

Fostering Health Equity: Elevating the Impact of Healthcare Providers

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ABSTRACT

This study explores the critical intersection of health equity and healthcare education, emphasizing the importance of equipping healthcare professionals with a deep understanding of equity principles to enhance patient outcomes and reduce disparities. Through a survey conducted among healthcare science students and professionals, this study reveals gaps in the understanding of equity, particularly in differentiating between equity and equality, and recognizing the implications of equitable care on healthcare utilization. The findings highlight the need for integrating equity-focused training into healthcare education to address these knowledge gaps and empower future healthcare providers to effectively implement equity-driven practices. By fostering a comprehensive understanding of equity, healthcare professionals can better identify and address disparities, ultimately improving the quality and fairness of healthcare services for all populations. This research underscores the necessity of targeted educational interventions and the development of robust frameworks to measure and promote equity within healthcare settings.

Keywords: *Health Equity, Resource Allocation, Healthcare Providers*

BACKGROUND

Although humans vary biologically and physiologically, their social and health outcomes are often shaped by the environments, neighborhoods, policies, and family dynamics they encounter (Baciu, Negussie, & Geller, 2017). These external factors can either limit individuals' understanding of their care status or exert a direct influence that hinders their potential in accessing full healthcare services. While modern systems are increasingly aimed at enhancing patient awareness about care processes, individuals often have limited ability

to influence these outcomes. Moreover, information systems face significant challenges in effectively aligning care processes with truly patient-centered care (Seroussi, Jaulent, & Lehmann, 2015).

Numerous factors contribute to disparities and perpetuate inequities in healthcare. These include race, ethnicity, sexual orientation, and gender identity, all of which are analyzed in various care settings to understand their effects on health inequities (Baciu, Negussie, & Geller, 2017). For such studies to be effective, detailed care must be taken to accurately identify and record these factors. Additionally, evaluating the combined impact of these factors and their interactions is essential for a comprehensive understanding of their influence on healthcare disparities. Health disparities often arise from the inability of different population groups to fully achieve their health potential. This can manifest in a disproportionate impact of disease incidence, prevalence, and other health conditions among these groups (Hill, Perez-Stable, Anderson, & Bernard, 2015). Since healthcare providers are at the forefront of care delivery and play a crucial role in both training and influencing patients, their understanding of equity in the care process is essential. A deeper comprehension of equity can significantly impact the identification of measures to promote fairness and address disparities within the healthcare system.

Measuring equity and identifying quantifiable indicators of disparities are crucial. Currently, social determinants of health (SDoH) are defined by individual attributes such as gender, education, financial status, and stability. To enhance care decision-making based on comprehensive measures, one must shift to an approach that integrates continuous data collection from structural and social sources. These integrated measures should be assessed using analytical models that provide a proper contextual framework for improving healthcare delivery (Braveman & Gottlieb, *The Social Determinants of Health: It's Time to Consider the Causes of the Causes*, 2014)

INTRODUCTION

While the terms equity and equality are often used interchangeably across various fields, including healthcare, their application in healthcare specifically involves enabling individuals and communities to attain optimal health. Equality refers to giving everyone the same resources and opportunities, regardless of their individual circumstances. Equity refers to giving everyone the resources and opportunities according to their individual needs (DiAngelo & Sensoy, 2011). Since this paper is discussing the potential needs in educating healthcare providers, a classroom example may be beneficial. Equality in teaching this topic would be delivering the information to all students in the exact same way. Equitable in teaching would be to consider the learning styles and needs of each student in the classroom. Perhaps there is a student with special needs regarding vision or hearing or even a learning disability. For equity of teaching, accommodation would be made to ensure all students received the information in order to be successful. Achieving health equity requires targeted efforts that not only address but also rectify historical inequities and entrenched beliefs (Brennan Ramirez, Baker, & Metzler, 2008) within healthcare settings and the broader community.

Organizations working on health equity must recognize that health encompasses more than just providing care services. Allocating the same resources to all patients can lead to adverse effects. Health equity requires consideration of the entire care cycle, emphasizing overall outcomes rather than just implementation. Patients with poorer health and fewer resources may need more support, not the same amount (Braveman, Arkin, Orleans, Proctor, & Plough, 2017). Understanding these differences and addressing individual needs is crucial for an effective care delivery system and clinical practice. True equity involves not only identifying disparities but also uncovering their root causes and quantifying their impacts. This understanding is essential for developing a framework that integrates these factors into the care delivery process. Clinical staff must clearly understand these issues to evaluate and address inequities as part of their routine care practices.

Several frameworks highlight the critical role of improved data acquisition in addressing equity challenges, particularly in resource allocation (Weinstein, Geller, Negussie, & Baciu, 2017). Often, healthcare

providers are actively involved in this process. Our study seeks to evaluate the understanding of equity among healthcare professionals who are poised to advance into leadership roles within both healthcare and governmental organizations.

A key focus across all the equity frameworks reviewed in this study, including those from the Robert Wood Johnson Foundation, the-Institute for Healthcare Improvement (IHI) Center for Disease Control (CDC), and the National Committee for Quality Assurance (NCQA), is on enhancing cultural competency in care interactions to better meet the needs of the populations served (RTI International, 2022) (Chin, et al., 2012). Additionally, these frameworks emphasize the implementation of policies that promote equitable care environments and the development of targeted interventions to address SDoH to reduce disparities (Weinstein, Geller, Negussie, & Baci, 2017).

The allocation of resources within healthcare settings is closely tied to the strategic objectives and future plans of the organization. Often, a significant portion of these goals are centered around enhancing healthcare outcomes and the wellbeing of patients. The operational definition of equity serves as a fundamental factor in shaping policies that will integrate this concept into future outcome measures and processes (Lane, Sarkies, Martin, & Haines, 2017). According to the World Health Organization (WHO) health equity is the absence of unfair, avoidable and remediable differences in health status among groups of people. Health equity is achieved when everyone can attain their full potential for health and well-being (World Health Organization, 2021). Thus, incorporating the definition of equity into healthcare settings necessitates a comprehensive understanding of all its components. For instance, assessing fairness in delivering healthcare services or pinpointing potential enhancements in healthcare status that would genuinely benefit disproportionately impacted populations demands a precise measuring framework.

The CDC equity framework employs comprehensive agency-wide strategies to integrate health equity into all its activities. This approach is based on several key components. Two of these components include embedding health equity principles into the design and implementation of their initiatives and interventions, as well as forming robust partnerships with multi-sectoral community organizations (Office of Health Equity, 2023)

To fully understand health equity, one must recognize the multiple ways to define it, rather than a single, limited definition. Clarity is crucial in identifying the necessary health resources and setting goals to achieve health equity (Braveman, Arkin, Orleans, Proctor, & Plough, 2017). For example, without accurate definitions, organizations might waste resources on ineffective paths.

Given the regulated nature of healthcare systems and the involvement of many stakeholders, it is essential to integrate equity principles and goals clearly. Developing measures that improve health equity while monitoring and reporting accountability is crucial. These measurements should track disparities, the efforts made to eliminate them, and the resources used (Rigolon, Browning, McAnirlin, & Yoon, 2021). Additionally, identifying the determinants of these disparities helps organizations focus on root causes. Accountability should include indicators that continuously report on marginalized groups and their disproportionate impact, not just average data points.

The Centers for Medicare & Medicaid Services (CMS) Health Equity Framework is a comprehensive approach that integrates data collection, quality improvement, and community partnerships to eliminate disparities and promote equitable healthcare access and outcomes for all populations -(RTI International, 2022). This framework for health equity emphasizes implementing health quality improvement initiatives to eliminate disparities by addressing SDOH. (McIver, 2023). Health equity is intrinsically linked to eliminating disparities and improving health literacy. The Healthy People 2030 SDOH model includes a wide range of factors such as housing, transportation, access to education, nutritious foods, language, and literacy, as well as living environment improvements-(Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2024). These factors significantly impact disparities and, consequently, health equity.

Clinicians and healthcare staff play a crucial role in not only observing these factors but also monitoring their impact on patient well-being (RTI International, 2022).

All frameworks reviewed agree on the need for increased resources for minoritized populations, yet they offer little guidance on who should be responsible for disbursement decisions. Educating clinicians about equity is critical, as it empowers them to take on leadership roles in this process. With the proper knowledge, designated leaders can ensure that resources are allocated appropriately, directing the right number of supplies to those in need. This approach is crucial for enhancing the quality and equity of healthcare services, through clinicians who have a deep understanding of equity and are well-positioned to make these critical decisions (Cheng, Emmanuel, Levy, & Jenkins, 2015).

Given the focuses on the above frameworks, this study seeks to explore the research question: How do healthcare professionals' understanding of equity influence its integration in care settings and the mitigation of its disproportionate impacts? This question is crucial as the allocation of resources within healthcare settings is closely tied to the strategic objectives and future plans of the organization. Often, a significant portion of these goals are centered around enhancing healthcare outcomes and the wellbeing of patients.

METHODS

Study and Survey Design

Our study is based on a researcher developed electronic survey approved by the University of North Georgia (UNG) Institutional Review Board. The survey responses were assured to be anonymous and unidentifiable, allowing respondents to share their input freely. The survey, included in Appendix 1, was created using the Qualtrics platform and consists of ten evaluation questions to facilitate easy participation. A few examples of these questions include the following:

- *Does the equitable distribution of resources such as food, housing and potable water positively impact healthcare outcomes?*
- *When planning healthcare resource allocation, to what extent do equity measures play a role in the decision-making process?*
- *How critical is determining patient healthcare needs when distributing healthcare resources?*
- *Based on your experience, what is your definition of health equity?*

The survey consists of 14 Likert-scale questions designed to measure the understanding of students, staff and faculty from the College of Health Sciences and Professions about health equity within the context of healthcare providers. The questions are divided into two sections, progressing from basic to more advanced understanding of health equity's role in impacting healthcare outcomes. The first section, questions 1-7 assesses health science students' understanding of the definition of equity and the role of addressing disparities in healthcare outcomes. The second section, questions 8-14, evaluates their understanding of the role of health equity in health emergencies and the healthcare decision-making process.

The study aims to assess participants' comprehension of equity concepts and their perceived importance of equity in evaluating care outcomes. It examines how equity, often highlighted in conferences, is regarded as a crucial element for assessing care outcomes and addressing disparities. The study focuses on several constructs, including the degree of knowledge among health science students and how their responses can provide accurate feedback for building comprehensive guide about equity.

The survey link was distributed to all current students, faculty, and staff in the Physical Therapy and Health Administration departments, as well as to current faculty and staff in the departments of nursing and

counseling of the College of Health Sciences and Professions at UNG. The electronic mailing list of the participants includes 274 recipients currently associated with CHSP. The email explained the purpose of the study, highlighting the assessment of healthcare providers' and students' knowledge regarding health equity and resource allocation. The participants were assured of their anonymity and notified of the absence of any risks associated with participation. Participation was voluntary and uncompensated. Contact information for the UNG IRB research integrity officer and IRB chair were provided for any questions.

Data Collection and Analysis

The survey was distributed on March 17, 2024, and remained open until May 23, 2024. We collected responses exclusively from valid and complete participants using the UNG Qualtrics Survey Service. To analyze the data, descriptive and inferential statistics were conducted for survey questions.

We created diverging stacked bar charts for several survey questions that assessed the link between equity and healthcare outcomes. These charts visually compare categorical variables by displaying bars segmented into proportional categories from a second variable. Additionally, we used contingency tables, such as crosstabulations, to summarize participant responses, categorizing them based on different groups using point estimates and ranges. These tables not only provide a clear way to tabulate responses but also serve as a foundation for more formal analyses. For instance, we used Pearson's chi-square test to assess the independence between respondents' healthcare involvement and their views on resource allocation. Given our small sample size, particularly in some categories, Fisher's exact test was considered more appropriate for ensuring accuracy. Statistical analysis for this study was conducted using IBM SPSS Statistics for Windows and RStudio (Version 2024.12.1+563) with R version 4.3.1.

RESULTS

Survey Response

The response rate for this study was 18%, as 49 out of 274 members of the UNG College of Health Sciences and Professions mailing list completed the survey. Of these 49 only 47 respondents completed the survey and were included in the final analysis of this study.

Respondent Characteristics

The majority of survey respondents identified healthcare sciences as their main field of practice. sciences (n = 34; 72%), with the second largest group having a background in education (n = 13; 28%). Most respondents reported their current state of health as "Good" (n = 29; 62%). Since the survey was conducted within a college of health sciences and professions, the majority of respondents (n = 27; 57%) indicated that they fully understood their interactions and communications with healthcare professionals, while the second largest group (n = 18; 38%) expressed that they mostly understood these communications. Additionally, most respondents identified themselves as members of a rural community (n = 25; 58%).

Stacked Bar Explanation of Equity Variables

The stacked bar charts illustrate participants' perceptions regarding how factors such as social determinants of health (SDOH) impact healthcare outcomes, comparing responses between healthcare-related

and non-healthcare-related individuals. This comparison is important for understanding the level of awareness participants have about the role of equitable access to resources—such as food, housing, and education—in improving patient outcomes.

Figure 1 presents the normalized distribution of participants' views on the impact of SDOH on healthcare outcomes. The majority of participants across both groups recognize a positive impact. However, a notable segment of non-healthcare-related respondents views the impact as neutral or somewhat negative. Importantly, none of the healthcare-related participants reported an extremely negative view, suggesting greater alignment between healthcare training and the recognition of equity's role in improving outcomes.

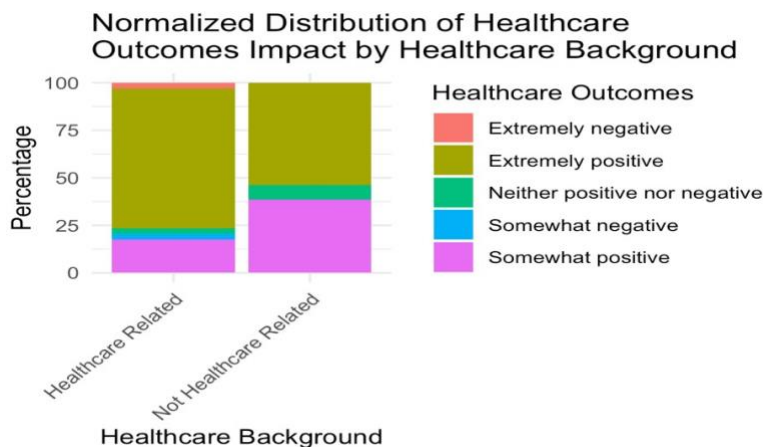


Figure 1- *The difference between healthcare and non-healthcare participants when it comes to linking between equity and healthcare outcomes.*

Figure 2 examines perceptions of the likelihood that marginalized populations might overuse healthcare services following improved access. While respondents from both healthcare-related and nonhealthcare-related backgrounds largely believe that overuse is unlikely, a significant portion in both groups perceive it as somewhat likely. This finding highlights persistent concerns or misunderstandings about equitable healthcare access and suggests that education around equitable system reforms remains necessary to address biases.

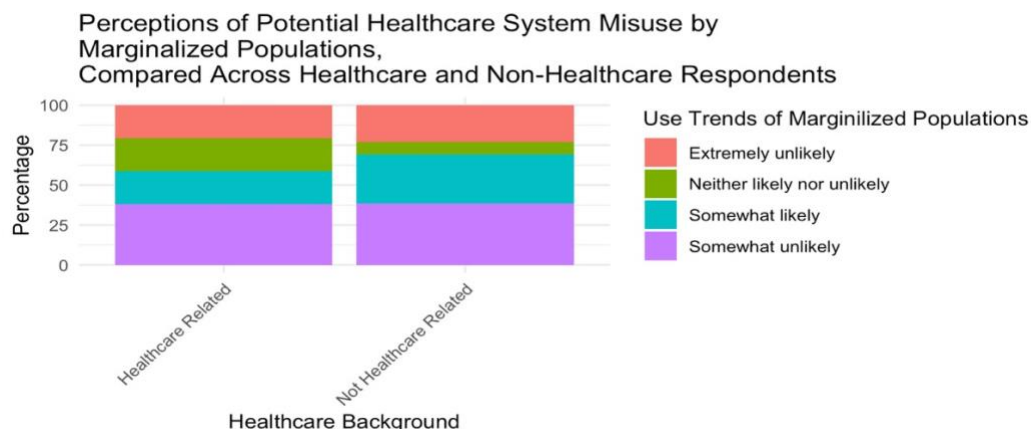


Figure 2 - *The difference between healthcare and non-healthcare participants when it comes to estimating overuse by marginalized populations.*

Figure 3 highlights the perspectives of healthcare-related participants specifically on the importance of considering population health status when allocating healthcare resources. The visualization demonstrates a strong consensus that equity must be considered in resource distribution, further reinforcing the link between professional background and understanding of systemic healthcare inequities.

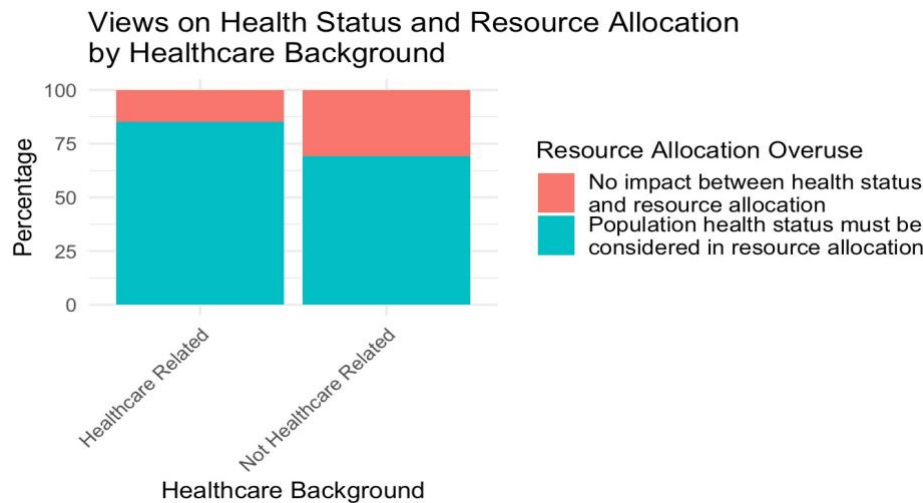


Figure 3 - Understanding the Impact of Equity in Healthcare Resource Distribution - Illustrating Healthcare Professionals' Perspective in a Stacked Bar Graph

Equity Factors Analysis – Odds Ratio

As illustrated in Figure 3, we assessed the association between the healthcare background of participants and their accurate definition of equity. The analysis shows that participants with a healthcare background are 2.2 times more likely to accurately define health equity compared to those who do not identify healthcare as their main field of practice. Since health equity is valuing all patients equally and providing resources according to need, this suggests a 120% increase in the odds of accurately defining equity for individuals with a healthcare background.

The confidence interval (CI) for this odds ratio is [0.48, 9.33], indicating that we are 95% confident the true odds ratio lies within this range. However, because this interval includes the value 1, it suggests that there is no statistically significant difference in the odds of accurately defining equity between those with and without a healthcare background at the 0.05 significance level. The inclusion of 1 means that the odds of accurate definition could be the same for both groups. Additionally, the wide range of the CI, spanning from 0.48, 9.33, highlights the imprecision of our estimate, potentially due to a small sample size or variability in the data. This lack of precision suggests that while there may be a trend, we cannot confidently determine the true strength of the association.

Risk Estimate			
	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Healthcare_Related (0 / 1)	2.109	.477	9.328
For cohort ResourceAllocation = 0	1.813	.565	5.819
For cohort ResourceAllocation = 1	.860	.615	1.203
N of Valid Cases	49		

Figure 4 - Evaluating the exposure between healthcare background and equitable resource allocation

Assessing the Relationship Between Equity and Resource Allocation – Chi Square Test

The crosstabulation table in Figure 5 examines the relationship between participants' involvement in healthcare and their stance on equitable resource allocation. It reveals that among the non-healthcare-related respondents, 4 are against resource allocation while 11 are in favor. In contrast, among the healthcare-related respondents, 5 are against and 29 are in favor of resource allocation. While these figures suggest that a larger proportion of healthcare-related participants support resource allocation compared to their non-healthcare-related counterparts, the Chi-Square test results indicate that this observed difference is not statistically significant. Specifically, the Pearson Chi-Square value of 0.993 yields a p-value of 0.319, which is well above the conventional alpha level of 0.05. This lack of significance is further supported by the Continuity Correction, Likelihood Ratio, and Fisher's Exact Test, all of which also produce non-significant p-values. Consequently, the data suggest that the relationship between being healthcare-related and views on equitable resource allocation may be due to chance rather than a meaningful association.

Healthcare_Related * ResourceAllocation Crosstabulation

			ResourceAllocation		
			0	1	Total
Healthcare_Related	0	Count	4	11	15
		Expected Count	2.8	12.2	15.0
	1	Count	5	29	34
		Expected Count	6.2	27.8	34.0
Total		Count	9	40	49
		Expected Count	9.0	40.0	49.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	.993 ^a	1	.319		
Continuity Correction ^b	.356	1	.551		
Likelihood Ratio	.946	1	.331		
Fisher's Exact Test				.427	.269
Linear-by-Linear Association	.973	1	.324		
N of Valid Cases	49				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.76.

b. Computed only for a 2x2 table

Figure 4 - Evaluation healthcare and resource allocation

DISCUSSIONS

The intersection of healthcare education and equity principles is becoming increasingly vital. Conferences and symposiums now frequently highlight equity as a cornerstone for enhancing healthcare outcomes. Integrating equity training into healthcare education offers significant potential for identifying and addressing disparities, particularly in resource-limited settings. This training encompasses two key aspects: first, emphasizing the importance of understanding equity to improve healthcare outcomes and reduce disparities; and second, focusing on practical, actionable concepts that providers can realistically incorporate into their care processes. This approach enables them to evaluate and monitor the determinants affecting equity, better identify and meet the needs of patients and populations and ultimately improve equity in healthcare.

In this study involving a cohort from the College of Health Sciences and Professions at UNG, we assessed participants' understanding of equity and its impact on care delivery and outcomes. The study revealed that 72% of respondents identified as members of rural or minoritized communities, or both. Notably, 95% of these respondents indicated that they fully or mostly understood their interactions with personal healthcare providers. However, the study also uncovered some findings for concern. Approximately 20% of respondents had an unclear understanding of the distinction between equity and equality. Additionally, 40% of respondents

disagreed with the statement that individuals who do not have access to equitable care are less likely to overuse healthcare services. These misunderstandings highlight a critical gap in knowledge among healthcare professionals regarding the importance of equity in healthcare outcomes.

These findings underscore the necessity of integrating equity principles into healthcare education. By doing so, we can better equip future healthcare professionals to recognize and address disparities in care, ultimately leading to improved health outcomes for all populations. Healthcare educational programs must critically focus not only on the theoretical aspects of equity, but also on practical applications to ensure that healthcare providers can effectively implement these principles in their daily practice.

A potential explanation for these survey outcomes may be the lack of a clear understanding of the significant impact equity has on the entire care continuum. Early and comprehensive understanding of equity principles can provide healthcare providers with a substantial advantage. This knowledge allows providers to recognize the crucial role of tools designed to enhance their grasp of equity principles and the fundamental roots of care delivery systems, which can highlight the presence or absence of equity.

By developing a thorough comprehension of equity, healthcare providers can better identify and address disparities in care, leading to more equitable health outcomes. This study intended to identify a process that can effectively measure and detect a detailed understanding of the main components used in defining equity. By doing so, we can equip providers with the necessary insights and skills to implement equity-driven practices within their care delivery, ultimately improving the quality and fairness of healthcare services.

After an extensive review of various equity frameworks, we propose an evaluation model that may serve as a comprehensive framework for monitoring the implementation of equity by providers in care settings. This model is grounded in the Avedis Donabedian structure-process-outcome (SPO) model (Naranjo & Kaimal, 2011), which has long provided a robust foundation for evaluating healthcare improvement initiatives (Mitchell, Ferketich, & Jennings, 1998). Our framework incorporates key equity principles throughout each phase. From an educational perspective, this framework offers a systematic way to teach healthcare providers how to make decisions that encompass the equitable distribution of healthcare resources. The framework offers the advantages of a holistic approach to quality care, provides a clear framework for evaluation, and promotes evidence-based care. Additionally, the framework is adept at translating classroom information to clinical practice and has the ability to involve multiple disciplines in the healthcare field, thus aiding in efficiency and effectiveness. Finally, this framework allows metrics for continuous improvement and aligns with typical clinical decision making which makes a seamless integration into any classroom curriculum.

In the **structure phase**, the care provider or clinician selects an equity framework that aligns with the goal of achieving optimal health for patients. This selection is critical as it sets the foundation for the entire care process. The structure phase identifies the setting and components involved in the setting such as equipment and technology. (Mitchell, Ferketich, & Jennings, 1998) In this study, for example, researchers are discussing equity of decision making in the allocation of healthcare resources, such as distribution of Covid 19 tests. The setting would be State Health Department offices and involve employees of that facility as well as the technology to distribute the Covid 19 test kits. 8)

In the **process phase**, the focus shifts to cultural competency. Here, relevant components and definitions from the chosen equity framework are identified and applied to the specific patient context. This phase ensures that the care provided is tailored to the patient's needs and reflects a deep, multifaceted understanding of equity. (Mitchell, Ferketich, & Jennings, 1998) To continue the scenario described in the above paragraph, making sure all healthcare providers responsible for delivering the Covid 19 test kits were trained to deliver culturally competent care. The training may include bias recognition and social determinants of health and the implications of need regarding these health disparities, i.e. multiple generational living conditions, elders, and the persons suffering from obesity would be at higher risk for contracting the Covid 19 virus, thus needing more test kits than those at low risk.

Lastly, in the **outcomes phase**, the culmination of the structure and process phases is realized through measurable outcomes. These outcomes provide concrete evidence of the effectiveness of the equity framework's implementation. During this phase, the most impactful goals are established to operationalize equity initiatives. This includes forming strategic partnerships with community organizations and addressing the unique equity needs of each scenario, thereby ensuring that care processes and outcomes are not only equitable, but also significantly improved. (Mitchell, Ferketich, & Jennings, 1998) Completing the above scenario in this phase may involve addressing the health disparities and increasing access to more Covid 19 test kits.

The application of this evaluation framework will establish benchmarks for future use, enabling the identification of the most relevant equity framework components with precise definitions that lead to improved healthcare outcomes.

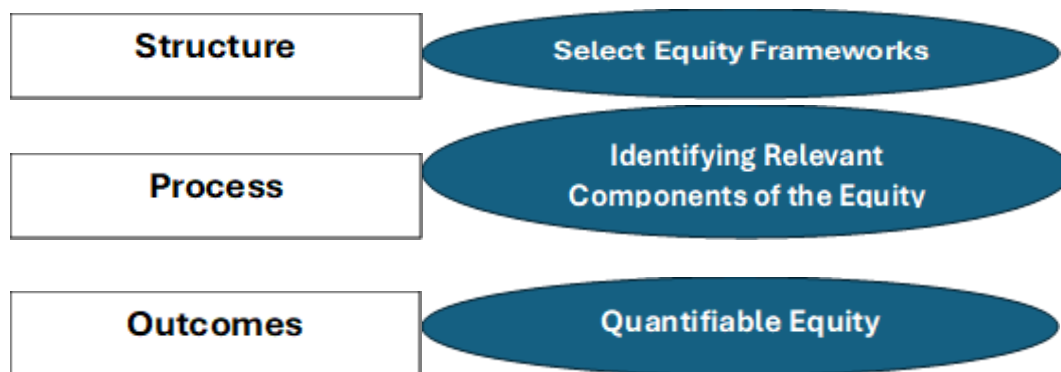


Figure 6 - Equity Implementation Assessment Framework

CONCLUSION

This study highlights the critical role of equity in healthcare and emphasizes the need for healthcare professionals to possess a thorough understanding of equity principles to improve patient outcomes and reduce disparities. The findings demonstrate significant gaps in knowledge among healthcare professionals, particularly in distinguishing between equity and equality, and in recognizing the implications of equitable care on healthcare utilization. Despite the apparent support for equitable resource allocation among healthcare-related participants, statistical analysis using Chi-Square and Fisher's Exact tests indicated no significant relationship between healthcare background and views on resource allocation, suggesting that further research with a larger sample size may be necessary.

The study underscores the necessity of integrating equity-focused training into healthcare education. By doing so, future healthcare providers can be better equipped to identify and address disparities in care, ensuring that all populations receive fair and effective healthcare services. The development of robust frameworks for measuring and promoting equity within healthcare settings is also crucial for advancing these goals. Moving forward, a concerted effort is required to embed equity principles across all levels of healthcare practice, from education to policy implementation, to achieve a more equitable and just healthcare system.

Limitations

This study had several limitations. The small sample size (n = 47) from a single academic institution limits the generalizability of the findings. The survey instrument, while thoughtfully developed, was not validated, which may affect the internal validity of the results. Self-reported responses may also introduce social desirability bias. Finally, the study's cross-sectional design prevents any causal interpretations, and the limited sample size reduced the statistical power of the inferential analyses. Future research should involve larger, more diverse samples and validated measures.

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