. Calculate the minimum and the maximum possible incidence of diseases of the digestive system among residents of the Sol-Iletsky district.

4. Determine the reliability of differences in levels of morbidity in men and women.

5. On the basis of the data obtained, make a conclusion.

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Var. 9.

When studying the prevalence of lower back pain among the adult population, depending on the level of income, the data presented in the table were obtained.

|  |  |  |
| --- | --- | --- |
| ***Level of income*** | ***Investigated*** | ***Number of cases of***  ***lower back pain*** |
| low | 608 | 369 |
| middle | 2317 | 1397 |
| high | 33 | 20 |
| ***Total*** | 2958 | 1786 |

1. Calculate the total and group (depending on level of income) rates of the prevalence of lower back pain.

2. Calculate the structure of the prevalence of lower back pain, depending on level of income.

3. Calculate the minimum and the maximum possible prevalence of lower back pain among adult population.

4. Determine the reliability of differences in levels of prevalence in low income and high income.

5. On the basis of the data obtained, make a conclusion.

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Var. 10.

When studying the prevalence of osteoarthritis, depending on age, the data presented in the table were obtained.

|  |  |  |
| --- | --- | --- |
| ***Age*** | ***Investigated*** | ***Number of cases of***  ***osteoarthritis*** |
| up to 40 years | 1507 | 71 |
| 40 years and older | 1448 | 408 |
| ***Total*** | 2955 | 479 |

1. Calculate the total and group (depending on age) rates of the prevalence of osteoarthritis.

2. Calculate the structure of the prevalence of lower back pain, depending on age.

3. Calculate the minimum and the maximum possible prevalence of osteoarthritis among adult population.

4. Determine the reliability of differences between the prevalence of osteoarthritis among people under 40 years and 40 years and older.

5. On the basis of the data obtained, make a conclusion.

Topic: **BASIC TECHNIQUES FOR ANALYSING CATEGORICAL DATA**

Var. 11.

When studying the prevalence of myopia in children, depending on the genetic predisposition, the data presented in the table were obtained.

|  |  |  |
| --- | --- | --- |
| ***Genetic predisposition*** | ***Investigated*** | ***Number of cases of***  ***myopia*** |
| absent | 174 | 10 |
| present | 109 | 60 |
| ***Total*** | 283 | 70 |

1. Calculate the total and group (depending on genetic predisposition) rates of the prevalence of myopia.

2. Calculate the structure of the prevalence of myopia, depending on genetic predisposition.

3. Calculate the minimum and the maximum possible prevalence of myopia in children.

4. Determine the significance of differences in the prevalence of myopia in groups with and without genetic predisposition.

5. On the basis of the data obtained, make a conclusion.

Topic: **BASIC TECHNIQUES FOR ANALYSING CATEGORICAL DATA**

Var. 12.

In the study of the frequency of visits to the general practitioner of men and women, the data presented in the table were obtained.

|  |  |  |
| --- | --- | --- |
| ***Sex*** | ***Investigated*** | ***The number of visits to the doctor*** |
| Male | 651 | 54 |
| Female | 1547 | 190 |
| ***Total*** | 2198 | 244 |

1. Calculate the total and group (depending on sex) rates of frequency of visits to the general practitioner.

2. Calculate the structure of visits to the general practitioner, depending on sex.

3. Calculate the minimum and the maximum possible rates of frequency of visits to the general practitioner.

4. Determine the significance of differences in the rates of frequency of visits to the general practitioner in groups male and female.

5. On the basis of the data obtained, make a conclusion.

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Var. 13.

When studying the prevalence of articular syndrome among residents of cities and villages, the data presented in the table were obtained.

|  |  |  |
| --- | --- | --- |
| ***Place of residence*** | ***Investigated*** | ***The number of***  ***articular syndrome*** |
| city | 2042 | 859 |
| village | 918 | 500 |
| ***Total*** | 2960 | 1359 |

1. Calculate the total and group (depending on place of residence) rates of prevalence of articular syndrome.

2. Calculate the structure of articular syndrome, depending on place of residence.

3. Calculate the minimum and the maximum possible rates prevalence of articular syndrome.

4. Determine the significance of differences in the prevalence of articular syndrome among residents of the city and village.

5. On the basis of the data obtained, make a conclusion.