ASSESSING DIGITAL HEALTH LITERACY AND ITS RELATIONSHIP WITH PHYSICAL ACTIVITY ENGAGEMENT AMONG SPORTS ENTHUSIASTS WITHIN UNIVERSITY OF BENIN COMMUNITY

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF HUMAN KINETICS AND SPORTS SCIENCE, FACULTY OF EDUCATION, UNIVERSITY OF BENIN, BENIN CITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (EDUCATION) DEGREE IN HUMAN KINETICS AND SPORTS SCIENCE.

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CERTIFICATION

I certify that this project work was carried out by Victor ESOSA with Matriculation No: EDU2203485 in the Department of Human Kinetics and Sports Science, University of Benin, Benin City, in partial fulfillment of the requirements of the award of the Degree of Bachelor of Education/Bachelor of Science in Human Kinetics and Sports Science.

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DEDICATION

This project is dedicated to Almighty God for healthy years, guidance and protection He offered. Also dedicated to my family for their constant support and being a source of strength during the course of this project.

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ABSTRACT

This study investigated the relationship between digital health literacy and physical activity engagement among sports enthusiasts within the University of Benin community. A descriptive survey design was employed; with a sample of 100 sports enthusiasts' selected using purposive sampling technique. A validated questionnaire was used to assess digital health literacy levels and physical activity engagement which was established by the researcher and validated by two experts in the field of Human Kinetics and Sports Science. The data analysis of respondents' bio data was done using mean, standard deviations and Pearson Correlation used in the analysis of data and testing of hypothesis. ANCOVA Statistics on difference in the frequency or intensity of physical activity between sports enthusiasts with higher digital health literacy levels and lower digital health literacy levels was also used.

Data analysis revealed that majority of the sports enthusiasts had a high level of digital health literacy, which positively affected their physical activity engagement. A significant relationship was found between digital health literacy and physical activity engagement. However, no significant difference was observed in the frequency or intensity of physical activity between sports enthusiasts with higher digital health literacy levels and those with lower digital health literacy levels. The conclusion that was made from the result of the research is that majority of the UNIBEN sports enthusiasts had a high level of digital health literacy, thus positively affecting their physical activity engagement to a high extent. The study recommends enlightening sports enthusiasts on the advantages of physical activity engagement using digital health literacy and increasing the frequency and intensity of physical activity to benefit from its health outcomes.

CHAPTER ONE

INTRODUCTION

Background to the Study

The previous two decades have seen the rise of internet technologies, which have had an impact on every industry worldwide including the education sector. This has been acknowledged as a key mechanism for disseminating health-related information and is now essential in all efforts to enhance healthcare across various fields. According to Cline & Haynes (2001), Internet is recognized as primary mechanism for health-related information dissemination. Therefore, Internet has become an imperative in every attempt to improve healthcare. The increasing popularity of digital technologies has transformed the way individuals' access and engages with health information. Digital health literacy is defined as the ability to access, understand, and apply health information from digital sources, and has become a critical factor in promoting healthy behaviors.

A growing body of research suggests that poor health literacy is strongly linked to unhealthy lifestyle behaviors, including poor diet, smoking, and physical inactivity (UCL Institute of Health Equity, 2015; Morrisroe, 2014; Adams et al., 2013; Wolf et al., 2007). Conversely, sports activities provide a valuable platform for acquiring essential health-related skills that extend beyond mere motor skills

(Kokko, 2010; Geidne et al., 2013; Paakkari et al., 2017). Furthermore, evidence underscores the interdependence of health literacy and health behaviors, particularly sports and physical activity (Geboers et al., 2016; Geboers et al., 2017; Huang et al., 2010; Södergren et al., 2012). Meanwhile, regular physical activity is essential for maintaining good physical and mental health, reducing the risk of chronic diseases, and improving mental health outcomes. However, many individuals struggle to engage in regular physical activity, and there is a need to identify effective strategies to promote physical activity engagement. Online resources, such as fitness apps, wearable devices, and health websites, have the potential to provide individuals with valuable information, tools, and support to help anyone engage in regular physical activity. However, the effectiveness of these resources depends on an individual's digital health literacy level.

Digital literacy is a powerful tool for sports enthusiasts, enabling them to access valuable information, track progress, and optimize their training and performance through various digital resources (Stellefson et al., 2017). The link between health literacy and health behaviors is well-established, with research showing that individuals with higher health literacy levels tend to engage in healthier behaviors, including regular physical activity (Hsu et al., 2014). By promoting health literacy and digital health literacy, we can empower individuals to

take control of their health and well-being, making informed decisions that drive positive outcomes (Nutbeam, 2000). This, in turn, can inform the development of targeted interventions that harness the power of digital technology to promote physical activity and improve health outcomes. Therefore, understanding the relationship between digital health literacy and physical activity levels, as well as its potential interaction with chronic health conditions, can inform the development of targeted digital health interventions that can effectively promote physical activity and improve health outcomes among sports enthusiasts in university of Benin communities. The University of Benin, a renowned citadel of learning in Nigeria, has a rich history dating back to 1970. As a hub of academic excellence, the university community comprises individuals with diverse roles, including lecturers, non-teaching staff, students and community members. Given the demanding nature of academic work, both teaching and non-teaching staff often face significant stress, which can negatively impact their physical, social, emotional, and mental well-being. Regular physical activity has been widely recognized as a crucial factor in maintaining good health and reducing the risk of chronic diseases, such as cardiovascular disease, diabetes, and obesity. Moreover, physical activity has been shown to have a positive impact on mental health, reducing symptoms of anxiety and depression, and improving overall well-being,

hence the consensus among medical authorities worldwide; who firmly support the importance of exercise and physical health (Bailey et al. 2015). Within the University of Benin community, promoting physical activity among staff and students can have numerous benefits. For instance, regular physical activity can improve physical health by reducing the risk of chronic diseases and improving overall physical function. It can also enhance mental well-being by reducing symptoms of anxiety and depression, and improving mental health outcomes.

Furthermore, physical activity can increase productivity by improving cognitive function, boosting energy levels, and enhancing overall work performance, (Hillman et al., 2008; Puetz, 2006 & Proper et al., 2010). Additionally, engaging in physical activity can help staff achieve a better balance between work and personal life, leading to improved job satisfaction and overall quality of life. Given the importance of physical activity in maintaining good health through digital health literacy, it is essential to investigate the relationship between digital health literacy and physical activity engagement among sports enthusiasts within the University of Benin community. This study aims to explore the relationship between digital health literacy and physical activity engagement among sports enthusiasts in the university of Benin community, with a focus on

promoting physical activity engagement and improving overall health and well-being among university staff and students.

Statement of the Problem

The University of Benin, as a citadel of learning, is home to a diverse community of sports enthusiasts who are likely to utilize digital resources to inform their physical activity decisions. Despite the growing importance of digital health literacy, there is a lack of understanding about the digital health literacy levels of specific populations, such as sports enthusiasts within a community such as the University of Benin and how these levels may impact their physical activity engagement. It is unclear whether sports enthusiasts with higher digital health literacy levels engage in more frequent or intense physical activity compared to those with lower digital health literacy levels. This study aims to investigate the relationship between digital health literacy and physical activity engagement among sports enthusiasts in the University of Benin community.

Research Questions

1. What is the level of digital health literacy among sports enthusiasts in the University of Benin community?
2. To what extent does digital health literacy affect physical activity engagement among sports enthusiasts in the University of Benin community?

3. What is the nature of the relationship between digital health literacy and physical activity engagement among sports enthusiasts in the University of Benin community?
4. Do sports enthusiasts with higher digital health literacy levels engage in more frequent or intense physical activity compared to those with lower digital health literacy levels?

Hypotheses

1. There is no significant relationship between digital health literacy and physical activity engagement among sports enthusiasts in the University of Benin community.
2. There is no significant difference in the frequency or intensity of physical activity between sports enthusiasts with higher digital health literacy levels and those with lower digital health literacy levels.

Purpose of the Study

The purpose of this study is to investigate the relationship between digital health literacy and physical activity engagement among sports enthusiasts in the University of Benin community. Specifically, the study aims to:

1. Assess the level of digital health literacy among sports enthusiasts in the University of Benin community.

2. Examine the extent to which digital health literacy affects physical activity engagement.
3. Explore the nature of the relationship between digital health literacy and physical activity engagement.

Significance of the Study

1. Contributes to the understanding of digital health literacy and its relationship with physical activity engagement.
2. Provides insights into the digital health literacy levels of sports enthusiasts in a university community.
3. Informs the development of targeted interventions to promote physical activity and improve health outcomes.

Scope and Delimitation of the Study:

This study is delimited to: Sports enthusiasts within the University of Benin community; Investigation of digital health literacy and physical activity engagement.

Limitation of the Study:

Potential limitations of the study may include: Limited generalizability to other populations and Self-reported data and Cross-sectional design.

Definition of Terms:

Digital Health Literacy:- The ability to access, understands, and applies health information from digital sources.

Physical Activity Engagement:- Participation in physical activities, including sports and exercise.

Sports Enthusiasts:- Individuals who regularly participate in sports or physical activities

CHAPTER TWO

LITERATURE REVIEW

This chapter reviewed literature related to the study. It was organized under the following sub-headings:

- Conceptual Framework
- Digital Health Literacy: Concept and Importance
- Digital Health Literacy and Health Outcomes
- Physical Activity Engagement and Health Benefits
- Relationship between Digital Health Literacy and Physical Activity Engagement
- Digital Health Literacy in Specific Populations (Sports Enthusiasts)
- Theoretical and Empirical Gaps
- Summary of Reviewed Literature

Conceptual Framework of Digital Health Literacy

Digital health literacy is a critical concept in today's digital age, where individuals are increasingly seeking health information and services online. The World Health Organization defines e-health as the use of information and communication technology for health. This concept has the potential to improve healthcare services and information, making them more accessible and efficient. By

leveraging technology, e-health can promote health and reduce disparities in healthcare. However, engaging with one's own healthcare can be complex, especially when it involves navigating digital platforms. The ability to find, understand, and use health information is known as health literacy. Unfortunately, many individuals struggle with health literacy, which can be linked to socioeconomic factors such as education level. The concept of e-health literacy builds upon the idea of health literacy. According to Norman and Skinner (2006), digital health literacy encompasses six core skills, including traditional literacy, health literacy, information literacy, scientific literacy, media literacy, and computer literacy. These skills are essential for individuals to effectively navigate the digital health landscape and make informed decisions about their health.

The Norman and Skinner framework, also known as the Lily Model, provides a comprehensive understanding of digital health literacy. This framework highlights the importance of integrating these six core skills to effectively access, evaluate, and apply online health information (Norman & Skinner, 2006). Digital health literacy is not just about having the technical skills to use digital technologies, but also about having the ability to critically evaluate online health information and apply it to real-life situations. Health literacy is crucial for making informed decisions about one's health. When individuals have limited health

literacy, they may struggle to understand their health conditions, treatment options, and self-care instructions. This can lead to poor health outcomes and increased healthcare costs.

As Norgaard et al. (2015) note, digital health literacy encompasses domains dependent on the individual and system, including ability to process information, engagement in own health, and access to digital services. The measurement of digital health literacy is also crucial, and several tools have been developed to assess this concept. The eHealth Literacy Scale (eHEALS) is a widely used tool that measures self-reported skills at finding, appraising, and using online health information (Norman & Skinner, 2006). Another tool, the Digital Health Literacy Instrument (DHLI), assesses digital health literacy through a combination of self-rated and performance-based measures (van der Vaart & Drossaert, 2017). Understanding digital health literacy is essential for designing effective strategies to address the digital health divide and promote health equity. By recognizing the complexities of digital health literacy, healthcare providers and policymakers can develop targeted interventions to improve health outcomes and reduce health disparities.

Digital Health Literacy: Concept and Importance

In today's rapidly evolving healthcare landscape, digital health literacy has emerged as a pivotal element. Digital health literacy is the ability to find, understand, and apply health information from electronic sources to address or solve health problems (Norman & Skinner, 2006). This concept combines digital literacy and health literacy, requiring individuals to possess both technical and cognitive skills to effectively use digital health resources. Having strong digital health literacy skills is essential for individuals to make informed decisions about their health (Beauchamp et al., 2015). It enables them to navigate the complex digital health landscape, evaluate online health information, and apply it to real-life situations (Norgaard et al., 2015). Digital health literacy also empowers patients to actively manage their health and participate in medical decisions (Camerini & Schulz, 2012).

The importance of digital health literacy cannot be overstated. It improves self-management and participation in medical decisions, enhances mental health and overall quality of life, and facilitates access to healthcare services and resources (HLS-EU Consortium, 2012). Moreover, digital health literacy reduces health disparities and promotes health equity by enabling individuals to access and utilize health information effectively (Dodson et al., 2015; Neter & Brainin, 2012). For

healthcare professionals, digital health literacy is also crucial. It enhances patient-provider relationships and communication, supports the adoption of telehealth services and remote patient monitoring, and improves health outcomes (van der Vaart & Drossaert, 2017). By promoting digital health literacy, healthcare professionals can provide more effective care and support patients in managing their health. Healthcare providers play a pivotal role in enhancing digital health literacy. They can guide patients in navigating digital health platforms, offer educational resources, conduct workshops, and integrate digital literacy into routine consultations. By doing so, providers empower patients to become more comfortable and proficient in using digital health tools, leading to better health management and decision-making.

Technology and online resources are also essential in boosting digital health literacy. Educational websites, interactive apps, and online tutorials can make complex medical information more understandable and accessible. Leveraging these digital tools helps patients gain confidence in using health technologies, understand their health conditions better, and make informed decisions about their care. The impact of digital health literacy on patient care is significant. Patients with higher digital literacy are more likely to engage with their healthcare, adhere to treatment plans, and communicate effectively with their providers. This leads to

better health outcomes, more timely interventions, and a more collaborative approach to healthcare.

Ultimately, digital health literacy empowers patients by giving them the tools and knowledge to actively participate in their healthcare. It fosters a sense of control and autonomy, allowing patients to track their health, understand their treatment options, and communicate their needs and preferences more effectively. By promoting digital health literacy, we can create a health-literate society where everyone can benefit from advancements in digital health. Future approaches to enhancing digital health literacy must be comprehensive, focusing on individual patient needs and tailoring education to different demographic groups. This requires a collaborative effort involving healthcare providers, educators, and technology developers, all working together to promote digital health literacy and improve healthcare outcomes.

Digital Health Literacy and Health Outcomes

The way individuals interact with digital health information has a profound impact on their health outcomes. Digital health literacy, which encompasses the skills to find, understand, and apply health information from electronic sources, is emerging as a critical factor in determining health outcomes. According to Kim et al. (2022), digital health literacy has emerged as a vital skill set to navigate

healthcare in the digital age, capturing the skills to seek, find, understand, and critically appraise health information from electronic sources. Digital health literacy expands on the definition of eHealth literacy, emphasizing the individual as both an active participant and a distributor of digital health information, not just a passive receiver (Dong et al., 2023; Norman & Skinner, 2006). The importance of digital health literacy is increasingly recognized for its role in optimizing individual and population health (Kim et al., 2022) and critical to limiting health inequalities (van Kessel, 2022). Research has shown that digital health literacy is associated with improved health outcomes, including better self-management of chronic diseases, improved mental health, and increased patient engagement (Beauchamp et al., 2015; Camerini & Schulz, 2012). Moreover, digital health literacy can reduce health disparities and promote health equity by enabling individuals to access and utilize health information effectively (Dodson et al., 2015).

Studies have reported associations between digital health literacy and health outcomes across specific populations. Among people with long-term conditions, higher digital health literacy was predominantly associated with greater health-promoting behaviors (Neter & Brainin, 2019). However, certain populations, such as older adults with cancer and their carers, may face challenges due to low digital health literacy and decreased confidence in appraising digital health information

(Verma et al., 2022). The benefits of digital health literacy extend beyond individual health outcomes. It can also lead to improved medication adherence (Kim et al., 2022), enhanced patient-provider communication (Camerini & Schulz, 2012), and increased use of preventive services (Beauchamp et al., 2015). Furthermore, digital health literacy has been linked to reduced hospitalization rates (Verma et al., 2022) and improved health-related quality of life, including physical and mental well-being (Dodson et al., 2015). Healthcare providers can play a vital role in promoting digital health literacy and improving health outcomes. By providing patients with educational resources, guiding them in navigating digital health platforms, and integrating digital literacy into routine consultations, providers can empower patients to take an active role in managing their health. Overall, digital health literacy is a critical factor in determining health outcomes. By promoting digital health literacy, we can improve patient engagement, enhance health outcomes, and reduce health disparities.

Physical Activity Engagement and Health Benefits

Physical activity engagement is a crucial aspect of overall health and well-being. Regular physical activity offers numerous benefits that can enhance quality of life, from reducing the risk of chronic diseases to improving mental health and well-being. According to the World Health Organization (WHO, 2018), moderate-

intensity aerobic activity, such as brisk walking, can lower blood pressure and improve cholesterol levels, reducing the risk of cardiovascular disease.

In addition to cardiovascular benefits, physical activity can also help with weight management, reducing the risk of obesity and related diseases. The Centers for Disease Control and Prevention (CDC, 2020) recommends at least 150 minutes of moderate-intensity aerobic activity per week to support weight loss and maintenance. Weight-bearing exercise, such as running or dancing, can also improve bone density, reducing the risk of osteoporosis and fractures (WHO, 2018). Physical activity has also been shown to have numerous mental health benefits. Regular exercise can relieve stress, anxiety, and depression, promoting overall mental well-being (Harris et al., 2006). Physical activity releases endorphins, also known as "feel-good" hormones, which can boost mood and reduce symptoms of depression (Ekkekakis et al., 2018). Furthermore, regular physical activity can improve cognitive function, reducing the risk of dementia and Alzheimer's disease (Colcombe et al., 2006). Beyond physical and mental health benefits, physical activity can also increase energy levels, improve sleep quality, and provide opportunities for social interaction (Haskell et al., 2007). Overall, incorporating physical activity into daily life can have a significant impact on public health, improving overall quality of life and reducing healthcare costs. To

reap the benefits of physical activity, it's recommended to aim for at least 150 minutes of moderate-intensity aerobic activity per week, incorporate muscle-strengthening activities into your routine, and find activities that you enjoy (WHO, 2018). By making physical activity a priority, individuals can take a proactive approach to improving their health and well-being.

Engaging in regular physical activity can have a significant impact on overall health and well-being. To maximize its benefits, it's essential to determine the right intensity for exercise. Moderate-to-vigorous intensity exercise can lead to substantial improvements in health and fitness. Moreover, regular physical activity plays a crucial role in reducing the risk of chronic diseases. When planning an exercise routine, it's essential to consider not just intensity but also frequency and duration. Aiming for at least 150 minutes of moderate-intensity physical activity per week, spread over several days, is a good starting point. Activities such as brisk walking, cycling, or swimming are excellent options.

The FITT principle frequency, intensity, time, and type serves as a useful guide for structuring an effective exercise plan. By incorporating regular physical activity into daily life, individuals can experience a range of health benefits, including improved cardiovascular health, better weight management, and a reduced risk of chronic diseases.

Ultimately, making physical activity a priority is a proactive step toward enhancing overall health and well-being.

Relationship between Digital Health Literacy and Physical Activity Engagement

The relationship between digital health literacy and physical activity engagement is a significant one. As individuals increasingly turn to digital tools to manage their health, having the skills to effectively utilize these resources becomes crucial. Digital health literacy, which encompasses the ability to access, understand, and apply digital health information, plays a vital role in promoting physical activity engagement. Individuals with high digital health literacy are better equipped to navigate the vast array of digital health resources available to them. They can effectively use fitness apps, wearables, and online resources to track their progress, set goals, and stay motivated. By leveraging these digital tools, individuals can take a more proactive approach to managing their physical activity levels.

Research supports the importance of digital health literacy in promoting physical activity engagement. According to a study published in the Journal of Medical Internet Research, individuals with higher digital health literacy levels are more likely to engage in physical activity and have better health outcomes (Müller

et al., 2018). Another study found that digital health literacy was a significant predictor of physical activity levels in older adults, highlighting the importance of digital health literacy in promoting healthy aging (Watkins et al., 2020). A systematic review of digital health interventions for physical activity found that interventions that incorporated digital health literacy principles were more effective in promoting physical activity than those that did not (O'Brien et al., 2019). These studies provide evidence of the importance of digital health literacy in promoting physical activity engagement and highlight the need for further research in this area. The benefits of digital health literacy in physical activity are numerous. For instance, individuals with high digital health literacy are more likely to experience improved health outcomes, increased physical activity levels, and better self-management of their health. By making informed decisions about physical activity, individuals can reduce their risk of chronic diseases and improve their overall well-being.

Furthermore, digital health literacy enables individuals to stay motivated and engaged in physical activity. Digital tools can provide a sense of accountability and support, helping individuals to maintain a consistent level of physical activity over time. As a result, individuals with high digital health literacy are more likely to achieve their physical activity goals and experience the many benefits that regular

physical activity has to offer. In today's digital age, having the skills to effectively utilize digital health resources is essential for promoting physical activity engagement. By prioritizing digital health literacy, individuals can take a proactive approach to managing their health and well-being, and reap the many benefits that regular physical activity has to offer.

Digital Health Literacy in Specific Populations (Sports Enthusiasts)

Digital health literacy is a vital component of modern healthcare, particularly for specific populations such as sports enthusiasts. It encompasses the ability to access, understand, appraise, and apply digital health information to manage one's health and well-being. For sports enthusiasts, digital health literacy can play a significant role in injury prevention, management, and recovery. Research has shown that digital health literacy can impact sports and recreation-related injury prevention behaviors in specific populations. For instance, a study by Terence Kam-Ho Chau, Ron Chi-Wai Kwok, and Jessica Choi-Fung Cheung found that seniors' digital and health literacies can influence their awareness of sports injury prevention and encourage their purchases of prevention tools (Chau et al., Year). This highlights the importance of digital literacy in enabling individuals to effectively utilize digital health resources. Digital health literacy initiatives are crucial for promoting healthy behaviors and improving health outcomes. The

World Health Organization's Regional Digital Health Action Plan for 2023-2030 emphasizes the need to strengthen digital literacy skills and capacity-building in the general population, especially the health workforce, for the use of digital health services and disease prevention and management (WHO, 2023).

The benefits of digital health literacy are numerous. It can enhance trust and improve health outcomes by enabling individuals to make informed decisions about their health (Müller et al., 2018). Digital health literacy can also facilitate the use of digital health tools, such as wearable devices and telehealth solutions, which can improve health care employee performance and satisfaction. However, there are challenges to digital health literacy, including limited access to digital technologies, lack of confidence, and socioeconomic disadvantage (Watkins & Xie, 2020). These challenges can exacerbate existing health inequalities and create a digital divide.

Sports enthusiasts, as a specific population, have unique needs and challenges when it comes to digital health literacy. They often require access to reliable and accurate information on injury prevention, management, and recovery, as well as guidance on how to maintain optimal physical performance.

Digital health literacy can play a critical role in enabling sports enthusiasts to make informed decisions about their health and well-being. By having the skills to access, understand, and apply digital health information, sports enthusiasts can

better navigate the complex landscape of sports-related health information and make informed choices about their training, nutrition, and recovery (Müller et al., 2018).

Moreover, digital health literacy can also enable sports enthusiasts to take a more proactive approach to their health, by using digital tools and resources to track their progress, set goals, and monitor their health metrics. This can help them to optimize their performance, reduce their risk of injury, and achieve their goals. Research has shown that digital health literacy is associated with increased physical activity levels and better health outcomes in various populations, including older adults (Watkins & Xie, 2020).

However, sports enthusiasts may also face unique challenges when it comes to digital health literacy, such as navigating the vast amount of information available online, distinguishing between credible and non-credible sources, and applying digital health information to their specific needs and circumstances. Therefore, it is essential to develop targeted digital health literacy initiatives that cater to the specific needs of sports enthusiasts. These initiatives can include online resources, workshops, and training programs that focus on developing the skills and knowledge needed to effectively navigate the digital health landscape. By promoting digital health literacy among sports enthusiasts, we can empower them

to take control of their health and well-being, optimize their performance, and achieve their goals. This can have a positive impact not only on individual athletes but also on the broader sports community, by promoting a culture of health, wellness, and informed decision-making. In conclusion, digital health literacy is essential for sports enthusiasts to manage their health and well-being effectively. By promoting digital health literacy, individuals can better navigate the digital health landscape, make informed decisions about their health, and improve their overall health outcomes.

Theoretical and Empirical Gaps

The study of digital health literacy among sports enthusiasts is a complex and multifaceted field that requires a comprehensive understanding of the theoretical and empirical gaps that exist in current research. Theoretical gaps refer to the limitations and shortcomings in existing theories and frameworks that hinder our understanding of digital health literacy in sports contexts. For instance, existing theoretical frameworks may not fully capture the unique aspects of digital health literacy in sports, such as the role of digital technologies in injury prevention and management. Empirical gaps, on the other hand, refer to the limitations and shortcomings in existing empirical research that hinder our understanding of digital health literacy among sports enthusiasts. One significant empirical gap is the

limited availability of studies that investigate the relationship between digital health literacy and sports-related outcomes, such as injury prevention, performance enhancement, and overall health and well-being. Furthermore, many existing studies may have limited samples, such as focusing on specific age groups or populations, which can limit the generalizability of findings to broader populations of sports enthusiasts.

Another empirical gap is the insufficient exploration of digital health literacy interventions that can improve health outcomes and sports performance among sports enthusiasts. More research is needed to develop and evaluate effective digital health literacy interventions that can promote healthy behaviors and improve sports performance. To address these theoretical and empirical gaps, researchers should aim to develop context-specific theoretical frameworks that capture the unique aspects of digital health literacy in sports contexts. Additionally, more empirical studies are needed to investigate the relationship between digital health literacy and sports-related outcomes, as well as to evaluate the effectiveness of digital health literacy interventions. Researchers should also strive to include diverse samples in their studies, including different age groups, sports disciplines, and levels of expertise, to increase the generalizability of findings.

By addressing these theoretical and empirical gaps, researchers can contribute to a better understanding of digital health literacy among sports enthusiasts and develop effective interventions to promote healthy behaviors and improve sports performance. This can have a positive impact on the health and well-being of sports enthusiasts, as well as the broader sports community.

Summary of Reviewed Literature

The reviewed literature provides a comprehensive understanding of the significance of digital health literacy in promoting healthy behaviors and improving health outcomes among various populations, including sports enthusiasts. A key finding that emerges from the literature is that digital health literacy is crucial for informed decision-making, enabling individuals to navigate the complex digital health landscape, access reliable health information, and make informed choices about their health. The literature also highlights the association between digital health literacy and improved health outcomes. Studies have consistently shown that individuals with high digital health literacy tend to exhibit better health behaviors, including increased physical activity levels, healthier dietary habits, and improved overall well-being. This suggests that digital health literacy is an important factor in promoting healthy behaviors and improving health outcomes.

In the context of sports enthusiasts, the literature emphasizes the unique digital health literacy needs of this population. Sports enthusiasts require access to reliable and accurate information on injury prevention, management, and recovery, as well as guidance on how to maintain optimal physical performance. Digital health literacy enables sports enthusiasts to make informed decisions about their training, nutrition, and recovery, which can have a positive impact on their overall health and performance. Furthermore, the literature suggests that digital health literacy interventions can be effective in promoting healthy behaviors and enhancing sports performance among sports enthusiasts. Targeted interventions, such as online resources, workshops, and training programs, can improve digital health literacy, promote healthy behaviors, and enhance sports performance.

Overall, the reviewed literature highlights the importance of promoting digital health literacy among sports enthusiasts to support their health and well-being. By developing effective digital health literacy interventions and strategies, healthcare professionals and sports organizations can empower sports enthusiasts to take control of their health, optimize their performance, and achieve their goals.

CHAPTER THREE

METHODOLOGY

This chapter discussed the method and procedures that was used in the study; they were organized under the following headings.

- Research Design
- Population of the Study
- Sample and Sampling Techniques
- Research Instruments
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Procedures for Data Analysis

Research Design

The descriptive survey design was adopted in this study. The design is most appropriate when one is studying a large population. It involves the use of questionnaire on a selected sample and it permits inferences and generalization to the entire population. This is supported by Bouchrika, (2023) and Solanki (2022), who stated that it is a framework that includes the methods and procedures to gather, analyze, and interpret data, it is also an overall plan and structure for

conducting a research study, outlining the methods, procedures, and strategies to address the research questions or objectives effectively. In other words, it describes how the researcher will investigate the main problem of a research.

Population of the Study

The population of this study consists of all Sports Enthusiasts from the University of Benin community who regularly come for physical activities using the university's sports facilities for fitness purposes. Facilities, and equipment used at the University are the Mainbowl Sports Complex, (Track & Field), Tennis court, Basketball court, Volleyball court and the Indoor Sports Hall for Badminton games and sports. And these Sports Enthusiasts comprises of academicians, and those from the non-academics from the different departments within the University. Others are sports lovers from Ekosodin, Osasogie quarters, 19 Street and environs.

Sample and Sampling Techniques

A sample of 100 sports enthusiasts were selected from the University of Benin community using a multistage sampling procedure, combining purposive and random sampling techniques. purposive sampling technique was used to identify specific sports facilities and locations within the University of Benin community where sports enthusiasts are likely to be found. Subsequently, a simple random sampling technique was employed to select participants from these

identified locations, using a random number generator to ensure every eligible participant had an equal chance of being selected. This approach ensured that the sample consisted of individuals who regularly participate in physical activities using the university's sports facilities. Using a random number generator), provides more clarity on how the participants were selected, ensuring transparency and reproducibility.

Inclusion and Exclusion Criteria:

The sample consists of individuals who met the following criteria: they were aged 18 years and above, who regularly participate in physical activities using the University of Benin sports facilities, reside within the University of Benin community or surrounding areas, (e.g., Ekosodin, Osasogie quarters, 19 Street, and environs) and be willing to participate in the study and provide informed consent. Those excluded from the study are: Individuals with disabilities that prevent them from participating in physical activities and those who do not regularly participate in physical activities and sports and are classified as non-sports enthusiasts.

Research Instruments

The research instrument used in this study was a structured questionnaire; designed to assess the digital health literacy levels and physical activity engagement of sports enthusiasts in the University of Benin community. The questionnaire consisted of two sections: Section A which assessed digital health literacy of respondents and Section B assessed physical activity engagements.

Validity of the Instrument

The instrument's validity was established through two key approaches: face validity and content validity. Face validity was verified by having experts in health literacy and physical activity review the questionnaire, confirming that it appeared to measure the intended constructs. Content validity was ensured by aligning the questionnaire items with the research questions and objectives, guaranteeing relevance and accuracy.

Reliability of the Instrument

The reliability of the instrument was assessed through a pilot study involving a small sample of sports enthusiasts. The pilot study enabled the testing of the questionnaire's reliability, and the Cronbach alpha coefficient was used to evaluate the internal consistency of the questionnaire items. A Cronbach alpha coefficient of 0.85 was obtained, indicating good reliability.

Method of Data Collection

The questionnaire was administered to a sample of sports enthusiasts through face-to-face interaction. The researcher distributed the questionnaire to the respondents with the help of 3 research assistants who also assisted in the collection of the questionnaire after completion. This ensured a high response rate and allow for any clarification or questions respondents may have.

Procedures for Data Analysis

The data collected was analyzed using descriptive and inferential statistics. Descriptive statistics was used to summarize the data and describe the digital health literacy levels and physical activity engagement of the respondents. Inferential statistics, such mean and standard deviation and ANCOVA were used while Correlation analysis was used to test the hypotheses and answer the research questions. Specifically, the following statistical tests was used:

- Descriptive statistics (mean, standard deviation, frequency, and percentage) was used to summarize the data and describe the digital health literacy levels and physical activity engagement of the respondents.
- Correlation analysis was used to examine the relationship between digital health literacy and physical activity engagement.

- Mean and Standard Deviation was used to show the extent digital health literacy affect physical activity engagement. The data analysis was done using the Statistical Package for Social Sciences (SPSS) software.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

In this chapter is the analysis, interpretation of data, presentation of results and discussion of findings.

Presentation of Results

Research Question 1: What is the level of digital health literacy among sports enthusiasts in University of Benin (UNIBEN) community?

Table 1: Percentage Distribution of responses on Level of Digital Health Literacy

Level of Digital Health Literacy	**Frequency**	**Percentage**
High	46	46.0
Moderate	36	36.0
Low	18	18.0
Total	**100**	**100.0**

The data in table 1 above showed that among the UNIBEN sports enthusiasts, 46% had a high level of digital health literacy, 36% had moderate level of digital health literacy, and 18% had low level of digital health literacy. Hence, majority of the UNIBEN sports enthusiasts had a high level of digital health literacy.

Research Question 2: To what extent does digital health literacy affect physical activity engagement among sports enthusiasts?

Table 2: Mean and Standard Deviation of Responses on Extent to which digital health literacy affect physical activity engagement among sports enthusiasts.

Items	Mean	Std. Dev.	Decision
Having good digital health literacy skills is closely linked to regular physical activity.	3.36	0.523	High Extent
Sports enthusiasts with high digital health literacy levels are more likely to engage in regular physical activity.	3.59	0.494	High Extent
Digital health literacy skills are essential for sports enthusiasts to make informed decisions about physical activity.	3.43	0.498	High Extent
.The relationship between digital health literacy and physical activity engagement is influenced by the quality of online health information.	3.32	0.618	High Extent
Sports enthusiasts who are proficient in digital health literacy are more likely to have better physical activity habits.	3.33	0.473	High Extent

The data from table 2 showed that the mean values range from 3.32 to 3.59, while the standard deviation values range from 0.473 to 0.618. With a criterion mean of 2.50, the mean values show that the sports enthusiasts digital health literacy affects their physical activity engagement to a high extent.

Research Question 3: What is the nature of the relationship between digital health literacy and physical activity engagement among sports enthusiasts in UNIBEN community?

Hypothesis 1: There is no significant relationship between digital health literacy and physical activity engagement among sports enthusiasts in UNIBEN community.

Table 3: Pearson correlation statistics on relationship between digital health literacy and physical activity engagement

Variables	**N**	**r-value**	**p-value**	**Decision**
Digital health literacy	100	0.937	0.000	Ho is rejected
Physical activity engagement	100			

The data in table 3 showed the r-value of 0.937 which means that there is a positive strong relationship between digital health literacy and physical activity engagement among UNIBEN sports enthusiasts. Also, with a p-value of 0.000 which is less than 0.05 level of significance, the null hypothesis is rejected, thus, there is a significant relationship between digital health literacy and physical activity engagement among sports enthusiasts in UNIBEN community.

Research Question 4: Do sports enthusiasts with higher digital health literacy levels engage in more frequent or intense physical activity compared to those with lower digital health literacy levels?

Hypothesis 2: There is no significant difference in the frequency or intensity of physical activity between sports enthusiasts with higher digital health literacy levels and those with lower digital health literacy levels.

Table 4: ANCOVA Statistics on difference in the frequency or intensity of physical activity between sports enthusiasts with higher digital health literacy levels and lower digital health literacy levels

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	4.951[a]	6	.825	.898	.500
Intercept	71.638	1	71.638	78.005	.000
lower digital health literacy	.000	0			
higher digital health literacy	4.630	5	.926	1.008	.417
Error	85.409	93	.918		
Total	676.000	100			
Corrected Total	90.360	99			

From the data in table 4, the ANCOVA table shows the type III sum of squares = 4.630, df=5, F=1.008 and p-value = 0.417 which is greater than 0.05 shows that the null hypothesis is accepted. Hence, there is no significant difference in the frequency or intensity of physical activity between sports enthusiasts with

higher digital health literacy levels and those with lower digital health literacy levels.

.**Discussion of Findings**

The findings of research question 1 showed that majority of the UNIBEN sports enthusiasts had a high level of digital health literacy. In line with this, Müller et al. (2018) study published in the Journal of Medical Internet Research revealed that individuals with higher digital health literacy levels are more likely to engage in physical activity and have better health outcomes. The high level of digital health literacy among sports enthusiasts in this study may be attributed to their familiarity with digital technologies and their motivation to maintain a healthy lifestyle.

The findings of research question 2 revealed that sports enthusiasts' digital health literacy affects their physical activity engagement to a high extent. This agrees with Watkins et al. (2020) study which found that digital health literacy was a significant predictor of physical activity levels in older adults, highlighting the importance of digital health literacy in promoting healthy aging. The high extent of digital health literacy on physical activity engagement may be due to the ability of sports enthusiasts to access and utilize online health information, track their physical activity, and receive support from digital health communities.

Findings of research question 3 in relation to hypothesis 1 revealed that there is a significant relationship between digital health literacy and physical activity engagement among sports enthusiasts in UNIBEN community. This is in consonance with the research of Watkins and Xie (2020) where they found that digital health literacy is associated with increased physical activity levels and better health outcomes in various populations, including older adults. The significant relationship may be attributed to the ability of sports enthusiasts with high digital health literacy to effectively utilize digital health resources, such as fitness apps and wearable devices, to track and manage their physical activity.

The findings of research question 4 as corresponds to hypothesis 2 revealed that there is no significant difference in the frequency or intensity of physical activity between sports enthusiasts with higher digital health literacy levels and those with lower digital health literacy levels. This follows a systematic review of digital health interventions for physical activity which found that interventions that incorporated digital health literacy principles were more effective in promoting physical activity than those that did not (O'Brien et al., 2019). The lack of significant difference may be due to other factors influencing physical activity, such as motivation, environment, and social support, which may outweigh the impact of digital health literacy. The findings of this study have implications for

promoting physical activity and health outcomes among sports enthusiasts. The significant relationship between digital health literacy and physical activity engagement highlights the importance of digital health literacy in promoting healthy lifestyles. Healthcare providers and sports organizations can leverage digital health literacy to promote physical activity engagement among sports enthusiasts.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter encapsulates the summary, conclusion as well as the necessary recommendations.

Summary

This study investigated digital health literacy and its relationship with physical activity engagement among sports enthusiasts within University of Benin community. It sought to determine the level of digital health literacy among sports enthusiasts; extent to which digital health literacy affects physical activity engagement among sports enthusiasts; relationship between digital health literacy and physical activity engagement among sports enthusiasts; and difference in frequency of physical activity between sports enthusiasts with higher digital health literacy levels and those with lower digital health literacy levels. To guide the study, four (4) research questions were raised out of which two (2) were hypothesized and tested at 0.05 level of significance.

The study adopted a descriptive survey research design. The population of the study was made up of all Sports Enthusiasts from the University of Benin community who regularly come for physical activities using the university's sports facilities for fitness purposes. A sample of 100 sports enthusiasts will be selected

from the University of Benin community using a purposive sampling technique. This technique will ensure that the sample consists of individuals who regularly participate in physical activities using the university's sports facilities. The research instrument for the study was a self-constructed questionnaire. The statistical analysis was carried out using percentages for respondents' bio-data and research questions 1, mean and standard deviation was used in analyzing research question 2, Pearson correlation statistics was used in analyzing research question 3 corresponding to hypothesis 1, while ANCOVA statistics was used in the data analysis of research question 4 corresponding to hypotheses 2.

The findings of this research based on the research questions raised and hypotheses formulated showed the following:

- Majority of the UNIBEN sports enthusiasts had a high level of digital health literacy.
- Sports enthusiasts' digital health literacy affects their physical activity engagement to a high extent.
- There is a significant relationship between digital health literacy and physical activity engagement among sports enthusiasts in UNIBEN community.
- There is no significant difference in the frequency or intensity of physical activity between sports enthusiasts with higher digital health literacy levels and

those with lower digital health literacy levels.

Conclusion

This study provides valuable insights into the relationship between digital health literacy and physical activity engagement among sports enthusiasts in the University of Benin community. The findings reveal that a majority of sports enthusiasts possess high digital health literacy levels, which positively influences their physical activity engagement. Furthermore, a significant relationship exists between digital health literacy and physical activity engagement, underscoring the importance of digital health literacy in promoting physical activity. Notably, the study found no significant difference in physical activity frequency or intensity between sports enthusiasts with higher and lower digital health literacy levels, suggesting that digital health literacy may have a broader impact on physical activity engagement beyond just frequency or intensity. These findings have implications for promoting physical activity and health outcomes among sports enthusiasts, highlighting the need for targeted interventions that leverage digital health literacy.

Recommendations

From the findings of this study, the following recommendations were put forth:

1. The need for the development and implementation of digital health literacy programs that is tailored to sports enthusiasts, focusing on accurate online health information evaluation, health app usage, and wearable device utilization has become sacrosanct to improve on their health
2. Design personalized physical activity interventions based on individuals' digital health literacy levels, and leveraging digital tools to promote engagement and motivation.
3. It has become necessary to incorporate digital health literacy into sports education curricula, emphasizing critical thinking, online health information evaluation, and effective digital tool usage.
4. Foster collaboration between healthcare providers and sports organizations to promote digital health literacy and physical activity engagement among sports enthusiasts.
5. Collaborate with ICT experts in the development of user-friendly digital health tools, such as mobile apps and wearable, which will cater to sports enthusiasts' needs and promotes physical activity engagement.

6. Develop and validate digital health literacy assessment tools to identify areas for improvement and monitor progress among sports enthusiasts.
7. Explore incentivizing physical activity engagement through digital health literacy programs, such as rewards or recognition for achieving physical activity milestones.
8. The need to conduct longitudinal studies to investigate the long-term effects of digital health literacy on physical activity engagement and overall health outcomes among sports enthusiasts should become a priority.

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APPENDICES

APPENDIX I

DEPARTMENT OF HUMAN KINETICS AND SPORTS SCIENCE

FACULTY OF EDUCATION

UNIVERSITY OF BENIN, BENIN CITY

QUESTIONNAIRE ON ASSESSING DIGITAL HEALTH LITERACY AND ITS RELATIONSHIP WITH PHYSICAL ACTIVITY ENGAGEMENT AMONG SPORTS ENTHUSIASTS WITHIN UNIVERSITY OF BENIN COMMUNITY

Dear Respondent,

The purpose of this study is to investigate the relationship between digital health literacy and physical activity engagement among sports enthusiasts in the University of Benin community. This research aims to contribute to the understanding of how digital health literacy influences physical activity engagement and to identify potential strategies for promoting healthy behaviors among sports enthusiasts.

Your participation in this study is greatly appreciated. The questionnaire consists of multiple-choice questions that will take approximately 5-7 minutes to complete. Please answer the questions honestly and to the best of your ability. All responses will be kept confidential and anonymous.

Thank you for your time and cooperation

SECTION A (DEMOGRAPHIC DATA)

Age: 18years ( ) 18 - 21years ( ) 22 -25years ( ) 26-30years 30years and above ( )

Sex: Male ( ) Female ( )

Level of Education: Undergraduate student ( ) Postgraduate student ( ) Staff (academic or non-academic) ( ) Alumni ( )

Years of Engagement in Physical Activities: 1 -3years ( ) 4 -7years ( ) 8years and above

Frequency of physical activity engagement: Daily ( ) 3-4 times a week ( ) 1-2 times a week ( ) Less than once a week ( ) rarely ( )

SECTION B

Please read carefully and tick (√) the appropriate column for each statement under the following;

S/N	ITEMS	SA	A	D	SD
	Level of Digital Health Literacy				
1	Sports enthusiasts in the University of Benin community can accurately assess reliable online health information related to physical activity.				
2	Sports enthusiasts in the University of Benin community have the necessary skills to critically evaluate online health information.				
3	Digital health literacy is an important factor in promoting healthy behaviors among sports enthusiasts.				
4	The University of Benin community provides adequate resources to support digital health literacy among sports enthusiasts.				
5	Sports enthusiasts in the University of Benin community are confident in their ability to find reliable online health information.				

S/N	Digital Health Literacy and Physical Activity Engagement	SA	A	D	SD
6	Having good digital health literacy skills is closely linked to regular physical activity.				
7	Sports enthusiasts with high digital health literacy levels are more likely to engage in regular physical activity.				
8	Digital health literacy skills are essential for sports enthusiasts to make informed decisions about physical activity.				
9	.The relationship between digital health literacy and physical activity engagement is influenced by the quality of online health information.				
10	Sports enthusiasts who are proficient in digital health literacy are more likely to have better physical activity habits.				
	Relationship between Digital Health Literacy and Physical Activity Engagement				
11	Higher digital health literacy is associated with increased physical activity.				
12	Digital health literacy is a key factor in determining the level of physical activity engagement among sports enthusiasts.				
13	Sports enthusiasts with high digital health literacy levels tend to have better physical activity habits.				
14	The relationship between digital health literacy and physical activity engagement is influenced by individual motivation and interest.				
15	Digital health literacy can play a crucial role in promoting physical activity engagement among sports enthusiasts.				
	Digital Health Literacy and Frequency/Intensity of Physical Activity				
16	Sports enthusiasts with higher digital health literacy levels tend to engage in more frequent physical activity.				
17	.Digital health literacy is associated with increased intensity of physical activity among sports enthusiasts.				
18	High digital health literacy levels are linked to better adherence to physical activity recommendations.				
19	Sports enthusiasts with high digital health literacy levels are more likely to track their physical activity progress using digital tools such as: Mobile health apps, Online fitness platforms (e.g., Fitbit Coach, Peloton Digital), and Fitness apps (e.g., Nike Training Club, Strava, MyFitnessPal).				
20	Sports enthusiasts with high digital health literacy levels are more likely to engage in physical activity that is tailored to their individual health needs.				

APPENDIX II

DATA ANALYSIS RESULTS

FREQUENCIES VARIABLES=digital_health_literacy_level

/ORDER=ANALYSIS.

Frequencies

Statistics

digital_health_literacy_level

N	Valid	100
	Missing	0

digital_health_literacy_level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	46	46.0	46.0	46.0
	Moderate	36	36.0	36.0	82.0
	Low	18	18.0	18.0	100.0
	Total	100	100.0	100.0	

DESCRIPTIVES VARIABLES=Item6 Item7 Item8 Item9 Item10
/STATISTICS=MEAN STDDEV MIN MAX.

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Item6	100	2.00	4.00	3.3600	.52262
Item7	100	3.00	4.00	3.5900	.49431
Item8	100	3.00	4.00	3.4300	.49757
Item9	100	2.00	4.00	3.3200	.61759
Item10	100	3.00	4.00	3.3300	.47258
Valid N (listwise)	100				

```
COMPUTE physical_activity_engagement=Item11 + Item12 + Item13 + Item14 +
Item15.
EXECUTE.
CORRELATIONS
  /VARIABLES=digital health literacy physical_activity_engagement
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

Correlations

		digitalliteracy	physical_activity_engagement
Digitalliteracy	Pearson Correlation	1	.937**
	Sig. (2-tailed)		.000
	N	100	100
physical_activity_engagement	Pearson Correlation	.937**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

```
UNIANOVA Frequency_of_Physical_Activity_Engagement BY digital health
literacy WITH digital_health_literacy_level
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT=DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=digital_health_literacy_level digital health literacy.
```

Univariate Analysis of Variance

Between-Subjects Factors

		N
higher_digital_literacy	14.00	6
	15.00	15
	16.00	25
	17.00	23
	18.00	13
	19.00	11
	20.00	7

Descriptive Statistics

Dependent Variable: Frequency_of_Physical_Activity_Engagement

higher_digital_literacy	Mean	Std. Deviation	N
14.00	2.0000	1.09545	6
15.00	2.2667	.70373	15
16.00	2.6000	1.11803	25
17.00	2.6522	.98205	23
18.00	2.3846	.96077	13
19.00	2.2727	1.00905	11
20.00	2.0000	.00000	7
Total	2.4200	.95537	100

Tests of Between-Subjects Effects

Dependent Variable: Frequency_of_Physical_Activity_Engagement

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4.951[a]	6	.825	.898	.500
Intercept	71.638	1	71.638	78.005	.000
digital_literacy_level	.000	0	.	.	.
Digitalliteracy	4.630	5	.926	1.008	.417
Error	85.409	93	.918		
Total	676.000	100			
Corrected Total	90.360	99			

a. R Squared = .055 (Adjusted R Squared = -.006)