

Scientific method assignment



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This study is conducted in order to assess the effects of caffeine on the endurance of the athletes. The focus of the assessment was on the caffeine on how it will work as an endurance enhancer to the athletes. In order to gather the necessary data, the researchers utilized the experimental method. According to Kendra Cherry, 2007, The experimental method involves manipulating one variable to determine if changes in one variable cause changes in another variable.

This method relies on controlled methods, random assignment and the manipulation of variables to test a hypothesis. Furthermore, according to Megan E. Bradley, 2000, Experimental Method is a study in which the investigator manipulates (at least) one variable while measuring (at least) one other variable. This method is often used in psychological research and can potentially lead to answering cause-effect questions. The research will be conducted at Talisay City where the respondents live.

Schematic Diagram Respondents There are only four respondents in this research, all males, these four respondents live in Talisay City where the research will be conducted. Subject A is 17 years old, a football player since he entered high school. Subject B is 18 years old, a basketball player, he started playing basketball when he was in his 2nd year of high school. Subject C is 19 years old, also a football player and also in the same team with subject A. Subject D is 18 years old and a basketball player in his area. The respondents were chosen by convincing them to be the respondents on this research.

The respondents are in the good shape to conduct this research and agreed on what might be the side effects of the caffeine during the research.

Sampling Design Sampling may be defined as measuring a small portion of something and then making a general statement about the whole thing. It enables the study of a large, heterogeneous population more economic wise, meaning not too costly, and more realistic and possible to make. The population to be researched upon is quite small; hence scientific sampling is implied to each member of the population since the number of population is attainable for sampling.

The proponents decided to use the unstructured random sampling technique since the population is well in the reach of statistical evaluation. To justify the point, the use of Slovic's Formula was utilized in the formula of: $n = \frac{N}{1 + N(e)^2}$ Where: n = sample size N - total population Gathering Instrument The data for this research were collected using a survey questionnaire, interviews, empirical observations, research and analysis used by the proponents as they conduct the proposed study.

The survey questionnaire was created using suitable questions modified from related research and individual questions formed by the researchers. The results and findings of the study should always be compared with the standards. Likert scale was used to determine if the respondent agreed or disagreed in a statement. After the experts in this field validated the questionnaire, these will be distributed to the four athletes who are part of this research. The researchers assured confidentiality of their survey sheets since the identities are not important.

The researchers also understood that people's consciousness may also affect their honesty and effectiveness in answering the survey, and so, the researchers gave people the option of being anonymous. Participants were given time to respond and then the researchers collected the surveys the next day. There were no incentives offered for participating in the research. Next, the researchers planned the questions that they would be asking to the interview. Interview.

An Interview is defined as a meeting of two people face to face to confer about something or an act of questioning to receive a desired answer that is necessary in solving a specific problem. This is where data gathering occurs by asking questions for much needed information from the interviewee verbally and directly. Observation. This technique is used when the researcher cannot secure adequate or valid data through the use of the questionnaire or some other technique. It is considered to be the most direct means of studying people in so far as their overt behavior is concerned. Observation of a current operating procedure is another data gathering tool seeing the system in action gives you additional perspective and better understanding of system procedures. Research. Research is simply, the systematic search for pertinent information on a specific topic or problem. It is systematic study or investigation or something for the purpose of answering questions posed by the researcher. It includes reviewing Journals, periodicals, and books to obtain background information, technical material, and news about industry trends and developments.

Analysis. Analysis is the process of breaking-up the whole study into its constituent parts of the categories according to the specific questions under

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the statement of the problem. This is to bring out into focus the essential feature of the study. Validity of the Data According to Rob Davis PE, 2003, Data validity is the correctness and reasonableness of data. Reasonableness of data means that, for example, account numbers fall within a range; numeric data are all digits; dates have a valid month; day and year; and the spelling of name is proper.

People who validate the questionnaire is a Sports Doctor, 42 years of age, a sports doctor for 20 years and also the official Sports Doctor of a football team and another person who validate the questionnaire is a coach of a football team, 38 years of age. These people have contribute a very important role in Reliability is known as to what extent the research findings can be replicated, if another study is undertaken using the same research methods (Ritchie and Lewis, 2003).

They asserted that “ the reliability of the findings depends on the likely recurrence of the original data and the way they are interpreted”(Ritchie and Lewis, 2003: 271). Marshall and Rossman (1999) and Seale (1999) argued that the absolute replication of qualitative studies is very difficult to achieve since they reflect realities at the time they were collected and in a situation which is likely to change. It is often referred to as an unrealistic demand. Phenomenological research may be difficult to repeat because it depends generally on unstructured data collection methods (Gray, 2004).

Instead, a good practice of reliability can be enhanced through an aspect of reflexivity, which is “ showing the audience of research studies as much as possible of he procedures that have led to a particular set of conclusions”

(Seale, 1999: 158). A number of measures were undertaken to enhance the reliability of the current research, including: all interviews were recorded to present more reliable evidence and avoid any bias which might happen if the researcher attempted to remember the conversation.

Gray (2004: 345) asserted that “ in terms of reliability, it is fairly obvious that taped conversations will tend to present more reliable evidence than hastily written field notes”. Also, all the questions were worded clearly and asked in a natural tone of voice. If there was any misunderstanding the question would be repeated in order to enable the interviewee understand what he was asked for. Moreover, all interviewees were given the opportunity to explain their own beliefs and thoughts freely without any intervention either with comments or gestures, which would create bias in the interviewee’s response to the question being asked.

It is recognised that the conditions surrounded the research might be different when replicating the current study but in an attempt to help others understand the various decisions and processes adopted along the research Journey and increase the robability of replicating the present study, all decisions and procedures were set clearly. The study provides detailed information about the aim and objectives of the research, how the study was undertaken and the Justifications of the adopted research strategy and methods.

Research Procedure According to Dr. Robert V. Williams, 2013, research procedure is the step-by-step procedure of developing one’s research ” and research paper. However, one can seldom progress in a step-by-step fashion

as such. Writing a research paper frequently requires continuous, and sometimes extensive, re-evaluation and revision of both one's topic and the way it is presented. Researchers will conduct a 4 days research days to identify if the caffeine is an effective endurance enhancer to the athletes.

Day 1 The Researchers will meet up with the respondents and orient them on what will happen in the following days. There will be warm up so that their bodies will be in good condition and also to avoid fatigue when we will be at the middle of research. Also in this day, the researchers will buy what all is needed in the research. Day 2 Researchers will meet up again with the respondents and start the research. First the respondents will do the short term and long term exercises without any consumption of caffeine. The researchers will record the time and other observations.

After this caffeinated drinks to the respondents in order to continue in the research. It needs to be one hour after the consumption of caffeine, so that, the researchers will observe any difference in their performance. After one hour, respondents must do again the short and long term exercise to see any improvements, and the research will observe and record any improvements. Day 3 In Day 3, the researchers will interview the subjects if they experienced any side effects of the caffeine after they used it as an endurance enhancer.

After the interview, researchers will give the questionnaire to the subject and they will be given 24 hours to answer all the questions from the questionnaire. Day 4 In the last day of research, the researchers will meet up with all the subjects and also to get the questionnaire that they've answered and

interview them again if they have experienced any side effects of the caffeine. Researchers will record all the observation and interviews. After this, Researchers will do the conclusion and analysis of all the data recorded.