Childhood Obesity

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**Regression Analysis**

Child obesity is one of the prime health issues that has threatened the social, economic and health paradigms of New York. According to an estimate, among all the states that make up the US, only New York makes the seventh lowest rate of obesity in the nation, positioned at 45 among 51 states. However, it is the 20th highest among the youngsters who are of 10 to 17 years of age. The current rate of obesity highlights that an average 13.2% are obese where most of them are black Americans (33.4%) men with (26.1%) women. (National Academies of Sciences, 2016). In order to identify the situation in detail, biostatistical procedures would be used. In order to proceed with the method, variables would be defined, classified as dependent or independent variable. The independent variables would be the type of food consumed, the number of calories that are taken in diet and the hours that are spent in physical activity in a single day. (Illowski, et, al. 2019). However, dependent variables would be the amount of weight that would be gained or lost, recorded on a weekly basis. Regression would be used to identify and describe the relationship that exists between both dependent and independent variables. (National Academies of Sciences, 2016). It is significant to note that there are three independent variables and one dependent variable. I will be using regression analysis in order to produce a regression equation in which coefficient would be used to represent the relationship between variables, both dependent and independent. Side by side, I will be using regression line to control variables. I will estimate the effect of changing of one independent variable on the dependent variable, while keeping all other independent variables at a constant level. This will help me to analyze the role of each independent variable without worrying and noting the other variables in my research. Regression analysis will also help me to keep the independent variables as constant by including them in my research. (Illowski, et, al. 2019).

**Issues in measurement analysis**

There are a number of measurement issues that can plague a research study, taking into consideration that these issues can demolish the entire spectrum of study and tilt it towards inadequacy.

**Operationalization**

 Operationalization issue is defined as an error or issue as a result of unspecified terms and concepts. In a simplified form, operationalization is a process of defining variables into different measurable variables. (Illowski, et, al. 2019). Operationalization sets the platform of exact definition, increasing the quality of research. The issue can be mitigated by the exact definition or a clear and concise understanding of the concepts.

**Measurement Validity**

 Measure validity is another issue that highlights the validity of any measurement by adhering to the core principles of truthfulness. (Sagoe, et, al. 2019). It is one of the significant, most discussed and occurring issues because it can misdirect research into something that would be ambiguous and irrelevant. This issue can be overcome in my study by a clear definition of the concepts along with a clear observation of the measurement ignoring the criticality of the concept and measurement itself.

**Measurement Reliability**

Another issue that may occur in my research study would be measurement reliability taking into account that it measures the accuracy of the device in terms of similar results when measurements are repeatedly made under the same conditions. (Sagoe, et, al. 2019). This issue occurs because of the inability of the researcher as well as of the instrument that would be used for the measurement of results. I will address this issue by synchronizing both the aspects validity of the instrument and the learnability of the individual who would be understanding the use of instruments.

**Measurement Scale**

Measurement scales are defined as the scales that are used after operationalization in order to identify scaling properties. (Sagoe, et, al. 2019). In a simplified form, the information yielded by a measurement operation is called a measurement scale. It addresses all types of measurement scales, i.e. nominal, interval, ordinal and ratio. The adequacy of scale highlights whether two values are same or different. I will mitigate issues with the scale by keeping a follow up with the recording and observations. It also includes the validity of statistical tests, ecological validity and psychological reality of the scale.

**Anticipating and fixing the problem**

Inappropriate distinctions play a significant role in the analysis of the measurement scale that may reflect or anticipate some kind of problem. Issues under this category may include reactivity, oversensitivity, and insensibility. All three aspects play a major role in misdirecting results. (National Academies of Sciences, 2016). Other interacting areas are the attitude of the subject, biases of the experimenter, and expectancy effects. It can be mitigated by adhering to research ethics and keeping a follow up with the automatic procedures. Moreover, pilot studies, manipulation check and reduction of biases are also aspects that can reduce issues related to anticipation and fixing the problem. (Illowski, et, al. 2019).

**Factor Analysis**

Factor analysis is a technique that is used to reduce a large number of variables into some fewer factors. This technique is used to extract some common variances from all the variables that are common in nature and they are commonly used. It is more like a tool that is used to investigate the relationship between different variables having complex concepts such as, psychological disorders, socioeconomic status, and dietary patterns. (Illowski, et, al. 2019).

 In order to design a questionnaire for my research topic, "Prevalence of obesity in children in New York", factor analysis would be used to identify and explore each of the factors associated with obesity so as to gather comprehensive and varied data that could extend my research. My subject factors are, food consumed, physical activity related questions, the number of calories taken in the diet, weight gaining. In order to develop my questionnaire, I will not address my concerns directly, in fact, I will try to use an indirect approach to obtain answers that would be used to reconnect and reanalyze the factors. My questionnaires will be addressing each of the factors in terms of behavioral patterns because behavior varies from individual to individual. I will ask how a child is encouraged towards eating the number of attempts each day. What is the environmental factor that reinforces consumption of food, what types of food is preferred and the reason behind the consumption of a specific category of food such as junk food or fast food. My questionnaire will address the routine of physical activity or pattern of physical activity of the family. What is the trend of weight gaining in family and how much focus it is given generally. I would ask about the impact of socioeconomic status in the family and what is its relationship with obesity. I would address the impact of school education and school environment on child obesity and how it can encourage or discourage a child. I would explore how psychological issues are related to obesity in children and what is the relationship between psychological disorders in terms of age factor. Moreover, I would like to highlight if psychological disorders are the product of actions and the way obese children are treated or it is something that is self-created or associated with birth.

**General Analysis Plan**

Data analysis plan is a roadmap that defines how research would be developed and organized. It is a systematic approach to the organization of data that is collected taking into account that it helps to evaluate the ambitions of research

**Analyzing aims**

It asserts to reflect back on my research questions, what I aim to find and what are my areas of research. Analyzing aims will help me to stay within the contextual limits and avoid any irrelevant data or information they can deviate my research topic or research paradigms. This step will redirect my research to the core basics of research question so that all necessary questions and points could be addressed. (Illowski, et, al. 2019).

**Data cleaning**

Data cleaning is another aspect that serves as a major section of collecting required information. Data cleaning means all irrelevant information that is collected from the research questions would be excluded. It would not be wrong to say that data cleaning is one of the complex steps because it requires to go through all information that is being collected and analyze how information is collected, is there adherence to ethical consideration, reliability and validity in the procedures through which data is collected or not. It also requires me to compare research questions with the data collected so as to know if there is any coordination between the data collected and the subject to be addressed. (Illowski, et, al. 2019). Data cleaning also requires an analysis of the facts and figures that are necessary to keep into account for collecting required data such as mitigation of biases and the verification of tools, softwares and techniques. (Illowski, et, al. 2019). Demographic aspects are also one of the major topics to address because it will help me to analysis who's who of my research. (National Academies of Sciences, 2016). It is one of the crucial section to be considered because it allows me to go through the major ethical consideration of representation and participation in research. I will also compare my major groups of study in terms of participants and the population that is discussed in research questions.

**Data transformation**

Data transformation is another step that would guide and allow classification and division of data in required format and sets. It is significant to note that data transformation is more like an approach that infers to review the research section again because the transformation of data is not possible without adhering to the analysis of whatever is found in the collection of data. Data transformation is more like feedback to the research data taking into account that it is the cohesion of data by using mathematical transformations. (Illowski, et, al. 2019). As regression analysis would be used, data transformation would include the method of formulating the equation of coefficient so that a relationship between different variables can be calculated. In a nutshell, all data would be represented in the form of mathematical equations and equation with statical signs. (National Academies of Sciences, 2016).

**Presenting Research Results**

Presenting research results is one of the most significant steps of a research paper. There is no use of research if results are not presented in required and comprehensible forms. There are different formats of presenting research result, i.e. poster presentation, oral presentation, and written paper. It is important to note that representation includes both the format of the paper as well as the sections that are addressed in the paper. In my paper, I will follow a sequence of headings so that a logical flow of information can be made. It would follow a sequence as, introduction section accompanied by literature review and background knowledge. After that a section of methodology would be added that will introduce the methodology of carrying out the research. It will include the procedures that would be used for the description of sufficient details so that they can be repeated again. The result section would include the summary of the experimental outcome, taking into account a concise flashback to the facts, figures and other experimental errors that may hamper the quality of research. It is significant to note that tables and figures would include the actual context, addressing what actually should be mentioned and analyzed. This section would be followed by a discussion method taking into account that it is the major section in which I will interpret and address the calculations and ultimate outcomes of the research. I will focus on the comparative analysis of other studies and it will highlight general significance of ultimate findings. I will also highlight errors and gaps in measurement and the scales used for measurement, side by side I will consider the latest model that would be used for analyzing this research topic.

 I will present my findings in written format, taking into account that I will compile and pen down my research in the form of comprehensive ways. It would not be wrong to say that a presentable document is the one that is professional in outlook and comprehensible to understand. I would incorporate tables and graphs that would illustrate data and help to understand the research finding such as presentation of a variable in the form of graphs and histograms. I will present the desired content in the form of understandable tables and graphs so that there would be no glitch in the observations and presentation.

**Conclusion**

 Obesity is one of the significant body issues that threatens both the physical and psychological health of a child. It is asserted that there is a great risk of obesity because of the increased exposure to mechanical world and less importance to physical activities. In order to analyze *The Prevalence and Risk Factors of Childhood Obesity in School Children in New York City*, a research would be conducted by using biostatistics. Literature would be collected by undergoing an analysis of the information that is published in different researches, books, and journals. Qualitative research would be conducted where prime focus of research would be to identify both dependent and independent variables. After that regression would be used to create a relationship between the two variables in order to get a mathematical equation that would analyze the issue of obesity in terms of home and school environment and its relationship with actual routine and psychological health of the participants. It is important to note that I will include diversity sample that include people from all the races and ethnicities moreover children of different age groups and social background would be used as a participant. It is more added that my research would be enclosing a graphical and mathematical representation as well so that comprehensive results can be obtained. Moreover, the interview section would comprise of questionnaires that would be highly diverse and indirect so that a variety of information would be collected from different resources. This information when collected would be analyzed by using statistical tools and equation and the illustrations would be recorded. I would pay special attention to the analysis of tools that would be used for the measurement of data so as to avoid any misinterpretation and error. After an in-depth analysis, results would be collected and after a counter check results would be displayed in a written report following a pattern. It is more added that my report would be a complete and concise interpretation and analysis of the data that is relevant to the research topic so that desired results can be achieved.

References

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