

## Return to Work Corner

---

# Providing quality employment services to people living with asthma in the vocational rehabilitation program: A model for meeting the needs of an emerging clientele

Phillip D. Rumrill, Jr.<sup>a,\*</sup>, Judiann McCrone Romeo<sup>a</sup>, Kimberly Wickert<sup>a</sup>, Kathleen Sheppard-Jones<sup>a</sup>, Sara Park<sup>b</sup> and Juliet Souders<sup>a</sup>

<sup>a</sup>*University of Kentucky, Lexington, KY, USA*

<sup>b</sup>*University of Wisconsin-Madison, Madison, WI, USA*

### Abstract.

**BACKGROUND:** With incidence and prevalence rates of asthma diagnoses steadily increasing in the United States and worldwide over the past 30 years, people with asthma are an emerging vocational rehabilitation (VR) consumer population.

**OBJECTIVE:** This article describes the job acquisition and return to work considerations facing employees with asthma.

**METHODS:** Following an overview of the etiology, incidence, prevalence, and career development implications of this chronic respiratory disease, the authors present career preparatory and return to work recommendations to meet the needs of Americans with asthma across the phases of the VR process.

**RESULTS:** The importance of access to quality healthcare, lifestyle, and environmental modifications to promote respiratory health, employer consultation, workplace accommodations and universal design, and interface with medical and mental health professionals is emphasized throughout the article.

**CONCLUSION:** Asthma is an emerging disability that disproportionately affects people of color and people who live in poverty. Rehabilitation professionals must be prepared to meet the needs of this growing and diverse clientele as people with asthma seek assistance from the VR program in acquiring, maintaining, and advancing in meaningful, satisfying employment.

Keywords: Vocational guidance, respiratory diseases, rehabilitation research

## 1. Introduction

The four objectives of this article are to (a) summarize the importance of work to people with and without disabilities in today's global economy; (b)

describe the medical and psychosocial consequences of asthma; (c) examine the often devastating effects that this highly prevalent respiratory disease has on employment and career development; and (d) suggest strategies that rehabilitation professionals can use to improve vocational rehabilitation (VR) services and outcomes for this growing but often underserved rehabilitation clientele. Established vocational case management and service delivery practices are

---

\*Address for correspondence: Phillip D. Rumrill, Ph.D., CRC, Human Development Institute, University of Kentucky, Lexington, KY, USA. E-mail: phillip.rumrill@uky.edu.

emphasized throughout the article, with a particular emphasis on the COVID-19 pandemic and how it has shaped VR service provision.

## **2. Work and well-being for people with and without disabilities**

It is well documented that gainful employment is beneficial to the physical health, psychological well-being, and quality of life of people with and without disabilities, including people with chronic health conditions such as asthma [1, 2]. A cornerstone of the VR process lies in the proven proposition that work is an integral factor in providing avenues for economic self-sufficiency and access to health insurance, facilitating social participation, and improving health and life satisfaction [3, 4]. Competitive integrated employment contributes to financial security and social connectedness [5]. Full-time employment also provides health insurance coverage and access to health care for individuals with disabling conditions, which can offset stressors related to their conditions and promote physical and mental health [6, 7]. Indeed, many researchers, policymakers, and disability advocates consider work a fundamental human right of people with disabilities and the primary focus of rehabilitation counseling services [5, 8–10]. Accordingly, providing goal-directed vocational services to promote competitive, integrated employment outcomes for people with disabilities has been an important focus of governmental policy in general and of the American state-Federal VR program in particular. Even so, there are durable disparities in the access to employment opportunities, level of employment (including wages and prospects for advancement), health insurance coverage, and rates of labor force participation for individuals with chronic health conditions and disabilities compared to non-disabled people [11, 12]. People with chronic illnesses and disabilities continue to experience pervasive un- and underemployment, social isolation, stigma, and discrimination in the workplace despite numerous and sweeping legislative efforts to improve VR services [13].

## **3. Asthma**

Asthma is well known as a growing public health concern in the United States and abroad, affecting approximately 334 million people globally [14]. It is

usually a lifelong respiratory disease that affects the airways of the lungs and restricts breathing, causes bronchial inflammation, and fluctuates in severity over time [14]. Symptoms of asthma include wheezing, labored breathing, shortness of breath, tightness in the chest, and coughing [15].

Frequently cited precipitants of asthma attacks include upper respiratory infections; the common cold; high-exertion activities; and exposure to secondhand smoke, dust mites, mold, animal dander, and strong odors or sprays [16]. On the initial manifestation of symptoms, asthma can be confused with other conditions such as allergies, respiratory infections, bronchiectasis, and pneumonia [15].

Incidence rates for asthma have risen steadily in the United States over the past several decades. The asthma prevalence in the U.S. increased from 3.1% in 1980 to 8.3% in 2016 [17]. Approximately 24 million Americans are currently living with asthma, including more than six million children [18]. It is one of the leading chronic illnesses associated with missed days at work, emergency room visits, and hospitalizations. In 2015, eleven million Americans reported having at least one asthma attack during the previous year [18]. Asthma is also associated with 3,000 deaths in the U.S. annually [17]. Epidemiologists remain unable to fully explain why the incidence and prevalence of asthma have increased so dramatically in recent decades, but it is known that asthma is a heterogeneous condition with multiple genetic and environmental factors; people living in poverty and those who are exposed to air pollution and other environmental toxins, for example, encounter increased risks of asthma diagnoses [17].

In recent years, there has been a growing body of literature on the social determinants of asthma. Having limited income, not owning one's home, housing conditions (e.g., disrepairs and exposure to mold and pests), long-term stress, lower educational attainment, and unemployment have all been linked to higher rates of asthma diagnoses and greater symptom severity [19]. There are notable racial and ethnic disparities in the experience of asthma. In the U.S., non-Latinx (NL) Black individuals have the highest prevalence of asthma (10.6%), compared to White individuals (7.7%) and Latinx individuals (6.6%), except among Puerto Rican and Dominican Americans who have slightly higher asthma prevalence rates [19].

Asthma often manifests during childhood or adolescence. Worldwide, 14 million children regularly experience asthmatic symptoms, and asthma is the

third-leading cause of hospitalizations for Americans 15 years of age or younger [18]. Children, especially those born into poverty, experience an increased risk of acquiring asthma, exacerbations, and intensive care unit (ICU) admissions because of factors such as poor nutrition; small body mass; increased breathing rates; lack of parental health literacy; limited health care access; and neighborhood violence, stress, and pollution [15].

#### **4. Asthma, employment, and career development**

Given the increased emphasis on competitive integrated employment for transition-age youth with disabilities that was spurred by the Workforce Innovation and Opportunity Act (WIOA) of 2014 [8], career preparatory services for the growing numbers of young people with asthma must take into account the potentially debilitating nature of this respiratory condition and the need to match the young person's work environment and job demands to their physical capabilities. Wehman et al. [20] found that two critical predictors of employment outcomes for transition-age youth are employment training and work experience in high school. On the other hand, Kaye et al. [21] found that a major reason for not employing individuals with disabilities is a lack of awareness of accommodations among employers. Therefore, vocational services and transition planning can benefit from encouraging work experience and exploration early on while also considering individualized accommodations and universal design strategies that can help younger workers with asthma succeed in employment. Air quality considerations must be taken into account in all decisions related to vocational training, postsecondary education, and job placement – and healthy living practices and prevention of progression should be included in the Individualized Transition Plan and the Individualized Plan for Employment [8, 20].

People with asthma of all ages encounter numerous barriers to employment. The symptoms of asthma may necessitate prolonged absences from work or flexibility in scheduling so that employees can attend doctor's appointments or participate in other treatment regimens to manage their illness [23]. Respiratory symptoms may make excessive physical activities or prolonged gross motor activities such as walking long distances challenging. Respiratory symptoms of asthma can also cause

headaches, fatigue, and depression. These secondary symptoms can result in difficulties with performing essential job functions and can be exacerbated by on-the-job stressors. The cognitive and memory deficits associated with fatigue, poor oxygenation of the blood, and medication side effects can create additional impediments to performing essential job functions [23]. Co-occurring depression can lead to absenteeism, impairments in completing cognitive tasks, and presenteeism (i.e., loss of productivity due to working while sick). Other barriers for rehabilitation consumers with asthma include negative reactions and workplace discrimination on the part of co-workers and employers; mistreatment and discrimination based on other characteristics of these individuals (e.g., race, gender, age); limited access to on-the-job accommodations; and unawareness of VR services [24].

Overall, employer support and willingness to modify working conditions or job tasks are the strongest environmental predictors of employment success for people with asthma and other emerging disabilities [22]. Given the high prevalence of fatigue and limited physical stamina among people with asthma, accommodations such as increased breaks, flexible scheduling, and memory aids should be considered as part of the placement, return-to-work, or job retention plan. It is also imperative that air quality in the work environment be assessed, improved, and monitored so as to prevent exacerbations of the worker's asthmatic symptoms [23].

Indeed, up to 20% of new cases of adult-onset asthma have been attributed to occupational exposure, yet asthma acquired during employment is frequently overlooked by employers, healthcare providers, and workers themselves [15]. Asthma symptoms may be induced or exacerbated by either acute or chronic exposure to allergens or other pollutants at work. Occupational rhinitis often precedes the onset of asthma; therefore, early screening and diagnosis are essential to prevent further exacerbation of symptoms [15]. Early identification and elimination of allergens through systemic workplace assessment are recommended, especially in industrial settings [15].

#### **5. People with asthma and the VR process**

Given the sharp increases in diagnoses of asthma that have been observed in the United States and other countries over the past several decades, rehabilitation and health professionals can expect to serve growing

numbers of people with asthma in the months and years to come. *Work* readers must be familiar with the medical, psychosocial, and vocational aspects of asthma, and they must become familiar with proven quality employment preparation and return to work strategies for people with chronic illnesses, including workplace accommodations and universal design [23]. Understanding asthma and its multiple effects will enable rehabilitation and health professionals to provide responsive services throughout the VR process. Because asthma affects every person differently, all VR interventions must be tailored to the individual's unique needs, circumstances, health status, skills, and job situation.

### 5.1. Outreach and eligibility determination

Outreach and education efforts to recruit people with asthma into the VR program should target asthma educators and pulmonologists, individuals with asthma, other healthcare providers, large and small employers, and human resource professionals. Individuals with asthma may not readily identify themselves as having disabilities because most of the effects of asthma are not apparent or visible to others and the symptoms of asthma are frequently in remission [23]. Thus, it may be necessary to use language such as "people with chronic health conditions" in replacement of, or in addition to, "people with disabilities" in marketing and outreach materials, intake interviews, and eligibility criteria [24].

Asthma has long been considered a partly psychosomatic disease [23] that can be triggered by emotional stress; mental health changes; and/or environmental precipitants such as chemicals, dust pollutants, and allergens. Until 2008, Federal law did not recognize asthma as a disability because its symptoms are not always present [23]. Those with asthma may only experience symptoms when they encounter a trigger [25]. The general public may not comprehend that the episodic nature of asthma still renders it a profoundly intrusive disease. Rehabilitation and health professionals must be cognizant of their own potential biases and how these could negatively influence their decisions regarding program eligibility. Misunderstandings increase when individuals have periods when they have minimal symptoms; this often leads service providers to conclude that people with asthma do not need VR services. VR eligibility determinations should be made based on the aggregate of functional limitations that applicants experience within the entire course of their illness.

Finally, despite the common co-occurrence of depression and anxiety with asthma and the availability of depression screening tools, depression often goes unrecognized. Pulmonologists rarely screen for depression, although research indicates that as many as 45% of individuals with asthma experience depression or depressive symptoms [26]. Moreover, some medications (used to treat asthma) can increase psychological reactions such as agitation, hallucinations, depression, and suicidal thinking [27].

### 5.2. Assessment and planning

Because asthma is chronic and can be unpredictable and progressive, flexibility in sequencing rehabilitation service delivery is a necessity. Although it is most commonly evident during childhood, asthma can occur during a wide age range, so it is imperative in VR planning to consider the developmental stage of the consumer, both at diagnosis and when they present for services. Early work-related experiences such as volunteer jobs or paid part-time employment are crucial for developing employment-related skills that are generalizable to any work setting (e.g., showing up for work on time, following directions, responding to evaluative feedback, completing projects by their deadlines). Young consumers with asthma may also benefit from career exploration activities such as vocational evaluations, job shadowing, job trials, work assessments and informational interviewing.

Early to mid-career adults may perceive that their career goals have been thwarted by the experience of a chronic illness such as asthma [28]. These individuals may benefit from counseling and guidance focused on their feelings about being diagnosed with asthma and their worries about their futures. Rehabilitation professionals may want to educate these individuals about the psychological and physical benefits of continuing to work, in addition to the risks. Asthma educators may also be included in the planning process so that consumers can gain a thorough understanding of asthma and essential self-care and self-management strategies. It is also important to inform consumers about on-the-job accommodations that can be used to assist them in achieving their career goals and reduce their perceptions that their careers have been thwarted.

Middle-aged adults may prematurely disengage from the workforce or have concerns about how much longer they can continue working. These individuals can benefit from job retention services (e.g., job anal-

yses, accommodation planning, transfer to another position, enrollment in postsecondary institutions to prepare for new careers). Older adults may also have concerns regarding the longevity of their careers and fears that they may have to retire before they can afford to do so. These adults can also benefit from job retention services. In addition, if their disability becomes too severe to continue working, they should be educated about employer benefits such as long-term disability or Social Security monetary and health insurance benefits [29].

In identifying employment goals, educating consumers about reasonable accommodations, assistive technology, and universal design will expand their perceived career options. For many individuals with asthma, career exploration should focus on occupations that allow employees to maintain flexible work schedules as well as the ability to work from home if necessary. Transferable skills analysis, whereby the person's prior work experience is evaluated for interests and skills that could be accessed in future career planning, can serve to further expand the consumer's employment options.

### 5.3. *Counseling and guidance*

In addition to participating in needed mental health counseling services, consumers with asthma should be referred to appropriate support groups, self-management education programs, and self-help literature to put their personal experiences into perspective, reduce feelings of isolation and alienation, and learn coping strategies and other approaches to better manage their conditions. This may be especially important during the COVID-19 pandemic, which has wrought unprecedented levels of psychological distress and social isolation upon the disability community. People with asthma are at heightened risk for negative COVID-19 outcomes, so maintaining social distance may be necessary but doing so can increase experiences of loneliness and disconnectedness. Telehealth delivery platforms and social media may be helpful to allow people with asthma to connect with important mental health resources and supports. Without appropriate professional or social support and education about how to manage asthma, many people with asthma are at risk of social withdrawal, feelings of hopelessness and loss of control over their lives, and worries about their futures, which can further exacerbate their conditions.

### 5.4. *Job development and placement*

The symptoms of asthma (e.g., shortness of breath, chest tightness, wheezing when exhaling, trouble sleeping caused by shortness of breath) may require an individual to cut back on activities to avoid environmental triggers [27]. Triggers vary from person to person; an inhalation of perfume may profoundly affect one individual while not bothering another, whereas that other person may be affected by a chemical component like newspaper ink or fabric softener. Individuals with asthma may also feel limited or embarrassed by the symptoms of the disease and by complicated disease management routines [27] that may interfere with work. VR consumers with asthma may be fatigued after work, which impacts their ability to socialize with family and friends or to participate in leisure activities. They may also have to avoid recreational activities that require excessive cardiovascular exertion, as well as activities where the air quality is poor. These considerations must be made in addition to ones associated with physical exertion and air quality in the work environment.

For individuals with asthma who are attempting to return to work, barriers to employment may occur in at least five areas: accessibility of the worksite (both physical and attitudinal), performance of essential functions and requirements of the job, relationships with employers and co-workers, employment policies, and necessary work supports. Although traditional approaches to job placement and accommodation planning target each of these areas [29], concepts such as accessibility, reasonable accommodations, telecommuting and home-based employment, social distancing and immune safety, and universal design have taken on new meanings for workers with asthma during COVID-19. Indeed, all members of society have had to accommodate the public health and economic impact of the pandemic in heretofore unheard of ways.

Also, under the auspices of job development, job placement, and return to work services, rehabilitation and health professionals must offer guidance and technical assistance regarding such processes of Americans with Disabilities Act (ADA) implementation as requesting reasonable accommodations, documenting disability status, and making formal complaints of employer discrimination [29]. It is also imperative to begin the accommodation planning process by discussing with individuals with asthma the coping strategies and accommodations they use in their daily lives because many of these can easily

be translated into on-the-job accommodations [22]. Employers may need to be educated about the low cost and ease of most accommodations (e.g., flextime, flex place, telecommuting, schedule modifications) for workers with asthma. They must also be made aware of the fact that many of the accommodations used by workers with disabilities can benefit other employees and/or customers of the organization or business [29]. The Job Accommodation Network (JAN) is a useful resource for exploring possible accommodations for individuals with asthma and other disabilities. As we continue to navigate COVID-19, many workers are telecommuting, so the option of working from home will be more readily available, not only as a reasonable accommodation for workers with disabilities but also as a business-as-usual alternative for larger numbers of employees than ever before. At the same time, many employers are calling workers back to offices and worksites, so rehabilitation and health professionals must be prepared to help people with asthma return to in-person employment engagement in safe and healthy ways. Universal design strategies, such as use of properly maintained ventilation systems, can improve air quality for all employees.

#### 5.5. *Job retention, follow-up, and return-to-work services*

Recent empirical findings stress the importance of career development and return-to-work services in helping people with asthma and other disabilities remain in the labor force [30]. Rumrill and Strauser [31] advocated a contextualized career development approach for people with asthma that casts the worker's current or customary job within a long-term life-career span. Their model emphasizes how services delivered at one point in one's career influence subsequent employment decisions and outcomes, so addressing short-term objectives as they lead to the attainment of long-term job retention and career advancement goals is imperative.

In their description of the RETAIN Kentucky statewide return-to-work and stay-at-work intervention that is in its fourth year of operation as of this writing, Rumrill et al. [30] emphasized follow-along services to address workers' changing accommodation needs over time, services that go beyond traditional case closure timeframes (up to six months in the case of RETAIN Kentucky), and close monitoring of the worker's health status by medical and mental health professionals as keys to long-

term employment success for people with disabilities in the COVID-19 era. The Crux model of vocational case management developed by Roessler et al. [29] provides the basis for the RETAIN Kentucky intervention, and it features a cyclical rather than linear process of consumer assessment, case planning, and service delivery that allows for changes to the return-to-work plan as the consumer's needs change in the present era of rapidly shifting economic, workforce, and public health dynamics. In RETAIN Kentucky, the Crux model is driven by a triage approach whereby employers, VR professionals, and healthcare providers work collaboratively to address the worker's health-related and vocational needs in a unified fashion. Of course, the worker with asthma or other disability is the conductor of the planning and service delivery process, which is guided entirely by the person's stated return-to-work or stay-at-work goals.

## 6. Conclusion

With its multiple and often chronic effects, increasing incidence and prevalence, and disproportionate impact on people from minority racial and ethnic groups and individuals living in poverty, asthma is a growing public health concern in the United States and worldwide. Some evidence suggests that people with asthma underutilize potentially important VR services, so return-to-work and employment interventionists need to increase access to and participation in VR services for members of this emerging consumer population. In this article, we have offered recommendations for providing quality employment services across the phases of the VR process, with an emphasis on the changes to the domestic and global labor forces that have been brought about by the COVID-19 pandemic.

## Conflict of interest

The authors declare no conflicts of interest.

## Ethical conduct of research and human subjects protection

N/A.

## Informed consent

N/A.

## Disclaimer

The contents of this article were developed, in part, under a grant from the Vocational Rehabilitation Technical Assistance Center for Quality Employment, H264K200003, from the U.S. Department of Education. However, the contents do not necessarily represent the policy of the U.S. Department of Education, and readers should not assume endorsement by the Federal government. The preparation of this article was also partly funded by the U.S. Department of Labor and the Social Security Administration under a grant award of \$21,600,000 to the Kentucky Office of Employment and Training that will be incrementally provided. 100% of grant funding is from U.S. Federal funds. Here again, this article does not necessarily reflect the views or policies of the U.S. Department of Labor or the Social Security Administration, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

## References

- [1] Gu XM, Ding CY, Wang N, Xu CF, Chen ZJ, Wang Q, Yao Q, Wang FL. Influence of occupational status on the quality of life of Chinese adult patients with epilepsy. *Chinese Medical Journal*. 2016;129(11):1285-90.
- [2] Na EY, Lim YJ. Influence of employment on the positive mental health of individuals with schizophrenia living in the community. *Psychiatric Quarterly*. 2020;91(1):203-8.
- [3] Hall JP, Kurth NK, Hunt SL. Employment as a health determinant for working-age, dually-eligible people with disabilities. *Disability and Health Journal*. 2013;6(2):100-6.
- [4] Reichard A, Stransky M, Brucker D, Houtenville A. The relationship between employment and health and health care among working-age adults with and without disabilities in the United States. *Disability and Rehabilitation*. 2019;41(19):2299-307.
- [5] Chan F, Tansey TN, Iwanaga K, Bezyak J, Wehman P, Phillips BN, Strauser DR, Anderson C. Company characteristics, disability inclusion practices, and employment of people with disabilities in the post COVID-19 job economy: A cross sectional survey study. *Journal of Occupational Rehabilitation*. 2021;31:463-73.
- [6] Muller V, Chiu CY, Tang X, Eagle D, Peebles MC, Iwanaga K, Brooks J, Chan F. Association of Employment and Health and Well-Being in People with Fibromyalgia. *Journal of Rehabilitation*. 2017;83(3).
- [7] Bishop M, Chiu CY. Epilepsy and employment. In: Pinikahana J, Walker C, editors. *Society, behavior and epilepsy*. Nova Biomedical Books; 2011. pp. 93-114.
- [8] Rubin S, Roessler R, Rumrill P. *Foundations of the vocational rehabilitation process*. 7<sup>th</sup> edition. Austin, TX: Pro-Ed; 2016.
- [9] Strauser DR. Introduction to the centrality of work for individuals with disabilities. Career development, employment and disability in rehabilitation: From theory to practice. New York: Springer Publishing Company; 2014.
- [10] Whelan N, Murphy MP, McGann M. The enabling role of employment guidance in contemporary public employment services: A work-first to life-first typology. *British Journal of Guidance & Counselling*. 2021;49(2):200-12.
- [11] Paul S, Rafal MC, Houtenville AJ. Annual Disability Statistics Compendium: 2021 [dataset]. 2021 [cited 2022]. The University of New Hampshire, Institute on Disability. Available from: [https://disabilitycompendium.org/sites/default/files/user-uploads/Events/2022ReleaseYear/2021\\_Annual\\_Disability\\_Statistics\\_Compendium\\_ALL%28corrected%29.pdf](https://disabilitycompendium.org/sites/default/files/user-uploads/Events/2022ReleaseYear/2021_Annual_Disability_Statistics_Compendium_ALL%28corrected%29.pdf)
- [12] Lauer EA, Houtenville AJ. Estimates of prevalence, demographic characteristics and social factors among people with disabilities in the USA: a cross-survey comparison. *BMJ Open*. 2018;8(2):e017828.
- [13] Tansey TN, Bishop M, Iwanaga K, Zhou K, Chan F. Vocational rehabilitation service delivery: Technical assistance needs of vocational rehabilitation professionals. *Journal of Vocational Rehabilitation*. 2022:1-4.
- [14] Carpaj OA, Burgess JK, Kerstjens HA, Nawijn MC, van den Berge M. A review on the pathophysiology of asthma remission. *Pharmacology & Therapeutics*. 2019;201:8-24.
- [15] Global Initiative for Asthma. *Global Strategy for Asthma Management and Prevention* updated 2016. Available from: <https://ginasthma.org/wp-content/uploads/2019/01/2016-GINA.pdf>
- [16] Global Asthma Network. *The Global Asthma Report 2014* [Internet]. Auckland, New Zealand; 2014. Available from: [http://globalasthmareport.org/2014/Global\\_Asthma\\_Report\\_2014.pdf](http://globalasthmareport.org/2014/Global_Asthma_Report_2014.pdf)
- [17] Gans MD, Gavrilova T. Understanding the immunology of asthma: Pathophysiology, biomarkers, and treatments for asthma endotypes. *Pediatric Respiratory Reviews*. 2020;36:118-27.
- [18] United States Environmental Protection Agency (EPA). *Asthma Facts*. [Internet]. 2017. Available from: [https://www.epa.gov/sites/production/files/2017-08/documents/2017\\_asthma\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2017-08/documents/2017_asthma_fact_sheet.pdf)
- [19] Grant T, Croce E, Matsui EC. Asthma and the social determinants of health. *Annals of Allergy, Asthma & Immunology*. 2022;128(1):5-11.
- [20] Wehman P, Sima AP, Ketchum J, West MD, Chan F, Luecking R. Predictors of successful transition from school to employment for youth with disabilities. *Journal of Occupational Rehabilitation*. 2015;25:323-34.
- [21] Kaye HS, Jans LH, Jones EC. Why don't employers hire and retain workers with disabilities?. *Journal of Occupational Rehabilitation*. 2011;21:526-36.
- [22] Job Accommodation Network (JAN). *Respiratory distress/breathing problem* [Internet]. 2023. Available from: <https://askjan.org/limitations/Respiratory-Distress-Breathing-Problem.cfm>
- [23] Koch L, Rumrill P. *Emerging disabilities in rehabilitation counseling*. New York. 2017.
- [24] Fujiura GT. Emerging trends in disability. *Population Today*. 2001;29(6):9-10.
- [25] Sherrell Z, Cattamanchi A. Do experts consider asthma a disability? [Internet]. *Medical News Today*; 2021

- May 27. Available from: <https://www.medicalnewstoday.com/articles/is-asthma-a-disability>
- [26] Opolski M, Wilson I. Asthma and depression: a pragmatic review of the literature and recommendations for future research. *Clinical Practice and Epidemiology in Mental Health*. 2005;1:1-7.
- [27] Mayo Clinic. Asthma: Diagnosis & treatment [Internet]. 2022, March 5. Available from: <https://www.mayoclinic.org/diseases-conditions/asthma/diagnosis-treatment/drc-20369660>
- [28] Pedron S, Emmert-Fees K, Laxy M, Schwetmann L. The impact of diabetes on labour market participation: a systematic review of results and methods. *BMC Public Health*. 2019;19:1-3.
- [29] Roessler R, Rubin S, Rumrill P. Case management and rehabilitation counseling, 5<sup>th</sup> edition. Austin, TX: Pro-Ed; 2018.
- [30] Rumrill P, Sheppard-Jones K, Collett JW, McCurry S. RETAIN Kentucky: A return-to-work and stay-at-work program for people with disabilities grounded in the conservation of resources theory. *Work*. 2022;72(1):3-8. Available from: <http://dx.doi.org/10.3233/WOR-223633>
- [31] Rumrill P, Strauser DR. A contextualized career development model to promote employment outcomes for people with asthma. *The Journal of Rehabilitation*. 2020;86(3):26-33.