Author Year Country PEDro Score Research Design Total Sample Size	Methods	Outcome
Daveler et al. 2015 USA Observational Phase 1 N=31 Phase 2 N=N/A Phase 3 N=12	*Phase I* **Population:** Mean age: 55.9 yr, Gender: males=26, females=6; Mean w/c experience:13 yr. **Intervention:** Survey regarding current wheelchair characteristics and perceived rating of difficult driving scenarios. **Outcome Measures:** Ratings of 23 driving scenarios by degree of difficult; power wheelchair drive wheel location. *Phase III* **Population:** Mean age: 46.9 yr; Gender: males=7, females=5; Mean w/c experience:16.3 yr. **Intervention:** Questionnaire about outdoor driving places visited in the past week, frequency encountering a terrain/architectural barrier and the action they performed at that time, **Outcome Measures:** Obstacle frequency, action taken upon obstacle encounter, features most likely to use if avaialble.	*Phase I* 1. The position of the drive wheel (FWD, RWD, and MWD) showed the greatest differences in driving difficulty reported especially in mud, gravel and cross slope conditions. 2. Avoidance of these conditions when encountered was reported: 1) in mud 70% of RWD and MWD, 33% of FWD; 2) in gravel 54% of RWD, 31% of MWD, 17% of FWD and: 3) in cross slope conditions 31% of RWD, 50% of FWD and 62% of MWD. 3. >50% of participants mentioned that the conditions: uneven terrain, driving up and down steep hills, cross slopes, gravel, curb cuts, and ramps where particularly difficult to maneuver. **Phase III** 1. Top 5 obstacles encountered at 1-3 times/wk: small curb, cross slope, grass, dirt/mud, curbs); >3 times/wk: curb cuts door thresholds concrete, carpet up and down ramps. 2. Top 5 avoided obstacles: sand, curbs, gravel, dirt/mud, small curbs. 3. Top 4 obstacles that required assistance: grass, dirt/mud, door threshold, gravel. 4. Curb climbing and traction control were featuring most likely to be used by study subjects in different terrain.
Hastings et al. 2011 USA Observational N=30	**Population:** Mean age: 47 yr; Level of injury: SCI, C6-C7, tetraplegia; Mean time since injury: 16 yr; Mean length of rehabilitation: 4.5 mo; Mean BMI: 23.7; W/c use: manual=18, power=12. **Intervention:** Demographic information and three questionnaires. **Outcome Measures:** Rosenberg Self-Esteem Scale (RSES), Spinal Cord Independence Measure III (SCIM), Craig Handicap Assessment and Reporting Technique (CHART).	1. No significant differences between manual and power group with respect to demographic information. 2. Significant differences found between wheelchair groups in SCIM III (F=11.088, p=0.003) and CHART subscales of Physical (F=7.402, p=0.011), Mobility (F=12.894, p=0.001), and Occupation (F=5.174, p=0.031). 3. No difference between groups for self-esteem (RSES) and CHART cognitive and social subscales.
Sonenblum et al. 2008 USA Observational N=25	**Population:** Mean age: 43 yr; Gender: males=16, females=9; Injury etiology: SCI; Level of injury: cervical=12, thoracic=1; Level of severity: complete=8, incomplete=4; Median time since injury: 10 yr. **Intervention:** Tracked wheelchair mobility use for 13-15 days in-home	1. Most wheelchair use occurred at home; outdoor period of use were longer in time and distance and faster in speed than indoor periods (p<0.001). 2. Median time in wheelchair was 10.6 hr (5.0-16.6 h); distance wheeled ranged 0.24-10.9 km (median 1.1

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	and community using a data logger; telephone interview. **Outcome Measures:** Wheelchair usage, location used, distance wheeled, time spent wheeling, time spent in the wheelchair, time in wheelchair spent wheeling.	km) over range of 16-173 min (mean 58 min). 3. Mean of 9.2% of time in wheelchair was spent wheeling. 4. Time spent wheeling and number of mobile periods had normal distribution. 5. Occupancy time was most normally distributed and least varied variable. 6. No consistent usage pattern across and within subjects. 7. Day-to-day variability in mobility was igh regardless of how much a subject wheeled.
Hunt et al. 2004 USA Observational N=412	**Population:** Mean age: 42 yr; Gender: male=325, females=87; Level of injury: paraplegia=210, tetraplegia=202; Mean time since injury: 8.9 yr; Wheelchair: manual=251, power=161. **Intervention:** In-person or telephone survey on demographic, socioeconomic and assistive technology data. **Outcome Measures:** Number and type (manual or power) wheelchair, Wheelchair customizability as defined by design features (e.g., axle adjustment, programmable controls).	1. 97% manual wheelchair users had customizable wheelchair. 2. 46% power wheelchair users had programmable and 54% had customizable wheelchair. 3. 40% of manual wheelchair users had at least one additional wheelchair (73% had additional manual, 27% power) and 57% of power wheelchair users had at least one additional wheelchair (84% manual, 16% power). 4. People with at least one additional wheelchair were more likely to be white (p=0.001), have higher income (p=0.001), and have private insurance (p=0.045).
Biering-Sorenson et al. 2004 Denmark Observational N=236	**Population:** Mean age: 50.5 yr; Gender: males=193, females=43; Level of injury: tetraplegia, paraplegia; Level of severity: complete=102, incomplete=134; Mean time since injury: 24.1 yr. **Intervention:** Medical chart review, Questionnaire regarding mobility aids. **Outcome Measures:** Functional classification at time of injury, Rehabilitation discharge functional classification, Mobility aids, transportation at time of follow-up.	1. 3.4% had no mobility devices; only men used standing frame and stand-up wheelchair (gender difference, p=0.0026). 2. Manual and power wheelchair used by 83.5% and 27% respectively, with power used more by those with tetraplegia (p<0.001). 3. 9.3% had neither manual nor power wheelchair. 4. majority of those who use their walking ability also use a manual wheelchair, power wheelchair or scooter for longer distances 5. 32% with manual wheelchair also had a power wheelchair or scooter. 6.
Cooper et al. 2002 USA Observational N=17	**Population:** Mean age: NR; Gender: males=11, females=7; Injury etiology: SCI=9, MS=1, spina bifida=1, polio=1, head injury=1, muscular dystrophy=1, lower motor neuron disease=1, CP=2; Level of injury: paraplegia=3, tetraplegia=6; Chronicity: chronic; Mean duration w/c use: 14.5 yr.	1. Wheelchair athletes travelled faster than regular users, but this trend was significant only on day 1. 2. Wheelchair athletes were more likely to travel farther (significant difference day 4 (p=0.03) and day 5 (p=0.05). 3. Total distance travelled over 5 days and average distance travelled per

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	Intervention: Wheelchair use monitoring using a data logger and standardized questions for both wheelchair athletes (n=10) and regular use individuals (n=7). **Outcomes Measures:** Speed, Distance travelled, Time wheelchair was being used in 24 hr.	day were significantly different (p=0.02) with the active group travelling further (17164±8708 m versus 8335±7074 m). 4. No significant difference between type of wheelchair and distance or speed over the 5 days.