

It has been well documented that the fatigue and dyspnea associated with COPD leads to a decrease in physical activity and further deconditioning.<sup>1</sup> As a result, many individuals with COPD are prescribed an assistive device, such as a rollator, which is a 4-wheeled walker with a seat and a basket.<sup>2</sup>

Using a rollator has both physical and psychosocial benefits. The forward lean posture decreases the effort required for forward momentum and braces the arms, thereby improving the efficiency of the muscles of respiration.<sup>3</sup> These benefits increase walking speed, especially among individuals with low functional capacity, and increase the distance achieved on a timed walking test, such as the 6-minute walk test.<sup>4</sup> Mobility in day-to-day activities is enhanced and social isolation is reduced.<sup>5</sup> Additionally, persons using rollators report feeling safer and being better able to cope with their symptoms.<sup>3,4,6</sup> These changes positively impact self-esteem and health related quality of life.<sup>7</sup> Notwithstanding the above, many individuals with COPD report infrequent rollator use.<sup>8</sup>

Barriers to rollator use include the physical and social environment in which individuals reside. Curbs, steps, and the need to transfer into and out of vehicles present challenges, especially when using a heavy device.<sup>8</sup> Older adults have also noted that they received inadequate information on the handling and transportation of mobility devices.<sup>9</sup>

Psychosocial barriers, such as stigma, influence rollator use, with almost half of users indicating that they preferred using a shopping cart for stability.<sup>3</sup> Fifty percent of rollator users have reported embarrassment associated with rollator use, with 70% of these individuals reporting persistent embarrassment that did not resolve after the first few weeks of use.<sup>8</sup>

To date, an in-depth exploration of individuals' views affecting optimal rollator use has not been performed, and our understanding regarding the complex reasons behind infrequent use

of rollators is limited. In depth qualitative techniques have been used to inform other care recommendations in COPD.<sup>10</sup> We therefore used a qualitative approach, with semi-structured interviews, to explore individual perceptions of rollator use in order to identify factors that may inform ways in which clinicians can promote optimal usage.

## **MATERIALS AND METHODS**

This study used a qualitative design, with semi-structured interviews to explore the views of individuals with COPD on the use of rollators. Ethical approval was granted by the Joint Bridgepoint Health-West Park Healthcare Centre (WPHC) and the University of Toronto. All participants provided informed consent.

### **Sample**

To be eligible for inclusion individuals had to; have a documented diagnosis of COPD (defined by spirometry testing and a smoking history of  $\geq 10$  pack-years); be community dwelling; be English speaking; and currently using a rollator. Individuals at WPHC are prescribed a rollator based on significant shortness of breath limiting their involvement in certain activities and an inability to maintain their independence in daily activities due to the effect of limited mobility. Compatibility with the home environment is also considered. Each participant was assigned a unique research identification number (eg, ID-8). Participants were excluded from the study if they were unable to participate in an interview due to cognitive or language deficits.

A total of 12 participants who had a mean age of 74 years, mean FEV<sub>1</sub>/FVC of 48%, and a median 1.5 years of rollator use (range 1 to >20 years) experience were recruited from an outpatient pulmonary rehabilitation program (Table). The 12 study participants had a mean of

4.75 comorbidities; the majority had cardiac (n = 11) or musculoskeletal (n = 7) comorbidities (Figure). All participants had >1 category of comorbidities, and many had multiple comorbidities in each category. Data saturation occurred after the completion of 10 interviews and was confirmed in an additional 2 interviews with no new themes identified from the data.

## **Interviews**

An interview procedure (SDC Appendix ) consisting of open-ended questions was developed based on existing literature and past experiences of the researchers working with individuals with COPD in a pulmonary rehabilitation setting. One researcher (AF) conducted the face-to-face interviews in a quiet room at WPHC. After completing the first interview, the interview schedule was revised by altering the sequence and wording of questions to improve clarity.

The interviewer took field notes during each interview and any initial ideas were recorded immediately after the completion of the interview. These interpretive notes were used during the data analysis to provide a richer perspective. Audio of the interviews was recorded and transcribed verbatim by a professional transcriber. The interviewer reviewed each transcript for accuracy and consistency.

## **Data Analysis**

All data were analyzed using NVivo version 10 qualitative data analysis software (QSR International Pty Ltd) for data management. A 6-step inductive thematic analysis was employed, which is independent of theory and epistemology and provides a flexible and pragmatic approach to collecting and analyzing narrative accounts in a rich and detailed way.<sup>11</sup> These 6 phases were: (1) familiarization with the data (all members of the research team); (2) generation of initial

codes considering the research aims (AB and MT); (3) organization of codes into themes (AB, MT, NR); (4) reviewing and organizing themes into a thematic map (all members of the research team); (5) defining and naming themes (all members of the research team); (6) extracting examples from the data to relate back to the original research question in the report (AH and NR).

## **RESULTS**

Many participants expressed a change in perceptions, initially describing resistance to rollator acquisition, but later communicating more positive views towards using the device. The following themes demonstrate this process: (1) “acquiring a rollator” reflects the process of obtaining a device either via a health care professional (HCP) or self-referral; (2) “acceptance vs resistance” describes opposing views regarding rollator usage; (3) “rollator roadblocks” describes practical barriers to use; (4) “participation” reflects how rollators can lead to re-integration into society; and (5) “revising perceptions” describes the process whereby participants eventually accepted their rollators.

### **Acquiring a Rollator**

#### ***Enforced, not informed***

Many participants described being prescribed a rollator by a HCP without the opportunity to be actively involved in the decision making process, “... my doctor told me you have to get a rollator” (ID-3). A few participants even claimed that the prescribing HCP presented them with an ultimatum, “I was told either get a device or stay home” (ID-1), and “...my rheumatologist said if you don't use it you're going to be in a wheelchair.” (ID-3). Some participants who were

prescribed a rollator described some formal training including altering the device height and receiving some basic instructions such as brake management, which increased feelings of confidence towards the device.

### ***Self-recommended***

Two participants described acquiring a rollator without formal recommendation from a member of the health care team. These participants considered a rollator to be a last resort, and described feeling abandoned by HCPs, *“I was considered written off [by the health care team].”* (ID-8). Participants expressed that they received no formal training on rollator use, but they learned to use it themselves, *“...nobody was there to inform me of it. I informed myself.”* (ID-8).

## **Acceptance Versus Resistance**

### ***Acceptance***

Individuals who perceived their rollators to be a permanent solution differed in their perception toward them compared to those who viewed them as temporary. The majority of participants recognized their rollator to be a permanent solution to maintain their functional mobility, and expressed some resistance to using it, *“...if I use it, it will help me to maintain my health so I have to pick up my socks and get with it and use it more often.”* (ID-12). In contrast, 2 participants expressed openness toward the use of their rollators from the initial acquisition of the device. Of these participants, 1 expected the rollator to be a temporary solution, and may have been able to avoid the identity shift commonly associated with the acquisition of a mobility aid, *“I felt at the time I got it I wouldn’t need it forever... I think that my health will improve to the point where I can function without it...”* (ID-5).

## ***Resistance***

The majority of individuals interviewed initially expressed negative views toward being prescribed a rollator. The adoption of a mobility aid made their invisible disease visible, and forced them to alter their self-perception and acknowledge the functional limitations that they attributed to aging and the disease process, *“I didn’t want my rollator... cause it reminded me of, you know, there is something wrong with me.”* (ID-8), and *“To me back then, rollators were for old people...”* (ID-3). Many were also negatively impacted by the perception of stereotypes and stigma associated with a debilitating condition, *“...I don’t want them to think of me as someone who is handicapped...”* (ID-12). The prescription of a mobility aid caused a dilemma.

Participants acknowledged the functional benefits of the device but expressed sensitivity to their dependence on a walking aid, *“Well I had mixed feelings I guess because I knew it would help me to walk further more easily but it was sort of a crutch that I never had in my life before...”* (ID-12).

## **Rollator Roadblocks**

### ***Environmental***

Participants described practical barriers, including obstacles in their homes such as narrow spaces, stairs, and carpets. Many participants only used their rollators when ambulating for longer distances and preferred alternate supports such as canes, furniture and walls for support at home, *“...in the apartment you can always reach walls or doors or something to balance yourself...”* (ID-10). For the individuals who reported using their rollators in the community, barriers included heavy or narrow doors, curbs, public transit, transitioning in and out of vehicles, and inclement weather. They described finding creative solutions to mitigate the

challenges presented by the built environment, “[I] open [the door] up and hold it with my rear end and then kind of push myself through” (ID-3).

### ***Characteristics of rollators***

Many participants found their rollators were too large and heavy, which together with their own weakness, presented an additional barrier to use, “...if I’m weak, I find it a little difficult...” (ID-7). One participant suggested, “I would maybe make it a bit lighter. It’s hard to get in and out of my car...” (ID-6).

### **Participation**

#### ***Multi-system adaptations (pain, balance and function)***

Individuals with COPD commonly have complex comorbidities (Figure) including painful musculoskeletal conditions that rollators can help attenuate, “If I try to walk too much without it like even around the house, the apartment, I get the pain in my back” (ID-9). A defining characteristic of COPD is shortness of breath, which was only reported by 2 individuals to be improved with the use of a rollator, “...it’s easier to breathe because when you put your hand on the handles it holds the upper part of your body so you don’t have to breathe as hard which for me is a plus.” (ID-10). Although the majority of participants cited an increased ability to walk further, and to engage in exercise, “...I realize that without it I won’t increase to 10 or get to 20 [minutes of walking]. So it’s part of me getting to my goal, to my goals of walking for 30 minutes straight.” (ID-8). Most participants observed that using a rollator made them feel more confident and secure, as it helped to compensate for their poor balance, “...you lose the fear that

*you are going to fall...*” (ID-7), and “*...it keeps me safe. It keeps me from tripping, falling, losing my balance...*” (ID-8).

### ***Social impacts***

Some participants expressed feeling isolated prior to using a rollator as a result of their decreased functional mobility and independence, “*I was a homebody, gained a lot of weight...*” (ID-3).

These participants identified rollators as an instrument that helped to reintegrate them into society, and establish a sense of independence and freedom, “*I could do so many more things especially going out and enjoying life again...*” (ID-10), and “*once I got the Rollator I was a free... a free person again...*” (ID-10). Additionally, many participants described feeling more confident going out in the community as a result of the ability to rest on the seat of the rollator if no chairs were available, “*It just gives you the confidence to do the things that you are going to do...*” (ID-5).

### **Revising Perceptions**

After experiencing the benefits from continued use of the device, the majority of participants, even those who initially resisted adopting a rollator, expressed overall feelings of satisfaction, “*I find it’s a very positive tool to have...I just think it’s the greatest thing...*” (ID-7); “*I don’t know what I would do without it*” (ID-3). This sense of satisfaction associated with the positive effects of their rollator led to an increase in usage, “*I don’t even think, you know, it’s there and I got to take it and that’s it. You know, you just automatically go for it.*” (ID-3). Once these individuals experienced the beneficial effects of rollators, their perceptions changed, and they were more likely to use it regularly. Even those who had experienced stigma did not allow this to impact



their willingness to use a rollator in the long-term, *“I wasn’t welcoming it at first and then slowly but surely when I started to feel confident and comfortable with it, it became my best friend”* (ID-8). As a result, some participants grew to accept their rollator as a part of their identity *“...it’s become part of me I wouldn’t think of going out without it.”* (ID-10).

## **DISCUSSION**

Rollators are prescribed in order to maintain mobility, function and community engagement. This is the first qualitative study to explore the views of individuals with COPD regarding rollator usage. The findings illustrate various perceptions dependent on the length of time using a rollator, and prior experiences using it. Users reported that the acquisition of a rollator is often prescriptive and not always accompanied by explanations of its indications and potential benefits. Adherence to many health care recommendations is lower in the absence of good communication, information sharing, and trust.<sup>12</sup> This is relevant as, in a population of individuals with COPD for whom rollators were prescribed, quality of life was higher among rollator users compared to non users.<sup>2</sup> Although the perception of stigma promotes initial resistance, willingness to use the device increased over time as physical and psychosocial benefits were experienced. Additionally, participants who had previous exposure to rollators expressed a more positive initial attitude, and used their rollators optimally.

In addition to practical barriers, psychosocial barriers, such as fear of stigmatization, are known to inhibit rollator use.<sup>9</sup> Two participants noted that the use of a shopping cart allows for a more normal appearance, while still providing the same physical support as a rollator.<sup>8</sup> The progressive nature of COPD means that disability becomes increasingly difficult to hide,<sup>5</sup> and the

visibility of symptoms may threaten the self-presentation of individuals (ie, the way individuals manage their appearance in order to appear competent and self-reliant).<sup>13</sup>

Participants in our study expressed awareness of negative evaluation; however, long-term willingness to use their rollators was not affected. Perhaps the negative preconceptions surrounding rollators were outweighed by the functional benefits and subsequent improvements in quality of life.

Co-morbidities are common in COPD<sup>14</sup> and often result in balance and pain issues.<sup>15</sup> In addition to documented improvements in dyspnea and exercise tolerance,<sup>2</sup> many of our subjects noted improvements in balance and pain with the use of a rollator. This is highly relevant, as impaired balance in COPD is associated with a 4-fold increase in the likelihood of a fall compared to age matched healthy individuals.<sup>16</sup> Improvements in the above will likely increase physical activity levels and decrease the risk of hospital admissions.

Providing education about the indications and benefits of rollator use, as well as discussing issues such as stigma and navigation in the home may facilitate a more positive early experience of the user. A home trial might also assist in addressing barriers and promoting self-efficacy. Finally, a peer-mentoring program could provide social modeling with current rollator users sharing their experiences.

A limitation of this study is the retrospective reliance on patients accurately recalling their thoughts and feelings regarding the rollator. Former concerns about how others viewed them can be difficult to express,<sup>17</sup> especially in the light of subsequent more positive experiences. We did not interview a cohort who refused rollator use who might have reported substantially more physical and psychosocial barriers.

## **CONCLUSIONS**

Individuals with COPD go through a distinct process leading to rollator acceptance. Their initial experience is often of acquisition by unilateral prescription, rather than a shared decision with an HCP, which contributes to initial resistance. This is compounded by their reception of inadequate information regarding its indications and potential benefits. However, the physical and psychosocial barriers initially noted do not ultimately impact their willingness to use the device on a long-term basis. Information sharing and problem-solving will likely improve willingness to use a rollator to promote physical mobility and reduce psychosocial barriers.

## ***ACKNOWLEDGMENTS***

The research group would like to acknowledge the patients and staff at the Joint Bridgepoint Health-West Park Healthcare Centre for their participation in this study. This research was completed in partial fulfillment of the requirements for an MScPT degree at the University of Toronto. Dr. Brooks holds a Canada Research Chair.

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## FIGURE LEGEND

**Figure.** Distribution of participant comorbidities grouped according to category for the study participants (n = 12). A participants may have had >1 comorbidity and/or comorbidities in >1 category.