

# **Final Report**

**Project: Cycling Without Age**

**Prepared by: P. McNiel DNP, RN, APHN-BC  
and  
J. Westphal PhD, RN, NE-BC  
University of WI Oshkosh  
School of Nursing**

**For further information and questions, please contact P.  
McNiel at 920-424-3089**

### **Abstract (Project Objective)**

The purpose of this study is to examine the impact of the Cycling Without Age (CWA) program introduced to enhance the quality of life in persons living in nursing homes on the Miravida Living (ML) campus. Program participants will spend more time outdoors, enjoy touring the community in rickshaws, and develop intergenerational relationships with their pilots (rickshaw drivers). The CWA program will help to dispel uninformed beliefs held by individuals not familiar with elders and nursing home life. It will strengthen ties between nursing home residents and the greater community. CWA is designed to provide residents with rides as one to two individuals sit in a specially designed rickshaw attached to the front of a specially designed bike driven by volunteers and staff trained to be rickshaw pilots. Benefits of the Cycling Without Age program are consistent with the Healthy People 2020 mandate "to improve the health, function, and quality of older adults." Funding was requested and approved by the State of Wisconsin Department of Health to measure outcomes of the program and support development of CWA programs in nursing homes across the state. Quantitative and qualitative studies confirmed the positive impact of the program nursing home residents, pilots and staff.

## Background

The purpose of this study is to conduct an analysis of the effectiveness of the Cycling Without Age (CWA) program. The program was founded by Ole Kassow in 2012 in Copenhagen, and has taken off worldwide. It pairs volunteers and staff piloting rickshaws and elders living in nursing homes interested in going for a ride and spending time outside. The program's moniker is The Right to Wind in Your Hair. CWA provides individuals living in nursing facilities to experience a better quality of life. Program participants spend more time outdoors, enjoy touring the community in rickshaws, and develop intergenerational relationships with rickshaw drivers called pilots. The program has created ties between elders and volunteers, effectively illustrating a model for sustainable collaboration between long-term care facilities and the greater community. Limited research has been done in this area since rickshaw bike rides are new to the elder care field. In one manuscript, the focus was on community collaborative efforts to initiate a new elder care recreational activity for long-term care residents (Sorensen & Torfing, 2015). Other biking studies focused on the aspect of the older adults actually going out and biking themselves versus riding in a rickshaw (Zander, Passmore, Mason & Rissel, 2013). Fitzsimmons (2011) actually developed evidenced-based guidelines for wheelchair biking to treat depression in long-term care residents.

The State of Wisconsin Department of Health provided funding to measure outcomes of the CWA program and support the development of the program in all types of nursing home settings across the state of Wisconsin. Grantee is the first licensed program in the United States.

## Methods

Researchers used a mixed methods approach to study the impact of the CWA program. Qualitative and quantitative data were collected. Researchers planned to identify the impact of the CWA program on residents, rickshaw pilots and staff. Specifically, researchers wanted to explore the impact of the CWA program on quality of life for nursing home residents.

UWO researchers conducted qualitative interviews with rickshaw pilots and riders participating in the program to assess their personal experiences related to the Cycling Without Age program. Quantitative data was also collected using a demographic form, ride records, and quality of life questionnaire.

## Qualitative Method

A single open-ended research question was explored with volunteers "*tell me about your CWA bike ride experience.*" Clarifying questions were asked as needed. Interview participants were rickshaw pilots and riders. Nursing home resident interviews captured the impact of their experiences while outside on a ride. Rickshaw pilots were individuals that might see the impact of the CWA program for residents participating in rickshaw rides. The program coordinator approached rickshaw pilots, riders, and staff with a verbal invitation to participate in the interviews. Contact information for researchers was provided. One researcher conducted interviews with residents and volunteers in a private room on campus. The interviews were recorded and transcribed; responses were kept confidential by the individual conducting the

interviews. Participants were also asked to complete a demographic form, ride experience survey, and a quality of life questionnaire.

## **Qualitative Results**

A total of 27 qualitative interviews were conducted including 16 residents and 11 volunteer pilots (including some staff).

Five themes were identified from the qualitative interviews with resident riders and pilots. For resident riders three themes were identified (a) *breath of fresh air*, (b) *wave, chat and remember*, and (c) *sit back and relax*. Two themes were identified for the pilots (a) *change in frame of mind* and (b) *mental and physical rewards*.

### ***Breathe of Fresh Air (Older Adult Rider-Nursing Home Resident)***

This theme highlighted the importance of being outside and enjoying nature. Direct quotes from the riders that support this theme include the following:

“Get out and see part of the city and get a little fresh air”.

“It's good to sit out and enjoy it, fresh air and sunshine.”

“Just being able to breathe the air and, you know, get fresh air and see the sights. It's, it's just gorgeous, you know, looking at everything.”

“Oh, you're out in the open and you're, you know, can feel the breeze and stuff. Feel the sun, how, how warm it is. And it makes you feel a lot better.”

### ***Wave, Chat and Remember (Older Adult Rider-Nursing Home Resident)***

This theme highlighted the importance of enjoying the interaction between the older adult rider and those they saw on the bike ride. It centers on the rider engaging in waving, chatting, and smiling to those they pass along the way and how they shared stories and reminisced with the volunteer pilot. Direct quotes from the riders that support this theme include the following:

“Yep. Cause they'll, anybody you bump into that's riding in a rickshaw waves to you, and anybody that's cutting grass and that all stop and wave, say hi to you.”

“Well it's enjoyable. You meet different people and hear about different things around town.”

“So he brought her out the front porch, the little stoop they had, and we visited for a while. And, yeah, cause at our age you don't pass something by and not do something about it because who knows what tomorrow will bring for all of us at our age. You have to think a little differently than when you were younger. ...well, they were thrilled, a surprise to say the least. Here I am in a rickshaw.”

...”And I was just as surprised to see them and I was happy to see them, so, it was a lovely rickshaw and it was a lovely day to go out and I was so pleased that she would take the time to stop to see them cause I'd never get there otherwise. Saw two people I really treasured. So it was a fun ride.”

“Oh, you see so many people, different people walking along the street. They wave at you.”

***Sit Back and Relax (Older Adult Rider-Nursing Home Resident)***

This theme highlighted the importance of being able to sit back and just enjoy the ride. It touched upon the impact the ride had on the older adult. Direct quotes from the riders that support this theme include the following:

“I think it's something that should be enjoyed to the, enjoyment for all the people here. ... And it's, it's fun. There's no danger or no hazards or anything, but some of them don't want to leave home I guess. I don't know.”

“I just really liked the whole experience. I like being able to just relax and just look around and see things, you know, just being out in the fresh air was, is good too.”

“Right. Oh definitely different than a car. Yeah, there you just buzz by. Yeah this is great. It's, it's very interesting and I enjoy going.”

“I like being outside and doing things. And it was something different and I can sit down and enjoy the fresh air.”

***Change in Frame of Mind (Rickshaw Pilot)***

This theme highlighted the perspective of the rickshaw ride from the pilot's perspective. They shared how they noted a change in the older adult riders' demeanor as they participated in rides. Direct quotes from the pilots that support this theme include the following:

“The most exciting things that I've found were just the change in personality.”

“And his face was the happiest I've ever seen him before that. He wasn't sassy at all; he was ready to go to bingo, he was ready to do stuff that day. It was awesome.”

“Like it was just, he kept saying, that's just what I needed to get me out of the dumps. And so, it just was very fulfilling knowing that it made his day better.”

“I definitely see a change in just their attitude and their happiness and just that positive, positive force.”

“You know, and, and I say they're wonderful, but, but the bigger joy is, is when you, when you take the residents out for a ride. I mean, just the looks on their faces and the big smiles they get.”

### ***Mental and Physical Rewards (Rickshaw Pilot)***

This theme highlighted the perspective of the rickshaw ride from the pilot's perspective. They shared how they noted a personal positive change in their life as they participated in volunteering to give rickshaw rides. Direct quotes from the pilots that support this theme include the following:

“Well I found it incredibly gratifying. .... It, it's taught me a lot about how to be a part of my community and to realize that there shouldn't be this mentality of okay, you know, my grandfather or grandmother is getting old, time to go drop them off and I'll go see them once a week. This is a method to become more part of your community in a different way. All the people on the side of the road smile when they see two residents and a pilot going down the road, the stories and everything. So there's a, there's a big emotional impact to it and I was proud to be a part of it.”

“I love it. That sums it up. ... And I was addicted to it; I knew this was something I wanted to do. So, I, right now I'm doing it two to three times a week. And I'm really enjoying it....”

“But again it's also an opportunity for somebody who wants to do some community work to get outside, exercise, it's a wonderful wellness break, it is, again, a wonderful time to connect with the community, with elders, intergenerational experience.”

“I mean, just from a marketing standpoint, it's good exercise. It's a lot of fun. It's not that hard. You got the electric assist motors. And you're giving back. And I think overall people like exercise.”

### **Quantitative Method**

Demographic and survey information was collected at the time of the rickshaw ride using the Bike Ride Record (Appendix A). The program coordinator/or researchers approached rickshaw riders (residents) with a verbal invitation and consent to complete the demographic and survey information. Demographic and survey information was collected using four different forms.

1. Wheelchair bike riding record, notebook used to track the number of rides per resident along with information regarding participation, socialization, behavior or mood of resident and comments. (Appendix A).
2. The Wheelchair biking outcomes monitor was used to track resident verbal and non-verbal responses, and mood. (Appendix A)
3. Demographic information such as age, ethnicity, gender, marital status, and length of time living on campus was collected from each participant.
4. The Older People's Quality Of Life (OPQOL) (2013) brief questionnaire with 13 items was used to assess the quality of life of the rickshaw riders. (Appendix B)

Cycling Without Age participants were asked to complete the OPQOL questionnaire before the ride program started in May and again at the end of the ride program in late September or October for those older adult residents participating in the study. A paired samples t-test was completed at the end of the study to compare the mean scores for the same riders on two

different occasions. The t-test was used to see if there was a significant change in participants' quality of life scores following participation in the ride program. The coordinator worked with the 28 resident riders, pilots, and staff to ensure at least two rickshaw rides per week during participation with the study.

## Results

The initial number of resident riders involved in the research was 28. Over time, study participants decreased by four due to deaths and relocation. At the end of the study, 24 resident riders were participating. There was no change in the volunteer pilots during the study.

## Quantitative Results

Demographic results. Ages of residents riding in the rickshaws ranged from 57-103 years of age with the majority of riders over the age of 75.

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | 55-64 years old   | 1         | 3.6     | 3.6           | 3.6                |
|       | 65-74 years old   | 3         | 10.7    | 10.7          | 14.3               |
|       | 75 years or older | 24        | 85.7    | 85.7          | 100.0              |
|       | Total             | 28        | 100.0   | 100.0         |                    |

The riders were not ethnically diverse, and 69 percent were female.

|         |        | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid   | Male   | 8         | 28.6    | 30.8          | 30.8               |
|         | Female | 18        | 64.3    | 69.2          | 100.0              |
|         | Total  | 26        | 92.9    | 100.0         |                    |
| Missing | System | 2         | 7.1     |               |                    |
| Total   |        | 28        | 100.0   |               |                    |

Most riders were high school graduates (71 %), followed by some school but no diploma (11%).

|       |                         | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------------|-----------|---------|---------------|--------------------|
| Valid | Some school, no diploma | 3         | 10.7    | 10.7          | 10.7               |
|       | High school graduate    | 20        | 71.4    | 71.4          | 82.1               |
|       | Some college, no degree | 1         | 3.6     | 3.6           | 85.7               |
|       | Associate Degree        | 1         | 3.6     | 3.6           | 89.3               |
|       | Bachelor's Degree       | 1         | 3.6     | 3.6           | 92.9               |
|       | Master's Degree         | 2         | 7.1     | 7.1           | 100.0              |
|       | Total                   | 28        | 100.0   | 100.0         |                    |

More than half were widowed or married.

|         |                                 | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|---------------------------------|-----------|---------|---------------|--------------------|
| Valid   | Single, never married           | 4         | 14.3    | 14.8          | 14.8               |
|         | Married or domestic partnership | 5         | 17.9    | 18.5          | 33.3               |
|         | Widowed                         | 16        | 57.1    | 59.3          | 92.6               |
|         | Divorced                        | 2         | 7.1     | 7.4           | 100.0              |
|         | Total                           | 27        | 96.4    | 100.0         |                    |
| Missing | System                          | 1         | 3.6     |               |                    |
| Total   |                                 | 28        | 100.0   |               |                    |

The mean number of rickshaw rides was 4.33 with a range of 1 ride to 12 rides for residents. This related to rickshaw rides in the previous calendar year before the research study started.

|                |         | How many Rickshaw rides have you been a rider? |
|----------------|---------|--|
| N              | Valid   | 27   |
|                | Missing | 1  |
| Mean           |         | 4.33   |
| Std. Deviation |         | 3.305  |
| Minimum        |         | 1  |
| Maximum        |         | 12   |

The results of paired samples t-test revealed a significant change in quality of life scores before the ride program began and at the end of the program.

#### Paired Samples Statistics

|            | Mean    | N  | Std. Deviation | Std. Error Mean |
|------------|---------|----|----------------|-----------------|
| PRE Total  | 44.0000 | 24 | 3.87859        | .79171          |
| POST Total | 52.3750 | 24 | 3.99796        | .81608          |

#### Paired Samples Correlations

|                        | N  | Correlation | Sig. |
|------------------------|----|-------------|------|
| PRE Total & POST Total | 24 | .687        | .000 |

**Paired  
Samples  
Test**

|                           | Paired Differences |                |                 |                          |          | t       | df | Sig. (2-tailed) |
|---------------------------|--------------------|----------------|-----------------|--------------------------|----------|---------|----|-----------------|
|                           | Mean               | Std. Deviation | Std. Error Mean | 95% Confidence Interval. |          |         |    |                 |
|                           |                    |                |                 | Lower                    | Upper    |         |    |                 |
| PRE Total- and POST Total | -8.37500           | 3.11814        | .63649          | -9.69168                 | -7.05832 | -13.158 | 23 | .000            |

## Conclusions

### Limitations

A number of variables may have influenced the results. Residents were sensitive to weather conditions and a majority of residents preferred riding on calm, warm, sunny days. A few residents that desired to ride anytime on any day utilized the specially designed rickshaw with the covered hood and extra blanket to provide warmth and lessen the impact of the weather.

Several residents were hesitant to participate in the rickshaw ride due to barriers such as their physical health due to immobility related to physical conditions and or their large size due to excess weight. They shared their concerns related to the barrier of getting into and out of the rickshaw. They felt uneasy and at times hesitant to move due their fear of falling with getting into and out of the rickshaw. Due to that hesitancy, at least two residents stated they only went out on rides once or twice in the past. After a few of the residents expressed their fear of getting into and out of the rickshaw they also shared that they preferred not to be an extra burden for staff with loading and unloading into the rickshaw. Staff and volunteers were patient and reiterated their willingness to assist with getting into and out of the rickshaw at any time. Several pilots also shared a modified approach to making getting in and out of the rickshaw easier for residents.

Each rickshaw ride is different from the next due to the variables of a different pilot or a different partner sitting in the rickshaw. Each rickshaw is designed to hold two adults or one large adult. Other variables include weather, route taken during the ride and timing related to the day of the week. Some routes might have frequent interaction with the public with waving, watching children, and stopping to enjoy wildlife and flowers. Other rides might have limited stops and focus on the older adult having a windshield view of the route without stops. In other words, rides may have been limited to geographical barriers. Pilots shared that navigating the roundabouts for the first time was scary.

During the ride, each pilot and resident had an opportunity to communicate and chat throughout the ride. In cases where the older adult had sensory deficits of vision and hearing, it might have affected the interaction between the pilot and the older adult. Many older adults and pilots shared positive remarks about being able to “talk about different things to different people.”

At the beginning of the study, it was noted the facility had concerns regarding program sustainability due to an open-ended approach to recruiting pilots. As the coordinator position developed, the concern of pilot availability eased and pilots were available to assist with meeting the organization's needs to staff rickshaws rides.

There was a staff change with the program coordinator leaving halfway through the research study slightly affecting communication with residents and pilots. An interim coordinator was in place until the new coordinator arrived toward the end of the study.

### **Lessons Learned**

The implementation of this program was positively received by nursing home residents, pilots and staff. The program generated excitement in the community as evidenced by qualitative comments such as telling other older adults to participate in the rickshaw rides “Tell them it’s the best thing they could do,” and “I’d recommend it to anybody.”

Majority of all pilots stated they noted a change in the older adults’ demeanor from the beginning of the rickshaw ride to the end. This is documented in the interviews and Record Ride Log. One volunteer pilot stated, “The most exciting thing I’ve found was just the change in personality.”

The program is person centered and engages residents in designing their ride. For example, several residents requested to ride in their old neighborhood. One resident smiled and their eyes lit up as they shared that they had a ride in their old neighborhood. They stated the volunteer pilot stopped the rickshaw and rang their old neighbors’ doorbell and they had an impromptu visit. Another resident shared they had a chance to ride by a nephew’s home and stop for a visit. Still others enjoyed the experience of driving through the Dairy Queen drive-through and purchasing an ice-cream cone.

One way to possibly expand sustainability and encourage further volunteer pilot participation is to highlight the benefits of the physical exercise for the volunteer pilot. This might provide an opportunity for partnership with local clubs.

Unintended consequences highlighted the positive impact of family bonding while sharing a rickshaw ride. Sons and daughters rode with their parents. Residents with family members in different buildings on campus actually had an opportunity to visit when the rickshaw would pick them both up for a ride. Spouses could share the rides together which was extremely impactful for one spouse with dementia. It provided a relaxing opportunity for the other spouse to share a few moments together outdoors. It even opened up communication between great grandparents and great grandchildren.

## **Recommendations**

During the study and grant period a new rickshaw design has been taking place to accommodate resident fears and physical conditions affecting getting in and out of the rickshaw. Volunteers and staff have also created a safe “work around” method to make the unloading and loading procedures easier. It is recommended this “work around” option be visually recorded so it may be shared via YouTube for other facilities. Investigation of new rickshaw design and or updating of old rickshaws should be completed to ensure safe transfers in and out of the rickshaw.

The importance of having a coordinator to ensure program sustainability to coordinate rickshaw rides with the older adults and volunteers is extremely valuable. The coordinator role in this case assisted with recruiting and training volunteer pilots, coordinating local resources to support and promote the program with area businesses, senior center, police department and the local university. The coordinator acted as a liaison between the participants, volunteer pilots, staff and family.

Since this facility is located in Wisconsin, it does limit the opportunities for rides. This facility does not conduct rides in the winter months due to weather, icy conditions, and potential wear and tear on the rickshaws. Rickshaw rides could be conducted on warmer sunnier days if residents were interested and able to enjoy fresh brisk Wisconsin air.

The mixed method research for this grant focused on residents that were able to make their own decisions. They were cognitively alert and could articulate their needs. Rickshaw rides were available to all residents of this long-term campus regardless of their participation in this study. While information was not obtained from these other riders, the pilots shared qualitative comments with the CWA rickshaw experiences with residents living with dementia and Alzheimer’s disease. The volunteer pilots stated that they noted positive interactions between the older adult and a family member as they experienced the rickshaw ride. This may be an area for further exploration and development.

If clear communication is desired between the pilot and the rider, a hearing assistive device might be explored further for those older adults with limited hearing capacity. Systems such as these currently exist for motorcycle helmets.

Overall, the Cycling Without Age program received many positive comments from riders, pilots some of which were staff, and family members. The program could be recommended for implementation at any long-term care facility or older adult venue such as Senior Centers in

which older adults are unable to bike on their own or travel without assistance on trails. The program could also be utilized for those older adults living at home in whom a local organization could initiate a rickshaw ride program. The program can also offer local older adult care programs new venues for patient-centered care approaches.

## Appendix

### Appendix A: Ride Record

#### Appendix A RIDE RECORD

(© Suzanne Fitzsimmons, 2001. Reprinted with Permission)

Name: \_\_\_\_\_

Transfer Assistance: \_\_\_\_\_ Room Number: \_\_\_\_\_

Date: \_\_\_\_\_

Check all that apply, add comments if needed

#### Participation

- \_\_\_\_\_ Enjoyed
- \_\_\_\_\_ Would do again
- \_\_\_\_\_ Needed encouragement
- \_\_\_\_\_ Participated to be polite
- \_\_\_\_\_ Refused to participate

#### Ride Details

- \_\_\_\_\_ Alone
- \_\_\_\_\_ With another resident
- \_\_\_\_\_ With family/friend

#### Socialization

- \_\_\_\_\_ Interacted with staff & other participants
- \_\_\_\_\_ Interacted with staff only
- \_\_\_\_\_ No interaction with others

#### Behavior/Mood

- \_\_\_\_\_ Appeared happy
- \_\_\_\_\_ Restless/anxious
- \_\_\_\_\_ Showed fear/frustration
- \_\_\_\_\_ Agitated
- \_\_\_\_\_ Became weepy

How was the ride? Comments:

Volunteer \_\_\_\_\_

Staff \_\_\_\_\_

Resident \_\_\_\_\_

Signature of person completing this form:

## Appendix B: OPQOL-Brief

### Appendix B OPQOL-brief:

Notes:

The OPQOL-BRIEF questionnaire has 13 items, with a preliminary single item on global QoL, shown below. This single item is not scored with the OPQOL; it is coded as Very good (1) to Very bad (5).

OPQOL-Brief scoring:

Each of the 13 items is scored Strongly agree=1, Agree=2, Neither=3, Disagree=4, Strongly disagree=5. The items are summed for a total OPQOL-Brief score, then positive items are reverse coded, so that higher scores represented higher QoL.

We would like to ask you about your quality of life:

Single item - global QoL:

1 Thinking about both the good and bad things that make up your quality of life, how would you rate the quality of your life as a whole?

Your quality of life as a whole is: Very good    Good    Alright    Bad    Very bad

OPQOL-Brief

2 Please tick one box in each row. Please select the response that best describes you/your views.

There are no right or wrong answers.

Strongly Agree    Agree    Neither Agree    Disagree    Disagree Strongly

1. I enjoy my life overall
2. I look forward to things
3. I am healthy enough to get out and about
4. My family, friends or neighbours would help me if needed
5. I have social or leisure activities/hobbies that I enjoy doing
6. I try to stay involved with things
7. I am healthy enough to have my independence
8. I can please myself what I do
9. I feel safe where I live
10. I get pleasure from my home
11. I take life as it comes and make the best of things
12. I feel lucky compared to most people
13. I have enough money to pay for household bills

Thank you for your help

*OPQOL-brief: Copyrighted @ A. Bowling. This questionnaire is free to use and no permissions are needed. The request is that the source is credited:*

Bowling A, Hankins M, Windle G, Bilotta C, Grant R. (2013). A short measure of quality of life in older age: The performance of the brief Older People's Quality of Life questionnaire (OPQOL-brief). *Archives of Geriatrics and Gerontology*, 56, 1: 181-187.

<http://dx.doi.org/10.1016/j.archger.2012.08.012>

The full OPQOL questionnaire, scoring details, the OPQOL-brief, and other information about the research can be found on:

[http://www.ilcuk.org.uk/index.php/publications/publication\\_details/good\\_neighbours\\_measuring\\_quality\\_of\\_life\\_in\\_old\\_age](http://www.ilcuk.org.uk/index.php/publications/publication_details/good_neighbours_measuring_quality_of_life_in_old_age)

The link for actual PDF of the OPQOL-brief is also here:

[http://www.ilcuk.org.uk/images/uploads/publication-pdfs/OPQOL\\_](http://www.ilcuk.org.uk/images/uploads/publication-pdfs/OPQOL_)

## **References**

Bowling A., Hankins M., Windle G. Bilotta C. and Grant R. (2013). A short measure of quality of life in older age: The performance of the brief Older People's Quality of Life questionnaire (OPQOL-brief). *Archives of Geriatrics and Gerontology*, 56, 1: 181-187.

<http://dx.doi.org/10.1016/j.archger.2012.08.012>

Fitzsimmons, S. (2011). Evidence-Based practice guideline: Wheelchair biking for the treatment of depression. *Journal of Gerontological Nursing*, 37(7), 8-15.