THE ASAHPERD JOURNAL



THE POWER OF ONE

One Voice One Vision One Mission

ONE TEAM

SUMMER 2025 VOLUME 46 ISSUE 2

2025 Health and Physical Education Summer Conference

Conference Time: 8:30-12:30

Dates and Locations- No Cost

Date: July 22- Athens State University (Carter Gym)

Date: July 24- Gadsden City Schools (Gadsden City High School)
Date: July 25- University Charter School (Smith Campus)
Date: July 28- University of South Alabama (Health and Kinesiology)
Date: July 31- Birmingham City Schools (Location and Times TBD)

Participants must register in PowerSchool to receive credit for attending the conference. If you do not have access to PowerSchool and will need a certificate of completion, certificates will be provided at the conference locations. The PowerSchool Section numbers are below:

- Athens State University (Carter Gym) Section Number: 524903
- JSU (Gadsden City Schools) Section Number: 526334
- University of West Alabama (University Charter School Section Number: 526335
- University of South Alabama (Mobile) Section Number: 524906

CEU Hours

Participants will earn 4 CEU hours for attending the conference. All credit will be awarded in PowerSchool after the end of the conference.



Contact Information

For more information, please contact Jonathan Thompson at jonathan.thompson@alsde.edu. List of sessions coming soon.

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Alabama State Association for Health, Physical Education, Recreation and Dance

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The ASAHPERD Journal, a refereed and blind reviewed journal, is the official publication of the Alabama State Association for Health, Physical Education, Recreation, and Dance and is published two times annually in the fall/winter and spring/summer. The authors' opinions are their own and do not necessarily reflect the attitude or views of ASAHPERD, its officers, or the editor(s) of the journal.

MESSAGE FROM THE PRESIDENT OF ASAHPERD

Jonathan Thompson



Hello, ASAHPERD Members!

As summer begins, I encourage you to take time for yourself—to rest, recharge, and reflect on all that you've accomplished this year. Whether you're traveling, spending time with loved ones, pursuing personal goals, or simply enjoying some well-deserved downtime, remember that this summer is for you.

For those looking to continue learning and growing, we'll be offering professional development opportunities at several Health and Physical Education Summer Conference locations listed below.

I hope to see you at one of these events!

- **July 22- Athens State University (Carter Gym)-Section Number: 524903**
- **July 24- Gadsden City Schools (Gadsden City High School)- Section Number: 526334**
- **July 25- University Charter School (Smith Campus)- Section Number: 526335**
- **July 28- University of South Alabama- (Health and Kinesiology Building): Section Number: 524906**
- **July 31- Birmingham City Schools (location and times TBD)**

Finally, no matter how you spend your summer, always remember—you are the **Power of One.** Your influence matters. Your work matters. You matter.

Wishing you a safe, restful, and joyful summer.

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Characterizing Prediabetes Prevalence and Screening Behaviors in Relation to Social Determinants of Health Among Adults in Alabama

Johanna D. Key & Larrell L. Wilkinson, University of Alabama at Birmingham



Introduction

According to the Center for Disease Control and Prevention (CDC), 1 in 3 adults in America (98 million) have prediabetes. In addition, more than 80% of people with prediabetes are unaware, as it is asymptomatic (Center for Disease Control and Prevention, 2024). Prediabetes is a diagnosis indicative of increased risk for developing type 2 diabetes. It also increases the risk of heart attack and stroke. As prediabetes can lead to detrimental health outcomes, it is imperative to reduce the prevalence of prediabetes in the United States. Diabetes alone cost the United States $412.9 billion in 2022 (Parker et al., 2023). Prediabetes is characterized by blood sugar levels that are higher than normal but not high enough to be diagnosed as type 2 diabetes (Center for Disease Control and Prevention, 2024). Risk factors for prediabetes include being overweight, being 45 years old or older, family history of type 2 diabetes, being physically active less than 3 times per week, history of gestational diabetes, giving birth to a baby who weighed more than 9 pounds, and having polycystic ovary syndrome (Center for Disease Control and Prevention, 2024).

In the state of Alabama in 2018, approximately 1,316,000 people (34.6%) had prediabetes (American Diabetes Association, 2018).

According to the CDC (2021), African Americans and older adults are disproportionately affected by prediabetes and diabetes. Nationally, 45.7% of African Americans and 48.8% of older adults have prediabetes, compared to Caucasian Americans (40.8%), Asian Americans (39.4%), and Hispanic Americans (41.6%) (Formagini et al., 2023; Center for Disease Control and Prevention, 2021). This is also supported by the most recent data collected by the CDC's Behavioral Risk Factor Surveillance System (BRFSS) Prevalence and Trends Data for 2022. In addition, Medicaid recipients and individuals who live in rural settings are also diagnosed with diabetes at higher rates (Alabama Department of Public Health, 2024).

Healthy People 2030 aims to reduce the overall burden of diabetes and improve quality of life for people who have been diagnosed or are at risk (Healthy People 2030, 2020a). Additionally, they also strive to reduce the number of people diagnosed with diabetes yearly (Healthy People 2030, 2020b). Healthy People 2030 also aims to reduce the number of people who do not know they have prediabetes (Healthy People 2030, 2020b). The American Diabetes Association recommends lifestyle changes such as dietary habits and increasing physical activity to prevent prediabetes. Furthermore, they also recommend regular screening for prediabetes (American Diabetes Association, 2021). It is recommended by the United States Preventive Services Task Force (USPSTF) that all adults older than 35 years old begin routine screening for prediabetes and diabetes every 3 years (U.S. Preventive Services Task Force, 2021). Individuals diagnosed with prediabetes should be screened every 1-2 years regardless of age (Center for Disease Control and Prevention, 2024b).

Social determinants of health (SDOH) are described as "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (Healthy People 2030, 2020c). These factors contribute to health disparities and inequities, making it essential that they are addressed to improve health outcomes for all. Given the prevalence of prediabetes and the high percentage of people unaware of their diagnosis, it is important to understand more about screening habits and the relationship between screening habits and other health related descriptives such as the SDOH. Therefore, the purpose of this study is to investigate the prevalence of prediabetes in Alabama adults and to assess the relationship between prediabetic screening behaviors and the SDOH among Alabamian adults.

Methods

Design

In this cross-sectional study design, a secondary analysis of the 2022 Behavioral Risk Factor Surveillance System (BRFSS) data was performed. The BRFSS is a nationwide system of health-related phone surveys that are collected yearly from residents of all 50 U.S. states, as well as the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. The BRFSS collected data about demographics, socioeconomic status, health-related risk behaviors, chronic health conditions, and use of preventative services (Centers for Disease Control and Prevention, 2023). The BRFSS has core surveys that are always conducted at a particular frequency. In addition, there are also optional surveys that states can choose to implement based on the needs and interests of their population. Further details regarding the sampling procedure and methodology are published here: https://www.cdc.gov/brfss/index.html.

Measurement

Outcome Variable. In 2022, the total sample size for the BRFSS survey was 445,132 and Alabama's response rate was 46.4% (Center for Disease Control and Prevention, 2023). In Alabama, the total number of survey respondents was 4,506. In the BRFSS data set,

two “optional” questions examine prediabetes in the data set. The first question, “When was the last time you had a blood test for high blood sugar or diabetes by a doctor, nurse, or other health professional?” assessed screening frequency. Screening frequency was categorized by the following time frames: 1 year, 2 years, 3-4 years, and 5+ years. The second question, “Has a doctor or other health professional ever told you that you have had prediabetes or borderline diabetes?,” assessed prevalence of prediabetes in Alabama.

Social Determinants of Health. SDOH were measured via the analysis of data from the following BRFSS sections: Education, Income, Healthcare Coverage, Employment Status, Rural or Urban Setting, Financial Security (i.e., Running out of food, utilities being shut off, loss of job), Use of Food Voucher/Food Assistance, and Transportation Access.

Data Analysis

To account for the complexity of the BRFSS survey design and to generate representative results, survey weights were utilized per the CDC data analysis plan. A total of 4,506 participants were included in the study, representing 3.9 million people living in the state of Alabama in 2022. Univariate statistics were used to ascertain pre-diabetes prevalence and screening behaviors among Alabama adults. Bivariate statistics using Rao Scott Chi-Square analysis supported the portrayal of associations between sample characteristics, adverse SDOH experiences, and the outcome of prediabetic screening behavior among Alabama adults. In addition, Table 1 illustrates sample characteristics and population estimates of adults who have prediabetes in Alabama.

Ethical Disclosure

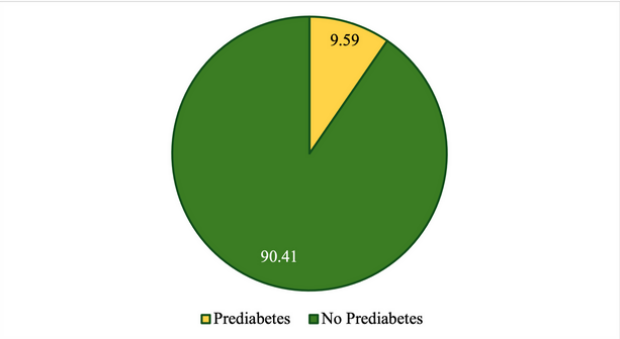
According to the university institutional review board standards, this study qualifies for exemption because the data selected from the BRFSS database is secondary data that was anonymized prior to dissemination. In addition, the data are accessible to the public. The authors of this paper express no conflicts of interest.

Results

Prevalence of Prediabetes in Alabama Adults

In relation to Alabama adults who responded to the BRFSS survey, Figure 1 depicts that about 10% of Alabamians who responded to the survey were told by a health care professional that they have prediabetes or borderline diabetes. A total of 1,589 individuals responded to that survey question and of those respondents, 169 of them reported a prediabetes diagnosis.

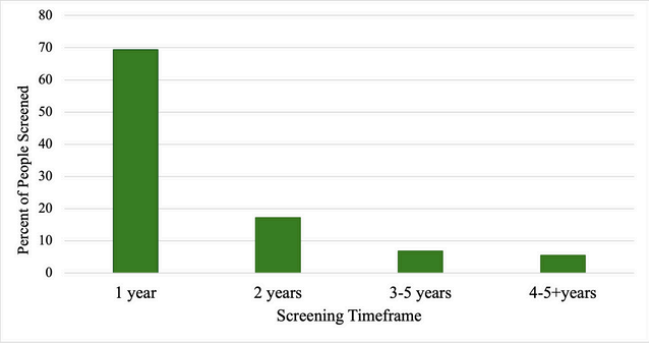
Figure 1. Prevalence of prediabetes in Alabama adults in 2022 BRFSS respondents



Overall Prediabetic Screening Frequency

Figure 2 illustrates the overall screening frequency for prediabetes in Alabama adults. A majority of survey respondents, 69.4%, had been screened for prediabetes within one year of taking the survey. 17.2% of respondents had been screened within 2 years of taking the survey, 6.9% between 3-5 years, and 5.5% had been screened greater than 5 years ago.

Figure 2. Alabama Adults Prediabetic Screening Frequency Prior to 2022 BRFSS Survey



General Demographics and Screening

Table 1 shows the results of screening frequency in relation to demographic characteristics such as sex, age, race, marital status, and BMI status. There was no statistical difference between sex and screening frequency. Older adults between the ages 55-64 and older than 65 years old were more likely to have undergone screening for prediabetes in the past year, 82.0% and 84.8%, respectively (Table 1). This finding was statistically significant ($p < 0.001$) (Table 1). It was shown that married people were more likely to have had prediabetic screening within the last year compared to people who were divorced, never married, or a member of an unmarried couple ($p = 0.007$) (Table 1). In relation to race, Caucasian Americans were more likely to be screened for prediabetes within the past year compared to African Americans, Hispanic Americans, and other races ($p = 0.001$) (Table 1). In addition, individuals with higher BMI were also more likely to have been screened for prediabetes recently ($p = 0.002$) (Table 1).

Prediabetic Screening and Social Determinants of Health (SDOH)

In relation to the SDOH, Table 2 showed that there was a strong relationship between having health care coverage and getting screened for prediabetes, while those without health care were less likely to be screened for prediabetes ($p = 0.001$) (Table 2). Employment status also showed a similar association with those who were unable to work or unemployed being less likely to have been screened within 1-2 years of the survey compared to students, homemakers, and individuals who were employed ($p = 0.001$) (Table 2). There was also a statistically significant difference between individuals who lived in a rural setting compared to those who lived in an urban setting. Rural Alabamians were more likely to have gotten screened for prediabetes than their counterparts ($p = 0.02$) (Table 2). Financial insecurity in relation to having utilities shut off in the home and loss of job was also negatively associated with prediabetic screening within 1-2 years, $p < 0.0001$ and 0.0004, respectively (Table 2).

There was no statistically significant difference between financial insecurity (running out of food) and utilization of food vouchers/food assistance programs. However, practical differences were observed within these SDOH experiences. Greater proportions of individuals did not experience running out of food ($p = 0.06$) and food voucher usage ($p = 0.07$). Surprisingly, there were no statistically significant differences related to education level or transportation insecurity among the sample in regard to prediabetic screening behavior (Table 2).

Discussion

The purpose of this study was to investigate the prevalence of prediabetes in Alabama and to assess the relationship between prediabetic screening behavior and SDOH among Alabama adults. Results revealed that most individuals who responded to the survey were screened for prediabetes within 1-2 years of their survey response. However, the results showed that there were some disparities among several groups when compared to their counterparts.

Hispanic Americans were found to be less likely to have had recent screening for prediabetes. Casagrande et al., 2018 found comparable results in their study in which they assessed factors associated with undiagnosed diabetes among adults with diabetes. They found that 37% of Hispanic/Latino adults with diabetes were undiagnosed. Since prediabetes and initial stages of diabetes are asymptomatic, the

Table 1

Prediabetic Screening Percentages by Demographic Groups Using 2022 BRFSS Survey

Variables	Screening within 1 year (%)	Screening within 2 years (%)	Screening within 3-4 years (%)	Screening within 5 years (%)	Chi-Square	p-Value
Sex						
Male	66.9	19.7	6.1	7.3	5.96	0.114
Female	71.8	16.8	7.7	3.8		
Age					63.05	**<0.001**
18-34	56.0	26.2	9.9	8.6		
35-54	73.7	15.7	5.9	7.3		
55-64	82.0	8.3	4.6	4.5		
65+	84.8	11.3	2.9	1.6		
Race					32.85	**0.001**
White	71.5	18.1	5.3	5.1		
Black	69.2	17.9	10.7	2.2		
Hispanic	49.7	26.5	1.8	22.0		
Marital Status					22.57	**0.007**
Married	74.8	16.8	4.5	3.9		
Divorced	72.8	16.8	5.8	4.7		
Never Married	60.8	20.7	11.1	7.3		
Member of Unmarried Couple	46.5	27.9	8.7	16.9		
BMI Status					20.47	**0.002**
Under/Normal Weight	59.6	27.2	7.5	5.7		
Overweight	73.3	12.9	7.1	6.7		
Obese	72.7	17.9	6.5	3.0		

Note: *p*-values below 0.05 indicate statistical significance. Bolded values denote significant associations.

Table 2. *Association Between SDOH and Prediabetic Screening Among Adults Residing in AL (2022 BRFSS Survey)*

Variable	Screening Within 1 Year (%)	Screening Within 2 Years (%)	Screening Within 3–4 Years (%)	Screening Within 5 Years (%)	Chi-Square	*p*-Value
Education					5.91	0.748
College Graduate	73.2	15.7	6.3	4.8		
Some College	70.6	18.1	5.9	5.4		
High School or GED	64.8	19.8	8.2	7.2		
Less than High School	67.1	22.2	7.8	2.9		
Healthcare Coverage					20.41	**<0.001**
Yes	71.8	17.5	5.9	4.8		
No	48.1	22.8	16.4	12.6		
Employment Status					37.93	**<0.001**
Employed	65.8	21.4	5.6	7.3		
Unemployed	60.4	16.8	17.6	5.2		
Home r/Student	79.7	12.3	6.4	1.6		
Unable to Work	81.7	7.7	9.8	0.9		
Urban/Rural Status					9.43	**0.02**
Urban Setting	68.1	18.9	7.2	5.8		
Rural Setting	81.8	12.1	3.4	2.7		
Financial Insecurity (No Food)					11.99	0.06
Yes	61.4	15.7	18.5	4.4		
Sometimes	68.0	13.9	6.2	11.8		
No	70.4	18.7	5.9	5.1		
Food Assistance/Voucher					7.00	0.07
Yes	67.4	16.3	12.8	3.5		
No	69.4	18.5	5.9	6.2		

Variable	Screening Within 1 Year (%)	Screening Within 2 Years (%)	Screening Within 3–4 Years (%)	Screening Within 5 Years (%)	Chi-Square	*p*-Value
Financial Insecurity (Utilities Shut Off)					22.03	**<0.001**
Yes	45.8	26.8	19.8	7.6		
No	72.2	17.4	5.6	4.9		
Financial Insecurity (Loss of Job)					6.97	0.07
Yes	57.5	24.9	9.3	8.3		
No	71.6	16.9	6.1	5.4		
Transportation					3.63	0.30
Yes	60.9	19.9	12.8	6.4		
No	70.9	18.0	6.1	5.0		

Note: *p*-values below 0.05 indicate statistical significance. Bolded values denote significant associations.

only way an individual would be aware of their diagnosis is if they got screened (Casagrande et al., 2018).

Adults between the ages 18-34 were also less likely to have been screened for prediabetes. This could be attributed to the fact that the current recommendations for when adults should be screened for prediabetes by the United States Preventative Services Task Force (USPSTF) only provides guidelines for adults older than 35 (U.S. Preventive Services Task Force, 2021). Expansion of guidelines for adults younger than 35 years old could help to improve the screening behaviors of this group. Adults without insurance being less likely to get screened for prediabetes is also supported by the literature. Individuals with health insurance are more likely to be screened for prediabetes (Casagrande et al., 2018; Mahoney et al., 2020).

Ali. et al., 2019 found that individuals with higher education levels and income levels were at lower risk for prediabetes and were more likely to engage in health behaviors such as screening (Ali et al., 2019). Results also revealed that income differences were statistically significant in relation to screening habits in Alabamians. There was no significant difference between education levels. However, the data did display a positive relationship between screening habits and education. Brady et al., 2021 found that one of the strongest associations to whether individuals in their study would get screening was having transportation (Brady et al., 2021). However, in Alabama, there was surprisingly no statistically significant association between transportation and screening frequency. Results also revealed an association between living in urban settings and being less likely to engage in prediabetic screening. This was different from the findings of previous studies. Typically, studies find that rural communities are less likely to get screened and people who live in rural settings usually have a higher prevalence of diabetes (Andrus et al., 2004; Dugani et al., 2020). This result could be related to the limitation of the small sample size from the survey. Mahoney et al., 2020 found that access to health insurance decreases the odds of undiagnosed prediabetes and type 2 diabetes in American adults (Mahoney et al., 2020). This study also supports this relationship as there was a strong association between health insurance coverage and prediabetic screening. Finally, being of lower socioeconomic status has been found to be associated with the decreased likelihood of engaging in prediabetic screening much like other studies in the literature. These results highlight important populations who may require intervention and support to improve screening behaviors. The BRFSS surveys are self-report in nature, so the data are subject to self-reporting bias and recall bias. Despite these limitations, to our knowledge, there are very few, if any studies that assess prediabetic screening frequency and their association with SDOH in Alabama which is what was accomplished with this study.

Healthy People 2030 recommends interventions that engage community health workers to help improve blood sugar control levels and weight related outcomes. They encourage prevention via improved diet, physical activity, and weight management. Programs may include screening, education, lifestyle counseling, coaching, and extended support. Screening is imperative to improving awareness and prevention efforts for prediabetes. Our findings support the need to apply special attention to factors related to the SDOH when creating interventions aligned with these recommendations in Alabama. For example, improving access to affordable health coaching services by providing resources through local health departments, churches, and other community centers could help increase awareness of the importance of screening and access. This study highlights the necessity of increasing screening opportunities for all Alabama adults because screening is the

only way for us to become aware of a prediabetes diagnosis. With management, adults with pre-diabetes can delay diabetes onset, and thusly live a more healthful life.

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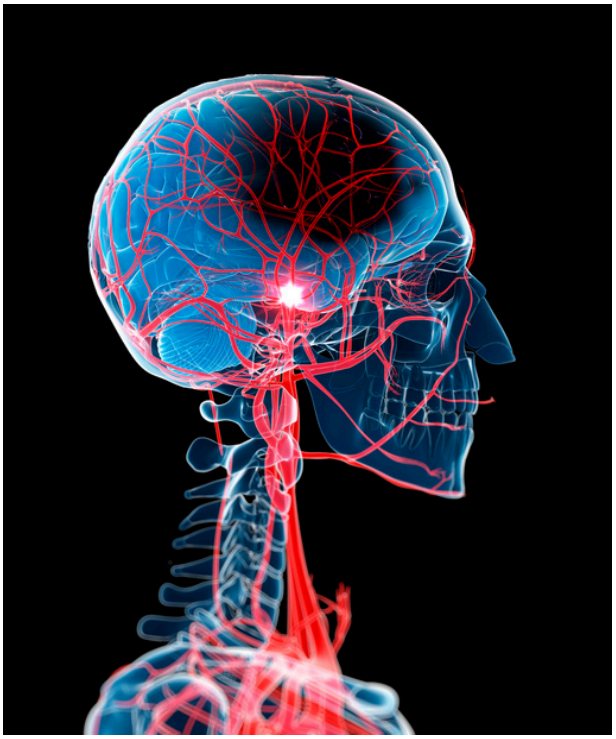
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Characterizing Stroke Survivors in Alabama Using 2022 BRFSS Data

Mary H. Bowman & Larrell L. Wilkinson
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Introduction

According to the World Health Organization (WHO), 15 million people worldwide sustain a stroke each year resulting in 5 million deaths and 5 million stroke survivors living with permanent disability (World Health Organization, 2024). Data regarding stroke prevalence in the United States (US) from the Centers for Disease Control & Prevention (CDC) reports that almost 800,000 individuals experience stroke annually in the United States (US) and 17.5% of deaths attributed to cardiovascular disease in 2022 were due to stroke (Centers for Disease Control and Prevention, 2024).

The global healthcare costs after stroke are exorbitant, with WHO estimating global costs in 2022 to be greater than $720 billion (World Health Organization, 2024). Strilciuc et al, (2021) describe direct costs as expenditures associated with medical intervention for inpatient care, outpatient treatment, and other aspects of care. Indirect costs are associated with the loss of productivity of the stroke survivor due to the duration of rehabilitation and medical intervention, issues associated with disability, and associated costs due to death. CDC data from 2019 to 2020 explains the direct and indirect costs were estimated to be $56 billion in the United States. (Centers for Disease Control and Prevention, 2024). The American Stroke Association (ASA)(2024b) reported that estimated lifetime costs for stroke caused by ischemic (blood clot) stroke are more than $140,000 per stroke survivor for medical care and rehabilitation.

The ASA (2024) describes that “a stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts (or ruptures)” resulting in brain cell

udeath. The symptoms resulting from stroke vary depending on where the stroke occurred in the brain such that stroke survivors may experience the following deficits:

- Weakness on one side of the body called hemiparesis or hemiplegia
- Sensory deficits
- Balance deficits
- Mobility deficits
- Cognitive issues
- Visual impairments
- Deficits in self-care independence
- Difficulty with community integration
- Decreased social connectedness

There has been an increased awareness and emphasis on stroke recovery from a global perspective to the state and local perspective. In 2017, the WHO initiated a focus on rehabilitation efforts in addition to prevention efforts previously employed, and stroke was one of the diagnoses targeted by the organization. Previously, WHO had focused on prevention and other aspects of medical care in global health. A WHO call-to-action was enacted known as Rehabilitation 2030 focusing on rehabilitation as an essential healthcare service (https://www.who.int/initiatives/world-rehabilitation-alliance). Additionally, Healthy People 2030 (HP2030) addresses stroke in terms of goals and objectives directed toward the much-needed efforts for the prevention of stroke. However, of note, HP2030 is initiating a goal to address the need of stroke survivors to be able to participate in therapy as a developmental goal to "increase the proportion of adult stroke survivors who participate in rehabilitation services."

Stroke can occur at any time during the lifespan from as early in utero with perinatal stroke to stroke occurring with a person who is of a geriatric population. Howard and Goff (2012) stated that approximately 75% of all stroke occurrences happen in individuals who are 65 years and older. Imoisili et al. (2024) reported the BRFSS prevalence of stroke in the United States (U.S.) increased to 2.9% in 2022, from (2.7%) in 2011, with the largest increase observed among 18-64 years old. Additionally, U.S. stoke prevalence data analysis over the same time period by race demonstrated increases for Americans Indian/ Alaska Native, Native Hawaiian/ Pacific Islanders, and Black or African Americans subgroups, with AAs experiencing the greatest increase (Imoisili et al, 2024). Furthermore, individuals that report having less than a high school education had the largest percent increase in stroke prevalence of more than 18% during this time period (Imoisili et al, 2024). With regard to risk factors for stroke, Tsao et al., 2023 report that modifiable risk factors (hypertension, obesity, hyperglycemia, hyperlipidemia, and renal dysfunction) are influenced by several behavioral risk factors related to smoking, physical activity, and diet.

State of Alabama

Alabama is in an area of the US designated by the CDCl as the "Stroke Belt", an area that spans predominantly across the southern portion of the US and is known for a 10% higher incidence of stroke and death from stroke than the national average (Liuzzo et al., 2024). Howard and colleagues (2020) Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study indicates the following "Stroke Belt" states consistently have high rates of stroke including Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. Luizzo reports the prevalence of stroke in the "Stroke Belt" states as being higher than the national stroke prevalence with 5.7% in the Stroke Belt states and 4.2% in the non-Stroke Belt states. Alabama stroke prevalence is 5.3% (CDC, 2022). According to the Alabama Department of Public Health, Alabama has a high incidence of stroke with 64.0 deaths per 100,000 individuals and Bibb County reports the highest rate of stroke-related deaths with 142.1 deaths per 100,000 individuals (ADPH, 2024).

In 2017, the state developed the Alabama Statewide Stroke System with the Alabama Department of Public Health and the Office of Emergency Medical Services with the primary goal of establishing an emergency care system specifically to address the needs of individuals experiencing stroke to increase the urgent administration of tPA (tissue plasminogen activator) to those experiencing ischemic stroke with potential reversal of the effects of stroke by breaking up the blood clot (Alabama Department of Public Health, 2021). The Stroke System consists of Alabama hospitals across the six designated regions of the state that serve as Stroke Centers which provide emergency services with emphasis on promotion of time-dependent medications. With regard to decreasing disability by maximizing stroke recovery, addressing social determinants of health have emerged as playing a key role in stroke rehabilitation outcomes and have been shown in stroke rehabilitation studies to influence optimal stroke recovery (Juckette et al., 2020; Gingrich et al., 2023; Magwood et al., 2019; McCurley et al., 2019).

Social connectedness and social support are important in prevention of stroke and in stroke recovery. Valoria et al. (2026) report that poor social relationships are related to over a 30% increased risk of stroke. In stroke rehabilitation literature and behavioral research studies, social isolation has been associated with poor stroke recovery (Aron et al., 2015; Bruss et al., 2022; Elayoubi et al., 2023; Espernberger et al., 2021; Haun et al., 2008). Stroke survivors also report that their needs across several domains of recovery are not being met (Guo et al., 2021; Lin et al., 2021; and Ytterberg et al., 2020). Given the prevalence of stroke in Alabama and the need for improved coordination of efforts for stroke recovery, it is of value to better understand the adverse experiences of stroke survivors in Alabama. Therefore, the purpose of this study is to characterize the social determinants of health (SDOH) experiences of stroke survivors in Alabama using data from the 2022 BRFSS study.

Methods

In this study, we performed a cross-sectional analysis using data from the 2022 Behavioral Risk Factor Surveillance System (BRFSS) for the State of Alabama related to stroke survivors. The BRFSS is a cross-sectional, state-based, nationally representative, computer-assisted telephone survey of noninstitutionalized US adults aged 18 years and older. The BRFSS is conducted annually by the Centers for Disease Control and Prevention (CDC) in all 50 states of the United States as well as the District of Columbia, Puerto Rico, the US Virgin Islands, and Guam. Details about the sampling procedure and methodology are published here: https://www.cdc.gov/brfss/index.html. The core questionnaire addresses information on chronic health conditions, health status, health-related risk behaviors, healthcare access, and demographic and socioeconomic characteristics and is administered in all states and territories. In addition, each state may choose to administer optional BRFSS modules on specific topics such as social determinants of health. The total sample size for the BRFSS was 445,135, the median state-level response rate was 45.1%. This analysis of anonymized BRFSS survey publicly available data and required no institutional review board review.

Outcome variable. Stroke was assessed using the BRFSS survey question “Has a doctor, nurse, or other health professional ever told you that you had any of the following? For each, tell me Yes, No, Or You’re Not Sure.” “(Ever toldyou had) a stroke?” If ‘yes’, then respondents indicated someone told them that they had a stroke, and normal participants responded ‘no’. All other answer choices were excluded from analysis.

Variables of Interest. Participants were asked questions related to their experiencing SDOH circumstances during the past 12 months. Table 1 depicts the questions, original question indicators, and indicators dichotomized, trichotomized, or categorized for analysis with “don’t know/not sure” and “refused” excluded from analysis.

Variable	Question	Indicators	Analysis Indicators
Life Satisfaction	In general, how satisfied are you with your life? Are you..	Very satisfied Satisfied	Satisfied
		Dissatisfied Very dissatisfied	Dissatisfied
		Don't know/not sure Refused	Excluded
Social & Emotional Support Needs Met	How often do you get the social and emotional support that you need? Is that…	Always Usually	Often
		Sometimes	Sometimes
		Rarely Never	Not Often
		Don't know/not sure Refused	Excluded
Social Isolation	How often do you feel socially isolated from others? Is it…	Always Usually	Often
		Sometimes	Sometimes
		Rarely Never	Not Often
		Don't know/not sure Refused	Excluded
Employment Insecurity	In the past 12 months have you lost employment or had hours reduced?	Yes	Yes
		No	No
		Don't know/not sure Refused	Excluded
Food Assistance	During the past 12 months, have you received food stamps, also called SNAP, the Supplemental Nutrition Assistance Program on an EBT card?	Yes	Yes
		No	No
		Don't know/not sure Refused	Excluded
Food Insecurity	During the past 12 months how often did the food that you bought not last, and you didn't have money to get more? Was that…	Always Usually	Often
		Sometimes	Sometimes
		Rarely Never	Not Often
		Don't know/not sure Refused	Excluded
Financial Insecurity	During the last 12 months, was there a time when you were not able to pay your mortgage, rent or utility bills?	Yes	Yes
		No	No
		Don't know/not sure Refused	Excluded
Utility Insecurity	During the last 12 months was there a time when an electric, gas, oil, or water company threatened to shut off services?	Yes	Yes
		No	No
		Don't know/not sure Refused	Excluded
Transportation Insecurity	During the past 12 months has a lack of reliable transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?	Yes	Yes
		No	No
		Don't know/not sure Refused	Excluded
Stress Experiences	Stress means a situation in which a person feels tense, restless, nervous or anxious or is unable to sleep at night because their mind is troubled all the time. Within the last 30 days, how often have you felt this kind of stress? Was it…	Always Usually	Often
		Sometimes	Sometimes
		Rarely Never	Not Often
		Don't know/not sure Refused	Excluded

Table 1. Social Risk Factor Measures from the 2022 BRFSS.

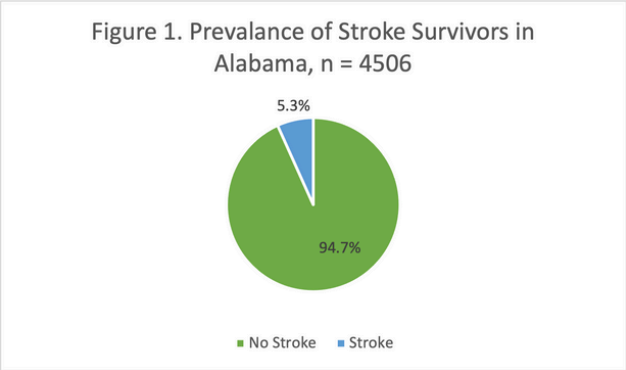
Individual determinants. We obtained data from the survey on the following factors: sex (male vs female), age of participants (categorized as 18-34, 35- 54, 55-64, and 65 or older), race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and non-Hispanic other), marital status (married vs not married), education level (did not graduate and graduated high school, attended college or technical school, graduated from college or technical school), household income (lower than $25,000, $25,000-$35,000, $35,000-$50,000, $50,000-$75,000, $75,000-$150,000, $150,000 -$200,000 and more than $200,000), employment status (employed, unemployed, homemaker/student, unable to work), health insurance (private insurance, CMS- Medicare and Medicaid, government, Veterans Affairs, uninsured). General health status was reclassified from 5 into 2 categories as (fair/poor vs good/very good/excellent).

Analysis

Survey weights were used to account for the complex survey design of the BRFSS and generate representative results per the guideline of CDC data analysis plan. Thus, the sample of 4,506 participants corresponds to a population estimate of 3.96 million. Firstly, descriptive statistics, percentages, and 95% confidence intervals (CIs) were conducted to describe the sample characteristics and population estimates (Table 2). Secondly, variables related to stroke survivors were compared by socio-demographic variables using chi square tests (Table 2). SAS version 9.4 was used for all statistical analysis (SAS, 2021). A two-tailed alpha of 0.05 was used to assess significance.

Results

Among the adult Alabamians surveyed, 5.3% responded they were told they had a stroke (Figure 1). Of the stroke survivors surveyed in Alabama, more respondents were male, non-Hispanic, and divorced (Table 2). Over 12% of stroke survivors had not finished high school and 16.71% reported a low household income of less than $35,000 a year (Table 2). Greater proportions of stroke survivors reported being unable to work (15.39%), zero children in the house (6.17%), and living in rural areas (8.36%). Unsurprisingly, the greatest proportion of stroke survivors were age 65 and older (Table2).



Among stroke survivors, no significant differences were observed for social isolation, although a practical difference may be observed with 8.73% reporting not being satisfied with life (Table 3). A significant proportion of stroke survivors reported that social and emotional support needs were not being met (14.04%). Significantly greater proportions of stroke survivors reported utilizing food assistance (8.87%), food insecurity (12.72%), and financial insecurity (8.33%), with perhaps a practical difference for utility insecurity (7.81%) (Table 3). Stroke survivors reported greater challenges with transportation (10.27%) and practical differences in stress experiences, with 8.88% reported often experiencing stress (Table 3). Regarding health indicators, 10.42% indicated that they have Medicare or Medicaid for their insurance coverage (Table 3). No significant findings were observed for BMI status, sleep insufficiency, and physical activity. However, 8.83% reported being current smokers and 3.9% reported receiving a diabetic screening in the past 12 months (Table 3).

Characteristic	Stroke -Yes	Stroke - No	Rao-Scott X^2	p-value
Sex			0.77	0.38
Male	5.7	94.3		
Female	4.9	95.1		
Age			61.65	<.0001
18-34	.55	99.45		
35-54	4.02	95.98		
55-64	9.0	91.01		
65+	10.01	90.0		
Race			0.1566	0.98
Non-Hispanic White	5.4	94.6		
Non-Hispanic Black	5.25	94.75		
Latino/Hispanic	4.84	95.16		
Non-Hispanic Other	4.8	95.2		
Marital Status			34.84	<.0001
Married	5.37	94.63		
Divorced	8.92	91.07		
Never Married	2.56	97.43		
Unmarried Couple	0.96	99.04		
Education Attainment			41.37	<.0001
Graduated College	3.0	97.0		
Some College	3.87	96.13		
Graduated High School	5.61	94.39		
Did not finish high school	12.23	87.77		
Household Income			52.66	<.0001
Lower than $25,000	11.69	88.31		
$25,000- $35,000	5.02	94.98		
$35,000-$50,000	3.58	96.42		
$50,000-$75,000	1.76	98.24		
$150,000	2.94	97.05		
$200,000	2.48	97.52		
More than $200,000	0.63	99.37		
Employment Status			97.74	<.0001
Employed	2.06	97.94		
Unemployed	4.31	95.69		
Homemaker/ Student	6.89	93.11		
Unable to work	15.39	84.61		
Number of children living in the house			10.84	0.055
Zero	6.17	93.83		
One	2.66	97.34		
Two	3.68	96.32		
Three	5.95	94.05		
Four	2.42	97.58		
Five	2.73	97.27		
Urban Status			2.77	0.1
Yes	4.87	95.13		
No	8.36	91.64		

Table 2. Sociodemographic characteristics of stroke survivors in Alabama, BRFSS 2022 (n = 4506)

SDOH Variables	Stroke-Yes	Stroke- No	Rao-Scott X^2	p-value
Life Satisfaction			2.9	0.09
Yes	5.27	94.73		
No	8.73	91.27		
Social Isolation			1.5	0.47
Yes	6.45	93.55		
Sometimes	6.23	93.77		
No	5.09	94.91		
Social and Emotional Needs Being Met			22.86	<.0001
Yes	4.37	95.63		
Sometimes	5.17	94.83		
No	14.04	85.96		
Employment Insecurity			0.23	0.63
Yes	4.52	95.48		
No	5.14	94.86		
Food Assistance			8.02	0.0046
Yes	8.87	91.13		
No	5.03	94.97		
Food Insecurity			8.42	0.01
Yes	12.72	87.28		
Sometimes	6.68	93.33		
No	4.79	95.21		
Financial Insecurity			5.59	0.02
Yes	8.33	91.67		
No	5.08	94.92		
Utility Insecurity			3.07	0.08
Yes	7.81	92.19		
No	5.16	94.84		
Transportation Insecurity			3.95	0.05
Yes	10.27	89.73		
No	4.99	95.01		
Stress Experiences			5.63	0.06
Often	8.88	91.12		
Sometimes	5.0	95.0		
Less	4.85	95.15		
Health Insurance Coverage			73.33	<.0001
Private Insurance	2.19	97.81		
CMS- Medicare & Medicaid	10.42	89.58		
Government	5.92	94.08		
Veterans Affairs	5.11	94.89		
Uninsured	4.18	95.82		
BMI			1.41	0.49
Normal/ Low	6.03	93.97		
Over	4.5	95.49		
Obese	5.46	94.53		
Prediabetic Screening			8.34	0.04
1 Year	3.9	96.1		
2 Year	.87	99.13		
5 Year	1.8	98.2		
5 Plus Years	1.4	98.6		
Sleep			3.42	0.18
Lacking	6.04	93.96		
Normal	4.58	95.42		
Too much	7.02	92.98		

Leisure time physical activity			3.42	0.18
Yes	4.37	95.63		
No	7.44	92.56		
Smoking			13.75	0.0033
Current Smoker	8.83	91.17		
Sometimes	5.32	94.68		
Former smoker	6.22	93.78		
Never	4.25	95.85		

Table 3: Social Determinants of Health (SDOH) and other health indicators of Stroke Survivors in Alabama, BRFSS 2022 (n = 4,506)

Discussion

This study characterized the social determinants of health (SDOH) experiences of stroke survivors in Alabama using data from the 2022 BRFSS study. No differences were found for experiencing a stroke among racial/ethnic groups and gender, but older individuals, individuals with less income and lower education achievement were associated with self-reported stroke. Among stroke survivors, practical differences were observed less life satisfaction. One significant difference observed was that stroke survivors reported greater proportions of not having their social and emotional needs met. Additionally, stroke survivors reported needing food assistance, being financially insecure, challenges with transportation, utilizing federal health coverage, and receiving a diabetic screening in greater proportion when compared to non-stroke respondents.

The respondents in this survey indicate they are not feeling isolated, but their social and emotional needs were not being met. This may be an important aspect of recovery, as each negative aspect of the SDOH for stroke survivors adds to the challenge of maximizing recovery and needs to be considered in the stroke recovery process (Mormer et al, 2024). Thusly, it is important for health educators and promoters to consider SDOH when implementing health promotion programs (Skolarus, Sharrief, Gardener, Jenkins, Boden-Albala, 2020). An abundance of evidence shows that supporting individuals to quit smoking, eat a healthy diet, and be physically active will reduce stroke risk (Benjamin, Virani, Callaway, Chamberlain, Chang, Cheng, 2018), health educators must also advocate for policy solutions to address SDOH circumstances. In this vein, it becomes increasingly important for health educators and promoters to learn more about the needs of stroke survivors; prioritize the stroke care continuum when working with marginalized communities; partner with communities; and embrace technological innovations (Benjamin, Virani, Callaway, Ch amberlain, Chang, Cheng, 2018).

The limitations of this study are that the numbers of stroke survivors did not make up a large portion of those surveyed. A larger sample would be helpful for data analysis. In additionally, we studied stroke survivors given their self-report of stroke. We do not have medical evidence to support participant reporting. Still, a strength of the study is examining state of Alabama data to characterize the experiences of stroke survivors, thus supporting health educators in their planning of interventions to prevent a second stroke.

This study describes stroke survivors SDOH experiences in Alabama.It highlights the need to further research the specific needs of stroke survivors in this state with implications pertaining to health, well-being, rehabilitation, limitations that each perceives in activities of daily living (ADL), and caregiving. It would be valuable to probe further regarding stroke survivor's social and emotional needs being met to further determine what type of needs the stroke survivor are missing. Health educators may consider regular check-ins with stroke survivors. Practical examples of providing support for stroke survivors include facilitating support groups to promote social interaction, providing education and information about resources, and working to involve family/caregivers in recovery efforts (AHA, 2017).

A one-size fits all approach to stroke recovery would not likely work well for stroke survivors since their needs are diverse and unique to each person. However, comprehensive efforts to increase coordinated rehabilitative care may yield better results and optimize recovery as reflected in the stroke rehabilitation research. Greater access is needed to evidence-based rehabilitation services that are designed to promote recovery, safety, and independence. Further studies are needed to examine the social determinants of health for stroke

survivors and gain a better understanding of how the important factors can be addressed or supported for a better outcome for stroke recovery.

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Barriers to Healthy Living by People with Disabilities

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According to the Centers for Disease Control and Prevention (CDC), up to 27% of adults living in the United States self-report having a disability (Disability Impacts All of Us Infographic, 2025). It is important to recognize the diverse spectrum of impairments, activity limitations, and restrictions ranging from physical to cognitive challenges. The experience of disability is dynamic and shaped by various factors of health such as socioeconomic status (SES), race, and geography (Wickenden, 2023). Individuals who have a disability, experience adverse health outcomes at higher rates compared to their peers without disabilities. For instance, people with disabilities (PWD) experience heart disease, diabetes, obesity, and smoking at double the rates of those without disabilities (Office of the Surgeon General (US); Office on Disability (US), 2005). Additionally, PWD often do not have a regular healthcare provider, miss routine wellness checks, and have unmet health needs due to cost (Department of Health and Human Services (DHHS), 2023).

Research has shown that participation in healthy activities such as wellness programs can improve quality of life, increase self-efficacy, maintain or increase independence, and reduce pain (Professional Wellbeing, 2024). These programs can also help people improve mental health (Mahindru et al., 2023), maintain a healthy weight (Young et al., 2015), enhance social skills (Zhao & Chen, 2018), reduce disease risk (Rippe, 2018), and improve overall physical health. Given these numerous benefits, it is important to consider whether all individuals can access and participate in these activities and programs.

Despite the potential benefits and advancements brought about by the

Americans with Disabilities Act (ADA) of 1990, significant barriers persist that affect PWD ability to participate in these healthy living activities and community integration (United Disabilities Services, 2021). Physical barriers such as inaccessible signage, transportation, and recreation spaces are more obvious and continue to exist. However, disability intersects with social, more subtle, challenges including poverty, discrimination, and healthcare disparities (Wickenden, 2023). This intersection heightens the vulnerability of individuals with disabilities to food insecurity, limited transportation options, especially in rural areas, and barriers to accessing quality healthcare services, which are often compounded by policy issues, lack of education among providers, inexperience with the disability community, and stigma (Colorafi et al., 2021; United Disabilities Services, 2022).

This paper will address some of the most common barriers to engagement in healthy living and associated wellness activities as experienced by PWD and provide practical ways to approach them. Specifically, we will delve into how these barriers around food security, transportation, and healthcare access, continue to impact PWD in the United States. We will focus on the intricate interplay between disability and economic insecurity, highlighting the complexities faced by working-age adults with disabilities who often fall within a gap that excludes them from essential financial assistance programs (Emerson et al., 2021).

Food Insecurity

Food insecurity is one of the many barriers that makes it difficult for people to live healthy, fulfilling lives (Kirkpatrick, 2012). Food insecurity is defined as the uncertainty around having enough food to meet household needs due to financial concerns or availability of resources, and PWD are more likely to experience food insecurity due to added cultural and socioeconomic barriers (Charnes, 2021; Ginsburg, 2018). While there is financial assistance available for those who are eligible for Supplemental Security Income (SSI) and subsequently the Supplemental Nutrition Assistance Program (SNAP), not all PWD are eligible for assistance (Special Needs Alliance, 2024; The National Council on Aging, 2012; The National Council on Aging, 2023; USDA Food and Nutrition Service, 2022). This is because disability is defined as, the inability to engage in any substantial gainful activity (SGA) by reason of any medically determinable physical or mental impairment(s) which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months (Social Security Administration, 2006).

This heavily impacts working-age adults with disabilities as they are unable to receive financial assistance such as SSI and SNAP even if their job is not full-time (Coleman-Jensen, 2020). Because current regulations identify those who make more than the SGA level, $18,600/year for non-blind individuals, as individuals who are able to work and financially support themselves, this creates a significant barrier for PWD who may be capable of working but still require financial assistance (Social Security Administration, 2017). The threshold can discourage them from seeking employment or advancing in their careers, as earning above the SGA level could result in the loss of essential benefits and support. While the purpose of the SGA standard is to determine if a person is able to work, it does not consider all the factors that impact quality of life and wellbeing for those with mobility limitations who may fall into the disability wealth gap (Social Security Administration, 2025).

Picture this. Maria, age 40, lives in rural Alabama and is now unexpectedly a wheelchair user after a car accident claimed the use of her legs. Maria, who has a ten-year-old son named José, diligently works as a customer service representative from her home office, earning $35,508 a year. Her days are a delicate balance

of managing calls, emails, and occasional video conferences, all while adapting to the realities of her newly acquired disability. Despite her efforts, Maria finds herself troubled by food insecurity. With the nearest grocery store located 30 minutes away and her car totaled due to the accident, Maria faces the daunting challenge of reliably accessing food for herself and her son. As rent prices soar and medical bills mount, Maria faces the agonizing decision of whether to allocate her meager funds to housing or to put food on the table, all while shielding José from the harsh realities of their situation. Desperate for assistance, Maria contacts her nearest food pantry, hoping for a lifeline. Fortunately, compassionate volunteers offer to deliver fresh produce and pantry staples directly to her home, providing temporary relief. However, Maria remains haunted by the fear of sustainability, knowing that these deliveries rely on incoming donations.

The Social Security Administration (SSA) should consider reassessing SGA levels to more closely align levels for all PWD. Additionally, SSI benefits are applied to on a state-by-state basis with states varying approval rates (Disability Experts of FL, 2023). Given that SNAP benefits are linked to SSI, it is important to standardize this approval process to keep rates more consistent (Headrick et al, 2022). On a more local level, policies by state health departments that provide travel vouchers (Gonzales et al., 2006) or food delivery services or vouchers (Banerjee et al, 2024) in partnership with pantries and local grocery stores can be beneficial to all PWD to ensure there is not a supply and demand issue as well as remove potential transportation barrier.



Transportation

In addition to missing out on medical care, PWD face reduced employment opportunities, have limited access to grocery stores, and may experience limited access to social settings because of transportation barriers. Approximately 3.6 million people in the United States do not obtain medical care due to transportation issues, and nearly one-fourth of these people have a disability and rarely leave home because of these issues (Field & Jette, 2007).

Historically, transportation issues have been a major policy issue for PWD (Field & Jette, 2007). Although laws such as the ADA and the Air Carrier Access Act (ACAA) have made advancements to ground and air transportation requirements for PWD, inadequacies with these modes of transportation continue to present barriers for the intended user. For example, the ADA requires curb cuts, ramps, or other forms of accessible entry to a building. But what about places built before its passage in 1990? Are PWD not supposed to freely travel or exist for fear of not being able to gain access to a building? Car rental agencies are mandated by the ADA to provide accessible modifications to cars, but this is not always enforced, and accessible cars are not always available.

While mass transit and paratransit are great options where available, not everyone has access. Some people live in extremely rural areas with little or no access to reliable public transportation and need to rely on personal vehicles, some of which may require costly modifications. Because of reduced employment opportunities and wage gaps for PWD when compared to their non-disabled peers, necessary modifications that promote accessibility are not always a reality.

Picture this. You work at a wellness facility as a project coordinator. Your facility was established ten years ago and believes it addresses a variety of needs for community members, provides affordable classes, a

welcoming staff, and has implemented many of the newest accessibility features on the market. However, the facility has struggled with enrollment for most of its existence. Because of this, you are tasked with developing a new wellness initiative to get people in the community more involved and increase your enrollment numbers. After six long months of planning, you and your team are ready to roll out the new initiative. You host a huge kick-off to introduce the new program to the community, and it was well attended and seems to be a success. Attendance continues to be high the first couple of weeks, but after a month, the numbers slowly start to dwindle. You and your director cannot figure out why.

After some research, it was discovered that although the facility has the newest accessibility features on the market, it is not easily accessible by the people for its intended use. Your facility is in a relatively remote area of a mid-sized city and public transportation does not currently have routes to the facility. After conducting a survey, you discover that at least one third of your members are PWD and utilize public transportation. Transportation is one of the most common barriers to participation in health and wellness programming, not only for PWD, but for their non-disabled peers, too. Poor vehicle design, inaccessible modes of public transportation, infrequency of accessible modes of transportation, inaccessible curbs, sidewalks and crosswalks, the absence of elevators, and inaccessible or non-existent signage excludes or 'others' PWD and makes it nearly impossible to access programs developed specifically for them.

This scenario highlights the importance of considering accessibility and including PWD in planning discussions. Doing so is beneficial not only from an inclusion and belonging perspective but also from a financial standpoint, as the facility should have considered public transportation routes when choosing its location. PWD often offer unique insights based on their lived experiences, which can differ significantly from those of non-disabled individuals. By engaging a diverse range of stakeholders, including disabled and non-disabled people, individuals of various ages, racial backgrounds, and socioeconomic statuses, the likelihood of creating optimally accessible programs increases. This approach ensures that the programs are beneficial to a wider range of people.



Healthcare/Disability Education

Fewer than 50% of healthcare providers feel confident when providing medical care to PWD (Iezzoni et al., 2021). It is well-reported that the U.S. healthcare system is not designed to support the transition of PWD from diagnoses to wellness (Rimmer, 2022). In fact, the U.S. Surgeon General's Call to Action in 2005 was to "[i]mprove the [h]ealth and [w]ellness of [p]ersons with [d]isabilities" with one goal being, "Health care providers hav[ing] the knowledge and tools to screen, diagnose and treat the whole person with a disability with dignity" (Office of the Surgeon General (US); Office on Disability (US), 2005). While the delivery of disability education and its applications are a new area being evaluated and tested by medical schools, historically, education has focused on the medical model of disability, which views disability through the lens of a biological impairment that needs "fixing" (Office of Developmental Primary Care, 2019). Consequently, the social application and cultural competency in medical training is

lacking, creating a stigma for PWD to access routine medical care.

Previous medical education has taught students to consider healthcare barriers from a physical barrier approach, focusing on what equipment is needed, such as a room, machine, or process for delivering medical care. This approach overlooks individual attitudes and implicit biases against PWD, as taught from the social model of disability. In this model, society's focus on individual impairments causes unnecessary isolation of PWD, similar to populations of low socioeconomic status (SES) (Gómez-Zúñiga et al., 2023). Applying the social model of disability to medical training ensures that education is intentional rather than an afterthought.

Picture this: Sarah, a twenty-year-old woman with cerebral palsy and high support needs, is admitted to the hospital with pneumonia. She is accompanied by her mother, Mrs. Johnson. Due to her condition, Sarah is having difficulty breathing and cannot effectively communicate with the medical staff. Upon admission, the nurse uses a customized electronic health record (EHR) system to record Sarah's specific accommodation needs. The EHR includes fields for preferred communication methods and necessary assistive devices. Alerts are set up in the EHR to remind healthcare providers to check Sarah's accommodation needs before each interaction. The hospital provides alternative communication tools to help Sarah express her needs and symptoms as she is able. Mrs. Johnson plays an active role in communicating Sarah’s needs to the medical staff. She helps translate Sarah’s attempts to communicate and provides insights into her specific communication methods. Regular team meetings are held to discuss Sarah's care. These meetings include nurses, doctors, and support staff to ensure everyone is aware of her specific needs and that these needs are consistently documented. Through effective communication and documentation, Sarah is treated and can return home. She and her mother feel safe and reassured to visit the hospital again if needed.

In this scenario, potential barriers that many PWD experience, such as inconsistent medical record documentation, ineffective communication with the person receiving care, and lack of accommodations during the medical intake process, are addressed (Morris et al., 2021). By incorporating such scenarios into medical training, future healthcare providers can develop a deeper understanding of the unique challenges faced by PWD. This training can include practical exercises on using adaptive communication tools, recognizing and documenting accommodation needs, and fostering a patient-centered approach that prioritizes dignity and respect. Additionally, it can emphasize the importance of interdisciplinary teamwork and regular communication among healthcare staff to ensure that the needs of PWD are consistently met. By preparing healthcare providers to handle these situations effectively, the overall quality of care for PWD can be significantly improved, leading to better health outcomes and increased trust in the healthcare system.

In addition to enhancing disability education, hospitals and medical providers should be creative with equipment usage by exploring adaptations to existing equipment rather than always considering the purchase of new machines or tools (Keller, 2022). Sometimes, the necessary modification involves transitioning to a different room for more space and proper patient positioning for data collection (Barbera et al., 2024), using cards as cues, pointing or eye direction for communication, and utilizing mobile health machines when possible. For example, grip gloves or cuffs can help people with limited hand function grasp exercise equipment, and trunk stabilizing belts can be used on strength training or endurance equipment. This equipment will benefit not only PWD but everyone. To ensure patient-

centered care, effective communication and understanding the needs and functionality of the patient are essential. This reimagined approach encourages providers and administrators to be mindful of how funds are allocated, ensuring that current spending enhances the inclusivity of their facilities.



Conclusion

Participation and engagement in health and wellness programs can be beneficial to the overall wellbeing of individuals, especially those who identify as having a physical disability or mobility limitation (Professional wellbeing, 2019). Research shows that people who participate in structured or formal health and wellness programs may experience a lower risk of certain diseases, illnesses, and injuries, as well as have a more profound sense of belonging and community (Zhao & Chen, 2018). Participation, however, is not always accessible or equitable largely due to barriers (Wickenden, 2023). Food insecurity, transportation limitations, and healthcare access are some of the most common barriers, but many more exist beyond the scope of this paper.

In an ideal world, all buildings, transportation methods, and other built environment structures would be accessible for all. Healthcare providers would be well versed in the latest disability topics, and food would be affordable, nutritious, and accessible for every individual. Unfortunately, this is not our current reality. However, laws such as the ADA, along with modifications, advocacy groups, interest groups, alliances, government entities, non-government entities, non-profit organizations, associations, publications, and a myriad of other groups, play a crucial role in advancing fair and equitable practice. These collective efforts help to move the needle forward, gradually improving accessibility and inclusivity for all (Salvalaggio et al., 2022; Toward Sustainable Improvements in Population Health: Overview of Community Integration Structures and Emerging Innovations in Financing, 2015; Opportunities for Enhanced Collaboration: Public Health Departments and Accountable Care Organizations, 2014). Additionally, considerations for universal centralization and standardization of policies and practice through governmental assistance programs and even universal healthcare could be viable options (World Health Organization, 2025). The interplay of financial assistance and the current structure of these programs often limits the execution of fully equitable and accessible opportunities for engagement in healthy living.

Addressing common barriers experienced by PWD can be more straightforward and cost-effective than one might think. Training and education can make a significant difference for care providers and others who serve the public. Importantly, PWD should be actively engaged in these training sessions. Their involvement ensures that policies and frameworks for medical practice are reviewed by those who will be most impacted, either positively or negatively. While modifications to non-accessible or non-ADA compliant entities may be costly and take several years to complete, training is an effective way to educate policymakers, healthcare professionals, hospital administrators, caregivers, laypeople, colleges/universities, students, professors, business owners, employees, and others on the importance of fair and equitable treatment for all individuals (Lawrence et al., 2019). Recognizing that the disability community continuously exists around us and may even involve us personally is crucial. It is essential to

avoid "othering" individuals who identify with a disability. By fostering broader connections and understanding, we can facilitate more organic accessibility applications. Approaching issues from a disability mindset allows for more inclusive and effective solutions.

Groups specifically dedicated to disability education, resource creation, and community implementation of accessible practices, such as the National Center on Health, Physical Activity and Disability (NCHPAD), Special Olympics, National Council on Disability (NCD), and the Administration for Community Living (ACL), exist to support these efforts. In partnership with these organizations, training can be customized to meet the specific needs of your target audience. There is no one-size-fits-all approach (Pulrang, 2023), and even simple disability education that includes lessons on topics like 'say this, not that' or 'what it means to be inclusive' can spark the accessibility mindset needed to remove barriers to healthy living.

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Self-Talk in Athlete Rehabilitation: Reconstructing Physical Rehabilitation to Improve Athletes' Mental Health

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Reconstructing Physical Rehabilitation to Improve Athletes' Mental Health following a sport-related injury, athletes often undergo a tremendous amount of stress and psychological distress potentially contributing to a decline in their overall athletic performance (Daley et al., 2021). Given the elevated levels of stress and psychological challenges that are associated with injury recovery, researchers have begun to explore ways to combat this issue, one of which is self-talk. Self-talk has been seen as a possible key addition to the rehabilitation program to improve the athlete's sports performance following an injury. However, some healthcare providers, such as physical therapists and athletic trainers, tend to primarily focus more on the physical aspect of rehabilitation, while pushing the psychological aspect to the side, thus shying away from including such techniques in their treatment program (Hamson-Utley et al., 2008). During the last decades, the need for psychological interventions in athletes has become apparent and cannot be ignored (Weib et al., 2024). Instructional self-talk has been upheld as the superior method and linked to greater parietal alpha power between the frontal and parietal connection (Belleomo et al., 2020). As of recently, healthcare and sports professionals have realized that to treat a patient following an illness or injury, you have to not only treat them physically but also mentally. According to Rogers and colleagues, those athletes who have been previously injured displayed significantly

higher amounts of symptoms of depression as well as generalized anxiety than uninjured athletes (Rogers et al., 2024). Therefore, it is important to combine the usage of both psychological intervention and rehabilitation when working with injured athletes to help improve their sports performance. The purpose of this paper is to review the literature that relates to self-talk and the usage of self-talk in rehab programs for athletes in hopes of improving their sports performance following an injury. First, the current climate concerning athletes and their mental health during an injury will be discussed. Following this, the succeeding sections will look over topics such as self-talk, valence, and the two-system theory, their components, and how they relate to the topic at hand. By examining the various constructs of self-talk, the connection between the two topics will be made. After reviewing the literature, suggestions for changes and improvements have been made.

Self-Talk

Although self-talk has been widely studied, a specific definition for the psychological intervention has been a challenging topic for researchers to agree on over the years. Experts like Van Raalete have stated that phrases such as "talking to yourself' or "a person's encouraging inner thoughts" are too vague and do not accurately depict the true definition of the word. According to Van Raalete (2017), those definitions fail to capture the complexity of self-talk as it involves both conscious and subconscious cognitive processes. Because of this, researchers have proposed the following statement as their definition for the term. Self-talk refers to recognizable internal articulation that is expressed both on the inside and outside of a person, and the one receiving the message is the one who is sending the message (Van et al., 2017). The usage of self-talk serves as a tool for individuals to better build their skills, boost their confidence, improve their mood, and elevate their attentional focus (Theodorakis et al., 1998). Depending on the content and context in which self-talk is used, it can serve several different purposes. For some individuals, self-talk may be used for expressing their inner thoughts, while others may use it to help them complete the task they may be working on at the time (Fuchs & Schmid, 2018). Additionally, it can be used as a method of enhancing task performance, where in motivational or instructional self-talk is used to help coordinate movement and focus (Hatzigeogiadis et al, 2011). Based on the person's use of self-talk and their reasoning behind using it, self-talk can be either harmful or beneficial to the individual depending on how it is interpreted. Due to the different effects self-talk can have on athletes, it has been broken down into multiple categories for the sake of this review, such as valence, overtness, and assigned/ self-selected self-talk (Hardy et al., 2001).

Categories of Self-Talk

Valence. To gain a better understanding of self-talk, researchers divide the term into categories, one of them being valence. Valence is used to describe the tone of self-talk thoughts (Van Al Raalte et al., 2017). With the help of this term, three additional self-talk categories have been created by researchers. These categories are as follows: negative, positive, and neutral (Dharani et al., 2024). Negative self-talk, as its name implies, negatively affects the person experiencing it. Negative self-talk thoughts are described as self-destructive and hindering to the individual as they are often phrases like "I'm awful" or "Bad game." (Van Raalte et al., 2017). Instead of assisting the individual with motivation to complete the task they are working on at the moment, negative self-talk thoughts instead instill fear and anxiety into the person, causing them to be pushed further away from their goals (Baumeister 1984). The second type of valence when it comes to self-talk is positive self-talk. Contrasting with negative self-talk, positive self-talk enhances the individual's performance by providing them with additional energy stemming from the motivational words and a positive attitude.

Phrases like "Good Shot" or "We're doing great" are typically those associated with positive self-talk (Hatzigeorgiadis et al., 2017). Unlike negative, which can cause self-doubt, positive self-talk allows individuals to focus more on the positive of the task at hand rather than the negative, thus increasing their productivity (Theodorkais et al.,1998). On the other hand, neutral self-talk, which includes thoughts like "Bend your knees more" or "eyes up", provides the individual with neither encouragement nor disapproval, rather it focuses on task-oriented feedback to assist the individual (Van el Raalete et al.,2001).

The Two System Theory. The Two System Theory refers to the way the person processes the information they are taking during the task (Kaheman et al., 2011). For the sake of this theory, it is broken down into system 1 and system 2 with each representing a specific part of the individual's information processing. According to Walter and colleagues (2019), System 1 is a person's emotional response to the situation at hand while System 2 is their logical process which takes care of the planning and decision-making. The Two System Theory helps to establish a clear understanding of the difference between intuitive, gut-feeling responses and intentionally, thought-out actions. In addition to this, the theory also helps to explain why the greatest performance benefits will be derived from self-talk when the type of self-talk being used is appropriately paired with a particular type of performance task (Van al Ralette et al., 2021).

While the benefits of self-talk have been discussed and defined, using self-talk in rehabilitation to aid in helping athletes recover after an injury is still being explored. A plethora of researchers have begun to dive into the benefits of using self-talk during athletic rehabilitation, which will be discussed in more detail in the next section.

Self-Talk in Athlete Rehabilitation

In this section, we will review information that was gathered from various studies that depict the use of self-talk by athletes in a rehabilitation setting. The information will be arranged based on the effects of positive self-talk on athletes: motivation and focus.

Motivation

Several studies were examined to explore how positive self-talk can enhance motivation and recovery during rehabilitation. Positive self-talk is often composed of encouraging thoughts, allowing the person to feel calm and maintain a positive attitude during their game. It is thought that if the athlete harbors a positive mindset regarding their upcoming match, they would be able to perform better than if they hold a negative mindset (Peris-Delcampo et al., 2008). Research has proven that positive self-talk as well as a positive mindset can contribute to improved performance by aiding in increasing motivation, lowering anxiety, and boosting confidence (Theodorakis et al, 1998). On the other hand, negative self-talk has been shown to increase stress, thus leading to a decrease in performance (Baumeister et al., 2001). In Hatzigeorgardis's study, he conducted a meta-analysis where he reviewed multiple articles regarding self-talk and how it affects sports performance. Through this, Hatzigeorgiadis found that positive self-talk not only helped to improve confidence but also execution and focus. As predicted, the usage of motivational self-talk, like "Good Job, keep going" was very beneficial to those taking part in endurance and strength-training activities, while statements like "Keep your back straight/ "Watch your form" helped with precision at completing the task. Hatzigeorgardis and his colleagues also found that self-talk has been shown to help athletes under stressful situations, as it helps them with maintaining concentration as well as managing their anxiety (Hatzigeorgardis et al., 2017). This is important regarding rehabilitation because the results help to show that using positive self-talk and

holding a positive mindset can help to improve athletic performance, thus making it not an excellent tool in competition but also rehabilitation. By adding positive self-talk into the recovery process, injured athletes may be able to improve their mental toughness and motivation, potentially speeding up their recovery. Therefore, the study presented evidence that positive self-talk is effective in assisting athletes to increase their performance during rehabilitation (Theodorakis et al., 2017).

Focus

In addition to the effects positive self-talk has on motivation levels, studies like those done by Van Raalte et al (2016) and Hatzigeogiadis et al (2011) have also determined that practicing positive inner thoughts helps athletes improve their focus on the task at hand. When it comes to sports performance, focus is defined as a person's conscious attention to the body's movements or a specific body part (Portier et al., 2010). The use of positive self-talk helps athletes maintain their attention on the game and keep a leveled head, as well as make game decisions due to the promotion of encouraging oneself to keep going in the game. Due to its positive effects, besides motivation, many of the studies, like Judy Van Raalte's, done on self-talk and athletes make a strong connection between positive self-talk and the effects it has on an athlete's focus. When a person experiences negative self-talk, it takes their focus away from the task they are completing and traps them in a box of self-doubt and destruction (Van et al., 2020). One study has shown that when athletes said they used self-talk during a task 71.6% indicated that they felt mental skills helped them to rehabilitate faster (Arvinen-Barrow et al., 2013). Because of this, the practice of self-talk should be considered as a new factor of a rehabilitation program plan for the athletes. In rehabilitation, it is easy for an athlete to shift their focus on the reality of their injury, thus making them depressed and lose interest in their training at the moment. This occurs more than we would like as many **h**ealthcare providers do not use psychological intervention when it comes to rehabilitation (Arvinen-Barrow et al., 2013). Healthcare providers should encourage the athlete to practice self-talk methods such as, " they can do it" or to" push through" as this can help them get through the training, thus leading to the improvement of their sports performance overall (Hatzegeorgiadis et al.,2017).

Applying Self-Talk in Athlete Rehabilitation

By looking at the studies and research that have been conducted throughout the years, it can be seen that the use of self-talk can help enhance the sports performance of an injured athlete during rehabilitation, and health professionals must incorporate this into their recovery plans (Goud et al., 2012). The research helped to reveal that self-talk affected the intrinsic motivational factors of effort, value, fun, and interest (Park et al., 2020). In addition to motivation, the studies also demonstrated how the positive thoughts that positive self-talk produces result in an increase in the athlete's focus. Therefore, it was determined that the different usage of psychological interventions is very effective when it comes to not only the athlete mentally but also their sports performance as well (Biswas et al., 2023). However, researchers have yet to figure out how to effectively test whether or not self-task is effective without the use of questionnaires. This reliance on questionnaires hinders any meaningful comparisons across individual athletes' responses to these types of self-talk questionnaires from being made and causes too much dependence on the questionnaires to give results (Van et al., 2017).

Practical Implications

Upon starting physical rehabilitation, athletes are often feeling a mix of emotions ranging from anger to sadness. A physical therapist, athletic trainer, or any healthcare professional who works with athletes who has a good understanding of this could encourage the usage of positive self-talk with their athletes by constantly reminding them to talk themselves

through their workouts as they are doing them. Those actively engaging in positive self-talk will be able to be more focused on the exercises being performed, as well as feeling more motivated. Physical rehabilitation programs that allow athletes to feel more focused and motivated grant the athletes the ability to better work through their injury recovery, thus allowing them to feel ready to return to their sports. This could be seen when a physical therapist is working with an injured football player who wants to get back to football following a torn ACL. While working with this said athlete, the physical therapist can tell them, while they are practicing sidewalks, to think positive thoughts to help them through it. Even statements like “You can do it” or “Good Job” would be encouraging to the athlete and they would most likely begin to think thoughts like such. Every day they work together, this process could be repeated, which would lead the athlete to eventually do it themselves without being told to do so.

Future Research & Recommendations

It is important to consider another way to test whether or not self-talk is effective in a rehabilitation setting for athletes. Van Raalte et al., 2020 argue that the questionnaires limit the athletes from accurately conveying their experiences due to the limited amount of answer choices. In addition to this, Van Raalte also argues that it requires the athlete to recall past self-talk which may not provide an accurate description of the thoughts. To add to this, the range of studies that use self-talk as the basis of the study is very limited, which is surprising, being that it has been proven that it is an effective method for helping athletes get back on track following an injury. As a society, we need to better connect the dots between self-talk and rehabilitation due to its great benefits to the psychological aspects of the athletes. By doing this, we can continue the research of self-talk in rehabilitation for athletes to improve their mental health, thus improving their sports performance following an injury.

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Ideas & Tips Corner

100 1925 YEARS 2025

SITTING VOLLEYBALL

HOW TO PLAY

Ideas & Tips



Overview

Sitting volleyball is a Paralympic sport designed for athletes with physical impairments. It is also an inclusive activity that can be played by all students. It promotes teamwork, agility, and upper-body coordination while ensuring accessibility in physical education settings.



Basic Rules

- Played on a smaller court (10m x 6m) with a lower net (1.15m for men, 1.05m for women).
- Players must remain in contact with the floor while playing the ball.
- The ball is allowed to be blocked or attacked at any point, provided the player's body is in a legal sitting position.
- Each team has six players on the court.
- The game follows standard volleyball rules (three touches per side, rally scoring, etc.), with adaptations for movement constraints.



Benefits

- **Inclusion & Adaptability:** Allows students of all abilities to participate in a competitive and fun environment.
- **Skill Development:** Enhances hand-eye coordination, reaction time, and teamwork.
- **Upper-Body Strength:** Encourages engagement of core and arm muscles due to the sitting position.
- **Social & Emotional Learning:** Fosters empathy and understanding of adaptive sports and the experiences of athletes with disabilities.



Assessment Options

- Discuss the history, Paralympic significance, and key adaptations.
- Teacher observation using a checklist of players application of skills.
- Teacher observation using a rubric of players application of teamwork.
- Peer feedback on communication and strategy.
- Written or verbal reflections on the experience playing sitting volleyball.



Skill Activities

Seated Passing Drills:

- Forearm passing (bumping) – Have students practice controlled bumps to a partner.
- Overhead passing (setting) – Encourage soft fingertip contact and control.
- Partner drills – One student passes, the other returns, focusing on accuracy.

Serving Techniques:

- Underhand serve – Focus on a fluid arm motion with follow-through.
- Target serving – Set up cones or zones on the court for students to aim.



Skill Activities

Seated Movement Drills:

- Sliding drills – Teach students how to move efficiently using their arms and core.
- Quick reaction games – Call out directions or use visual cues for students to reposition.

Blocking and Attacking:

- Blocking – Teach proper hand positioning and timing near the net.
- Hitting – Encourage players to strike the ball with an open hand using upper-body rotation.

For more detailed tips and resources, visit https://www.paralympic.org/sitting-volleyball/about

RESEARCH ABSTRACTS
Spring 2025

Relationship between Aerobic Fitness and Accuracy of Predicted Aerobic Fitness in Undergraduate Kinesiology Majors

Authors/Affiliations: Hailey Whitlock, Alexis Brown, Alexus Robbins, Demetrice Williams, LaQuesha Wright, Aneilya McFarlin, Amana Diab, and Angela Russell, Auburn University at Montgomery, Department of Kinesiology

Purpose: The purpose of this study was to determine if actual aerobic fitness is related to calibration of aerobic fitness.

Methods: Thirty-two healthy Kinesiology students (8 male, 24 female) between the ages of 19 and 28 (mean age 21.4 ± 2.0 years) participated in the study. Participants first completed the PAR-Q to determine medical eligibility to participate and were then asked to describe their aerobic fitness level as one of the following: well below average, below average, average, above average or well average. Participants were then asked to complete the Queens College Step Test to determine actual aerobic fitness category. A calibration variable was then created to categorize student predictions as overpredicted, accurate, or underpredicted. Chi-square was used to determine if fitness prediction accuracy varies by actual aerobic fitness level.

Results: Accuracy of predicting aerobic fitness varied by actual fitness category, $X^2(6, N=31) = 36.55$, $p < .001$. All 4 students whose fitness was very poor overpredicted their fitness level. Of the 6 students of average fitness, 1 overpredicted and 1 underpredicted fitness, while 4 predicted their fitness accurately. Of the 3 students with above average fitness, only 1 underpredicted fitness, while 2 were accurate. Students with well above average fitness largely underpredicted their fitness (16 students), while 2 students were accurate. No students classified as above average or well above average overpredicted their fitness level.

Conclusion: Students with poor aerobic fitness overpredicted their fitness level, while students with well above average fitness underpredicted their fitness level. Students with average to above average fitness were most likely to predict their fitness level accurately. Poor calibration of aerobic fitness may result in suboptimal decisions about exercise and could lead individuals to misjudge their health risks. Interventions to increase students' awareness of their actual aerobic fitness level may be needed to promote optimal training decisions to help students develop a health-enhancing level of fitness.





Aerobic Fitness of Undergraduate Kinesiology Majors as Measured by the Queen's College Step Test

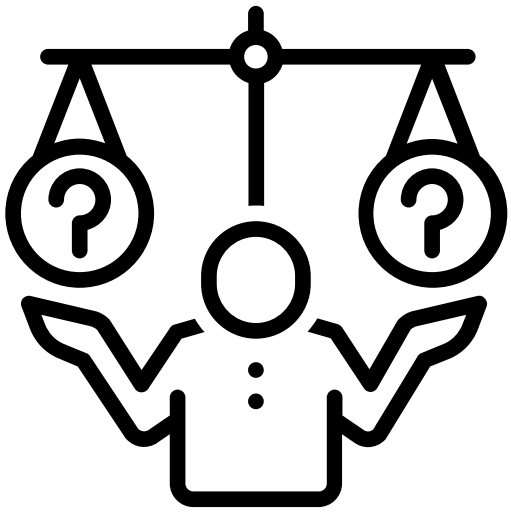
Authors/Affiliations: Madison Foshee, Erin Wofford, Sherilyn Briggins, Bethany King, William Warren, Nathan Lochte, Amana Diab, and Angela Russell, Auburn University at Montgomery, Department of Kinesiology

Purpose: The purpose of this study was to determine the current aerobic fitness level of undergraduate Kinesiology majors.

Methods: Thirty-two healthy Kinesiology students (8 male, 24 female) between the ages of 19 and 28 (mean age 21.4 ± 2.0 years) participated in the study. Participants first completed the PAR-Q to determine medical eligibility to participate and were then asked to complete the Queens College Step Test to determine aerobic fitness level and estimate $V\dot{O}_2$ max. Frequencies of categorical ratings of fitness (poor, average, etc.) were determined for the group as a whole, as well as separately for males and females. Descriptive statistics were also run to find mean estimated $\dot{V}O_2$ max values of study participants.

Results: Twenty-seven students (8 male, 19 female) completed the step test. Five subjects (15.6% of the sample, all female) were unable to complete the step test. All other participants were classified as average (6 subjects), above average (3 subjects), or well above average (18 subjects). Mean $\dot{V}O_2$ max was estimated at 39.8 ± 2.5 ml/kg/min (males 39.6 ± 2.9 ml/kg/min; females 39.9 ± 2.4 ml/kg/min).

Conclusion: Undergraduate Kinesiology students on average recorded higher than average aerobic fitness level, with 56.3% of the sample classified as well above average. However, 15.6% of the sample had very poor fitness, indicating that additional instruction or interventions may be required for some students to reach a level of aerobic fitness needed for good health. Future research should examine factors contributing to fitness and health habits (athlete status, lifestyle factors, etc.) in this population in order to formulate interventions to improve their aerobic fitness.



Comparing PETE Majors' Motor Skills Tests Performances to k-12 Norms.

Author: Kory Hill
Institutional Affiliation: Jacksonville State University

Purpose: The purpose of this study was to pilot test the evaluation of motor skill proficiency of physical education majors at a mid-size regional university. The study aimed to assess both fundamental motor skills and sports-specific skills through various standardized assessments, with the understanding that effective teaching in physical education is closely linked to teachers' motor skill competence. PETE majors' scores are compared to published test norms for middle school females and to determine if a generalized test of fundamental motor skills would correlate well with a battery of sport specific skills tests.

Methods: Following brief practice periods, volunteers completed each assessment for an official score. Nineteen volunteers, thirteen males and six females, completed the 4 skills tests in a two-hour time period. During both practice and official testing situations, students rotated roles within their groups, alternating between scoring/assisting and completing the assessment. The following assessments were administered as part of the study: The Canadian Agility and Movement Skill Assessment (CAMSA), the Shaufele Soccer Volleying Test, the AAHPERD Volleyball Skills Test – Volley Subtest, the Basketball Skill Test – Foul Shot Subtest.

Results: The averages and standard deviations for the skills tests are as follows: Free throws 8.4±3.3, Soccer volley 28.6±11.7, Volleyball volley 19.2±10.1, CAMSA: 23.1±3.5. Volleyball, basketball and CAMSA test scores were compared to norms for 12-year-old females. The youngest age group for which soccer norms were available was ninth grade. PETE majors outperformed the 5th percentile on all four tests and they outperformed the 95th percentiles on the basketball and soccer tests. The PETE majors scored below the 95th percentile for the CAMSA and volleyball tests. The PETE major combined sports skills tests scores showed no relationship with the test form fundament motor skills (r=.01).

Conclusion: Research indicates that physical education teachers tend to offer activities in which they themselves are more skilled. Additionally, learners have expressed a desire to learn from teachers they believe are highly skillful. In this study, the PETE majors appear to demonstrate a minimum level of skill desired by the PETE faculty by scoring over 50th (for middle school females)percentile on all tests. The CASMA scores appeared to be lower than ideal; informal observations indicated that volunteer effort was not as great for the CASMA. Future testing events may need to motivate or incentivize maximal effort.



Effects of Nutrition on Injury Prevention and Recovery in Athletes

Authors/Affiliations: M.S. Green, K.R. Lewing, L.K. Delinsky, and T.A. Coppus. Troy University, Troy, AL

Purpose: This poster presentation will discuss the application of nutritional strategies aimed at injury prevention and recovery, with emphasis placed on the practical use of such strategies by coaches, athletes, and athletic trainers. This is in order to allow them to better monitor the nutrient intake of athletes to keep them healthy or help them to recover from injury more quickly and efficiently.

Methods: A focused review of literature was performed using the Google Scholar database. Keywords included “nutrition” and “injury” and literature was selected for further review if it included the keywords “prevention” or “position stand.” Peer reviewed articles published since 2014 were selected. Fifteen articles including position stands and original research were ultimately utilized for this presentation. The intent was to identify the degree to which nutrition has been shown to prevent and enhance recovery from injury.

Results: Peer reviewed literature was located detailing injury rate and type in certain sports, and the extent to which specific nutrients may affect such injuries. The literature also included information on programs that should be implemented in schools to promote acceptable nutrition habits among athletes. Results of the literature review suggest that nutrition can play an important role in injury prevention and recovery. Athletic departments should include nutrition in their programs to help keep athletes healthy. There is still more research needed on this topic to really know the importance that nutrition plays in the overall health of an athlete.

Conclusion: Nutrition does play a key role in injury prevention and recovery. Coaches and athletic trainers should be aware of vitamins and supplements their athletes are taking in order to keep them healthy. It is important for practitioners and athletes to remain up to date on nutritional standards.



To PETE, or not to PETE, that is the Question

Author/Affiliation: Craig Parkes & Shelley L. Holden, University of South Alabama

Purpose: A reduction in physical education teacher education (PETE) enrollments has been evident over the past decade. Many institutions have eliminated PETE programs or placed them under the recruitment and retention microscope. The study aim was to investigate how occupational socialization influenced PETE recruitment and retention.

Method: Participants were 16 individuals who were undergraduate students or recent graduates. Data were collected through autobiographical essays and interviews. Data were analyzed using occupational socialization theory (Lawson, 1983).

Results: Participants were organized into five categories (a) PETE pre-candidacy, (b) currently enrolled in PETE, (c) recent PETE graduate, (d) considered PETE but never enrolled, and (e) withdrew from PETE. Participants acted as pursuers, latecomers, and lamenters. The factors influencing recruitment and retention were (a) teachers, coaches, and family members, (b) early field observations, (c) job satisfaction over career earnings, and (d) mental wellbeing.

Discussion/Conclusion: Recommendations include challenging negative views of the profession, promoting job satisfaction, providing early field observation opportunities, and directing students to mental health resources.

ASK THE EXPERT

Quality High School Physical Education Programs

By Dr. Sandra Sims



Q: Why are quality high school physical education programs important?

A: Quality high school physical education programs help establish lifelong habits of healthful and meaningful physical activity. For many students, the required high school physical education course is their last formal opportunity to build knowledge and skills related to health and fitness. Programs that provide standards-based instruction equips students with the skills and behaviors necessary for a healthy, active life.

Q: How Can Physical Education Teachers Design a Quality High School Program?

A: Students often enter high school after completing up to nine years of physical education. A high school physical education course should be distinct from previous classes, offering new challenges and deeper learning opportunities. In Alabama, this course is known as Basic Kinesiology. According to the Alabama Course of Study, by the end of high school, students should be able to:

- Plan and implement various types of personal fitness programs.
- Demonstrate competency in two or more lifetime activities.
- Describe key concepts associated with successful participation in physical activity.
- Model responsible behavior while engaged in physical activity.
- Engage in physical activities that fulfill the need for self-expression, challenge, social interaction, and enjoyment (ALCOS, p. 45).

Designing a Basic Kinesiology curriculum requires a thorough review of all 28 content standards. Teachers should evaluate each standard and develop instructional strategies that effectively address them. From there, a comprehensive yearly plan can be created to ensure all standards are covered. A common issue, however, is that many schools are not fully meeting the Basic Kinesiology standards. High school programs are often structured like previous physical education classes, similar to those offered in middle school. This redundancy can cause students to perceive high school physical education as merely a repetition of past experiences. The Basic Kinesiology course presents a valuable opportunity for educators to design a meaningful and engaging program that promotes lifelong healthy and active choices. The flexibility of the standards allows teachers to create a dynamic curriculum that can significantly influence their students' futures.

Q: What are the new National Physical Education Standards?

In 2024, SHAPE America revealed the new National Physical Education Standards. The four new standards address the four domains for learning—psychomotor, cognitive, social, and affective. The new standards are:

Standard 1-Develops a variety of motor skills.
Standard 2-Applies knowledge related to movement and fitness concepts.
Standard 3-Develops social skills through movement.
Standard 4-Develops personal skills, identifies personal benefits of movement, and chooses to engage in physical activity.

Teachers will notice the number of national standards was reduced from 5 to 4. Standard 3 from the 2013 National Standards was removed and the content was merged into the new Standards 2 and 4.

Q: How do the new National Standards impact Alabama Physical Education teachers?

A: Alabama teachers are required to follow the current Alabama Course of Study (COS) for Physical Education (2019). A new COS is typically updated every six years. Until a new COS is approved, teachers must follow the current 2019 COS Standards.
However, teachers need to be aware of the new National Standards since the 2019 COS was developed using the old National Standards. Teachers will see many similarities with the new standards but will also notice differences. One of the differences is the move to grade-span learning indicators instead of grade level indicators. I encourage every teacher to review the crosswalk documents showing connections between the new SHAPE America NationalPhysical Education Standards (released in 2024) and the 2013 SHAPE America National Standards for K-12 Physical Education. Those documents can be found at https://www.shapeamerica.org/sTandards/pe/resources.aspx .

Q: What are the differences in the new high school grade-span indicators to the 28 Basic Kinesiology content standards?

A: Important differences are listed below:

- High school physical education teachers will notice there is no longer the Level 1 and Level 2 sections.
- Standard 1 moved from three content standards to nine grade-span learning indicators. These new nine indicators include a separation of all of the activities that were grouped together in the old content standards. This separation creates more emphasis on the variety of activities needed in the curriculum.
- Standard 2 includes seventeen grade-span learning indicators from the four content standards listed previously. This increase is mainly due to combining the old Standard 2 & some of the old Standard 3 together.
- The old Standard 3 was removed.
- The new Standard 3 grade-span learning indicators include most of the old Standard 4 content standards and increased grade-span learning indicators from four to eight. The new additions include new concepts (see indicators 3.12.1, 3.12.3, 3.12.4 and 3.12.5).
- Standard 4 grade-span learning indicators include most of the old Standard 5 content standards and increased grade-span learning indicators from four to nine. This increase is due to adding some of the old Standard 3 indicators to this group.

I am sharing the new high school grade-span learning indicators below in Table 1. The new high school grade-span indicators can be beneficial to current physical education teachers seeking to improve their Basic Kinesiology content. Just a reminder, the Alabama COS is the minimum content required to teach. Knowing a new COS may include some of the new learning indicators, my hope is that teachers will review the new learning indicators and make additions to their current courses to improve curriculum development.

TABLE 1-National High School Physical Education Standards and Grade-Span Learning Indicators
STANDARD 1: Develops a variety of motor skills.
1.12.1 Demonstrates activity- specific movement skills in a variety of lifetime sports and activities.
1.12.2 Demonstrates activity- specific movement skills in a variety of recreational and backyard games.
1.12.3 Demonstrates activity- specific movement skills in a variety of outdoor pursuits.
1.12.4 Demonstrates and creates movement sequences based on one or more forms of dance.
1.12.5 Demonstrates appropriate technique in cardiovascular training.
1.12.6 Demonstrates appropriate technique in muscular strength and endurance training.
1.12.7 Demonstrates appropriate technique in flexibility training.
1.12.8 Demonstrates appropriate technique in skill- related fitness training.
1.12.9 Demonstrates water safety skills. If a pool facility is available, demonstrates water safety and basic swimming skills.
STANDARD 2: Applies knowledge related to movement and fitness concepts.
2.12.1 Demonstrates knowledge of tactics and strategies within lifetime sports & activities.
2.12.2 Demonstrates knowledge of tactics and strategies within recreational & backyard games.
2.12.3 Demonstrates knowledge of tactics and strategies within outdoor pursuits.
2.12.4 Applies knowledge of movement sequences to create or participate in one or more forms of dance.
2.12.5 Analyzes how health and fitness will impact quality of life after high school.
2.12.6 Establishes a goal and creates a practice plan to improve performance for a self- selected skill.
2.12.7 Applies the principles of exercise in a variety of self- selected lifetime physical activities**.**
2.12.8 Designs and implements a plan that applies knowledge of aerobic, strength and endurance, and flexibility training exercises.
2.12.9 Evaluates perceived exertion during physical activity and adjusts effort.
2.12.10 Applies heart rate concepts to ensure safety and maximize health-related fitness outcomes.
2.12.11 Discusses the benefits of a physically active lifestyle as it relates to young adulthood.
2.12.12 Applies knowledge of rest when planning regular physical activity.
2.12.13 Applies movement concepts and principles (e.g., force, motion, rotation) to analyze and improve performance of self and/or others in a selected skill (e.g., overhand throw, back squat, archery).
2.12.14 Identifies and discusses the historical and cultural roles of games, sports and dance in a society.
2.12.15 Analyzes and applies technology as tools to support a healthy, active lifestyle.
2.12.16 Identifies snacks and food choices that help and hinder performance, recovery, and enjoyment during physical activity.
2.12.17 Demonstrates knowledge of water safety skills. Demonstrates knowledge of basic swimming skills.
STANDARD 3: Develops social skills through movement.
3.12.1 Demonstrates awareness of other people's emotions and perspectives in a physical activity setting.
3.12.2 Exhibits proper etiquette, respect for others, and teamwork while engaging in physical activity.
3.12.3 Encourages and supports others through their interactions in a physical activity setting.
3.12.4 Implements and provides feedback to improve performance without prompting from teacher.
3.12.5 Analyzes the value of a specific physical activity in a variety of cultures.
3.12.6 Applies best practices for participating safely in physical activity (e.g., injury prevention, spacing, hydration, use of equipment, implementation of rules, sun protection).
3.12.7 Thinks critically and solves problems in physical activity settings, both as an individual and in groups.
3.12.8 Evaluates the effectiveness of leadership skills when participating in a variety of physical activity settings.
STANDARD 4: Develops personal skills, identifies personal benefits of movement, and chooses to engage in physical activity.
4.12.1 Selects and participates in physical activities (e.g., dance, yoga, aerobics) that meet the need for self-expression.
4.12.2 Selects and participates in physical activities that meet the need for social interaction.
4.12.3 Identifies and participates in physical activity that positively affects health.
4.12.4 Chooses and participates in physical activity based on personal interests.
4.12.5 Chooses and successfully participates in self- selected physical activity at a level that is appropriately challenging.
4.12.6 Sets and develops movement goals related to personal interests.
4.12.7 Analyzes factors on regular participation in physical activity after high school (e.g., life choices, economics, motivation, accessibility).
4.12.8 Analyzes and applies self-selected techniques to manage one's emotions in a physical activity setting.
4.12.9 Reflects on movement experiences during physical education to develop understanding of how movement is personally meaningful.

Q: How can school administrators and policymakers be convinced of the importance of investing in quality physical education for high school students?

High school physical education programs are often overlooked by administrators. It is essential for teachers to educate administrators about the importance of the Basic Kinesiology course and advocate for making this course available to all high school students.

We must continue to advocate against exemptions or substitutions for the one required physical education credit needed for graduation. While some high schools permit alternatives—such as marching band, ROTC, cheerleading, or school sports—these activities, though valuable, do not offer the comprehensive, standards-based instruction provided by a quality physical education program. Such extracurricular activities should not replace the required physical education credit.

The most powerful advocacy tool you can use is to provide a high-quality physical education program. When administrators observe your program's effectiveness, they can better appreciate the importance of all students participating in physical education. After all, what other high school course equips students with the skills and behaviors necessary for leading a healthy, active life?

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Dr. Sandra Sims

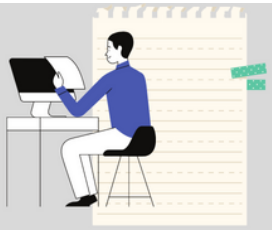


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Sandra held various leadership positions at the national, regional and state levels. Nationally, she currently serves on the Board of Directors for the National Academy of Health and Physical Literacy (NAHPL) as the Southern Tier Region Representative.

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PUBLISHING IN THE ASAHPERD JOURNAL



The ASAHPERD Journal is looking for articles that communicate theory, research and practice in an ASAHPERD (health, physical education, recreation, or dance) discipline. Acceptable topics include teaching techniques; research; Alabama state resources and services; meeting Alabama state or national standards; philosophy; advocacy and policy appropriate for Alabama; and reviews of web resources, books, and audiovisuals. The current schedule for publication is spring and fall. Acceptance of articles for publication is ongoing.

Manuscripts must meet the most current APA Guidelines, be submitted electronically as a word document in portrait configuration (not landscape), include an abstract, and not exceed 3000 words or 10 pages double-spaced, Times New Roman, and 12 font. Headers should be centered, and sub headers left justified. Do not insert any extra blank spaces or special formatting. Line numbers must be visible down the left hand side of the manuscript. The abstract should be 50 words or less. Please include a cover letter with your credentials (student or faculty and your university affiliation or place of employment) and stating the article is not being considered for publication elsewhere. Manuscripts should be submitted to the journal editor, asahperd.journal@gmail.com.

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The Ideas & Tips Corner features short articles about one specific practical area of interest in physical education, health, recreation, exercise science or dance. Articles contain a brief introduction, followed by practical information, and steps to success that can immediately be implemented in the appropriate environment. The ASAHPERD editorial team encourages members who value the sharing of knowledge to promote positive change in our field to submit a short article for the ideas & tips corner. Submissions should not exceed 1,000 words.

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Ask the Expert features a short interview, questions and answer style article highlighting one area of interest to the audience. The expert seeks to provide the reader with background and practical information that can be applied. The ASAHPERD editorial team encourages experts to reach out to the journal to be considered for an 'ask the expert' segment in future journals. Alternatively, Individuals may nominate an expert in the field.

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