Chronically Ill College Student Well-Being: A Systematic Review of the Literature

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Abstract

The purpose of this systematic review is to synthesize existing empirical research on physically chronically ill college student well-being, focusing specifically on individual- and institution-level factors that could become targets for future intervention and research. This review was conducted to answer the following research question: What malleable student-level and institution-level factors are related to well-being for students with physical chronic illnesses in four-year higher education programs? The electronic databases Academic Search Complete, EBSCO EJS, and ProQuest Central were searched for peer reviewed empirical studies published between 1990 and 2021. A process of citation chaining and a scan of sources from other relevant literature reviews were used to locate additional articles. The results of this review offer three major implications. First, with only 13 studies identified in the literature, there is a critical need for additional research investigating well-being for physically chronically ill college students. Second, the correlational nature of the extant literature does not elucidate the causal directionality of the relationships among the variables of interest. For example, although findings have correlated physical chronic illness and poor mental health outcomes, it remains unknown how causality operates, which can create challenges as institutional leaders determine how to effectively support this group. Third, no studies to date have investigated institutional practices that may result in increased well-being for these students. Future researchers and institutional leaders should support a decrease in negative outcomes along with mechanisms to increase experiences of well-being to advance opportunities for physically chronically ill students to flourish.

Keywords: chronic illness, college student development, well-being, chronic illness identity, systematic review

As of 2019, over half of U.S. adults between the ages of 18 and 34 reported having at least one physical chronic illness, with many of them attending Institutes of Higher Education (IHEs) (Watson et al., 2022). IHEs are defined as postsecondary education settings including community colleges, four-year colleges, and graduate schools. With the onset of COVID-19, chronically ill students at IHEs across the United States reported feeling unsupported as many individuals with physical illnesses faced heightened risks for contracting the virus and for experiencing severe symptoms (Carpati, 2021; Greco, 2020; Kelly-Coviello, 2021; Mattea, 2021). In a time that was already difficult for general IHE students' mental health (Son et al., 2020; Soria & Hugos, 2021), chronically ill students reported increased anxiety and lack of school resources highlight the large shortcomings in institutional supports for chronically ill college students. Although COVID-19 has further revealed shortcomings in university support for chronically ill student well-being, there remains a critical gap in the existing research as well as what can be drawn from best practices to better understand how to accommodate students and foster both academic and social growth and a sense of thriving in university settings. A barrier to identification of, gaining access to information, and providing support to students with chronic illness is definitional inconsistencies that restrict who counts as being chronically ill (Bernell & Howard, 2016). Additionally, variations in the defini-

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tion of chronic illness used in different fields make it difficult to track studies across all chronically ill people in general, much less chronically ill IHE students, in particular.

Note that, throughout this manuscript, we operationalize chronic illnesses as having a primary physical component (e.g., diabetes, asthma, hemophilia). Existing research notes that other types of illnesses, such as mental illnesses and developmental disabilities, may also be considered as chronic illnesses depending on the definition used (Bernell & Howard, 2016). However, given the unique types of challenges that students with physical chronic illnesses may face as compared to groups whose illnesses are primarily developmental or mental, we apply this narrower definition when referring to chronic illness. Within this manuscript, we report the relationship between chronic illness and disability in line with how the relationship is portrayed within the individual pieces of scholarship being discussed.

If institutions are to implement policies and practices that are supportive and inclusive of this marginalized population, there is a need to better understand what works for students with chronic illnesses in postsecondary settings, as others have suggested is necessary for students with disabilities in IHEs (Dukes et al., 2017; Kutscher & Tuckwiller, 2019). Although a variety of outcomes may be considered in determining "what works" for students with physical chronic illnesses, we focus on factors that promote students' well-being to cover a comprehensive range of positive supports and factors relevant to students' experiences. We operate from a definition of well-being which asserts that the construct refers to a positive emotional state, which is the result of synchrony between environmental factors and individual needs (Aelterman et al., 2007). Applying these definitions of chronic illness and well-being, this systematic review aims to support the work of IHEs and disability service providers, as well as the development of future research into chronically ill college student well-being, by focusing specifically on what is currently known about the well-being of students with physical chronic illnesses in four-year postsecondary education programs.

A Note on Language

Throughout this manuscript, we primarily use identity-first language (e.g., chronically ill people) as opposed to person-first language (e.g., people with chronic illnesses). Although we acknowledge the validity of both forms of language in describing disability/chronic illness status, this review's emphasis on the institutional role in fostering well-being in contrast with actions that students can individually take to improve their well-being influenced our decision to use identity-first language where possible.

Focus on Well-being that Extends Beyond Mental Health Alone

Existing research suggests that children with long-lasting (e.g., chronic) physical illnesses are more likely to develop mental health disorders and, inversely, adults with depression are more likely to develop physical illnesses (NIH, n.d.). Although much remains to be known about the relationships between mental and physical illnesses, this research suggests that students with physical chronic illnesses in postsecondary settings may be at an increased likelihood of experiencing mental illness, and that students with mental illnesses may be at an increased likelihood of experiencing physical chronic illness. In well-being research, the dual factor model of mental health (DFM) places mental health on one end of a spectrum and well-being on the other (Keyes et al., 2002). By separating psychopathology from well-being, the DFM illustrates how people can experience well-being regardless of their mental health status, which becomes especially important when considering connections between poor mental health and physical chronic illness (Cadman et al., 2013; Evans et al., 2005). However, as this review highlights, no current work on student populations in IHEs have attempted to elucidate directionality between chronic physical and mental illness relationships, nor has current work explored how IHE students' mental health differs from their well-being (academic or emotional data). By demonstrating how physically chronically ill students in IHE settings experience well-being, research can disrupt a dominant narrative that insists that higher than typical rates of mental illness prohibit groups of physically chronically ill people from experiencing well-being, and instead targets both supporting mental illness but enhancing individual well-being in tandem. Therefore, this review specifically emphasizes the importance of enhancing well-being with efforts to decrease mental health supporting a strengths-based approach (See Figure 2).

Aim of this Review

The aim of this review is to synthesize existing empirical research in order to provide higher education professionals with a better understanding of what facilitates well-being among physically chronically ill students in IHE settings. This review is organized to present existing measures of physically chronically ill student well-being in IHE settings, as well as demographics of participants and types of chronic

illnesses represented in scholarly literature. Further discussion considers areas for future research and practice and presents limitations of this review.

Methods

Review Process and Inclusion Criteria

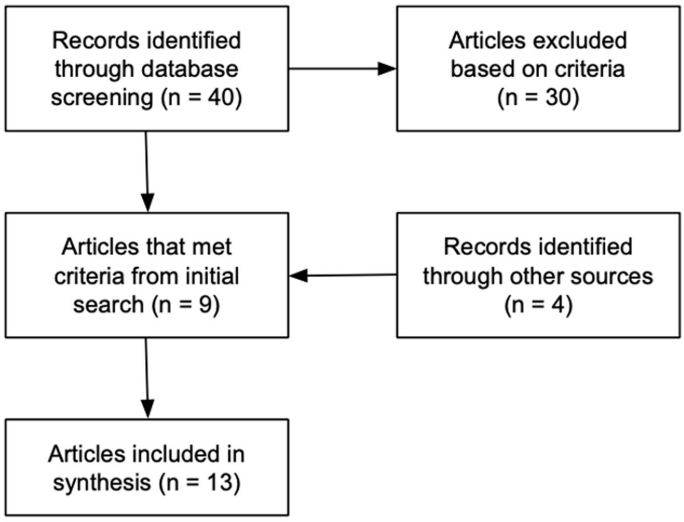
Prior to conducting this review, the authors established a plan for systematically identifying and analyzing relevant studies. First, we developed a research question to guide our inquiry, which specified the participants (four-year college students with physical chronic illnesses), variables (student- and institution-level factors), and outcomes (well-being in postsecondary education) of interest (Schlosser et al., 2007). Next, we made decisions regarding the scope of our search, including any geographic, methodological, linguistic, and temporal constraints, and considered restrictions to study designs. Methodologically, we included empirical studies that utilized qualitative, quantitative, or mixed methods designs. We did not place any geographic constraints on our search, given the dearth of literature on this topic and need to maximize the potential literature body available; however, we limited the search linguistically and temporally to English-language articles published between 1990 and 2021, to reflect the year that the Americans with Disabilities Act was legislated (Kutscher & Tuckwiller, 2019). Although we did not limit the geographic scope of this search due to the overall paucity of literature on this topic, we recognize that higher education experiences may vary substantially by country or cultural context.

Identification of Articles

Based on a series of initial scoping searches, a Boolean search was performed using the Academic Search Complete, EBSCO EJS, and ProQuest Central databases. The search used the terms “chronic” AND “illness*" (Title) AND “college” (subject) AND “student*” (any field) restricted to peer reviewed articles written in English between 1990 and 2021. These databases, keywords, and Boolean operators were selected through initial scoping searches. Book chapters, non-academic articles, and commentaries were excluded. Master’s theses and dissertations were also excluded in order to focus the search on articles that have undergone rigorous peer review processes, although one dissertation was consulted to locate articles during the citation chaining process (Scheese, 2018). The initial search returned forty results; after reviewing the titles and abstracts, nine studies were identified as potentially meeting the inclusion criteria and required closer review. The researchers then used a process of citation chaining (i.e., using a seminal article and searching forward and backward from that article to identify additional relevant sources; Biernacki & Waldorf, 1981). Additional citations from other relevant literature reviews (e.g., Forber-Pratt et al., 2017) were also searched to identify potential missing studies. The inclusion and exclusion criteria identified in this section were used to determine the relevance of studies for inclusion in this review. This study review process yielded an additional four articles for a total of thirteen studies in the final analysis. The search process used to identify articles is described in Figure 1.

Figure 1

Article Selection Process



Search Exclusion Criteria

Of the forty articles resulting from the Boolean search, nine were included in the final review. Articles were excluded if they were theoretical (n = 2) or purely focused on issues that were not directly related to well-being (e.g., medical studies of chronic illness treatment; n = 18), did not include participants who were college students with physical chronic illnesses (n = 24), or focused on issues specific to the symptomatology of a particular illness (n = 9).

Data Synthesis

A literature matrix was constructed to organize the thirteen studies. For each article, the following information was gathered and depicted in the literature matrix, where reported: number of participants, type of illness(es), age of participants, gender of participants, method of data collection, findings, and outcome variables of interest. The thirteen articles are presented in Table 1 and the information summarized across articles is presented below.

All thirteen studies were descriptive in nature. Five studies divided people with chronic illnesses into groups by illness and compared them to each other across outcomes of interest (Feldman et. al, 2012; Herts et al., 2014; Maslow et al., 2012; Mullins et al., 2017; Sharkey et al., 2018). Although path analyses were used in three studies to predict how characteristics associated with chronic illness may relate to other outcomes, no studies attempted interventions intended to improve outcomes (Coutinho et al., 2021; Sharkey et al., 2018; Trindade et al., 2018).

Additionally, no studies indicated directionality of relationships between key variables. For example, although findings have correlated physical chronic illness and poor mental health outcomes, it remains unknown whether physical chronic illness causes mental health challenges (which may in turn affect psychological well-being such as positive emotions, personal growth) or whether mental illness challenges exacerbate physical chronic illness. Note that, in accordance with the dual factor model framework, patients [people] who are diagnosed with mental illness can achieve well-being regardless of mental health status. However, psychological well-being (e.g., personal growth) is dependent on psychopathology (e.g., anxiety, depression) and thereby suggests that the directionality of the relationship between physical chronic illness and mental health is relevant to any comprehensive approach for understanding the well-being of students in IHEs with physical chronic illness. From these studies, it also remains unclear which features of illnesses may be associated with particular outcomes of interest (e.g., graduation rates, social support, life experiences, feelings toward illness).

Participants

All studies included four-year students in Institutes of Higher Education (IHEs) with diagnosed physical chronic illnesses. One study included both participants with physical chronic illnesses and other types of disabilities (Hughes et al., 2016). Three studies included both physically chronically ill and non-chronically ill individuals (Coutinho et al., 2021 Mullins et al., 2017; Sharkey et al, 2018).

Type of Chronic Illness

The majority of articles specified the most common types of physical chronic illnesses participants identified having, while one article focused on all childhood onset chronic illnesses and three others focused on chronic illness generally. Chronic illness diagnoses were vast and included a range of physical conditions (e.g., asthma and allergies, Hashimoto's Disease, Type 1 diabetes). Although some studies also included mental illnesses (e.g., bipolar disorder), each study contained at least some participants who reported physical illnesses. See Figure 3 for a full listing of physical chronic illness and mental health diagnoses represented in the studies. Asthma and allergies were the most common diagnoses, which were reported in 28.5% of included articles (Barber & Williams, 2021; Coutinho et al., 2021; Mullins et al., 2017; Sharkey et al., 2018).

Gender

Most students enrolled in IHEs with physical chronic illness identify as women (Goodwin, 2015; Parker, 2021), making gender representation especially relevant. The majority of studies had mostly or all women participants (n = 10). Two studies reported a relatively even distribution between men and women participants (n = 2; Barakat & Wodka, 2006; Wodka & Barakat, 2007). An additional two studies did not specify gender distribution (Hughes et al., 2016; Maslow et al., 2012). Lastly, only one study reported having a participant that did not identify as either woman or man (i.e., nonbinary) (Rogowsky et al., 2020).

Age

Six studies included average participant ages at the time of participation, though the method of reporting ages varied considerably by study. One other study also referenced participant ages but focused on the ages when participants were diagnosed with physical chronic illnesses versus their ages when participating in the study (Barakat & Wodka, 2006). Of the studies that did report mean participant ages at the time of participation, mean ages ranged from 18 to 24.7 years. Part of this range can be explained by the countries where the studies took place. For example, the two

Table 1

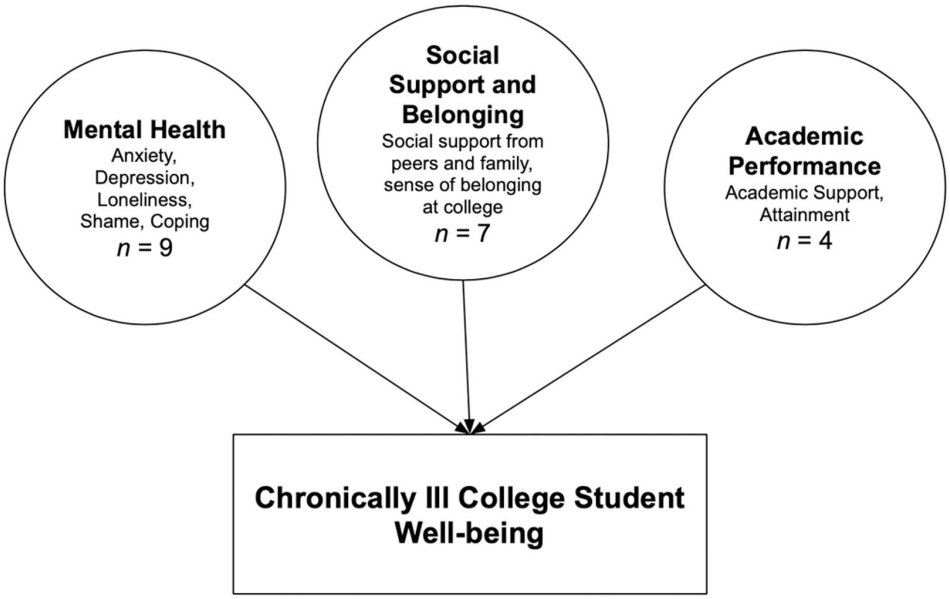
Studies on College Students with Physical Chronic Illness

Study	*n*	Chronic Illness	Demographics	Country	Method	Outcome(s) Measured
Mullins et al., (2017)	1413	364 w/asthma or allergies, 148 w/other chronic illnesses, 901 control group students	Chronically Ill Group Mean Age - 19.62 years (S.D. = 2.09) Gender - 65.1% female	U.S.	Survey and one way between groups ANOVA	Anxiety and Anxiousness
Barakat, L. P., & Wodka, E. L. (2006).	32	43.8% pulmonary illness, 12.5% gastrointestinal illness, 9.4% orthopedic problems, 6.3% migraine/ headache difficulties, 6.3% chronic fatigue	Mean Age at Diagnosis – 10.5 years (S.D. = 5.9, range 0 - 21 years) Gender – 53.1% male Race - 59.4% Caucasian, 18.8% Asian, 3.1% Hispanic, 18.8% Other	U.S.	Survey and one way between groups ANOVA	Depression and Anxiety
Trindade, I. A., Duarte, J., Ferreira, C., Coutinho, M., & Pinto-Gouveia, J. (2018).	115	Asthma (22.6%), Crohn's disease (9.6%), psoriasis (9.6%), celiac disease (7.8%)	Gender - 16.5% male, 83.5% female Mean Age - 24.27 years (S.D. = 4.54)	Portugal	Survey and SEM - path analysis	Illness-related shame, quality of relationships, psychological health
Sharkey et al., 2018	120	Specific illness information not reported	Race - 78.3% Caucasian, Gender - 73.3% female Freshman year of college - 42.5%	U.S.	Survey and SEM - path analysis	Grit and depressive/Anxious symptomologies, illness appraisals
Coutinho, M., Trindade, I. A., & Ferreira, C. (2021).	347	Asthma (22.6%), Crohn's disease (9.6%), psoriasis (9.6%), celiac disease (7.8%)	Chronically Ill Group Gender - 16.5% male, 83.5% female Mean Age - 24.27 years (S.D. = 4.54)	Portugal	Survey and SEM - path analysis	Experiential avoidance and committed action's effects on anxiety and psychological quality of life
Herts, K. L., Wallis, E., & Maslow, G. (2014).	163	22 reported a physical chronic illness and 23 reported a mental illness or learning disability	Gender - 61.5% female Mean Age - 18 years (78.7%, range 18-20) Ethnicities - White (68.1%), Asian (11.4%), Hispanic (9.0%), Black (4.2%), and Other (7.2%).	U.S.	Survey and *t* tests	Health-related quality of life and loneliness
Rogowsky, Laidlaw, and Ozakinci, (2020)	20	Various types, described in article.	Gender - 80% female, 15% male, 5% gender queer Undergraduate and postgraduate students	U.K.	Semi structured interviews and survey	Health-related experiences and aspirations/ support needs

Study	*n*	Chronic Illness	Demographics	Country	Method	Outcome(s) Measured
Barber and Williams, 2021	105	Chronic migraines (24.8%), asthma (18.1%), irritable bowel syndrome (17.1%), endometriosis (15.2%), thyroiditis (14.3%), arthritis (13.3%).	100% female	U.S.	Survey and frequency Counts	General feeling toward chronic illness, identity development, college adjustment
Hughes, K., Corcoran, T., & Slee, R. (2016).	83	Types not specified	All students from a single university	Australia	Survey and descriptive statistics	Academic support need fulfillment
Maslow, G., Haydon, A. A., McRee, A.-L., & Halpern, C. T. (2012).	10,925	Youth with childhood-onset chronic illness (COCI)	Used data from Waves I, III, and IV of the National Longitudinal Study of Adolescent Health.	U.S.	Survey and multivariate logistic regression	College graduation
Bê, A. (2019).	2	Chronic fatigue syndrome, fibromyalgia, myalgic encephalomyelitis	2 females in university - one in Portugal and one in the U.K.	U.K.	2 case studies	Disability manifestation in higher education
Wodka, E. L., & Barakat, L. P. (2007).	101	43.8% pulmonary illness, 12.5% gastrointestinal illness, 9.4% orthopedic problems, 6.3% migraine/ headache difficulties, 6.3% chronic fatigue	Gender - 53.1% male, 46.9% female Mean age - 19.41 (S.D. = 1.07) Ethnicity - 59.4% White, 18.8% Asian American, 3.1% Latino, 18.8% other	U.S.	Survey and one way between groups ANOVA	Life experiences, coping strategies, social support, anxiety, depression
Feldman, E. C. H., Macaulay, T., Tran, S. T., Miller, S. A., Buscemi, J., & Greenley, R. N. (2020).	121	Various types	Gender - 78.5% female Mean Age - 19.57 (S.D. = 1.51) Ethnicity - 29.8% Latinx Race - 52.1% White, 19.7% Asian, 6.6% Black/African American, 26% other	U.S.	Survey and *t*-tests	General illness-related social support

Figure 2

Outcome Categories



Note. Outcome categories across all 13 studies included mental health, social support and belonging, and academic performance.

studies conducted in Portugal reported higher mean participant ages than studies based in the United States, likely due to the higher average age of college students in Portugal compared to the U.S. (OECD, 2019).

Method of Data Collection

Most studies utilized surveys as the primary data collection instrument. Of the quantitative studies, two utilized independent samples *t*-tests (Feldman et al., 2020; Herts et al., 2014). Four studies used regressions, with three using one way between groups ANOVA and one using multivariate logistic regression (Barakat & Wodka, 2006; Maslow et al., 2012; Mullins et al., 2017; Wodka & Barakat, 2007). Three other studies used structural equation modeling, namely path analyses (Coutinho et al., 2021; Sharkey et al., 2018; Trindade et al., 2018). Finally, one study utilized descriptive statistics (Barber & Williams, 2021).

In the one mixed methods study, descriptive statistics were gathered through a survey and thematic coding was used to group qualitative responses to open ended questions (Hughes et al., 2016). Within a qualitative study, two case studies were analyzed through narrative inquiry methods (Bê, 2019). Additionally, one other qualitative study utilized semi-structured interviews and used thematic analysis to categorize participant responses (Rogowsky et al., 2020).

Type of Variables Considered

Seven studies measured deficit-oriented outcomes (Barakat & Wodka, 2006; Coutinho et al., 2021; Herts et al., 2014; Mullins et al., 2017; Sharkey et al., 2018; Trindade et al., 2018; Wodka & Barakat, 2007). That is, research outcome indicators were centered on dimensions of physically chronically ill students' experiences that may be considered negative or sub-optimal. Deficit-oriented measures included negative psychological outcomes such as anxiety, or negative emotions such as loneliness and shame. Six other studies focused on non-deficit-based outcomes, such as perceived academic and social support (Barber & Williams, 2021; Bê, 2019; Feldman et al., 2020; Hughes et al., 2016; Maslow et al., 2012; Rogowsky et al., 2020).

Major Findings

As medical treatments for physical chronic illnesses have advanced, greater numbers of physically chronically ill people are attending IHEs (Lemly et al., 2014). Through the COVID-19 pandemic, reports of challenges that students with physical chronic illnesses face highlight the need for more targeted institutional support that can help facilitate the well-being of this group. Current literature on physically chron-

Figure 3

Illnesses Represented in the Literature Reviewed

- Acne
- Allergies
- Arthritis
- Arthritis and bipolar disorder (remission)
- Asthma
- Bulimia
- Celiac disease/Coeliac disease
- Chronic fatigue
- Chronic gastritis and anxiety/depression
- Chronic mental illness
- Complex regional pain syndrome
- Depression
- Depression and anxiety
- Dyslexia and anxiety
- Eating disorder
- Eczema
- Endometriosis
- Epilepsy
- Fibromyalgia
- Gastrointestinal diseases
- Generalized anxiety
- Hashimoto's disease
- Irritable bowel syndrome
- Major depressive disorder
- Migraine/headache
- Multiple sclerosis
- Myalgic encephalomyelitis
- Myalgic encephalopathy (2)
- Orthopedic problems
- Polycystic ovary syndrome
- Post lyme disease syndrome
- Psoriasis
- Psychiatric diseases (general)
- Pulmonary disease
- Purely obsessional obsessive-compulsive disorder (Pure-0)
- Short-sightedness
- Thyroiditis
- Tremor
- Type 1 diabetes

ically ill college student development is sparse, but the field is growing. Out of the thirteen studies identified in this review, for example, eight studies were published within the past five years. As a condition that can impact any person at any point in their lives—before college, during, and/or after—physical chronic illness is an important and understudied phenomenon. Further, research suggests that there is a positive association between college enrollment and increased levels of student-well-being (Office of Disease Prevention and Health Promotion, 2020). It becomes particularly important to encourage more physically chronically ill students to attend and graduate from IHEs to support increased well-being and academic outcomes. In this review, studies predominantly focused on three main outcome categories: mental health (e.g., stress, anxiety, depression) and well-being (e.g., personal growth, autonomy), social support and connectedness ($n = 7$), and academic performance ($n = 4$).

Mental Health and Well-Being

Seven studies found associations between physical chronic illness and negative outcome indicators (e.g., poor mental health, passive coping) during postsecondary education (Barakat & Wodka, 2006; Coutinho et al., 2021; Herts et al., 2014; Mullins et al., 2017; Sharkey et al., 2018; Trindade et al., 2018; Wodka and Barakat, 2007). In these studies, mental health conditions that physically chronically ill students experienced at higher rates than their peers included anxiety and depression. Mental health outcomes varied depending on types of physical chronic illnesses represented in samples. For example, in two studies that largely consisted of students with allergies or asthma, factors related to physical chronic illness were associated with higher depressive and anxious symptomatology (Mullins et al., 2017; Sharkey et al., 2018). Notably, no studies considered whether the correlations found between physical chronic illness and mental health deterioration may be related to physical changes stemming from the illness. For example, a student with multiple sclerosis may exhibit symptoms of depression if she develops a new lesion on the frontal lobe of her brain. In each of these studies, however, illness and mental health outcomes were treated as being independent.

Numerous studies conducted with chronically ill children similarly pointed to associations between chronic physical illnesses and mental health illnesses (e.g., Cadman et al., 1987; Ortega et al., 2002), but there are currently no empirical studies among

adults with physical chronic illnesses (college-aged or otherwise) that elucidate directionality between the two types of illnesses. Lack of directional research at other life stages, coupled with the findings from this literature review, suggest that there is currently no strong directional precedent (e.g., interventions, path analyses) for understanding how physical chronic illness and mental chronic illness influence one another. Yet, despite associations between physical chronic illnesses and mental health disorders that lack indications of directionality, other evidence suggests that people with both mental and physical chronic illnesses do demonstrate signs of well-being. In this review, two studies found a range of physically chronically ill students exhibited coping aptitude (e.g., resilience, ambition) (Barber & Williams, 2021; Rogowsky et al., 2020). In one of these studies, about half of interviewees reported that they demonstrated positive coping behaviors, and the majority of respondents reported other signs of well-being (e.g., beliefs that they could complete college and obtain jobs, beliefs that they have worth; Barber & Williams, 2021). In the other study, participants distinguished between illness support groups and identity-affirming groups, and they noted that groups where students could bond with others who share their identity were useful toward the promotion of positive coping (Rogowsky et al., 2020). This association between chronic illness and positive coping behaviors held true across a range of physical chronic illness diagnoses in both studies, thereby suggesting that the capacity to demonstrate well-being was not tied to one specific form of illness.

Social Support and Belonging

Social support and belonging among college students are associated with positive outcomes including increased motivation, task value, and self-efficacy (Freeman et al., 2007). For students with physical chronic illnesses, researchers have explored whether these individuals experience the same levels of social support and belonging as their non-chronically ill peers, as well as how support impacts other indicators of educational success during college. Two studies included in this review found a connection between social support and positive outcomes (e.g., psychological health, educational attainment) for a range of chronically ill students (Maslow et al., 2012; Trindade et al., 2018). One study pointed to the potential efficacy of chronically ill peer groups as an effective means to decrease loneliness (Herts et al., 2014). Notably, one other study suggested that family support was associated with negative adjustment outcomes including anxiety and depression for chronically ill students with physical conditions (Wodka & Barakat, 2007).

Other studies focused specifically on the role of peer support in relation to well-being. One study found that type of illness was associated with peer disclosure and support (Feldman et al., 2012). This study showed that, on average, students with physical chronic illnesses reported similar levels of social support as their non-chronically ill peers, but that students with functional etiology (diseases with symptoms of physical chronic illness but with no clear way to determine a diagnosis) or pain reported disclosing their disability to fewer peers compared to students with other types of illnesses (Feldman et al., 2012). These findings suggest that ability to receive peer support may vary by disability type and by whether a diagnosis or cause is identified.

Further emphasizing the need for peer support, other studies considered how lack of peer support can inhibit the efficacy of formal disability accommodations. In one study, a student recalled how receiving university supports required that they ask for other students' notes as an accommodation, which sparked conversations among peers about why the student did not deserve her peers' class notes due to the student's perceived lack of effort (e.g., a poor record of lecture attendance; Bê, 2019). Another more recent study similarly highlighted concerns about illnesses being misunderstood or judged by peers, despite students emphasizing internal awareness of their capability to succeed (Barber & Williams, 2021). By demonstrating that formal accommodations alone were not enough to create an inclusive college environment for one student, this study demonstrated why social support from peers may not only be helpful, but also necessary for physically chronically ill students to fully access appropriate supports (Barber & Williams, 2021). In addition, this study also highlighted a lack of understanding among higher education professionals about the kind of supports that can hinder or enhance opportunities for social connection.

Academic Support

Only one study explored the relationship between college students' chronic illness and academic performance. In that study, students with physical chronic illnesses and other disabilities identified fatigue and time scarcity as being particularly significant barriers and noted support services including time flexibility, assistance with organization, and resources for anxiety management as being potentially helpful for their academic success (Hughes et al., 2016). Notably, findings from that study suggested that strength of disability identity saliency was associated with use of academic support services (Hughes et al., 2016). In other words, regardless of whether students recog-

nized their needs for accommodation, they appeared less inclined to disclose their conditions in order to access those accommodations when they did not present salient disability identities. This meant that students both saw their physical chronic illnesses as disabilities and viewed those disabilities as an important aspect of who they were.

Summary of Major Findings

The results of this systematic review suggest that well-being among students with physical chronic illnesses is a unique phenomenon that shapes a person's way of understanding their identities, their bodies, and their ways of engaging with their college environments. Although some literature in this review highlights connections between poor mental health and physical chronic illnesses, other literature suggests that chronically ill students have the capacity to achieve well-being regardless of psychopathology (Barber & Williams, 2021; Rogowski et al., 2020). This finding creates opportunities for future researchers and practitioners to focus on the development of well-being for this unique group of students, with possible attention toward the dual-factor-model (DFM). Further, research on social support and belonging suggests that support from peers is especially important for chronically ill students to succeed, and that formal accommodations alone are not enough for students to get the support they need and are entitled to (Barber & Williams, 2021; Rogowski et al., 2020). Finally, results from this review suggest that physically chronically ill students in IHE settings may not always be aware of the academic supports available to them and that, even when students are aware of available supports, they may be less likely to utilize formal academic accommodations when they do not possess strong levels of disability identity saliency (Hughes et al., 2016).

Discussion

Utility of a Systematic Review for an Emerging Body of Literature

As research on chronically ill students attending IHEs continues to emerge within different disciplines, wide variation in terminology embedded within a scant body of scholarly literature leaves scholars with little knowledge about who this group represents, their experiences of college, and their well-being (Rau & Lewis, 2019). Although literature in this field may be emerging, it is important that practitioners have access to the information that is currently available so that they may generate research-supported practices and policies for the students with physical chronic illnesses they currently serve at their institutions.

Present challenges in understanding the scope and content of this emerging scholarly base can be at least partially mitigated by a systematic approach to the literature review. By utilizing Boolean operators, this review was able to identify literature that addressed physical chronic illnesses from different disciplinary lenses with slightly variant terminology. For example, the terms "chronic" and "illness" were separated to allow for articles that referenced "chronic medical illness," a term we found used to refer to physical chronic illnesses in medical-related disciplines. This level of attention to and scoping of search criteria, terms, and dates serve a critical function in capturing relevant, timely literature with widely divergent terminology. Citation chaining, another feature utilized commonly in systematic searches, was especially useful given the emerging nature of literature around this topic. For example, chaining allowed us to identify one relevant article that was published only one month before the search was performed and thereby not yet included in scholarly databases (Barber & Williams, 2021). Although the process of the literature review is often taken for granted as a search and synthesize endeavor, the current review provides evidence of the critical nature of a systematic search process, particularly when a relevant issue to policy and practice has been little studied, is referenced with broad terminology, or is of increasing interest illustrated by recently emerging scholarship.

Building on Key Themes in the Literature

The results from this literature review suggest three major implications. First, the body of existing empirical literature suggests the need for clearer operational definitions of chronic illness and nuanced understandings of severity of illness in future well-being research. As noted in the limitations section of this review, we repeatedly observed definitional inconsistencies that made it difficult to track literature across this population. Discrepancies throughout the literature created challenges in discerning how often mental illness is considered to be a form of chronic illness, in particular. Further, although there are benefits in requiring diagnoses for the purpose of establishing definitional clarity and explicit parameters for students' participation in chronic illness-related activities, existing research among chronically ill college students also notes that numerous physical chronic illnesses can take extensive time to correctly diagnose (Marwaha et al., 2022; Mengshoel, 2022; Soloman, 2019). Although named illness diagnoses were not an inclusion criterion for our search, no studies reported cases where symptoms were present, but illnesses were not yet diagnosed. If institutions of

higher education hope to understand how to support the well-being of students with chronic illnesses, they need to understand who this group consists of (e.g., physical, mental, and/or developmental conditions). Once this group is more clearly identified, institutional stakeholders may use a dual-factor model (DFM) strengths-based perspective to support positive mental health and overall well-being among this growing student population (e.g., targeted counseling services that highlight individual strengths).

Second, as stated in the findings section of this review, much current research on chronically ill students' well-being employs a deficit-based focus. Although such research is well-intended and can elucidate some of the challenges that institutions and individuals face when accommodating the needs and experiences of students with physical chronic illnesses at IHEs, this research does not explicitly offer institutional leaders or disability service educators actionable strategies or policy solutions to leverage chronically ill students' strengths in order to promote students' well-being.

Third, current empirical research tends to use similar methods (e.g., survey research) that are not strongly use-oriented. No studies offered directionality in their associations between mental and physical illnesses (e.g., interventions). For example, although literature showed correlations between physical chronic illness and poor mental health outcomes, it remains unknown whether physical illnesses drive mental health conditions or whether mental health conditions drive physical illnesses. This type of directionality is challenging to establish, given small sample sizes in several of the studies included in this review. However, such an understanding of directionality is paramount for effectively targeting institutional policies and practices to support chronically ill students. In order to provide institutions with this vital information to inform their practices around chronic illness, future studies might consider employing longitudinal approaches to move toward establishing directionality or causality. When seeking to elucidate the directionality of both mental health conditions and physical chronic illnesses, the DFM can help to understand how mental health, chronic illness, and well-being operate in tandem.

Recommendations and Limitations of this Study

Although data in this review suggest that students attending IHEs with chronic illnesses are a unique population with specific profiles of needs and strengths, there are significant limitations of the extant literature. First, the small number of articles included in this review represent the lack of attention to this group of students and their unique features within higher education literature. It is possible that a search that did not use the term "college" could have generated additional relevant literature, as could a search that included illnesses that were identified by their specific names (e.g., diabetes, epilepsy) without reference to the term "chronic illness." Similarly, it is also highly possible that operational definition inconsistencies in the constructs of chronic illness and well-being limited the literature that this search yielded. Future research might consider more expansive search terms to identify additional literature beyond chronic illness and college alone, as well as more uniform definitions when referring to chronic illness and well-being. Although the literature search was performed on all relevant articles since 1990, all but three studies were published within the last decade, and eight studies were published within the last five years. Thus, the scholarly literature investigating chronically ill students in IHE settings well-being is nascent and requires more in-depth exploration as the field continues to emerge.

It should also be noted that no articles in this review accounted for variation in outcomes based on the type of college that students attended. All schools included in this review were four-year universities, as called for by the guiding research question. To understand chronically ill student development more holistically, and to offer research-based strategies to practitioners at other types of IHEs, further research should examine students' development in two-year and nontraditional college environments. It may be also interesting to consider regional and cultural differences in chronically ill college student development, given differences in age for attendance in IHE settings or tendencies to leave home for postsecondary schools that vary between the United States and other countries, as well as age differences between traditional and nontraditional students in the U.S. who may attend college at later points in life (e.g., Veterans). Further, differences between students at private versus public schools and schools that vary in admissions selectivity and cost may also be worthwhile to explore.

Perhaps most notably, no current research aims to facilitate the development of chronically ill students' well-being in IHE settings. In the Rogowsky (2010) study, participants suggested a shared identity group (distinguished from a support group) as a potential way to facilitate healthy coping, yet no research currently examines the impact of such a group on well-being. The study pointed to chronically ill student peer mentorship programs at Brown University, Dartmouth College, and Duke University where chronically ill

students partnered with local youth partially as a means toward improving students' well-being (Rogowsky et al., 2010; Samsel et al., 2011). Illness support groups, in contrast to identity affirming groups, are designed to provide individuals with a network of people who have similar medical issues, with the goal of using the group to help individual members cope and build resilience (Palant & Himmel, 2019). In line with Rogowsky's findings, some scholarship suggests that students can experience support groups negatively when students do not ask for support or feel overwhelmed (Palant & Himmel, 2019). Further, other research suggests that the full range of negative consequences related to support groups may not yet be fully understood (Galinsky & Shopler, 1994).

Finally, with respect to the current literature, future research is needed to understand chronically ill postsecondary students' unique strengths. Although current strengths-based studies consider academic and psychological factors related to well-being, no current research seeks to leverage chronically ill college students' strengths to promote their well-being through community (e.g., DFM). Strengths-based approaches to supporting college students with chronic illness, including the development of identity affirming spaces, may be helpful for identifying how this group of students can thrive in postsecondary settings.

Further research should consider the use of community-building spaces, as opposed to support groups, as a means for institutional leaders and disability service providers to encourage chronically ill postsecondary students' well-being. Other marginalized identity groups often do this through the creation of identity-based campus groups. Namely, campus counterspaces, or places where students can explore and affirm their identities with the marginalized community on campus, might be useful tools for the development of chronically ill postsecondary student well-being (Ball & Steinmetz, 2022; Ball & Traxler, 2024; Keels, 2020). These groups are intended to not only provide safety and support, but also to utilize political advocacy on behalf of students' identities as a means for facilitating well-being.

Although counterspaces have not yet been empirically tested within disabled or chronically ill student communities, they have proven effective for other marginalized campus student groups. The theoretical basis for campus counterspaces emerges from scholarship that outlines the role that these dedicated spaces might play in "facilitating marginalized individuals' capacity to achieve well-being in the face of systemic, widespread and repeated instances of dehumanization" (Case & Hunter, 2012, p. 268). Since their conception, counterspaces have been used among various postsecondary student populations including Black and LatinX students, Black women in STEM, low income and first-generation students, and Black gay and bisexual spiritual men, just to name a few (Keels, 2020; Lee & Harris, 2020; Means, 2017; Ong et al., 2018). A similar counterspace model may facilitate the well-being of chronically ill students. If carried out effectively, counterspaces for chronically ill college students could be utilized both by students seeking to develop well-being through identity-based community, and by colleges as they seek to implement inclusive institutional policies and practices.

Given that no current research investigates interventional practices like the facilitation of counterspaces described above for chronically ill students, it becomes important to understand the methodologies and limitations that constitute what we do know about postsecondary students who have chronic illnesses thus far. One major limitation surfaced through this review is the wide variation in definitions of chronic illness (Bernell & Howard, 2016; Scheese, 2018). This inconsistency is problematic for two reasons. First, definition variability makes it difficult to compare studies on chronically ill student populations. As the body of literature on this population continues to grow, it is important to consider how studies can compare these differential experiences and build from one another. Second, and perhaps more importantly, narrow definitions of chronic illness can exclude important voices who have a stake in chronic illness as an identity group. In this manuscript, we focus on illnesses that have a physical component, but other researchers may argue for a more expansive definition that includes other types of illnesses (e.g., mental, developmental). There is a cogent argument to be made that it is not appropriate for researchers to decide which chronic illnesses are "valid" enough for students to consider themselves to be chronically ill, though there is also an argument to be made that concrete parameters must be established to understand the unique features attributed to any identity group.

In addition to the small volume of empirical literature and definitional inconsistencies, the similarity of methods used in current empirical research limits our understanding of chronically ill college student development. As evidenced in the "Methods of Data Collection" section of this review, 75% of studies used surveys as the primary method of data collection. These studies did not include any kind of interview to contextualize data, nor did they examine an intervention designed to improve college experiences for these students. Although stand-alone surveys are important tools to describe the self-reported experiences and orientations of chronically ill college stu-

dents, they do not offer a means for comprehensively understanding facilitators of, or barriers to, effective interventions to support chronically ill postsecondary student well-being in practice. Rather, further research should focus on uncovering the depth and nuances of chronically ill college student experiences and individual- and institutional-level factors that can be better leveraged to support well-being. Although the limited number of qualitative studies in this review offer such depth, similar studies must be conducted with more chronically ill students, representing different types of illnesses, in the United States and other countries' higher education contexts (Bê, 2019; Rogowsky et al., 2020).

Along with the need for further qualitative research, this review also supports the development of additional mixed methods research in the field of chronically ill postsecondary student development. In order for research to shape a path for transformative practices for chronically ill students in higher education (Mertens, 2007), mixed methods research is needed to provide a more nuanced accurate representations of this group's experiences, which either method could not provide on their own. Additionally, there is a critical need for generalizable findings that lend directly toward substantive reform in policies and practices for chronically ill students.

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