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Descriptive Study of Coordination and Treatment in West Virginia's Behavioral/Mental Health Crisis

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Walden University

College of Management and Human Potential

This is to certify that the doctoral study by

Samuel Gordon Weaver

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2024

Abstract

Descriptive Study of Coordination and Treatment in West Virginia's Behavioral/Mental
Health Crisis

by

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MA/MS, Walden University, 2019

BS, West Virginia University, 2013

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Healthcare Administration

Walden University

May 2024

Abstract

West Virginia's residents are less likely to have adequate access and effective care coordination when receiving behavioral and mental health treatment as compared to residents of other states. Seeking patterns of relationships can provide administrators with a better understanding of influences that might cause inter and intra-team systemic challenges and how to reorient policies and behaviors to ameliorate micro and macro task failures. The research questions and associated hypotheses involved understanding the nature of associations between three variables - behavioral health treatment status for autism spectrum disorder, behavioral health treatment status for attention-deficit hyperactivity disorder, and professional mental health treatment – and whether or not effective coordinated care was a critical part of the treatment. A multi-systems approach was used as the theoretical foundation to analyze research questions. Secondary data from the Child and Adolescent Health Measurement Initiative 2020 were used for analysis. Chi-squared test of association was used to evaluate relationships between variables. Results indicated no statistically significant relationship among variables. Implications for positive social change include reenergizing families across the U.S. to put more emphasis on preventative and proactive care to reduce overall exhaustion of healthcare system resources that could also result in improved patient coordinated care outcomes.

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Section 1: Foundation of the Study and Literature Review

This study involved ongoing challenges within West Virginia's healthcare system, specifically access to care through means of healthcare coordination. This study needed to be conducted to help to have more satisfied consumers in terms of physical and mental health. This study focused on behavioral health as West Virginia is facing a crisis with increased levels of addiction, anxiety, and depression that result in suicides. It is designed to identify communication problems between providers or teams of providers in relation to consumers as well as factors that may contribute to miscommunications involving policies, culture, and provider dynamics. Administrators can better predict influences in their healthcare system that might influence stability and dynamics in terms of coordination of care that can affect access problems in their own state. This document includes background information and literature as well as evidence to support the problem statement that was addressed in this study. I addressed research questions and hypotheses as well as theoretical and conceptual frameworks. The nature of the study was explained with a rationale of the methodology followed by literature search strategies. A comprehensive literature review was used to examine recent studies regarding the topic. Definitions and assumptions were defined as well as limits involving testing and analysis; additionally, I addressed the significance of the study followed by a summary and conclusions.

Background

Ongoing behavioral support has been successful for programs that typically support cultural competency and are locally based but often face issues related to funding

(Crespo et al., 2020). Administrators typically set the tone for provider-orientated compassionate care and workplace culture (Vogus & McClelland, 2020). Clarkson et al. (2018) said communication between the accreditation system, reporting system, and hospital-level healthcare system led to the most proficient transfer of data through coordination.

There was a gap in knowledge in literature as researchers have investigated this issue, but there is little analysis of potential correlative factors involving received behavioral or mental healthcare and coordination that is involved for consumers to receive such care in West Virginia as well as other states with similar behavioral healthcare access and care coordination issues. This study was needed due to ongoing challenges experienced in West Virginia as well as other rural states that lack access to care. Often in rural settings, strained healthcare systems are exacerbated due to poor coordination of care among administrators and providers. This study could be useful in terms of drawing conclusions regarding relationships between behavioral health treatment and effective care coordination. I evaluated significance and strengths of relationships to address factors that can affect coordination of care in rural or urban areas.

Problem Statement

The problem is that there are elevated behavioral and mental health concerns as well as access challenges in terms of receiving treatment for residents of West Virginia. West Virginia's mental healthcare system underwent review in 2015 due to compliance issues involving integration of supports and services that were appropriate for patients in need of specialized medical care. Repeated unethical violations involving coordination of

care have put a strain on the state's healthcare system which has resulted in reduced revenue, increases in healthcare costs, escalated diversions, and insufficient staffing. Some resolutions to access challenges for consumers are being ameliorated by the West Virginia University Department of Family Medicine's Care Coordination and Transitional Care Management team with case managers in addition to an interdisciplinary team who provides care to patients regardless of money, while focusing on identified needs and risks (West Virginia University, n.d.). There are many duties that these assigned care managers have taken that range from patient outreach to surveillance that have provided added benefits and value to the department.

The Division of Health Promotion and Chronic Disease (DHHR, 2019) stated 26.3% of West Virginia residents considered their health poor, with the highest poor ratings for physical and mental health in the nation. West Virginia has 5% more individuals who are uninsured when compared to the national average (DHHR, 2019). Close to one fifth of West Virginia residents do not have a personal healthcare provider, with close to 15% reporting they could not afford medical care in 2017 (DHHR, 2019).

In West Virginia, 70% of children and adolescents report having a psychiatric disorder but not receiving treatment (Pradhan et al., 2019). Implementation and dissemination of an evidence-based telehealth model for integration has improved access to behavioral healthcare for the most at-risk youth in West Virginia.

Purpose of the Study

The purpose of this quantitative study was to evaluate elevated behavioral and mental health concerns as well as understand the relationship between coordinated care

and treatment of these diagnoses and disorders for residents of West Virginia. By understanding relationships between variables, healthcare administrators can better create a system of coordinated care to effectively meet needs of residents of West Virginia. This study involved understanding if there were relationships between effective care coordination and autism spectrum disorder (ASD) behavioral treatment, attention-deficit hyperactivity disorder (ADHD) behavioral treatment, and mental health professional treatment as it related to West Virginia's mental healthcare system. Statewide metrics can be used for further exploration and comparison to provide context regarding West Virginia's unique crisis in terms of behavioral and mental health. ASD, ADHD, and mental health professional treatment are the independent variables while effective care coordination was the dependent variable.

Research Questions and Hypotheses

RQ1: Is there a statistically significant relationship between received behavioral health treatment for ASD and effective care coordination in West Virginia?

H₀1: There is no statistically significant relationship between received behavioral health treatment for ASD and effective care coordination in West Virginia.

H_a1: There is a statistically significant relationship between received behavioral health treatment for ASD and effective care coordination in West Virginia.

RQ2: Is there a statistically significant relationship between received behavioral health treatment for ADHD and effective care coordination in West Virginia?

H₀2: There is no statistically significant relationship between received behavioral health treatment for ADHD and effective care coordination in West Virginia.

H_{a2}: There is a statistically significant relationship between received behavioral health treatment for ADHD and effective care coordination in West Virginia.

RQ3: Is there a statistically significant relationship between received mental health professional treatment and effective care coordination in West Virginia?

H₀₃: There is no statistically significant relationship between received mental health professional treatment and effective care coordination in West Virginia.

H_{a3}: There is a statistically significant relationship between received mental health professional treatment and effective care coordination in West Virginia.

Theoretical and Conceptual Framework

The multi-teams systems framework was used to explore functions and information sharing between multiple providers or groups to guide processes of coordination during team processes. This framework involved time-based conceptualization of performative multilevel processes to achieve goal-orientated task work through directed sequences (Marks et al., 2001). This theoretical framework supported the dependent variables to help address evaluative conditions involving both effective care coordination and consumer status.

The multi-teams system was used to provide support structures to dictate the existence of coordinated care systems more appropriately for specific states due to identified conditions. Constrained behavior refers to when the system is open to alternatives, but the structure is closed, while information is needed to overcome constraints. Routine habit behavior is when the structure is open to alternatives, but the system or individuals defend habitual behaviors. Fatalistic behavior of an organization

occurs when the system and structure both fail to realize a problem and offer no alternatives; ability or interest to control the environment might be limited (Grunig, 1975).

Nature of the Study

To address research questions in this study, the specific research design was descriptive and involved using a chi-square test of independence to evaluate relationships between nonmanipulated variables via Cramer's V measurements. Archived secondary data from the Child and Adolescent Health Measurement Initiative 2020 was used for analysis and pattern tracking without external conditioning. This research method and design was used to help determine if relationships were positive, negative, or non-existent between effective care coordination and behavioral/mental health treatment.

Literature Search Strategy

In this study, I used the following databases: Google Scholar, PubMed, ScienceDirect, and JSTOR. I used the following search terms: *West Virginia, health crisis, healthcare policy, administration, multi-systems, coordination, culture, and behavior health*. Results were evaluated based on relevance, date, contribution, consistency, and validity. Sources were published between 2018 and 2024.

Literature Review Related to Key Variables and Concepts

Terry and Woo (2020) concluded work-family conflict and work during personal time was negatively correlated with job satisfaction and positively correlated with perceived stress and burnout. Knox et al. (2022) suggested that additional case managers can address social risks if they are trained using interdisciplinary approaches; trust,

observation of change, and independence and stability promotion were key factors in terms of incremental success. Hansroth et al. (2021) concluded rural departments in WV have a small census on average with less specialized care; over 60% of full-time physicians attended medical school or grew up in the state. Specialized coverage has increased in the past decade, but is still moderately underrepresented in West Virginia, especially in more rural areas.

Charistiadi et al. (2021) concluded employment in the WV healthcare workforce grew and this was a net gain as the state's overall employment was in decline. Lowest financial wages were in residential and intellectual and developmental disability groups, substance abuse facilities, and behavioral/mental health groups; workers in assisted living and elderly facilities made slightly more (Charistiadi et al., 2021). Both mental health counselors and social workers have over a 40% turnover rate when compared to higher paid and more advanced degrees such as psychiatrists. Telemedicine has been effective for delivery reform for both psychiatric services as well as coordination of care. Many services are comparable to face-to-face treatments; in 2014, 12 in every 100 visits were provided via telemedicine in areas with serious mental health challenges, while more rural areas were up to an average of 45 for every 100 visits (Barnett et al., 2019).

The World Health Organization (WHO) has made efforts for integrating mental health into primary healthcare settings. Key recommendations made by the WHO included situational analysis of best options for treatment at different levels of care, these often include care, case, and coordination managers, and building on existing networks to create more access to healthcare. To gain a consensus for support of spending more

taxpayer money for behavioral healthcare, a shift in perceived cultures needs to take place where primary care physicians alter appropriateness of mental health so it is treated similarly to other diseases that can be treated with success.

Definitions

Effective Care Coordination: Having the needs of consumers met through efforts of care coordinators, case manager, or providers that links or coordinates care for the consumer.

Behavioral Health Care: Behavioral health treatment that helps assess, treat, and prevent the worsening of behavioral or mental health symptoms.

Mental Health Care: Treatment that primarily involves emotional, psychological, and social wellbeing of individuals or groups of consumers.

Therapist: A trained professional who provides therapy and counselling to individuals, couples, families, and groups for various mental and physical issues.

Telemedicine: Distance healthcare delivery services using technology-based software and hardware such as computers or phones.

Assumptions

I assumed care coordination was conducted in similar fashions between and within agencies. I also assumed data were collected by practitioners with honest and admirable intentions without agendas intended to elevate or devalue certain states or conditions, and data were as accurate and fair as scientifically possible. Another assumption was that collaborative interprofessional practices were essential for addressing mental health care concerns. Lastly, I assumed implementation of behavioral

healthcare should reduce circumstances where there are crises due to lack of care or resources to achieve access to receive care.

Scope and Delimitations

Participants in this study were residents of WV; national averages were applied for contrast and comparison. This included children and adolescents. Participants completed the survey. There is potential generalizability for similar populations living in similar states, or states with more rural populations, lower socioeconomic status, and less resources, as well as potentially similar cultures in terms of healthcare and treatment.

Limitations

A known limitation of descriptive designed studies in general involves causation; a study such as this one can determine associations in terms of exposures and outcomes but not direct causes of one variable on another. WV often lacks reporting due to resource allocation and financial availability. In terms of validity threats, the COVID-19 pandemic could have influenced results of data collection and skewed normalcy in terms of both dependent and independent variables. Survey data is from 2020.

To course correct for potential bias, a review of objectivity took place during the beginning, middle, and end of data analysis as well as the literature review. To address limitations, a data review was used to consider even distribution of reporting from counties that have higher socioeconomic statuses such as Jefferson County compared to counties with lower socioeconomic status such as McDowell.

Significance

This study promotes and advances knowledge in this specific discipline as well as supports ongoing improvements involving coordination between providers for the benefit of consumers, specifically in areas where there are social, environmental, and other contextual challenges within healthcare systems. Patterns of relationship provide administrators with a better understanding of influences that might cause systemic challenges and how to reorient policies and behaviors to address micro and macro task failures. This research provides necessary conditions to reinforce social relationships in terms of positive change, stability, and ethical integrity.

Summary and Conclusions

Major themes in literature were mutual systems of support to uphold and reinforce cultural positives while revolutionizing obsolete ones. Rural discomfort with the trajectory of healthcare result because clinics and specialist care can often be lacking. Consistent reporting on discontent with coordinated care is shown through survey and polling data as well as firsthand interviews. Other aspects of rural healthcare systems culture were evaluated such as emergency care to analyze coordination more comprehensively.

What is not known is, relationships and correlations between variables that contribute to overall system failure and functioning are specifically related to coordinated behavioral healthcare. There does not appear to be literature that examines the influence of coordinated care in behavioral healthcare settings that also uses a multi-teams systems framework. This study supplements ongoing research to improve administrative and

clinical performance and policy making. Updated supporting literature was provided.

This study may be used to address relational concerns involving the independent and dependent variables. This study fills a gap in literature involving WV healthcare systems.

Section 2: Research Design and Data Collection

The purpose of this quantitative study was to evaluate elevated behavioral and mental health concerns as well as understand the relationship between coordinated care and treatment of these diagnoses and disorders for residents of West Virginia. By understanding relationships between variables, healthcare administrators could better create a system of coordinated care to effectively meet needs of residents of West Virginia. This study involved addressing if there was a correlation between effective care coordination and ASD, ADHD, and mental health professional treatment as it relates to West Virginia's mental healthcare system. This study involved examining individuals who reported having access to their desired healthcare and received some sort of evaluation, diagnostic, or treatment for their behavioral and mental healthcare needs.

Received autism spectrum disorder behavioral treatment, received attention-deficit hyperactivity disorder behavioral treatment, and received mental health professional treatment were the independent variables while effective care coordination was the dependent variable. Stratified random sampling was used to divide the population into smaller groups of children and adolescents. SPSS was used to analyze data for statistical significance, hypothesis testing, and other statistical measures and analyses. Specificity was a possible threat to external validity as variables in this study varied in terms of operational definitions. Evaluation of statistical regression could have posed a potential threat to internal validity if the effect size was difficult to discern. Possible ethical concerns and conflicts of interest were accounted for.

Research Design and Rationale

The variables for this study were effective care coordination as the dependent variable with ASD and ADHD behavioral treatment as well as received mental health professional treatment as independent variables. The research design was descriptive and involved using chi-square testing to examine relationships between independent and dependent variables. There were no time or resource constraints aside from SPSS licensure expiration. Some adolescents could have possibly aged out and be adults by the time of analysis.

Methodology

Population

The target population for this research study was children and adolescents who were between zero and 17 in West Virginia. Out of the estimated total residents (1,775,156), 360,784 are under the age of 18, or 1.6%. The general health status of each participant was unknown prior to the collection of the survey.

Sampling Procedures

Researchers utilized random sampling, so each child and adolescent had equal opportunity for selection. Randomly selected households were contacted by mail to first identify those with one or more children under the age of 18 within the household; in circumstances where multiple children lived in the home, one child was also randomly selected for the survey. In 2020, a total of 42,777 surveys were completed in the U.S., with a state range of 644-3,039. The weighted overall response rate was 42.4%.

Each household received a mail invitation which requested a parent or guardian familiar with their children's health conditions to first complete a short questionnaire by web or paper. Individuals who used web-based questionnaires were immediately selected to report additional details. Questionnaires were in English, with Spanish as an additional option. The initial screener contained questions about race, ethnicity, language, housing status, and presence of special healthcare needs. Online survey participants moved to the topical questionnaire while those who filled out paper questionnaires mailed their data back to the researcher. After random selection of one child per household was concluded, the main topical questionnaire was sent. Online participants moved to the age-appropriate questionnaire while paper respondents received the age-appropriate topical questionnaire through the mail. To build the CAHMI secondary data set, respondents completed one of three versions of the survey depending on the following age categories: zero-five, 6-11, and 12-17.

To gain access to this specific data set, communication began with online representatives of the Data Resource Center for Child and Adolescent Health through the National Survey of Children's Health on August 10, 2022, at 9:11 p.m. Further conversations to review study requirements were explored; topics included variable specifics, state specifics, codebooks, and survey responses. After a general discussion of the mission and dissemination and use of results was performed by the Data Resource Center and Johns Hopkins Bloomberg School of Public Health, access was granted.

More specifically, the NSCH is sponsored by the Maternal and Child Health Bureau of the Health Resources and Services Administration, which is part of the U.S.

Department of Health and Human Services. A power analysis was performed to find a suitable sample size. This produced a sample size of 684, with 683 valid cases. The effect size, alpha level, and power level chosen were justified as generated outputs were appropriate for this type of study as there seemed to be little waste in resources. An online statical power and sample size calculator was used for these results. The sample size was calculated in SPSS with the state filter applied, providing 684 samples with 683 valid cases as one individual was missing the effective care coordination component. The online statistical calculator tool G*Power 3.1 that has been widely used for operations such as this and recommended by University Methodology department helped calculate the power after the effect size w was found by taking the chi-square statistic over the observations with the square root of the quotient.

Instrumentation and Operationalization of Constructs

The instrument that was used for computational analysis was the Statistical Package for Social Sciences (SPSS). This study combined social sciences with statistical analysis, making SPSS have high potential for utilization. The Statistical Package for Social Sciences software was selected due to the ability that it can assist in analyzation and computation of various measurements and results that can further expand understanding of the utility of the variable being examined. A bibliometric analysis was published in 2021 that explored trends and usage of statistical software with associated designs in health sciences research; SPSS was the most used statistical tool, with 52.1% usage, most of the studies associated included observational and experimental study designs (Masuadi et al., 2021). This instrument has been used on various populations and

in various countries as it is owned by an International Business Machine (IBM); having such a capacity for diversity in usage, SPSS will assist in analysis for this study's population.

This software has been widely used for generalizability and repeatability processes in research as well as reliability testing and research making this tool appropriate for this study. About 61% of original research articles that reviewed reliability in the Journal of Health Services Research specified that SPSS and Statistical Analysis Systems (SAS) were the predominant software utilized (Masuadi et al., 2021). G*power was founded by Jochen Grommisch in 1983, where the headquarters are in Aichach, Germany. G*power is a valid statistical tool as it can assist in calculations related to two-sample or independent t-test, dependent t-test, one-way analysis of variance, correlation-Pearson r , and two independent proportions: chi-square tests, which was applicable for this study. This powerful statistical tool assisted with the process of sample estimation and various statistical methods to help establish research goals and hypotheses.

Operationalization

Each variable was measured and manipulated in various ways to determine if there was significant relationship between two nominal (categorical) variables. In the data analysis phase, the categorical variables took a numerical format in valuing. The dependent variable of effective care coordination combined with and analyzed with the independent variables of received behavioral healthcare for both ASD behavioral treatment and ADHD behavioral treatment as well as received mental healthcare

professional treatment in a test for independence using chi-square testing. Chi-square testing provided understanding of possible relationships that can help viewers describe the research phenomenon or population regarding the research problem. For all four variables, the type was numeric while the measure was nominal. The crosstabulation or bivariate table evaluated independence through the test statistic. This approach was intended to analyze group differences when the dependent variable was measured at a nominal level. Through review, the frequency of each category for one of the nominal variables was compared across the categories of the second nominal variable.

The descriptive research designed study evaluated for both positive and negative relationships as well as zero correlations of effective care coordination, which was being linked to services, providers, and or the sharing of informational data to another, with received behavioral/mental healthcare or an individual who received some form of behavioral/mental health treatment. After the appropriate information was gathered for variable-x and variable-y, means or averages were collected for all variables as well. Results then were represented after analysis. The Cramer's V indicated the strength of the relationship as it acts like a correlation coefficient; these values range from -1.0 and 1.0.

An example item of a chi-square statistic test would be calculated by the square of the difference between observed and expected values, a researcher would divide the number by the expected value. There may be two or more values which would result in chi square as it is the sum of those values.

Data Analysis Plan

The software that was used for the data analysis plan is the Statistical Package for Social Sciences (SPSS); the data set used is the Child and Adolescent Health Measurement Initiative (CAHMI 2020) National Survey of Children's Health. To increase validity data cleaning and screening took place in the form of checking data accuracy by examination of correct location and entering within the cell blocks of the statistical software. The completeness of data was inspected as well as suspicious patterns of atypical looking data; this included distribution, consistency, as well as other reliability measures. In preparation the data was categorized and noted if they are nominal, ordinal, interval, or ratio variables. Exclusion of data were states that are not West Virginia and appropriately coded; valid case were individuals ages zero-17 that were surveyed in the behavioral and mental health system. Variables were reviewed a second time to determine independence, dependence, or control. The independent and dependent variables were coded like the following: attention-deficit hyperactivity disorder behavioral treatment for ADDTREAT, autism spectrum disorder behavioral treatment for AUTISMTREAT, mental health professional treatment for K4Q22_R, and effective care coordination for HelpCoord_20.

In preparation logical skips were considered for individuals who only needed to see one provider as they did not need effective care coordination. The research questions were: What if any, is the correlation between received behavioral health treatment for autism spectrum disorder and effective care coordination in West Virginia?, What if any, is the correlation between received behavioral health treatment for attention-deficit

hyperactivity disorder and effective care coordination in West Virginia?, and What if any, is the correlation between received mental health professional treatment and effective care coordination in West Virginia?

The Hypotheses were: There is a statistically significant correlation between received behavioral health treatment for autism spectrum disorder and effective care coordination in West Virginia., There is a statistically significant correlation between received behavioral health treatment for attention-deficit hyperactivity disorder and effective care coordination in West Virginia., and There is a statistically significant correlation between received mental health professional treatment and effective care coordination in West Virginia.

The data analysis plan included performing a chi-square analysis that utilized Cramer's V analysis for additional effect size and strength of association and relationships. Descriptive statistics was used to evaluate frequencies, percentages, valid percentages, and cumulative percent with information displayed on bar charts. After this analyzation was conducted a review of appropriate graphs was examined for applicable statistical figures that was included in the final document for data representation. Data analysis outputs and figures were stored through encryption protected hardware and utilized for ongoing needs and accessibility.

Threats to Validity

There were many threats to validity internally and externally when processing data for analysis. Ecological validity could have been concern in this study as it can be difficult to generalize the findings to another environment or situation for real world

actuality. Even the most similar states had high variability amongst political structures, healthcare structures, socioeconomic structures, and other confounding variables that made the research results difficult to generalize regarding assumptions. A disclaimer was offered to readers suggesting different considerations to review to assess generalizability to other areas such as rural areas. History was also a concern in this study since the Covid-19 pandemic, the healthcare structure in the nation was reformatted where coordination and the receiving of healthcare in general has gone through a unique shift in a variety of different settings. The external validity threat known as history was addressed through the utilization and incorporation of expansive literature to supplement years after the most active years of the Covid-19 pandemic.

Threats to internal validity can look different from each study like external validity. Internal validity deals with confidence in test results due to procedure; this suggest the higher the internal validity the more confident the researcher and the reader can be in the displayed and observed results respectively. Face validity could have posed a threat due to reporting; West Virginia has been notoriously known within the literature to often under report due to population and socioeconomic status of the state. Such significant under reporting could have make it hard for researchers to conduct a sufficient test. This was addressed through transparency ratio sizing between groups. Criterion validity could have posed a possible threat due to the differences in procedure such as use of different computational tools or order of operations to receive a different test result with the same data. This threat was addressed by retesting results through the same methodology for the highest test-re-testability. Just like history with external validity,

historical events could have also been a threat to internal validity due to a state's politics forcing researchers to collect data differently for example: face to face, paper mail, or electronic mail. This threat was addressed in review in the data collection process was the same or similar between the different collection methods. The data collector provided a comparison flow-chart for conceptualization purposes.

There did not appear to be any active threats to construct validity or this study measuring what it is supposed to in analysis. This factor was contained due to constructs being operationalized to the degree of being both measurable and concrete regarding characteristics. Statistical conclusion validity was explored in the inference phase where the extent of the relationship was determined through the content of the data. The strength of the relationship was considered from a variety of different dimensions for a more comprehensive conceptualization.

Ethical Procedures

There was an agreement for access gain to the secondary data analysis through the NSCH of Johns Hopkins Bloomberg School of Public Health, established in early August 2020. There were no reported ethical violations to the attainment of survey data or the treatment of participants in the process of collection and review. The IRB was contacted to review permission for proposal. After review, there were no substantial ethical concerns persisting in how the recruitment of materials or any items related to procedure as the data collectors were highly skilled in both consent and management of data. There was no report of any participants refusing to participate as the guardian had authority on reporting status of their child within the household. With a response rate over 40% there

was no recorded adverse event that caused any shortage in data collection. This reporting percentage was considered in the review section to remind readers about the totality of the data and generalizability.

Data collectors reported saving data appropriately as the data was confidential as the first series of data was collected the data collectors had to resend information if the return respondent reported multiple children within the household. Non-anonymous reporting can sometimes deter respondents in studies due to systemic concerns and fears in the testing and display of data process. The data Resource Center for Child and Adolescent website provided access to the 2020 NSCH survey data that allowed users access to the data to run a multitude of different data analyses; the staff at the DRC allowed requests to clean and sort data sets while public data sets in SAS can be obtained using the U.S. Census Bureau. The author of this study along with the Doctoral chair and other committee member had access to this data and will only keep one week after oral defense and dissertation approval. Currently the data is existing and being stored on a five-terabyte hard drive at the authors residence. The hard drive is encrypted, and the computer is password protected as well. Data set usage was utilized at the residence more than 90% of the time while the remaining ten percent was done at the author's employer which had an agency encrypted network for individual HIPAA compliance.

Summary

I evaluated the relationship between variables using relational analysis and chi-square testing. This design was descriptive as it involved using secondary data to analyze. Variables were not manipulated but analyzed. It is important to accurately run data

through appropriate mediums and to accurately depict data in the most ethical and meaningful manner that is free from error and bias. Section 3 includes a presentation of results and findings.

Section 3: Presentation of the Results and Findings

The purpose of this quantitative study was to evaluate elevated behavioral and mental health concerns as well as understand the relationship between coordinated care and treatment of these diagnoses and disorders for residents of West Virginia. Research questions were as follows:

RQ1: Is there a statistically significant relationship between received behavioral health treatment for ASD and effective care coordination in West Virginia?

H₀1: There is no statistically significant relationship between received behavioral health treatment for ASD and effective care coordination in West Virginia.

H_a1: There is a statistically significant relationship between received behavioral health treatment for ASD and effective care coordination in West Virginia.

RQ2: Is there a statistically significant relationship between received behavioral health treatment for ADHD and effective care coordination in West Virginia?

H₀2: There is no statistically significant relationship between received behavioral health treatment for ADHD and effective care coordination in West Virginia.

H_a2: There is a statistically significant relationship between received behavioral health treatment for ADHD and effective care coordination in West Virginia.

RQ3: Is there a statistically significant relationship between received mental health professional treatment and effective care coordination in West Virginia?

H₀3: There is no statistically significant relationship between received mental health professional treatment and effective care coordination in West Virginia.

H_{a3}: There is a statistically significant relationship between received mental health professional treatment and effective care coordination in West Virginia.

In Chapter 3, a full review of secondary data and provisions is followed by results and a summary. This includes key experimental results, statistical analysis, and interpretations of the significance of results.

Data Collection of Secondary Data Set

The time frame began in 2016 for the NSCH. For 2020, NSCH data were collected between July 2020 and January 2021. A total of 42,777 surveys were collected from families with children who were enrolled in health services with a range between 644 and 3,039. Survey data were adjusted and weighted after collection. The recruitment process conducted by the NSCH involved encouraging adults to fill out the online or email version of the questionnaire if they had knowledge about their children's health and healthcare statuses. Only one child per household was selected to be participants. For this secondary data set, 90.4% of respondents chose to complete the survey online, while 9.4% chose paper.

There appeared to be no discrepancies in accordance with the data analysis plan as use of secondary data went without error. All analyses were conducted in a proficient manner with generated outputs for assisted data observation. Relationships were established and connections were made from the secondary data set.

Table 1

Baseline Descriptive and Demographic Characteristics

		Statistics				
		State FIPS Code	Autism ASD - Behavioral Treatment	ADD/ADHD - Behavioral Treatment	Mental Health Professional Treatment	Family got help with coordinating child's health care in the past 12 months, among those who needed
N	Valid	684	22	83	683	325
	Missing	0	662	601	1	359

Table 1 displays the total number of valid cases is 325. A total of 684 cases from West Virginia in total were reported and collected. For ASD and ADHD, there were relatively small sample sizes that were addressed using Cramer's V testing.

Table 2

ASD and Effective Care Coordination Crosstabulation

ASD - Behavioral Treatment * Family got help with coordinating child's health care in the past 12 months, among those who needed Crosstabulation					
		Family got help with coordinating child's health care in the past 12 months, among those who needed			Total
		Yes	No		
Yes	Count	3	6	9	

Autism ASD - Behavioral Treatment		% within	33.3%	66.7%	100.0%
		% of Total	17.6%	35.3%	52.9%
		Count	4	4	8
		% within	50.0%	50.0%	100.0%
Total	No	% within	23.5%	23.5%	47.1%
		Count	7	10	17
		% within	41.2%	58.8%	100.0%
		% of Total	41.2%	58.8%	100.0%

Table 3

Chi-Square Testing for ASD and Effective Care Coordination

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.486 ^a	1	.486		
Continuity Correction ^b	.041	1	.839		
Likelihood Ratio	.487	1	.485		
Fisher's Exact Test				.637	.419
Linear-by-Linear Association	.457	1	.499		
N of Valid Cases	17				

a. 3 cells (75.0%) have expected count less than 5. The minimum expected count is 3.29.

b. Computed only for a 2x2 table

Table 4

ADHD and Effective Care Coordination Crosstabulation

ADD/ADHD - Behavioral Treatment * Family got help with coordinating child's health care in the past 12 months, among those who needed Crosstabulation					
			Family got help with coordinating child's health care in the past 12 months, among those who needed		Total
			Yes	No	
ADD/ADHD - Behavioral Treatment	Yes	Count	10	14	24
		% within ADD/ADHD - Behavioral Treatment	41.7%	58.3%	100.0%
		% of Total	20.4%	28.6%	49.0%
	No	Count	6	19	25
		% within ADD/ADHD - Behavioral Treatment	24.0%	76.0%	100.0%
		% of Total	12.2%	38.8%	51.0%
Total	Count	16	33	49	
	% within ADD/ADHD - Behavioral Treatment	32.7%	67.3%	100.0%	
	% of Total	32.7%	67.3%	100.0%	

Table 5*Chi-Square Testing for ADHD and Effective Care Coordination*

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.738 ^a	1	.187		
Continuity Correction ^b	1.027	1	.311		
Likelihood Ratio	1.751	1	.186		
Fisher's Exact Test				.232	.155
Linear-by-Linear Association	1.702	1	.192		
N of Valid Cases	49				

Table 6*Mental Health Professional Treatment and Effective Care Coordination Crosstabulation*

Mental Health Professional Treatment * Family got help with coordinating child's health care in the past 12 months, among those who needed Crosstabulation

		Family got help with coordinating child's health care in the past 12 months, among those who needed		Total
		Yes	No	
Yes	Count	28	37	65

Mental Health Professional Treatment	% within Mental Health Professional Treatment	43.1%	56.9%	100.0%	
	% of Total	8.6%	11.4%	20.1%	
	No, but this child needed to see a mental health professional	Count	3	5	8
	% within Mental Health Professional Treatment	37.5%	62.5%	100.0%	
	% of Total	0.9%	1.5%	2.5%	
	No, this child did not need to see a mental health professional	Count	74	177	251
	% within Mental Health Professional Treatment	29.5%	70.5%	100.0%	
	% of Total	22.8%	54.6%	77.5%	
	Total	Count	105	219	324
		% within Mental Health Professional Treatment	32.4%	67.6%	100.0%
% of Total		32.4%	67.6%	100.0%	

Table 7

Chi-Square Test for Mental Health Professional Treatment and Effective Care Coordination

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.453 ^a	2	.108
Likelihood Ratio	4.314	2	.116
Linear-by-Linear Association	4.434	1	.035
N of Valid Cases	324		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 2.59.

Results

In reporting of the statistical analysis, the findings supported the study's null hypothesis, although an argument for the support of the hypothesis could be had as well due to the relatively smaller sample size. The sample sized varied depending on each test for the variables as the population did not share the same characteristics within the secondary data from the 2020 National Survey of Children's Health. For the autism spectrum disorder behavioral treatment group there were N=17 completed surveys in that analysis, N=49 for the attention deficit hyperactivity disorder behavioral treatment group, and N=324 for the Mental Health professional treatment group. For the ASD and ADHD chi-square tests, there was one degree of freedom while the Mental health professional treatment chi-square test had two degrees of freedom. G*Power was utilized for the power analysis to provide the three independent variable power levels. The Chi-square

statistic, the total observed counts, and the effect size w , and the degrees of freedom were all plugged into G*Power. The effect sizes were: ASD/BT ($w=.17$) with a power level of .11, ADHD/BT ($w=.19$) with a power level of .26, and MHP/T ($w=.12$) with a power level of .48.

When reviewing the crosstabs tables for individual who received behavioral treatment for autism spectrum disorder to see if this population received effective care coordination, 33.3% reported yes, while the population that did not receive Autism behavioral treatment reported a rate of 50% of them receiving effective care coordination. Due to three cells of the table having a count less than five, the p value from the Fisher's exact test was reported over the chi-square. Fisher's exact test was a way of testing independence for small samples. This fisher's exact test was .637 due to it being bigger than .05, there was not a statistically significant relationship between whether they got the behavioral treatment for ASD and whether or not they received the effective care coordination. In reviewing the relationship, we evaluated the Cramer's V that had a value of .169 similarly functioning as a correlation coefficient. Due to the .169 being closer to zero and further from one, this was a relatively weak relationship. This was an additional way of evaluating this relationship.

For the next independent variable of attention-deficit hyperactivity disorder, zero cells had an expected count less than five so the chi-square test will be applicable. For those who were receiving behavioral treatment for ADHD, 41.7% received effective care coordination and those who did not receive behavioral treatment for ADHD, 24% did receive effective care coordination. Based on the chi-square test, we examined the

asymptotic significance (two-sided) and use the figure of .186 for the p-value to conclude that there is no significant relationship for these two values due to its larger range from .05. The Cramer's V value was .188, suggesting a relatively weak relationship.

For the final independent variable of mental health professional treatment, of those who did receive such care, 43.1% reported to receive effective care coordination; those who did not receive mental health professional treatment, but they needed to, 37.5% received effective care coordination. For individuals who did not receive mental health professional treatment as well as reported they did not need it, 29.5% reported to still have got effective care coordination. More individuals received coordinated care if they did see a mental health professional. Despite this data driven suggestion, the Pearson Chi-square asymptotic significance (p-value) still indicated there is no significant statistical relationship with a value of .108 despite being closer to significance. There was a cell with an expected count of less than five, however a Fisher's exact test could not be performed due to SPSS only generating them for a 2x2 table and not a 3x2, so the Pearson Chi-square was reported. The Cramer's V value was .117, suggesting a relatively weak relationship.

Due to the relatively small sample size, especially for ASD and ADHD it was difficult to be conclusive but there appeared to be a positive trend and direction. For the independent variable of ADHD there were more individuals getting effective care coordination if they were receiving behavioral treatment for ADHD, it was just not at a rate that suggested statistical significance. Due to the even smaller sample size of the ASD variable the percent difference needed to be applied with caution. Figures 1-3

shown below represent bar charts for visual representations of the descriptive statistic ratios with respect to the various sample size.

Figure 1

Bar Chart for ASD Count in Relation to Receiving Effective Coordinated Care

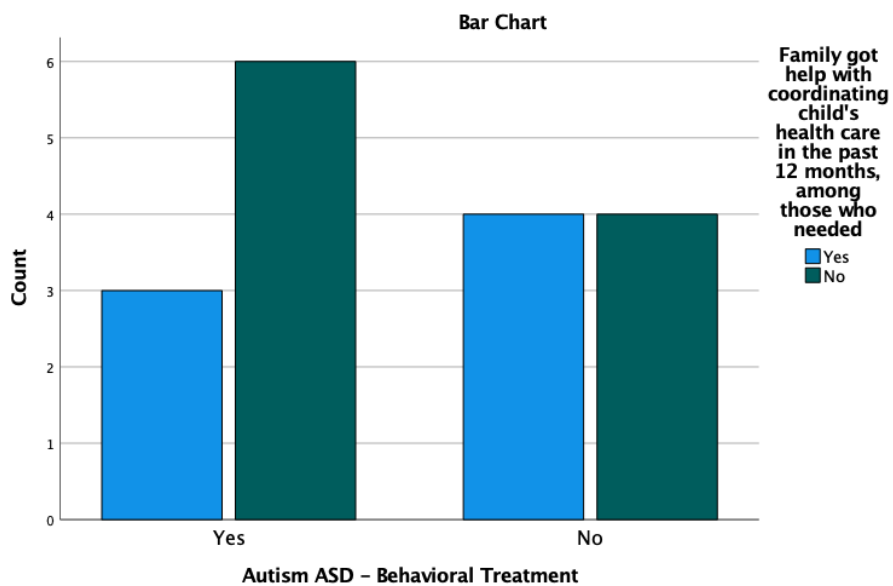


Figure 2

Bar Chart for ADHD Count in Relation to Receiving Effective Coordinated Care

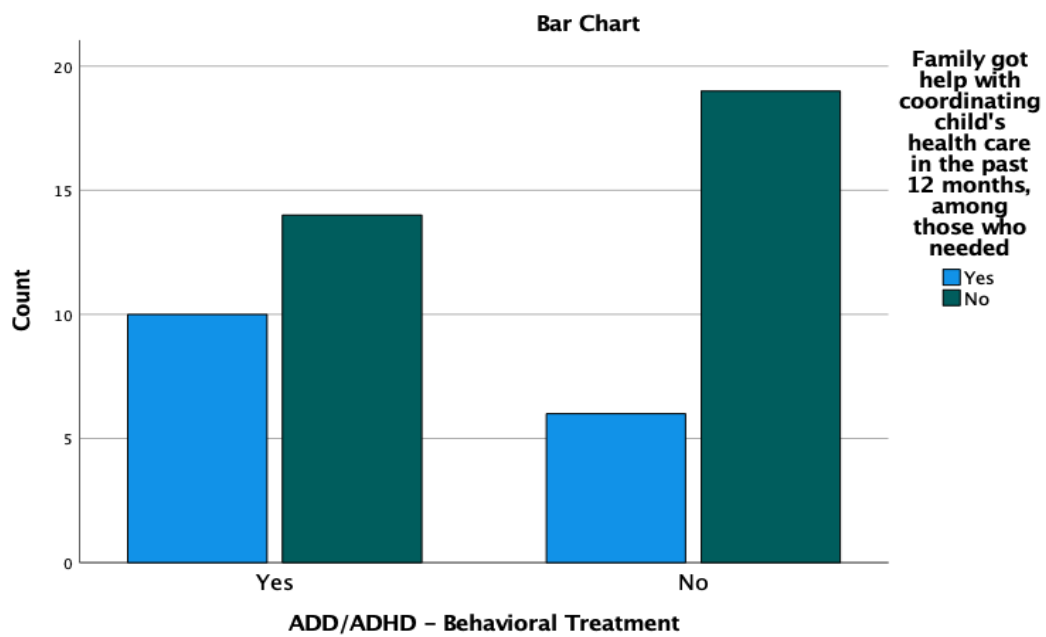
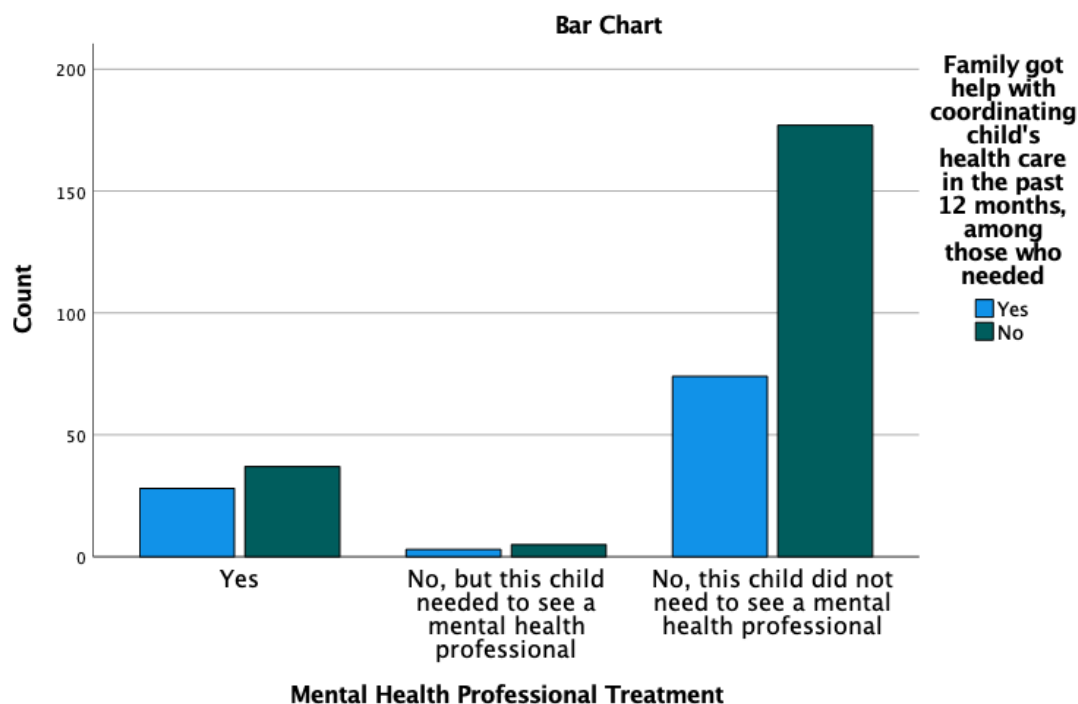


Figure 3

Bar Chart for Mental Health Professional Treatment Count in Relation to Receiving Effective Coordinated Care



Summary

For RQ1, the alternative hypothesis was validated as there was no statistically significant relationship between received behavioral health treatment for ASD and effective care coordination in West Virginia. For RQ2, the alternative hypothesis was validated as there was no statistically significant relationship between received behavioral health treatment for ADHD and effective care coordination. For RQ3, the alternative hypothesis was validated as there was no statistically significant relationship between

received mental health professional treatment and effective care coordination in West Virginia.

Individuals who received effective care coordination for the ASD treatment group was 33.3%, the ADHD group was 41.7%, and the mental health professional treatment group was 43.1%. Relationships were not statistically significant, although a greater sample size could influence direction of relationships. Section 4 includes a further analysis of validity as well as recommendations for further research and implications for professional practice and social change. This is followed by a conclusion.

Section 4: Application to Professional Practice and Implications for Social Change

The purpose of this quantitative study was evaluate elevated behavioral and mental health concerns as well as understand the relationship between coordinated care and treatment of these diagnoses and disorders for residents of West Virginia. To address the research questions, I used a descriptive research design and chi-square test of independence to evaluate the relationship between nonmanipulated variables. This study was conducted to provide insights regarding challenges that prevent and inhibit rural healthcare systems from maximizing consumer access through provider-coordinated care.

Key Findings and Interpretations

There were various key findings in this study during the analysis as well as the research phase. I provided key insights to understand relationships between dependent and independent variables. Statistics suggested there was support of the null hypothesis for all three research questions, suggesting no statistically significant relationship with the dependent variable. These findings could have been due to the small sample size as there were trends that were suggestive of a possible support that there was a statistically-significant relationship between variables.

Effective care coordination clearly had deficits when it came to independent variables. Rural areas have less specialized care and financial stability, as well as lower satisfaction scores in terms of coordinated care evaluation in rural areas (Mohr et al., 2019). This can create an underwhelmed and apathetic consumer base. The multi-teams systems framework was used to inspect functionality and information-sharing capabilities. Due to there being no statistical relationship, providers in this study were not

able to perform multilevel processes to achieve goal-orientated tasks involving directed sequences.

Limitations of the Study

Descriptive research in general involves a small timeframe with a current problem or situation and does not involve establishing root causes or effects. Often, researcher bias can affect research. Bias can affect collection, analysis, and interpretation of data. Due to the small sample size, there can be a lack of generalizability, especially in terms of ASD and ADHD, a larger sample was provided for mental health professional treatment. Sometimes responses to survey questions can be ambiguous and inaccurate on purpose or unintentionally.

Recommendations

There are various areas of investigation regarding types of insurance of consumers as well as education status. Additional research can also be useful to address current health status, adverse childhood experiences, income level of households, and racial and ethnic identification. Gaining knowledge in these specific areas can enhance and contribute to overall systemic knowledge of the healthcare system in question.

Implications for Professional Practice and Social Change

Recommendations for professional practice involve careful examination of changes in data sets from year to year, as additional insights can be drawn. Quasi-experimental techniques can be used to assign groups based on nonrandom criteria in order to establish cause-and-effect relationships between dependent and independent variables. Positive social change can result from bolstered access to specialty care for

administrators and providers as well as consumers. When consumers are more satisfied, additional revenue can be provided to healthcare systems via stakeholders and federal and private grants. This can reenergize families across the U.S. to put more emphasis on preventative care and proactive care to reduce overall exhaustion of healthcare systems that are destabilized. New policy changes could enhance funding and coordinated care aspects of mental health that could lead to impactful changes for consumers finding care through their current providers to establish more meaningful relationships with new and additional providers via collaborative care. Counts and Horstman (2023) asserted to sufficiently meet needs of people with mental and behavioral health concerns, behavioral and mental health must be integrated with primary care.

Conclusions

There must be an intentional shift and refocusing to the mental health needs in particularly rural, lower socioeconomic, and underserved areas throughout the nation. The terrain of Appalachia in the nations eastern mountainous region is home to more than 26 million individuals. However, this area is notorious for having unsatisfactory healthcare in the more rural regions of the region. Many inhabitants turn to illicit drug use and other poor lifestyle choices that exacerbate isolation and worsen behavioral/mental health conditions. The isolation and terrain make access to healthcare difficult and screening and coordination to other providers sometimes nonexistent due to the insufficient number of providers in the area. It appears that when it comes to specialty providers such as therapists, nurse practitioners, physician assistants, and psychiatrists, it is unreliable and statistically insignificant they are well equipped to providing

satisfactory coordinated care. A revision of this part of the healthcare system is needed as well as additional funding to make substantial and robust policies effective for the consumers in this region as well as other regions across the nation.

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