Public health biostatistics questions and answers

ExplanationThe given statement suggests that the estimation of the likelihood of a negative outcome in the future can be determined by analyzing the past rate of occurrence for that particular outcome. The length of each bar corresponds to the quantity or frequency of the data it represents. This is because pie graphs can become cluttered and difficult to interpret when there are too many categories. It is also important to minimize "chart junk," which refers to unnecessary elements that can clutter the display and distract from the data. Ordinal Variables ExplanationOrdinal variables are categorical variables where the categories have a natural or logical ordering or ranking. Nominal variables, on the other hand, are categorical variables that do not have a natural order or ranking, such as eye color or gender. In contrast, sample data refers to data that is collected from a subset of the population, while numerical data simply refers to data that consists of numbers. Lastly, it is important to clearly indicate what each axis, bar, pie segment, etc. Cut-off points for 1/4E. MedianF. It serves as a reference point for evaluating changes in risk over time or in different circumstances. Correct Answer B. Discrete Variables ExplanationThe given answer is correct because it correctly identifies two types of quantitative variables. In such cases, it is important for the display to reflect this logical order. QualitativeB. These variables can be measured on a continuous scale, allowing for a wide range of values. This term is commonly used in finance and insurance to determine the initial level of risk before any adjustments or modifications are made. Examples of nominal variables include blood type, gender, and marital status. This is because the examples provided, such as the number of children, number of students, number of pages in a book, and number of rooms in a house, represent variables that can only take on specific, distinct values. Correct Answer A. Harder to compare fraction of the whole ExplanationThe given answer suggests that one of the problems with 3D pie charts is that they are harder to interpret. Nonresponse bias is a term used interchangeably with nonparticipation bias, as it refers to the bias that arises when those who do not respond to a survey or study differ from those who do respond in important ways. It provides a valuable resource for students and professionals seeking to test their knowledge and ... Biostatistics and Epidemiology Step 1 Sample Questions Set 1 1. The upper quartile represents the 75th percentile, dividing the data into the top 25%. Therefore, the results may not accurately reflect the true population, introducing bias into the findings. By using visual displays, we can quickly and effectively summarize and interpret data, leading to a better understanding of the information at hand. Base rate; baseline rate ExplanationThe correct answer is base rate; baseline rate. In other words, these variables cannot have values between the whole numbers. Correct Answer(s) A. If there are too many categories, the pie chart can become cluttered and difficult to interpret. This means that if the data set is arranged in ascending or descending order, the median will be the value that separates the lower half of the data from the upper half. Lower quartile; upper quartile ExplanationThe lower quartile and upper quartile are (roughly) the medians of the lower and upper halves of the data. Instead, they are used to represent data and perform operations on that data. This means that the categories can be arranged in a specific order or sequence. These quartiles divide the data into four equal parts, with 25% of the data falling below the lower quartile, 25% falling above the upper quartile, and 50% falling between the two quartiles. The answer also correctly identifies two subtypes of qualitative variables, which are nominal (categories with no inherent order) and ordinal (categories with a specific order or ranking). Explanation3D isn't correct in this class 5 or fewer slices are appropriate for a pie chart if more use table instead Quiz Review Timeline + Our quizzes are rigorously reviewed, monitored and continuously updated by our expert board to maintain accuracy, relevance, and timeliness. This type of graph is commonly used to compare and display data in a visual and easy-to-understand manner. This is because the examples provided (# of minutes, weight in pounds, snowfall in inches) are all measurements that can be expressed in numeric values with units. It can include any type of information that is collected and recorded for analysis or reference purposes. Therefore, the correct answer is data. Additionally, the answer mentions that it is harder to compare fractions of the whole in a 3D pie chart, which could be due to the added complexity and visual distractions caused by the three-dimensional elements. With Expert Solutions for thousands of practice problems, you can ... The document contains a 30 question multiple choice quiz on biostatistics concepts. Qualitative ExplanationThe given answer is "Categorical, Qualitative". Analysis is typically done on the data stored in identifier variables, not on the variables themselves. Correct Answer C. Contingency Tables (2 variables) ExplanationThe correct answer is a combination of different methods for displaying categorical data. Therefore, the given statement is incorrect. Correct Answer B. This type of study is useful for exploring relationships between variables and identifying patterns or trends, but it cannot establish causation. The margin of error accounts for the inherent variability and uncertainty in sampling, and provides a measure of the precision and reliability of the survey results. It involves the collection, organization, analysis, interpretation, and presentation of data. It is important to distinguish them from other variables, such as Social Security Number and ISBN, are unique identifiers that have exactly one individual in each category. By using statistical methods, patterns, trends, and relationships within the data can be identified, allowing for informed decision-making. Choose TWO: Based on ... Our resource for Essentials of Biostatistics in Public Health includes answers to chapter exercises, as well as detailed information to walk you through the process step by step. This answer is correct because the 5 Ws (Who, What, When, Where, and Why) and 1 GH (How) are commonly used to gather information and understand the complete picture of a situation or event. Population Data ExplanationPopulation data refers to data that is collected when all individuals in a population are measured. Therefore, the answer accurately identifies both ordinal variables and nominal variables as two types of categorical variables. The lower quartile represents the median of the lower half of the data, while the upper quartile represents the median of the upper half of the data. This type of data provides a comprehensive view of the entire population and allows for accurate analysis and conclusions to be drawn. They are most effective when there are fewer than 5 categories. It is the raw material from which conclusions and insights can be drawn. represents in order to avoid confusion. Data should stand out clearly from the background, which helps ensure that it is easily distinguishable. What each axis, bar, pie segment etc denotes ExplanationThe answer includes several important factors for good statistical displays. ExplanationThe given correct answer is "rate". It is not affected by the sum of the values or the total number of values in the data set. Lowest valueD. By gathering data systematically, it becomes easier to analyze and interpret the information, ultimately reducing uncertainty and improving the quality of decisions made based on that data. Who, What, When, Where, Why, and How ExplanationThe correct answer is "Who, What, When, Where, Why, and How". These individuals are referred to as a "volunteer sample" or a "self-selected sample" as they have willingly chosen to take part in the poll. Nonparticipation bias ExplanationNonparticipation bias can occur when many people who are selected for the sample either do not respond at all or do not respond to some of the key survey questions. Therefore, it is recommended to use a pie chart when there are 5 or fewer categories. 5 or fewer ExplanationPie charts should be used when there are 5 or fewer categories. This indicates that they are quantitative measurements, which involve the use of numbers to represent quantities or amounts. Sample Data ExplanationThe term "sample data" refers to a subset of a large population that is collected for analysis or study. Therefore, it is advisable to avoid using pie graphs if there are more than 5 categories. Additionally, the scale of each axis, including the starting and ending points, should be clearly indicated. Identifier variables are used to store values in a program, and they are not meant to be analyzed. Systematically ExplanationData is systematically defined as recorded information to help minimize uncertainty in the decision-making process. By specifying "sample" in the term, it emphasizes that the margin of error is based on the sample data collected and may not accurately represent the entire population. A relative frequency table is used when there is one variable, as it displays the frequencies of each category as a proportion of the total. Data is a fundamental concept in statistics and is used to derive meaningful insights and make informed decisions. It refers to a statistical analysis or study that focuses on a single variable at a time, examining its characteristics, distribution, and relationships with other variables. Variables, samples, and population are related concepts, but they do not encompass the full scope of collected observations. ExplanationPie graphs are a type of data visualization that is used to represent categorical data. nonresponse bias ExplanationNonparticipation bias refers to the tendency for certain individuals or groups to not participate in a study, which can result in a biased sample. Additionally, they would not conduct a sample survey to collect data from a smaller subset of the population in order to estimate the characteristics of the larger population. Dotplot ExplanationA dotplot helps us see the pattern in the data by representing each data point as a dot along a number line. Finally, contingency tables are used when there are two variables, as they show the relationship between two categorical variables. Pie Chart (1 variable)E. Categorical D. It is a measure of how often an event or action takes place in relation to the total number of opportunities or occurrences. Quantitative ExplanationThe given answer is correct because it accurately identifies the two types of variables, which are qualitative and quantitative. Highest value ExplanationNonparticipation bias can occur when many people who are selected for the sample either do not respond at all or do not respond ... Our resource for Essentials of Biostatistics in Public Health includes because they allow us to represent data in a visual format, making it easier to identify patterns, trends, and relationships. Margin of error ExplanationThe margin of error for a properly conducted survey is a number that is added to and subtracted from the sample information to produce an interval that is 95% certain to contain the true value for the population. A bar graph is used when there is one or more variables, as it allows for easy comparison between categories. A histogram, on the other hand, uses bars to represent the frequency or proportion of data within certain intervals, while a stem and leaf plot displays the individual data points in a tabular format. In comparison to pie charts, bar graphs are more appropriate for ordinal data because they allow for a clearer representation of the order and magnitude of the data, whereas pie charts are better suited for displaying proportions or percentages. Who, What, When, Where, Why, and How Who, Would, Why, Where, and How Who, What, Why, Won't, and How Correct Answer A. Examples of ordinal variables include t-shirt size (S, M, L, XL) and satisfaction rating (very satisfied, somewhat satisfied, somewhat dissatisfied, very dissatisfied). Correct Answer D. Poll; sample survey ExplanationIn order to gather opinions or other information from each individual included in the sample, the investigators would conduct a poll to collect data from a specific group of people. Correct Answer D. Lower quartileC. ExplanationData refers to the observations or information that has been collected. Statistics ExplanationStatistics is a collection of procedures and principles for gathering data and analyzing information to help people make decisions when faced with uncertainty. In this study, researchers do not assign treatments or control groups, but rather collect data by observing and recording the natural behavior or characteristics of the participants. This means that data is collected from every member of the population, rather than just a subset or sample. If you submit answers to 11 questions, I will grade the first 10 questions only. Qualitative variables are categorical in nature and represent qualities or characteristics, while quantitative variables are numerical and represent quantities or measurements. ExplanationData refers to numbers or nonnumerical labels collected from a set of entities (people, cities, etc). Continuous VariablesC. Together, these values provide a concise summary of the dataset's range, central tendency, and spread. These three values are used to understand the central tendency and distribution of the data. Self-selected sample ExplanationMagazines, TV stations, and internet websites often conduct polls where individuals voluntarily choose to participate and respond. Nominal variables do not have a natural ordering or relationship between the categories. This bias can occur due to various reasons such as refusal to participate, inability to be reached, or non-completion of the study. This estimation is based on the assumption that the future will follow a similar pattern as the past. This visual representation makes it easier to compare and understand the data. Different types of visual displays can be used depending on the type of variables being analyzed. QuantitativeD. Statistics is essential in various fields such as business, economics, healthcare, and social sciences, where data-driven insights are necessary for making informed choices and predictions. In the middle when the numbers are put in order ExplanationThe median of a numerical list of data is the value that falls in the middle when the numbers are put in order. The lower quartile represents the 25th percentile, dividing the data into the bottom 25%. They are not limited to specific categories or values, and can include measurements such as height, weight, GPA, square footage of a building, or distance. The statement that the relative frequencies should be ordered in ascending or descending order is not relevant to the use of pie graphs and is therefore false. A pie chart is used when there is only one variable, as it shows the proportion of each category in relation to the whole. This means that if the survey was conducted multiple times, the true value for the population would fall within this interval 95% of the time. For example, graphs are commonly used for displaying numerical data, while histograms are used for displaying data that is divided into intervals or categories. Explanationthey should not touch Correct Answer C. Nominal Variables ExplanationThe given answer is correct because it correctly identifies two types of categorical variables. In this case, the blanks are being filled with "sample data" to complete the sentence. The name of the variable should identify what has been measured. This means that data is organized and collected in a methodical and structured manner, ensuring that it is reliable and can be used effectively to support decision-making. Therefore, the correct answer for this question is nonresponse bias. Observational study ExplanationAn observational study is a type of research method where participants are only observed and measured without any intervention or manipulation of variables. This can range from numerical measurements such as age or height to nonnumerical labels such as gender or occupation. Bar graph ExplanationA bar graph is able to illustrate the natural order of data because it uses bars of different lengths to represent different values or categories. Data should stand out clearly from background.E. As little "chart junk" as possibleG. Clear labeling of Title or purpose of picture.H. Scale of each axis, including starting pointI. Correct Answersample margin of error ExplanationThe term "sample margin of error" is used in some polls to specifically refer to the margin of error, which is the range within which the true population value is likely to fall. Discrete Variables ExplanationThe given correct answer is "Discrete Variables". This is because pie charts are most effective when there are a small number of categories that can be easily compared and understood. Volunteer sampleC. This can include measurements, genders, survey responses, or any other type of collected information. The lowest value represents the smallest observation in the dataset, the cut-off points for 1/4, 1/2, and 3/4 divide the dataset into four equal parts, and the highest value represents the largest observation in the dataset. These variables are used to uniquely identify each case or record in a dataset. The maximum score possible on this exam is 100. This can lead to a skewed representation of the population being studied, as the non-respondents may have different characteristics or opinions compared to those who do participate. Discrete variables, on the other hand, can only take on specific values, such as the number of children in a family or the number of cars owned by a person. This is because the examples provided (gender, favorite color, type of car, satisfactory rating) are all values that are measured in groups or categories. The base rate or baseline rate refers to the rate of risk at the beginning of a period or under specific conditions. In this context, the rate refers to the frequency or number of times something occurs within a specific period or in relation to a given opportunity. The dots are stacked vertically above their corresponding values, allowing us to easily visualize the distribution and identify any clusters or gaps in the data. This could be because the depth and angles of the chart can distort the perception of the sizes of the different sections, making it difficult to accurately understand the data being presented. Harder to interpertC. The variables are shown on the horizontal axis, while the frequencies are shown on the vertical axis. This term is used to differentiate it from other sources of errors and biases that can affect the accuracy of the poll results. A study wishes to assess birth characteristics in a population. Identify Different Categories/ Tally the amount that falls into each category place in table/ Create Frequency column/ Relative Frequency column (frequency / n) / convert into% ExplanationIf a categorical variable is ordinal in nature, it means that the categories have a specific order or ranking. Jan 21, 2024 Quiz Edited byProProfs Editorial Team Feb 28, 2013 Quiz Created byAworschmidt A collection of multiple-choice questions and answers covering various topics in biostatistics. Continuous variables are those that can take on any value within a certain range, such as height or weight. The display should either decrease in logical order (from highest to lowest) or increase in logical order (from lowest to highest). Measurement ExplanationThe given answer is "Quantitative, Measurement". The questions cover topics such as measures of central tendency ... You will need the following information to answer questions 6 through 8: There were over 3.5 million hospital discharges in the year 2000 in the U.S. state of California. Cut-off points 3/4H. Variables ExplanationVariables are characteristics recorded about each individual. Cut-off points for 1/2G. ExplanationThe statement "you can analyze Identifier Variables" is false. Correct Answer(s) B. The inclusion of "Won't" in one of the options is incorrect and does not align with the standard 5 Ws and 1 GH framework. These questions cover the essential aspects of any given data, allowing for a comprehensive analysis and understanding. Therefore, the correct answer is "Quantitative, Measurement". Clear labeling of the title or purpose of the picture helps provide context and understanding. The five-number summary consists of these five values and is used to summarize the distribution of a dataset. Continuous Variables ExplanationContinuous variables are variables that can take on any value within a given range. Therefore, the correct answer is "risk" as it refers to the potential for a negative outcome or loss. In univariate analysis, data is analyzed and summarized using measures such as mean, median, mode, and standard deviation for a single variable, without considering the influence of other variables. Identifier variables ExplanationThe given correct answer is "Identifier variables". Ordinal VariablesD. Therefore, "Categorical, Qualitative" accurately describes the nature of the values mentioned in the question. Upper quartile ExplanationThe 3 middle values of the summary are called the lower quartile, median, and upper quartile. Bar graph ExplanationA bar graph is a type of graph that uses rectangular bars to represent the frequency counts of different categories or variables. One varaible ExplanationUnivariate means having only one variable. Categorical data refers to data that can be divided into distinct groups or categories, and qualitative data refers to data that describes qualities or characteristics rather than quantities.

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