Occupational therapy in respiratory medicine: Global challenge in the 21st century.

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Abstract

Worldwide respiratory disease causes an immense health burden which impacts to productive human activity. The leading causes of respiratory diseases in the modern world are: rapid urbanization, imbalance occupation, physical inactivity, use of tobacco, indoor and outdoor air pollution, allergens, ageing and heredity. Healthcare costs for respiratory diseases are an increasing effect on productivity and national growth. The public, political leaders and policy makers should awake to and address that respiratory diseases are preventable and avoidable by reducing use of tobacco and air pollution. The ability to control respiratory disease and promote respiratory health predominantly relies on healthy lifestyle and a daily balance of occupation. Occupational Therapy has a profound effect on respiratory health by increasing awareness, education, training, advice on lifestyle and daily occupations which could reduce economic costs and enhance patient's health and wellbeing. Research is essential for improving the understanding of the disease processes, which will allows for preventions, better diagnoses, treatment and enhance patient's quality of life. So, the Nation needs to provide advanced and up to date training for health professionals in respiratory medicine.

Keywords: Respiratory disease, Occupational therapy, Activities of daily living.

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Abbreviations: COPD: Chronic Obstructive Pulmonary Disease; WHO: World Health Organization; WFOT: World Federation of Occupational Therapist

Introduction

Millions of people across the UK have respiratory diseases and they don't even know it. They're struggling with their symptoms resulting in a lower quality of life. Due to lack of awareness, treatment, disease progression and symptom manifestation can progress quickly. This adversely affects patients by causing physical constraints, psycho-social disturbances and an economic burden [1]. Therapeutic options are available on smoking cessation, pharmacologic therapies and other treatments such as rehabilitation, oxygen therapy and ventilatory support [2].

A multidisciplinary approach to optimise health and wellbeing of patients with respiratory impairment are important in acute medical units. In multidisciplinary teams, integration of occupational therapy can improve the independence of patients with respiratory disease in their activities of daily living. According to [3] Occupational Therapy is "A profession concerned with promoting health and wellbeing through occupation". As Wilcock claims, occupation to the majority of people signifies all the 'things that people do' (p.413). In more detailed views of occupation Yerxa et al. and McLaughlin proposed that occupation is meaningful, self- motivated and goal directed, carries social value and is of a repeatable character. In addition, occupation is a highly subjective phenomenon, in terms of meaning, engagement, and skills [4], it does not only regard the individual involved but can be carried out in a group for community, cultural, social, political reasons, in that it constitutes an innate mechanism that supports health and survival [5]. In a following definition of occupation [6], emphasizing the environment and further reflecting on the typical features of occupation stated that 'occupations are units of activity which are classified and named by the culture according to the purpose they serve in enabling people to meet the environmental challenges successfully. Some essential characteristics of occupation are that it is self-initiated, goal directed (even if the goal is fun or pleasure), experiential as well as behavioral, socially valued or recognized, constituted of adaptive skills or repertoires, organized, essential to the quality of life experienced, and possesses the capacity to influence health' (p.5).

To make it more clear, Wilcock categorises occupation in the three distinct concepts, doing, being and becoming [7]. On the other hand, some other occupational therapy authors have categorised occupation into productivity, self-care, and leisure. These categories, come under criticism particularly by occupational scientists looking at, cultural diversity of occupation. Consequently, Hammell argued that some occupations, for example those motivated by connections to and care for others, do not fit with these categories [8]. Thus authors recommended that separating leisure and work is a concept specific only to a minority of world cultures. Moreover Iwama proposed that many theoretical models in Occupational Therapy were formed in a particular cultural context from the worldview and significance patterns of the authors [9]. Moreover cultural and ethnic backgrounds can also shape a person's view on illness and well-being and affect their perceptions of healthcare and outcomes of treatment [10]. This means that Occupational Therapists working with individual in respiratory medicine from different backgrounds need to consider their point of view on occupation and health and well-being when

outlining interventions. Taking into consideration the above fact, an Occupational Therapist's main goal is to promote an optimal level of occupational performance through meaningful occupation for maintain health and well-being.

So, Occupational Therapy involves advice on activities of daily living for example energy conservation and work simplification techniques for the people with respiratory disease. These are discussed below (Table 1):

Principles of Energy Conservation and Work Simplification Techniques

The rationale behind energy conservation and work simplification are to reduce unnecessary oxygen expenditure in the body during activities. There are five major principles which can be incorporated into daily activities and routine to improve oxygen expenditure:

Planning and organising daily routine and tasks

- Plan activities of daily living by alternating heavy and light tasks. Try to simplify tasks as much as possible
- Prepare for daily tasks before starting by gathering and organising tools and/or supplies needed
- Have adequate rest after completing an activity and before starting the next one

Use appropriate equipment to simplify activities

- Use of modern household utensils or electric appliances to conserve energy, e.g. non-stick kitchen wares, electric can opener, microwave oven etc.
- Use assistive devices such as long handled researchers to reduce the need to stoop or bend over when collecting objects from the floor.
- Use kitchen trolleys to assist pushing and carrying objects from room to room.

Work with appropriate pacing

- Allow plenty of time to complete an activity, remain relaxed, maintain a gentle pace and do not rush.
- Listen to your body's messages, when you feel tired rest, to prevent exhaustion.

Avoid inappropriate posture that may affect breathing

- Sit down during your daily activities whenever possible. Try to avoid activities that require long periods of standing, squatting or stooping.
- Avoid moving arms too high above shoulder level.

Use of correct body mechanics

- Keep posture upright while performing an activity, awkward posture consumes more energy. Keep arms close to body while carrying objects and equally take the load between both arms at the same time.
- Keep elbows on table or a firm surface while performing an activity to avoid positions that make you exhausted, e.g. during shaving, grooming and peeling potato skin.
- Proper Posture: When sitting down to rest, lean your

***Table 1**. Application of energy conservation and work simplification techniques.*

Daily living activities	Application of energy conservation and work simplification techniques
Location of daily necessities	Clothes should be kept in nearby drawers or wardrobes. Kitchenware should be kept in a rack for drying. This conserves energy by reduction the need to dry and tidy
Cooking	Use an extractor fan to make sure there is appropriate ventilation in kitchen during cooking. While cooking, handle one activity at the time, e.g. avoid boiling vegetables and frying fish together as this could make you tense. Frying and stir-frying causes vapours and smoke leading to breathlessness. Sit down for certain activities, e.g. sitting down for peeling or cutting vegetables. Place an appropriate chair with standard height for both inside or outside kitchen for intermittent rests.
Eating	Good posture should be ensured and avoid stooping or semi-incline positions. Elbows should be supported on a table and all dishes should be placed within reach. Light and more frequent meals can ensure enough time for enjoyment and to minimise shortness of breath.
Grooming	Sit in front of water basin for cleaning face, brushing teeth, shaving and combing hair. Elbows should be supported on the rim of water basin while grooming. Small towel should be used and coordinated breathing should be applied when wringing the towel. Never cover nose and mouth together while cleaning face. Electric tooth brush and razor should be used to minimize upper limbs exertion
Dressing and Undressing	Avoid wearing tight clothing and clothing with zips or buttons at the back. Wear shoes without shoelaces to avoid having to bend your trunk when tying shoelaces. Sit when possible when putting on and taking off clothing.
Toileting	To reduce breathlessness use coordinated breathing during opening bowels. Ensure adequate ventilation and an extractor fan in toilet. Daily intake of fruits and vegetables will help bowel movements. Use toilet grab rails while sitting toilet or raised toilet seat to ensure proper height of toilet bowl.
Bathing	Plan for bathing when you have the maximum stamina and energy of the day. After using bronchodilators have a bath and use domestic oxygen for those who are indicated after assessment. Prepare and keep close the equipment needed before bathing e.g. towels, soap and clothing. Sit down if needed. Sit on a shower chair, bath board or the toilet. For those who need a basin to hold water for bathing and washing hair, the basin should be raised to a suitable height to avoid the need to bend excessively or to squat. Bathing in the bath-tub by using bath grab rails is suitable and consumes less energy.
Laundry	Use the washing and drying machine. Minimise repeated squatting down when loading and unloading the washing machine. For hanging clothing, sit down and place the clothes on the hanger first. During hanging clothing try to do coordinated breathing
House Cleansing	Use a helping hand for heavy domestic activities. Sit near the counter surface or cabinet when cleaning or wiping the lower part of the cabinet. When bending down use coordinated breathing procedure. Plan one task a day to reduce the strain of daily living, e.g. laundry on Friday, cleaning floor on Monday etc. Use vacuum cleaner masks for dusting at home
Gardening	During summer, strolling in the garden at about 6.00AM to 7.00 AM will help to avoid the Sun. In winter, walks at about 8.00 AM to 9.00 AM in the morning with warm and sunny weather. Use warm clothing to keep warm
Shopping	Use plan route and map for shopping to avoid getting exhausted. Order online delivery for heavy groceries. Use wheeled trolley for shopping.
Attend Medical Appointment	Allow time to get to your medical appointment, to avoid rushing. Use non-emergency ambulance via nurses whenever possible. Use assistance from oxygen vending people or Occupational Therapists to plan of transportation if you are require oxygen. Use wheelchair if needed.
Long Tour Trip	Plan and organise intermittent rests for the trip to avoid exhaustion. Use Medication lists for emergency use. Take along sufficient medication with additional dosage for emergency situations. Use wheeled trolley to carry luggage or seek the help of others.

body straight and forward slightly. Relax your shoulders while keeping your both hands on thighs and rest. Keep your feet comfortably on floor.

The above strategy of energy conservation exclusively relies with individual's routines, activities and time which are very much linked with each other in daily life. Thus, Occupational Therapists could use structured routine and a time framework to improve healthy life style and balance between activity and rest. However there are some strategies to overcome dyspneoa such as, controlled breathing during rest and activity, learning to pace breathing with activity exertion, the influence of breath monitoring and body position on activity exertion, coordinating the mechanics of breathing during movement and activity exertion, breaking the cycle of shortness of breath, confidence and mastery of controlled breathing with activity exertion.

Occupational Therapy as a discipline must seek to clarify how occupation relates to physical, psychological and subjective measures of health and well-being. So, that through evidence gathering, Occupational Therapists can justify individualised interventions that clients find meaningful, that are contextually specific and which respond to the challenges in daily life. Occupational scientist Wilcock acknowledged that 'the health conditions of this millennium are related in part to the unhealthy lifestyle including occupational imbalance created within social contexts and the inadvertent application of traditional medical model practice for predominantly social conditions' (2001, p. 412). She advocates for the profession of Occupational Therapy to pro-actively establish a role in the management of respiratory health concerns. Thus, it is strongly encouraged that we embrace the social health models to understand, research, and identify evidence-based interventions that promote Occupational Therapy which can lead to health and well-being for the people with respiratory diseases.

Furthermore, biofeedback, relaxation, work hardening, leisure education, equipment provision and stress management can improves patient's independence and quality of life [11,12]. Also, advices on home modifications and adaptation can reduce the number of hospital readmission rates and premature care home admissions [13].

Glass et al. conducted 13-year randomised controlled trial study concerning the mortality of older Americans in relation to their daily activities [14]. They found that social and productive activities conferred benefits equal to exercise on the mortality of over 2,761 older people they sampled. Although independency with household-related activities, both inside the house and outdoors like gardening and shopping, changed individuals' dependency on family members. This independency in daily activities is associated with psychological wellbeing. For example, patients gain confidence, self-esteem and a better mood; some regain a positive self-image and self-surveillance, and others are hopeful for the future despite coping with chronic respiratory issues. Similarly Mildred Blaxter surveyed on 9000 people throughout the Britain link lifestyle with health. They found economic, environmental circumstances, social well-being, patterns of behaviour and their life style associated with health and well-being [15].

The ability to cope with the limitations of COPD can enhance patient's "control" and "management". The health education associated with coping style leads to a learning process which provides knowledge and consciousness of the illness perception, including symptoms and progress to the patients. Evidence suggests that when programs teaching self-management considers the patients assessment of their condition, there is a greater patient satisfaction with care and better patient compliance with treatment [16].

Also, health education can impact behavioural changes of each individual's health and wellbeing. So, both psycho-social support and health education work together for the patient with COPD in their treatment to contribute towards the development of patients' independence in their daily life [12,17].

In addition, Iwasaki found that leisure based activities are an effective strategy for reducing stress and preserving health and well-being [18]. Iwasaki and Mannell have proposed three main leisure coping mechanisms: they are social support; soothing breathers from stressors; and it emotional uplift to sustain coping efforts [19]. So the strong association between stress, leisure and well-being suggests that leisure activities enhance to live with COPD by compensating for stresses in the symptoms of respiratory disease.

Although Occupational Therapy can be applied in a group setting, this treatment depends on each patient's condition and is planned individually. When patients are more involved in group activities as well as form a partnership between the patient and Occupational Therapists it offers the opportunity to empower patient to become more active in managing their health. Ciccone et al in their project 1160 patients were recruited from February 2006 to September 2007 in Italy by thirty care managers and six supervisors who were recruited into the office of 83 physicians to evaluate the effects on disease and care management [16]. Its result showed collaborative work with patient care significantly improved majority of patient's healthy lifestyle, independency in daily activities, socialization and reduced hospitalisation.

This proactive approach offered an opportunity to lessen the need for more costly treatments and reduce the negative impact of the condition on the patient with respiratory disease. We would encourage Occupational Therapists to subjectively evaluate their patients in order to know their treatment expectations, their necessities during the intervention and, more importantly, the results achieved with an Occupational Therapy, although a more tailored approach needs further elaboration in busy clinical settings.

Conclusion

Humans are considered as 'occupational beings' as they have intrinsic need to be involved in occupations in order to live in a healthy way and maintain well-being [5]. There is no dispute about the assumption that occupation is a fundamental human need and it is important to person's physical, mental and social well-being. Further quantitative and qualitative or mixed studies in respiratory medicine are desperately needed for better outcome and understanding of the impact of Occupational Therapy in patients' daily lives. Studies results may contribute to treatment modifications or adaptations according to the effectiveness or perspective of the actual beneficiaries. Ultimately this will help to achieve the worldwide Forum of International Respiratory Societies (2013) aim: "Realities of Today-Opportunities for Tomorrow" [20].

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