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## Holistic Review in Health Professions Education Program Admissions: A Concept Analysis

Andrea N. Bowens

*University of Alabama, abowenspt@gmail.com*

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# Holistic Review in Health Professions Education Program Admissions: A Concept Analysis

## Abstract

**Purpose:** Health professions education programs often use holistic reviews to promote a more diverse student body, leading to a more diverse healthcare workforce. Although many organizations and educational institutions advocate for holistic reviews of applicants, there are inconsistencies in the literature as to what this practice entails. Thus, the purpose of this concept analysis was to identify the defining attributes of holistic reviews and provide an operational definition. **Methods:** Walker and Avant's description of a concept analysis served as a guide for this review. This systematic process included an analysis of current literature, legal proceedings, and organizational documents; identification of defining attributes, antecedents, consequences, and empirical referents; and development of an operational definition of the concept. **Results:** Five defining attributes emerged as critical to the definition of holistic review in the health professions. These attributes included individualized, balanced, flexible, reflective of mission, and contextualized. Following the identification of these attributes, sample cases that depicted the attributes of holistic reviews further illustrated the concept. Prior to adopting holistic reviews in admissions, programs should have a clear mission statement, individuals trained to implement holistic reviews of applicants, and an application that allows for prospective students to provide adequate information on their background and experiences. Programs should also evaluate their holistic reviews using established scoring models or checklists and assess the outcomes of holistic reviews on the diversity of matriculated students. Finally, an operational definition of holistic review was generated based on the defining attributes. **Conclusions:** The proposed definition of holistic review can inform higher education admissions practices and be used in future research investigating the impact of holistic review admissions policies and practices on student body diversity and learning outcomes. Health professions programs may also consider institutionalizing the antecedents that support holistic reviews and measuring its consequences using the established empirical referents.

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## Author Bio(s)

Andrea Bowens, PT, DPT, PhD is an Associate Professor of Physical Therapy within the School of Health Professions at the University of Alabama at Birmingham (UAB). She has over nine years of academic teaching experience in the areas of therapeutic exercise, differential diagnosis, imaging, and management of orthopedic conditions. Prior to teaching, Dr. Bowens worked in an outpatient orthopedic and sports medicine clinic. Her research interests include outcomes related to teaching and learning strategies in physical therapist education and issues impacting the physical therapy workforce. Dr. Bowens's doctoral work focused on holistic admissions as one strategy to diversify the profession and address health disparities. She has served alongside students providing pro-bono care to medically underserved communities and participated in international medical mission trips. She currently serves as the APTA Alabama Chief Delegate to the House of Delegates.

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Andrea N. Bowens

University of Alabama

United States

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### ABSTRACT

**Purpose:** Health professions education programs often use holistic reviews to promote a more diverse student body, leading to a more diverse healthcare workforce. Although many organizations and educational institutions advocate for holistic reviews of applicants, there are inconsistencies in the literature as to what this practice entails. Thus, the purpose of this concept analysis was to identify the defining attributes of holistic reviews and provide an operational definition. **Methods:** Walker and Avant's description of a concept analysis served as a guide for this review. This systematic process included an analysis of current literature, legal proceedings, and organizational documents; identification of defining attributes, antecedents, consequences, and empirical referents; and development of an operational definition of the concept. **Results:** Five defining attributes emerged as critical to the definition of holistic review in the health professions. These attributes included individualized, balanced, flexible, reflective of mission, and contextualized. Following the identification of these attributes, sample cases that depicted the attributes of holistic reviews further illustrated the concept. Prior to adopting holistic reviews in admissions, programs should have a clear mission statement, individuals trained to implement holistic reviews of applicants, and an application that allows for prospective students to provide adequate information on their background and experiences. Programs should also evaluate their holistic reviews using established scoring models or checklists and assess the outcomes of holistic reviews on the diversity of matriculated students. Finally, an operational definition of holistic review was generated based on the defining attributes. **Conclusions:** The proposed definition of holistic review can inform higher education admissions practices and be used in future research investigating the impact of holistic review admissions policies and practices on student body diversity and learning outcomes. Health professions programs may also consider institutionalizing the antecedents that support holistic reviews and measuring its consequences using the established empirical referents.

**Keywords:** graduate education, health occupations, admissions, diversity, institutional policy

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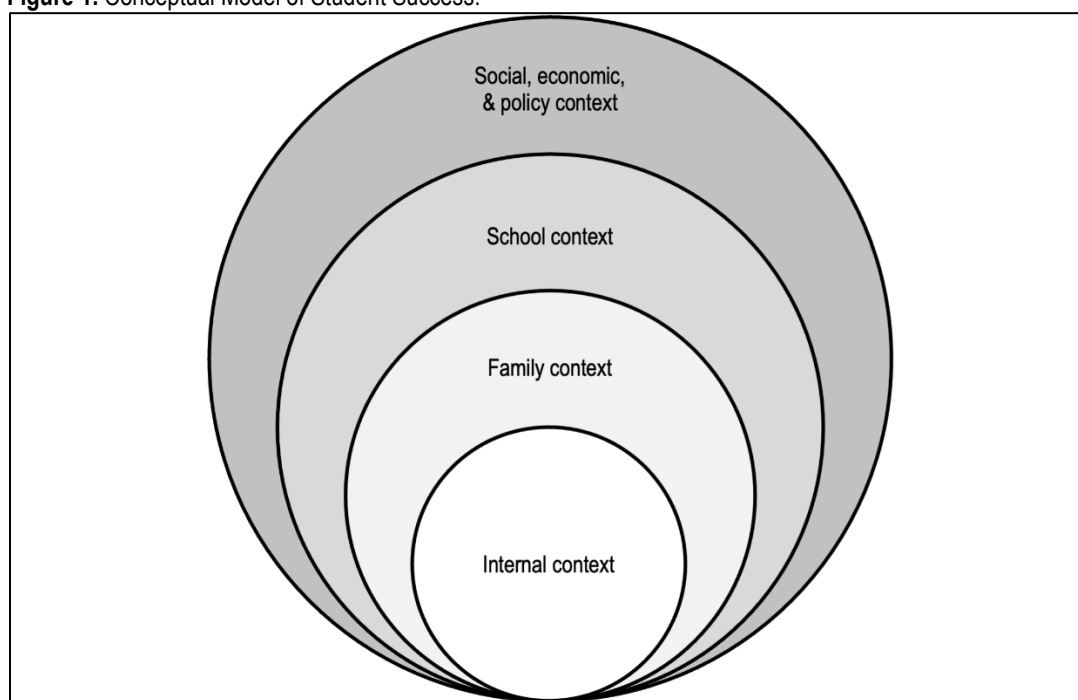


## INTRODUCTION

Higher education institutions' admissions procedures entail reviews of applicants that consider both cognitive and non-cognitive factors to admit a diverse body of students. In one of the first landmark United State Supreme Court cases on this topic, the *Regents of the University of California v. Bakke*, the Court discussed the legal considerations of individual applicants' attributes and experiences in higher education admissions.<sup>1</sup> Since this decision, professional organizations and academicians, specifically in the health professions, advocated for considering both quantitative and qualitative factors as part of a holistic review of applicants in an effort to promote a more diverse student body.<sup>2-9</sup>

Several existing theoretical models elucidate the key factors shaping student success, and some of these factors can inform the important components of holistic reviews. Such models include the human capital, social capital, and cultural capital theories.<sup>10-13</sup> Perna and Thomas incorporated elements of these theoretical perspectives into a comprehensive conceptual model that acknowledges the multiple contexts influencing student success and educational attainment.<sup>14</sup> Specifically, this model accounts for the diverse experiences that can foster or hinder students' academic progress.<sup>15</sup> The four contexts that may influence student success, as illustrated in Figure 1, are (a) internal context, (b) family context, (c) school context, and (d) social, economic, and policy context.<sup>14</sup>

**Figure 1.** Conceptual Model of Student Success.<sup>a</sup>



<sup>a</sup> Adapted from Perna and Thomas.<sup>14</sup>

The innermost layer, the internal context, accounts for students' cognitive abilities and non-cognitive attributes, such as work ethic, motivation, and self-efficacy.<sup>14</sup> The second layer, the family context, represents the influence of family wealth, family structure, parental education, parental involvement in their children's education, socioeconomic status, and identification with a racial/ethnic group. The third layer, the school context, considers the compounding effects of K-12 school resources, educational opportunities, and characteristics of higher education institutions on students' academic preparation and educational orientations. The outermost layer—the social, economic, and policy context—encompasses public policies, social inequities, societal norms, and economic conditions and their influence on student success. Perna and Thomas noted the path for student success is not universal; therefore, it is critical for researchers, practitioners, and policy makers to evaluate students' success based on the interaction of these four contexts.<sup>14</sup> Thus, there is a need to align the evaluation of student achievement during the admissions process with the comprehensive framework provided in this model.

Given the various contextual factors that may influence student success, the Association of American Medical Colleges (AAMC) led the charge in advocating for holistic reviews.<sup>3</sup> This process intended to look beyond the internal context by considering other critical elements that may influence applicants' academic success or contribute to the creation of a more diverse student body. In



a review project report for the AAMC, Addams et al. initially defined holistic admissions as an effort to consider academic metrics, experiences, and attributes, along with the potential contributions the applicant may make as a student and future practitioner.<sup>3</sup> Since its introduction of this initial definition, the AAMC revised its definition of holistic review to ensure the consideration of applicants' academic records, experiences, and attributes aligned with the mission of the institution.<sup>16</sup> AAMC's new definition of holistic review emphasized "the value an applicant would contribute to learning, practice, and teaching."

The successful implementation of these holistic admissions practices in medical schools served as a model that other health professions programs subsequently adopted.<sup>4-6,8,17,18</sup> Professional organizations and position papers in dental education, physician assistant studies, and pharmacy education programs collectively emphasized the use of holistic admissions as a method to increase diversity in their respective student bodies and professions.<sup>4-6</sup> In the rehabilitation professions, organizations and leaders encouraged the use of strategies, such as holistic admissions, to promote a more diverse student body.<sup>8,18,19</sup> With the use of holistic admissions to facilitate diversity in student body composition, the AAMC made clear that the intent of this strategy was not to be the end itself, but rather the means to promote both educational and societal benefits.<sup>20</sup>

Although there is agreement about the use of holistic admissions policies and procedures, there appear to be inconsistencies about what specifically the concept of "holistic" represents.<sup>21</sup> As is the case with the AAMC, some of the inconsistencies in definition appear as part of an evolution of this concept over time.<sup>16,20</sup> However, if recommendations include measuring the effectiveness of such policies on student body diversity and learning, then there is a need to develop a shared understanding of this concept.<sup>9,22</sup> Therefore, the purpose of this analysis was to review the concept of holistic reviews in health professions education admissions among the literature, relevant legal proceedings, and guidelines or opinions promoted by health professions organizations. This review also aimed to inform the development of an operational definition of holistic review that would be of value to researchers, practitioners, and policy analysts who seek to determine the extent to which holistic reviews result in measurable changes to the composition of students admitted into health professions programs.

## METHODS

The concept analysis approach used in this review models the one described by Walker and Avant.<sup>23</sup> Specifically, a careful analysis of the concept of "holistic review" was undertaken in order to develop a consensus definition of the term and present its potential application in scholarly and practical works. The approach described by Walker and Avant<sup>23</sup> provided a well-defined and systematic methodology that included the eight steps described in this review. The analysis began with a selection of the concept holistic review, followed by a determination of the analysis's purpose. In the next step, I identified, as a result of a thorough search, the concept's varying uses in current literature, legal proceedings, and organizational documents. The literature search involved the exploration of multiple databases, specifically ProQuest, EBSCO, Elsevier, PubMed, Ovid, Wiley, CINAHL, and Google Scholar. The database search terms included various combinations of "holistic review," "holistic admissions," "diversity," "health professions," "medicine," "dentistry," "pharmacy," "physical therapy," and "admissions." In addition to a scholarly database search, a complementary search of the terms on the Google internet search engine was conducted to identify additional definitions used by higher education institutions, organizations, and legal documents. Though literature and resources published between 1979 and 2023 were identified, I paid particular attention to the literature published in the last 20 years for greater relevancy. The year 1979 was chosen as a starting point because of the 1979 Supreme Court ruling on the landmark case, *Regents of the University of California v. Bakke*, in which the Court ruled on the constitutionality of higher education institutions' admissions practices.<sup>1</sup> Following the search, I screened the literature and resources for relevance and reviewed in full the most applicable materials.

After identifying the uses of the concept, I determined the concept's defining attributes, described by Walker and Avant as the characteristics "most frequently associated with the concept."<sup>23</sup> A case illustration that exhibited all the defining attributes associated with this concept, as well as other cases that were closely aligned with or at odds with the model case, followed this process. The analysis concluded with a determination of the events or incidents that should precede or follow the holistic review practice, followed by an identification of empirical referents for the defining attributes of the concept. The analysis concluded with the proposal of a clearer operational definition of a holistic review.

## RESULTS

Drawing on the recommendations outlined in the study by Walker and Avant, only those resources deemed pertinent to the context of higher education and, more specifically, to the health professions were reviewed.<sup>23</sup> While the inclusion of perspectives from contexts outside of higher education could provide a deeper understanding of certain attributes, their inclusion could prove impractical and would add limited value to the present concept analysis.<sup>23</sup> As such, I focused primarily on literature related to medicine and other graduate health professions education programs.



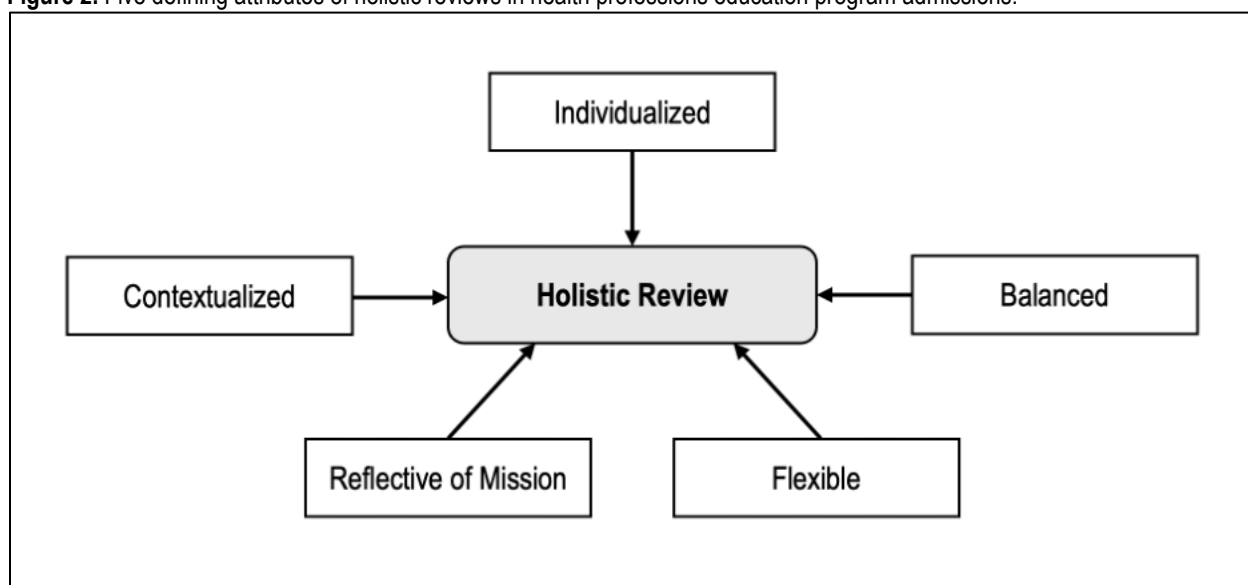
### Uses of Concept

The medical literature is replete in regard to holistic reviews and how this practice can improve student body diversity.<sup>2,20,22,24,25</sup> Furthermore, legal precedents established by the Supreme Court in the cases of *Grutter v. Bollinger et al.*, *Regents of the University of California v. Bakke*, and *Students for Fair Admissions, Inc. v. President and Fellows of Harvard College* delineated specific recommendations relevant to the use of holistic reviews in admissions.<sup>1,26,27</sup> When examined in tandem, the recommendations offered in both the medical, health professions, and legal literature demonstrated significant agreement on many aspects of holistic reviews.<sup>1,2,4,5,8,20,26–28</sup> The primary differences discovered appeared to be rooted in how programs applied contextualization to their individual reviews of applicants.

### Defining Attributes

There were five attributes that emerged as themes across the higher education, health professions, and legal literature. Figure 2 presents these five themes and their relationship with the holistic review concept. The following sections contain explanations of these attributes. In some cases, basic dictionary definitions assisted in the understanding of each of these attributes.

**Figure 2.** Five defining attributes of holistic reviews in health professions education program admissions.



#### Individualized

In the context of higher education admissions, a focus on the individualized elements began with the landmark Supreme Court case, *Regents of the University of California v. Bakke*.<sup>1</sup> The Court established that policies and practices must consider each applicant as an individual in the application review process. In *Grutter v. Bollinger et al.*, the Supreme Court expanded on this, stating that individualized consideration includes “all the ways an applicant might contribute to a diverse educational environment.”<sup>26</sup> More specifically, the Court noted that a single variable, such as race, should not serve for making decisions of acceptance or denial and such decisions should avoid using mechanical processes or quotas. Evaluating applicants’ individual experiences was also emphasized in the Court’s most recent ruling in *Students for Fair Admissions, Inc. v. President and Fellows of Harvard College*.<sup>27</sup> In the health professions literature, professional organizations and researchers modeled the language of the Supreme Court in their definitions of individualized reviews of applicants.<sup>2,5,6,18,20</sup>

#### Balanced

Addams et al. of the Association of American Medical Colleges (AAMC) first described the need for balanced consideration of academic accomplishments and personal factors in medical school admissions.<sup>3</sup> Moreover, they described the practice as adequately accounting for each applicant’s experiences, attributes, and academic metrics. Modeling this language, the Association of Governing Boards of Universities and Colleges also adopted a balanced consideration of applicants’ experiences, attributes, and academic metrics as one of its four principles of holistic admissions.<sup>29</sup> Other researchers described this practice as one of weighing applicants’ academic readiness with other factors that may demonstrate suitability for the institution’s program and future profession.<sup>2,5,17,30</sup>



### Flexible

The Merriam-Webster definition of *flexible* is “characterized by a ready capability to adapt to new, different, or changing requirements.”<sup>31</sup> The Supreme Court initially used the term in the higher education context to describe how elements of diversity may be used in admissions.<sup>1</sup> Specifically, the Court stated admissions programs should be “flexible enough to consider all pertinent elements of diversity in light of the particular qualifications of each applicant, and to place them on the same footing for consideration, although not necessarily according them the same weight.” Since this initial use, later Court opinions and professional organizations referenced or modeled the language used in the *Bakke* case.<sup>20,26</sup> The Association of Governing Boards of Universities and Colleges reflected similar sentiments in its recommendations of holistic admissions.<sup>29</sup> Specifically, Ono noted diversity should be defined more broadly and include “all aspects of human differences,” such as “socioeconomic status, race, ethnicity, language, and gender identity.”<sup>29</sup>

### Reflective of Mission

An organization’s mission helps establish its objective or purpose.<sup>32</sup> Considering this basic definition, researchers articulated the importance of aligning the admissions policies and practices with the institution’s mission and goals.<sup>2,5,17,18,20,29,30,33,34</sup> The Supreme Court established this condition in its decision in the *Grutter v. Bollinger et al.* case.<sup>26</sup> Explicitly, the Court proclaimed that a program’s ability to attain a heterogeneous student body required a narrowly tailored consideration of attributes that would enrich the learning environment or help advance the institution’s mission. Institutions, however, should establish specific measures to assess the achievement of its mission and these diversity-related educational goals.<sup>27</sup> Authors provided the following examples of attributes evaluated in applications: research experience, global health experience, first-generation student, geographical origin, socioeconomic status, languages spoken, community service, or experience with disadvantaged populations.<sup>2,9,20</sup>

### Contextualized

In their conceptual model of student success, Perna and Thomas noted that multiple contexts influence student success and may vary across different racial/ethnic, socioeconomic, gender, and other cultural groups.<sup>14</sup> Additionally, the interactions of the applicant with their family, school, and community can collectively shape the applicant’s academic success and preparation for further educational attainment. Similarly, Bastedo et al. referred to contextual factors as the level of access to resources that could impact applicants’ educational opportunities and academic records.<sup>21</sup> The contextual features included, but were not limited to, academic opportunities, family background, hardships, or other extenuating circumstances (i.e., learning disability or serious personal or family illness). Conrad et al. recommended the consideration of “the context of an applicant’s pathway” when evaluating applicants’ academic records, such as grades and standardized test scores.<sup>33</sup> Others offered similar suggestions, although they referred to such practice as part of the consideration of personal characteristics that may help contextualize the interpretation of an applicant’s academic performance or other achievements, such as family background or socioeconomic status.<sup>2,3,35,36</sup>

### Cases

Case examples, either from real life, the literature, or fictional, help clarify the concept and differentiate between characteristics that correspond to the concept and those that do not.<sup>23</sup> Walker and Avant defined the first case as a model case, which provides an exemplar scenario of the selected concept and effectively illustrates its defining attributes.<sup>23</sup> In comparison, the related case offers similar depictions but either exclude certain defining attributes or describe characteristics that are similar but conceptually different. Finally, the contrary case provides an example scenario that diverges from the defining attributes of the concept. All these cases, Walker and Avant proposed, are necessary steps to refine the concept’s defining attributes. Table 1 summarizes the presence of the defining features for each of the cases.<sup>23</sup>

**Table 1.** Presence of the Holistic Review Defining Attributes in the Case Examples.

Case Example	Attributes Present				
	Individualized	Balanced	Flexible	Reflects Mission	Contextualized
Model	√	√	√	√	√
Related	√	√			
Contrary					



**Model Case**

The model case is adapted from the admissions policies and practices described by the Supreme Court.<sup>26,27</sup> One of the top physical therapist (PT) education programs in the United States received applications for admission from a large number of very qualified individuals. The applications vastly outnumbered the available slots for their graduate program. It was the program's desire to admit students who demonstrated academic excellence and diversity as a means of enriching their educational experiences. The program's admissions practices included reviewing each applicant's file and giving consideration not only to the applicant's grade point average (GPA) and Graduate Record Examination (GRE) scores, but also to the individual's personal statement, letters of recommendation, personal background, and unique life or employment experiences. The program used some of the applicants' individual characteristics as a plus factor in their review process. At the same time, their admissions practices avoided using quotas or a system of automatic acceptance or rejection based on specific variables. By doing so, the program's admissions committee was able to build a diverse class of students who could make notable contributions based on their individual strengths, backgrounds, and experiences. The intended goal of admitting a diverse student body was to achieve a robust exchange of ideas within and outside the classroom, a goal that was central to the mission of the program and its institution.

This model case captures all the defining attributes of the holistic review concept. First, the PT program considered each applicant as an individual and carefully considered how the student could contribute to a diverse educational environment. In addition, the school's admissions policies showed flexibility by considering the variety of ways an applicant could be qualified for the program. The lack of quotas or use of specific attributes as an automatic acceptance or denial decision demonstrated its utilization of a balanced review. Moreover, the school demonstrated a commitment to its mission to providing an enriching learning environment through an exchange of diverse perspectives. Finally, the school evaluated the contextual factors that may have impacted the applicant's academic performance or could contribute value to the educational program and profession.

**Related Case**

In a related case, a university's occupational therapy (OT) education program evaluated applicants using a standardized scoring rubric created by its admissions committee. Besides examining applicants' GPAs and GRE scores, the admissions committee of the OT program reviewed the applicants' awards and honors received, involvement in extracurricular activities, clinical experiences, and written essays. The admissions committee members scored applicants using a rubric, awarding more points to those with strong academic achievement, records of honors and awards, evidence of leadership, and greater exposure to clinical practice. After the score calculations, the program admitted applicants with scores in the top 40 positions.

Although the program considered both cognitive and non-cognitive factors of individual applicants, the review process did not include several of the defining attributes. The admissions committee extended its evaluative criteria beyond the academic record. However, the program's use of a rubric did not clearly reflect its mission or allow for any flexibility in its consideration of desirable characteristics. It also did not consider the context of each individual and the potential impact of educational, financial, or environmental disparities on the applicants' records. In their policy brief, Bastedo et al. defined this type of review as a "whole file" review.<sup>21</sup> The program's balancing of cognitive and non-cognitive factors in their decisions connected to the main concept, but when examined closely, their reviews reflected more of a whole file review than a holistic review.

**Contrary Case**

A highly ranked physician assistant (PA) studies program at a prestigious state university annually received a sizeable number of qualified applicants for its program. Since the program's faculty believed standardized test scores and academic records were reliable predictors of future academic performance, the admissions committee relied heavily on quantitative metrics when evaluating each applicant. In addition, the program faculty felt they were too busy to review each applicant's entire file. Therefore, they ranked applicants by their GPA and GRE scores and granted the top 60 admission to the program.

This scenario failed to include any defining attributes of a holistic review. Specifically, the merit-based admissions procedures focused solely on the applicants' academic achievements. Further, the committee did not consider applicants as individuals, they ignored the value of non-cognitive attributes that aligned with their program or institutional mission, and they did not consider the environments or backgrounds from which the applicants came. Instead, the program used a narrowly focused and rigid admissions process—characteristics that are contrary to those of a holistic review.

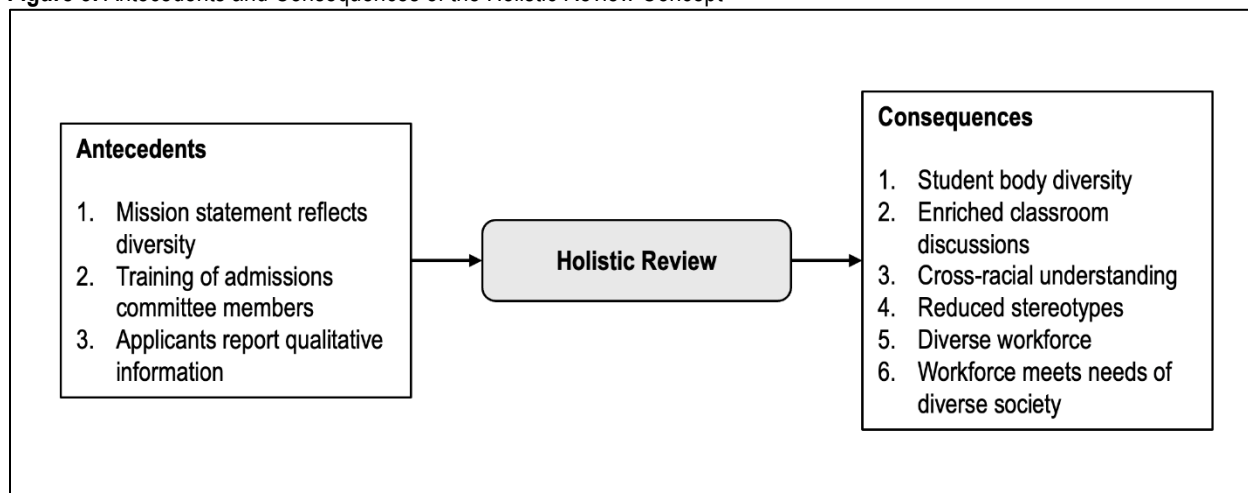
**Antecedents and Consequences**

The next step in the analysis of the holistic review concept was to identify both its antecedents and consequences. As Walker and Avant described, antecedents precede the occurrence of the concept, whereas consequences result from the occurrence of the concept (see Figure 3).<sup>23</sup> Before they adopt holistic review practices, higher education institutions and educational programs staff



must have a clear mission statement that demonstrates the value they place on diversity. Secondly, admissions personnel and committee members need training that aligns with and supports the commitment of the institution to diversity and trains individuals in how to perform holistic reviews effectively. Finally, schools' applications must allow students to report qualitative information for consideration. Such information may include multilingual abilities, leadership qualities, cross-cultural experiences, work or volunteer experiences, family background, environmental contexts, and other hardships or extenuating circumstances the applicant has overcome.<sup>2,21</sup>

**Figure 3.** Antecedents and Consequences of the Holistic Review Concept



The implementation of a holistic review in admissions results in many benefits to the educational environment, the workforce, and society. One of the primary outcomes of holistic admissions practices is that it generates a more diverse group of students.<sup>2,37</sup> Interactions among students of diverse backgrounds and experiences facilitate enriched classroom discussions, promote cross-racial understanding, and help reduce stereotypes.<sup>26,37,38</sup> Additionally, considering applicants' qualitative attributes in the admissions decision-making process helps create a more diverse pipeline of students that ultimately contribute to a more diverse workforce upon completion of their studies.<sup>2,37</sup> Over time, the enriched educational experiences and diverse pool of professionals can result in a workforce that is better able to address the healthcare needs of an increasingly diverse society.<sup>2,37</sup>

### Empirical Referents

The final step in the analysis, as described by Walker and Avant is to identify occurrences of the concept in the real world and ways to measure them.<sup>23</sup> In their study, Glazer et al. developed the Holistic Review Scoring Model as a means to assess the use of holistic reviews in programs such as medicine, dentistry, pharmacy, nursing, and public health.<sup>35</sup> The survey tool incorporated holistic admissions practices that spanned the entire application process, including training for admissions committee members, the mission-based practices to increase diversity, and the balanced consideration of applicant attributes. Their findings highlighted the percentage of programs employing holistic reviews and the effectiveness of this strategy in increasing student body diversity, enhancing the learning environment, and supporting student success. The AAMC published other resources for assessing holistic review practices, and their reports included both a holistic review admissions checklist and key recommendations for evaluating the impact of holistic admissions practices.<sup>22</sup>

### Definition

Based on this analysis, the operational definition of holistic review in higher education admissions is an individualized evaluation of applicants designed to provide balanced consideration to the cognitive and non-cognitive attributes of these individuals, doing so in light of the unique contexts, such as family, school, and community, in which they were embedded. In addition, reviews are flexible enough to consider all elements of diversity and their potential contributions to the educational environment and the program or higher education institution's mission.

### DISCUSSION

This concept analysis aimed to bring clarity and a greater understanding of the concept of holistic reviews in health professions education admissions. A review of the current literature, relevant legal proceedings, and guidelines or opinions of organizations were instrumental in informing and guiding the development of an operational definition of holistic reviews. This definition featured five defining attributes exemplified in a model case of admissions: individualized, balanced, flexible, reflects the mission, and



contextualized. These attributes can be useful in guiding the development of admissions policies that help programs realize the goal of a more diverse learning environment. The operational definition may also help inform future research that focuses on the admissions process of health professions-related programs at higher education institutions.

Several of the defining attributes of this concept analysis incorporated one or more of the four contexts influencing student success described by Perna and Thomas.<sup>14</sup> First, the balanced evaluation of academic metrics with applicants' personal attributes is reflective of the internal context. Consideration of applicants' socioeconomic status, first generation college graduate, and primary language focuses attention on the family context. The third context, school, comes into play when programs assess the academic rigor of applicants' preparation. Programs that employ individualized reviews and appraise contextual factors are ones that support the social, economic, and policy context. Finally, programs that show flexibility in the assessment of diversity in their holistic reviews are able to promote a student body that possesses a mix of attributes, backgrounds, and experiences that span all four contexts.

One of the primary outcomes of holistic admissions practices is that it generates a more diverse group of students.<sup>2,37</sup> Interactions among students of diverse backgrounds and experiences facilitate enriched classroom discussions, promote cross-racial understanding, and help reduce stereotypes.<sup>26,37,38</sup> Additionally, considering applicants' qualitative attributes in the admissions decision-making process helps create a more diverse pipeline of students that ultimately contribute to a more diverse workforce upon completion of their studies.<sup>2,37</sup> Before adopting holistic review practices, higher education institutions and educational programs should ideally have a mission statement and measurable goals that clearly reflect the value placed on diversity. Moreover, the Supreme Court and numerous authors noted the importance of aligning the admissions policies and practices with the institution's mission and goals to assess the aforementioned outcomes.<sup>2,5,17,18,20,26,27,29,30,33,34</sup>

The adoption of holistic reviews among health professions programs has occurred to a greater extent among medical and dental schools versus other health professions programs surveyed.<sup>35</sup> Of those schools who self-identified as using holistic reviews, only 38% reported using several holistic review elements, while 48% employed some of the components. The authors postulated that the varying utilization of holistic reviews could be due to differing perceptions of what holistic reviews entail. In a similar study, Coplan et al examined the frequency of holistic reviews in PA program admissions and the impacts on student body diversity.<sup>39</sup> Of the PA programs surveyed, 77.2% reported using holistic reviews. The programs that employed holistic reviews incorporated several elements consistent with the defining attributes described in this concept analysis. Between these two studies, the strategies reportedly used by programs included linking admissions practices to the institution or program mission, considering the ways applicants could contribute to either the learning environment or profession, and assessing a multitude of diverse attributes and experiences.<sup>35,39</sup> The reported outcomes of these practices in medical and health professions education programs included improved student body diversity and greater odds of admitting students identifying as African American or Hispanic.<sup>35,39</sup>

Another study evaluated the impact of the inclusion of socioeconomic factors in holistic reviews of applicants to one PT program.<sup>40</sup> As a way to evaluate applicants as individuals using a balanced and contextualized approach, the program evaluated the economic, educational, and environmental backgrounds of applicants. The author identified significant moderate correlations between levels of environmental and educational disadvantage and between educational and economic disadvantage. Further, applicants' identification of first-generation college graduate was strongly correlated to being classified as educationally disadvantaged and moderately correlated with being classified as environmentally disadvantaged. Because of the holistic review process, Coleman-Salgado also noted a more diverse representation of racial, ethnic, and socioeconomic characteristics among the admitted applicants.<sup>40</sup> These findings underscore the use of holistic reviews as a means to consider the various contexts that may influence student achievement.

Great support for the use of holistic admissions practices exists in the literature and among higher education and health professions organizations.<sup>2,3,5,8,9,17,29,30,34</sup> However, there appears to be an evolution over time and ongoing discrepancies in what constitutes a holistic review.<sup>16,22,35</sup> Further, the variation in holistic review practices adopted could be due to differing perceptions of what holistic reviews entail.<sup>35</sup> Considering the recommendations for the use of holistic reviews in health professions programs, along with the need for assessing its impact on student body diversity and outcomes, it is important to develop a common understanding of holistic reviews.<sup>2,9,22</sup> Thus, future research should continue to evaluate the outcomes of holistic reviews but apply this operational definition to determine which attributes may be most essential in achieving the desired outcomes.

### Limitations

The primary limitation of this study is the narrow scope of the analysis, which may impact the generalizability of this study's findings to other areas of higher education institutions' admissions practices. Specifically, the primary literature search was limited to the graduate health professions, such as medicine, dentistry, pharmacy, physician assistant studies, and physical therapy. However, additional searches related to higher education organizations and health professions organizations' position statements or



resources resulted in a more robust review of the concept. Therefore, aspects of this concept analysis could be relevant to admissions practices in other areas of higher education.

## CONCLUSION

The concept analysis of holistic reviews in health professions education admissions identified five defining attributes. The defining attributes and the resulting definition of holistic reviews can inform health professions programs as they seek to design admissions policies and practices that promote a more diverse student body and advance the entrée of a healthcare workforce whose background and experiences align with those in the communities they serve. In addition, the findings of this analysis can provide greater clarity to researchers as they seek to assess current practices and outcomes associated with holistic reviews in health professions admissions. The antecedents, consequences, and empirical referents can also assist programs in the establishment and measurement of holistic admissions practices.

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