**RESEARCH PLAN/PROJECT 2018-2019**

**A. Rationale**

Sepsis is a hyper-inflammatory condition where the body’s overwhelming and life-threatening response to an infection can lead to tissue damage, organ failure, and, ultimately, death. More than 1.5 million people get sepsis each year in America, with 15-30% of those people dying because of the condition. Previous studies have shown that, internationally, public understanding and awareness of sepsis is low. This study will be a survey sent out to the public. In this part of the study, a survey will be created and distributed online via SurveyMonkey. The survey will aim to analyze adult (over 18 y/o) general understanding and awareness of sepsis. Through the distribution of the survey, the student researcher will be able to analyze general trends in public understanding and awareness of sepsis. The responses to the survey for the public will be compared to a survey created especially for medical professionals. This will enable the researcher to compare what the public knows to what the medical professionals assume the public knows about sepsis. Both surveys will be anonymous and only be answered by adults. Though sepsis kills more people annually than AIDS, prostate cancer, and breast cancer combined, public awareness of the condition is low. This is dangerous because, for every hour of delated treatment, the risk of mortality increases by 8%. Previous international studies have shown that in Italy, Spain, the United Kingdom, France and the United States, a mean of 88% of interviewees had never heard of the term “sepsis.” Furthermore, in Italy, Spain, United Kingdom, France, and United States, of people who recognized the term sepsis, 58% did not recognize that sepsis is a leading cause of death. These statistics validate that public understanding of the condition is low, and that a survey could further assess what exactly the public is aware of with regard to sepsis. General public understanding of the condition for the disease needs to be analyzed so that awareness can be spread, and education can be provided to the public. Trends in public understanding could possibly reveal which groups of people must be educated most about the risks of sepsis. Additionally, specific discrepancies could be used to target exact weaknesses in understanding. Since doctors will be asked specific questions, specific discrepancies between what doctors think the public knows compared to what they actually know could potentially be addressed. This research could help to raise awareness of sepsis, expose the need for sepsis education, and even potentially lead to lower sepsis recognition times, and better patient outcomes, as the public becomes more aware of the condition.

**B. Research Questions, Hypotheses, Goals, Expected Outcomes**

*Research Questions:*

1. To what extent is there a discrepancy between what doctors assume the public knows about sepsis and what the public actually knows?
2. How aware is the public about general information regarding sepsis, including its causes, risks, and potential outcomes?

*Hypotheses:*

1. Because it has been found in previous studies that many people are unaware of even the term “sepsis,” it is hypothesized that there will be a large discrepancy between what the public knows about sepsis compared to what doctors think patients know. It is hypothesized that patients will know less about sepsis than doctors think they do.
2. It is hypothesized that the general public’s knowledge about sepsis will be relatively low. Specifically, younger adults (20-30 y/o) who do not work in the medical or biology fields will have a lesser understanding, knowledge, and awareness of sepsis. In general, it is hypothesized that the general public will have limited knowledge about the causes of sepsis and its risks.

*Goals:*

1. To determine the discrepancy between what real physicians assume the public knows about sepsis compared to what they actually know, to allow for more targeted education to raise awareness.
2. To determine the specific populations of people that have a significant lack of knowledge about sepsis. Also, to determine general trends in the public awareness of the condition, including its causes, risks, and outcomes. The study aims to determine where, in general, public (adult) knowledge lacks.

*Expected Outcomes:*

1. It is expected that there will be a large (significant) difference between what doctors assume the public knows about sepsis, and what the public actually knows. It is expected that the public will know less than the doctors assume the public knows, especially in the areas of sepsis causes, risks, and potential outcomes.
2. It is expected that adults from the age of 20-30 years old who do not work in the biology or medical fields will be the most unaware of sepsis, including its causes and outcomes. It is expected that people with family or friends who have had sepsis and those who currently work, or have worked, in the healthcare industries will be the most aware of sepsis because they have had first-hand experience with the condition. The general public will be most unaware of the causes and outcomes of sepsis.

**C. Methodology**

*Procedures:*

1. Public Awareness of Sepsis Survey:
   1. Questions will be composed by the **student** with approval by the mentor.
   2. The survey will be created (based on information learned from sepsis literature) and will be distributed to the general public. The audience will be all adults since the goal of the study is to see how aware the general public, specifically adults (18+), are of sepsis.
   3. The survey website, SurveyMonkey, will be used to create the survey format that will be distributed (paper surveys will be distributed on a limited basis for those without internet capabilities).
   4. After the survey questions are distributed the responses to the survey will be sent to the researcher. Responses are anonymous.
   5. After all the responses are returned to the researcher, the researcher will work with a statistician to sort the data
   6. Trends of sepsis-related awareness and knowledge will be analyzed
2. Survey for Medical Professionals:
   1. Questions will be composed by the **student** with approval by the mentor.
   2. The survey will be created via Survey Monkey and will ask the medical professionals about what they believe is important for the public to know and what they believe the biggest misconceptions about sepsis are.
   3. After the survey questions are distributed the responses to the survey will be sent to the researcher. Responses are anonymous.
   4. After all the responses are returned to the researcher, the researcher will work with a statistician to sort the data
   5. Trends will be analyzed and compared to the public’s responses.

*Risk and Safety (****including role of mentor****):*

There is limited risk associated with this study. The **mentor** will provide guidance during the question making process and the analyzing of results once the survey responses are collected. The student researcher will create questions and the mentor will check and approve them. All the participants’ names will be kept anonymous for their privacy and safety, limiting any risks of taking the study. In terms of safety precautions, all data will be secured in a secure area to ensure safety. All results of the online survey will be deidentified.

*Data Analysis:*

The surveys responses will be gathered after several weeks of the survey being circulated online by the student researcher. All responses will be coded for statistical analysis by the student researcher. The survey will show how aware the public is of sepsis and will also foster a self-analysis of their awareness of this fairly common, yet concerning, condition. Statistical examination will take place to state the significance of the findings. The findings will aid in providing better patient care by raising awareness about sepsis in the general public so that they may realize when they may be at risk, potentially leading to earlier recognition and treatment.

*Bibliography:*

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**Human Participants Research**

*Participants:*

The survey will be anonymous, but it will ask the person’s age, gender, ethnicity, occupation, and the state they live in because the demographic information is important in order to assess trends in sepsis knowledge and to determine if specific groups of people have greater/lesser understanding of sepsis than others. All participants will be adults. All will be 18 years of age or older. The survey will be open to all genders and racial/ethnic compositions. The survey is entirely voluntary, therefore vulnerable populations such as minors, pregnant women, and economically disadvantaged will have a choice to participate.

*Recruitment:*

The survey will be distributed online and via social media. Doctors’ offices will also be contacted and asked to distribute the survey to adults waiting. Participants will be invited to participate via an online link to the survey. They will also be invited via an email with a link to the online survey.

*Methods:*

Participants will be asked to answer questions regarding their demographics, and knowledge of sepsis in general, its causes, outcomes, and risks. This is to determine trends in sepsis awareness between different groups of people. The questions include Likert-style questions assessing how much they believe that a condition could lead to sepsis. Other questions would ask if the participant knows anyone who has, or had, sepsis. Other questions would ask the degree to which they know the effects of sepsis. The student researcher will be using surveys. Each participant will only be asked to complete the survey once. The survey will not take up much of the participant’s time (around 10-15 minutes for around 20 questions)

*Risk Assessment:*

A potential discomfort for the participants would be to state where they live (city/county) and the time it would take to fill out the survey. The risks will be minimized through making sure all information is confidential and that the questions asked are very direct and do not take time to analyze. Additionally, participants who know someone who has, or had, sepsis might be uncomfortable, but the discomfort would be alleviated because participants may skip any questions that they feel uncomfortable answering. Benefits to the participant would

be to make themselves aware sepsis and the risks associated with it. A person that is knowledgeable about the risks and impacts of sepsis will be at a lower chance of a poor outcome, and potentially earlier treatment, should they be faced with the condition. This survey may help a community realize that sepsis is a major risk and the lack of education should be addressed.

*Protection of Privacy*

Very minimal identifiable information will be needed in order to complete the survey. The information would be what state the person lives in, their gender, age, and their ethnicity. The information that is collected will not contain any names, telephone number, birth dates or a requirement for an email address. If the participant would like to receive an email about the outcome of the study they may provide an email address. The data will be deidentified, confidential, and anonymous. The data will be collected confidentially; because after completion, the survey replies will be mailed to the student researcher and the researcher’s mentor. No one else will come in contact with the replies except for the student researcher, the mentor, and the researcher’s supervisors. The information that is given on the survey replies will not be distributed to anyone. Once the replies are sent back to the student researcher, they will be stored in a locked file drawer. At the end of the study, the data will be shredded in a paper shredder to ensure confidentiality.

*Informed Consent Process:*

At the top of the survey print out, the goal of the study will be stated and the focus of the questions. The disclaimer will state that the survey is completely voluntary and the participant can quit at any time*.*