**Improving Accessibility at the**

**American Club’s Fitness Center**

**in Taipei, Taiwan**

for

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**INTRODUCTION**

The new addition of the fitness facility in the American club (ACC) has been largely welcomed by members of the club. However, its inaccessibility to members with mobility disabilities may lead to lasting issues for this population in the maintenance of their physical and mental health and their inclusion into the club culture.

This may lead to long-term health issues for individuals with disabilities. Research shows that Taiwanese adults with disabilities scored the lowest on participation in physical and social activities, ten times less than the scores for those without disabilities (Yen et al. 603). Individuals with mobility impairments also tend to spend 9.5 hours a day sedentary. This behavior is largely correlated with poor facilities for exercise, leading to chronic health issues (Okuyama and Oka 69; Rimmer et al. 214).

This also leads to ethical issues for these individuals. The exclusive design of spaces (i.e. no wheelchair ramps) communicates microaggressions (intentional or unintentional verbal, behavioral, or environmental communications of prejudice) towards individuals with disabilities (Freeman and Stewart 411). This causes social exclusion and unequal treatment of these individuals, further compromising their mental and physical well-being.

Based on previous research, an observational study of the fitness space, interviews with individuals with disabilities and surveys with ACC members and fitness trainers, this report assesses 1) the specific causes of inaccessibility of ACC’s fitness center and 2) the feasibility of improving the accessibility of the ACC fitness center by removing physical and social barriers.

This research includes six major areas of focus: 1) the barriers to the lack of participation of individuals with disabilities in the gym, 2) what members with disabilities look for in the fitness facility, 3) the actions ACC can take to remove physical and social barriers, 4) whether these changes would negatively affect current users’ experiences of the gym, 5) the form of education the fitness staff requires to help individuals with disabilities, and 6) the costs of making the fitness center more accessible.

This report concludes by making recommendations for improving the accessibility of the fitness center physically and socially. These recommendations also consider the potential costs of the modifications.

**NEEDS ASSESSMENT OF INDIVIDUALS WITH DISABILITIES**

**Accessibility Needs and Space Design**

**I**ndividuals with mobility disabilities’ share the same universal needs as everyone else. However, their needs of autonomy, empathy, and community (participating and contributing to society) are often unmet due to environmental barriers (Max-Neef 197). This contributes to poor mental health and higher risks of secondary health conditions (Rimmer et al. 214). Consequently, these needs should be emphasized when designing spaces and services to avoid unintentional communications of microaggression, welcoming these individuals into the space.

The universal design principles are often used as guidelines in space design or redesign. More specifically, designing to include individuals with mobility impairments considers the principles of equitable use, flexibility in use, and size and space for approach and use (Mace “The”). Equitable use is the ability for all users, dependent of ability, to use the space or service in the same way. Flexibility in use describes having choices and accommodations for use by a wide variety of individuals. Size and space for approach and use states that there should be enough space and objects are easily reachable for users of all mobility and postures (Mace “The”). These three principles allow individuals with disabilities to have the ability to move around freely in spaces, have choices and accommodations, and experience these spaces with others, meeting their needs of autonomy, empathy, and community, respectively (Max-Neef 197).

Research has also shown that individuals with disabilities have specific needs, depending on their specific impairments (Rimmer et al. 214). For instance, the different safety and supervision requirements of individuals with mobility impairments requires user-centered space design, through inquiring all potential users of the space (Petersen and Piletic 38).

**ACC’s Viewpoint on Accessibility of the Fitness Space**

The importance of user-centered design involves gathering opinions from the local community. Accordingly, an objective analysis of the fitness space, surveys with members without disabilities and fitness trainers, and interviews with those with disabilities were conducted.

**Observational Study of ACC’s Fitness Facility.** The second-floor location of the fitness space poses an inconvenience for members with disabilities. As shown in *Figure 1*, the staircase is steep with no means of access for those with disabilities. The elevator leading to the gym is also closed to members. This communicates exclusive rights for individuals without wheelchairs to access the gym, which could unintentionally communicate microaggression. Further, the narrow push-pull door to enter the gym is inconvenient for individuals with wheelchairs as they either cannot easily enter the space due to the need to push or pull, or they cannot enter the space at all due to the narrow doors. Within the gym, the space between equipment is very narrow, leaving no path for wheelchair access to certain areas. This could prevent those with disabilities from performing exercises with others. Most machines are also unadaptable, which could limit the exercise options for individuals with disabilities.

[Insert Image of ACC’s Facility]

**Specific Needs of Members with Disabilities.** A few members with mobility impairments agreed to speak to their difficulties accessing and using the fitness space. A 40-year-old diplegic (with paralysis in both legs) member, with a pseudonym Ann, stated her difficulty entering the gym and maneuvering it:

I don’t go because it is too difficult for my wheelchair to go there. The only way is stairs… you have to go through the back staff area [to reach the elevators]… I cannot do much except use the light weights. But other equipment I cannot use because I need help getting out of my wheelchair and back on again.

Another individual, with the pseudonym Mary, who is a senior and lost muscle mass in her legs to walk, expressed her difficulty accessing washrooms:

The bathroom is a huge problem for me everywhere I go because I’m old. I need time to get in and out of the wheelchair. So, wherever I go, I need the bathroom nearby when I do exercises because it’s difficult for me to hold it for so long when I’m old.

Ann also mentioned social barriers concerning fitness trainers and group classes:

I never [do group classes]. They use full body and there are too many people and no space for my wheelchair. The movements are too intense for me and it’s not safe when there is no one paying full attention to me. I would need one-on-one classes, but I don’t think the trainers know how to help me work out… It doesn’t say in their descriptions. I need to go to a trained physical therapist to do exercises because I have other health issues too.

Mary indicated her experiences with exclusion either due to inaccessibility or ageism:

I think people usually don’t talk to me much because I’m their senior. It’s also hard to talk when there are so many people and it’s busy because I have my wheelchair too and people move too quickly. When you are exercising people are also very intense, when I can only do slow stretching. But then I have to get in and out of my wheelchair so people have to wait.

These two individuals demonstrated that both structural and social barriers are present within ACC’s fitness space. The lack of access to the gym and certain equipment, and the inconvenience of bathrooms are key physical barriers within the gym space. The inexperience of trainers with individuals with disabilities and (unintentional) exclusive behavior of other members are notable social barriers that must be addressed.

**Survey of Members without Disabilities and Fitness Trainers.** To capture the views of all stakeholders, members without disabilities who frequent the gym and fitness trainers were surveyed questioning inclusivity and physical barriers in the gym. Both instructors and members believed that there is a lack of individuals with disabilities in the gym. *Figure 3* demonstrates that none of the participants have seen individuals in the gym more than 5 times, indicating a lack of participation of individuals with disabilities in the fitness environment.

***Figure 3.*** *Responses to the frequency of seeing members with disabilities in the gym or group classes*

**Physical Barriers.** In terms of physical barriers, the highest ratings for adaptability of the fitness space and equipment is 3 out of 5, with the highest proportion of participants rating the space 1 out of 5 (see *Figure 4)*.

***Figure 4.*** *Participant ratings of the adaptability of the fitness space and equipment to individuals with disabilities*

Participants also provided reasoning behind their ratings, most of them explaining that “there is no way for them to get up to the gym” and that “all the machines are for running or biking, there are no machines for them to use”.

**Social Barriers.** The ratings for trainer and member inclusivity were also low among participants, suggesting a lack of awareness of accessibility issues members with disabilities experience in the gym. *Figure 5*demonstrates that on average, ratings of inclusivity fell around 2.5 out of 5, indicating that members and trainers were considered not very inclusive to this population.

***Figure 5.*** *Average trainer and member ratings of trainer and member inclusivity towards individuals with disabilities in the gym*

Some reasons for other members rating less than 5 are: “some people will judge when someone comes in to work out in a wheelchair” and “[the classes trainers hold] are too hard for them”. Fitness trainers indicated that functionality is important to be in spinning, boxing, and weightlifting classes and that they do not have the proper experience to help [people with disabilities] in large fitness classes.

**Interpretation of Findings and Research**

Based on observations, members’ with and without disabilities and fitness trainers’ opinions, ACC’s fitness facility presents notable structural and non-structural barriers.

**Structural Barriers.** ACC’s fitness facilities main structural barriers are:

* Inaccessible elevators to the gym
* Narrow and non-accessible doors to the gym
* Spacing of equipment
* Equipment that are not adaptable for individuals with mobility impairments
* Inconvenient bathrooms

Similar to the literature, these barriers prevent members with disabilities from entering and using the fitness space, leading to less participation in physical activity (Petersen and Piletic 38). This causes their needs of autonomy, empathy, and community to be unmet, instigating secondary health conditions and poor mental health for this population and, ultimately, reducing their quality of life (Rimmer et al. 214).

**Non-structural Barriers.** Key non-structural barriers present in the gym are:

* Lack of education of fitness trainers on training individuals with disabilities
* Inaccessible group fitness classes
* Exclusive attitudes of members with disabilities

These social barriers may unintentionally negate this group’s needs and feelings (Freeman and Stewart 411). Without equitable access to services, these members could be less willing to participate in community activities and less motivated to improve their health altogether (Dolbow and Figoni 515).

**Possible Interventions**

From the abovementioned barriers, this section proposes possible interventions utilizing the universal design principles.

**Structural Interventions.** Making the elevators accessible to members on the first floor would make it a lot more convenient for those with disabilities to access the gym. Opening the small staff area where the elevator is located can communicate that these individuals are welcomed in the gym. Further, the narrow doorway could be widened and made an automatic sliding door like the other doors in the club. This allows for equitable use rather than individuals with disabilities having to make more effort entering the club.

Moreover, some equipment that are old or that members don’t often use can be removed, creating wider pathways for people with wheelchairs. Additionally, introducing equipment that have swing-away seats or arm-bikes would allow for flexibility and provide this population with a choice of exercises.

Finally, removing the swing-open door on the way from the gym to the bathroom and attaching a bar to the wall will allow individuals with disabilities to easily access and use the washroom during a workout session.

**Non-structural Interventions.** Actively including members with disabilities in fitness classes through adapting classes or putting out ads could increase their participation in the classes. These classes could be adapted to be smaller and include different levels of the same exercises, so more focus can be paid to each member.

Further, requiring that trainers get a certificate for helping individuals with disabilities exercise or hiring a trainer with a disability can promote this fitness space as more inclusive. This can inspire a different attitude and understanding of disability in both trainers and other members (Richardson, Smith and Papthomas 84). It will also create a space that meets the needs of empathy and community of individuals with disabilities.

**COST-BENEFIT ANALYSIS OF PROPOSED INTERVENTIONS**

**Costs of Structural Interventions**

The costs of structural interventions are detailed in *Table 1* below.

|  |  |  |
| --- | --- | --- |
| Structural Intervention | Reasons for Cost | Approximate Cost |
| Opening the elevator space to members | Removal of gates that separate the elevator from the area open to members | 0 – 1000 NTD (for service) |
| Making the gym entrance and passage to bathrooms accessible | Adding a sliding door that is wider than the current door | 28,000 – 57,000 NTD |
|  | Alternative: Removal of push-pull doors for entrance and door to get to the bathrooms | 2800 – 5000 NTD |
| Removal of equipment | Service to relocate old equipment | 2000 – 5000 NTD |
| Addition of universally designed equipment | Exercise machines with removable seats (i.e. arm ergometers) | 100,000 – 200,000 NTD |
| Attachment of grab bar in bathrooms | Cost of bar and attachment | 500 – 700 NTD |

***Table 1.*** *Costs and Reasons for Costs of Structural Interventions*

All the structural interventions are feasible and within the 10,000,000 NTD budget for maintenance and renovation of the fitness facilities (Yin 2). These changes will invite more members to utilize the gym and foster an inclusive club community. Although adding a sliding door and purchasing accessible exercise machines are costly, their universal design benefits those with disabilities without compromising convenience for those without. These one-time costs will provide long-term benefits to members with disabilities and the overall ACC community.

**Costs of Non-structural Interventions**

*Table 2* details the reasons and approximate costs of non-structural recommendations.

|  |  |  |
| --- | --- | --- |
| Non-structural Intervention | Reasons for Cost | Approximate Cost |
| Adaptation of Fitness Classes | Fewer individuals per class and time for adapting fitness programs | 5000 NTD for every 5 fewer people in class |
| Certification of Fitness Instructors | Online course and certification for Adaptive Personal Training and Group Fitness with the American College of Sports Medicine (ACSM) | 40,000 NTD (8000 NTD per instructor) |
| Hiring a fitness instructor with disabilities | Salary of fitness instructor | 55,800 NTD per month |

***Table 2.*** *Costs and Reasons for Costs of Non-structural Interventions*

These non-structural interventions encourage more diverse individuals to join the fitness center and use its services. Although adapting the class for fewer individuals and making changes in the program lead to less profit per class, more (diverse) individuals will be willing to attend these classes, compensating for this loss. Further, having fitness instructors with more knowledge ensures safety of individuals and proper adaptation of exercise activities for those with disabilities. This one-time cost is low compared to gambling the well-being of individuals with disabilities when working with instructors. These long-term benefits outweigh the costs. Further, having more diverse staff would promote the club’s fitness center, encouraging more individuals to join the club and use these services. However, this intervention may run over the club’s budget for fitness staff due to the higher costs of fitness instructors with disabilities compared to those without.

**CONCLUSION**

**Summary and Interpretation of Findings**

Individuals with disabilities require extra attention to meet their needs of autonomy, empathy and community. Many fitness facilities often unintentionally neglect these needs and communicate microaggressions, leading these individuals to feel further excluded. This results in long-term health conditions and poor quality of life for this population. To mitigate this, the use of universal space design, namely the principles of equitable use, flexibility in use, and size and space for approach and use, are used in the design and redesign of facilities.

Among ACC members with and without disabilities and fitness trainers, there is an overall consensus that notable physical and social barriers are present throughout the gym. Members with disabilities also mentioned specific needs of extra supervision, educated trainers, and convenient bathrooms.

Key structural barriers include:

* Inaccessible entrance to the gym (lack of elevator access, inaccessible doorway)
* Inappropriate equipment and narrow spacing of equipment
* Inconvenient bathrooms

The major non-structural barriers cited are:

* Lack of education of fitness trainers on training individuals with disabilities
* Inaccessible group fitness classes
* Exclusive attitudes of members with disabilities

These barriers prevent individuals with disabilities from achieving physical and individual independence, gaining respect and understanding from others, and being included in the ACC community.

**Final Recommendations**

Considering the limitations and costs of possible interventions, the ACC community can take small steps towards achieving an inclusive club culture:

* Opening access to the elevators on the first floor by removing the gates
* Removing push-pull doors to the gym and on the path to the bathroom
* Removing old equipment from the gym for wider paths
* Attaching grab bars to the bathrooms near the gym
* Adapting fitness classes for individuals with disabilities
* Funding fitness instructors’ certification for adaptive fitness training

These inexpensive interventions can spark huge changes for the club in the future. With higher budgets, ACC can begin implementing the following recommendations that will make the space truly all-inclusive:

* Adding universally designed equipment to the gym
* Hiring fitness instructors with disabilities

Communicating inclusion through these small steps can change members’ attitudes towards individuals with disabilities and a more diverse club population. This allows those with disabilities to independently improve their physical and mental well-being, leading to a better quality of life. With increasing acceptance and awareness among ACC members and staff, further, more impactful, changes can be implemented to ensure an inclusive club culture.

**Works Cited**

American College of Sports Medicine. “ACSM/NCHPAD Certified Inclusive Fitness Trainer.” *American College of Sports Medicine.* [www.acsm.org/get-stay-certified/get-certified/specialization/cift](http://www.acsm.org/get-stay-certified/get-certified/specialization/cift)

Dolbow, David R., and Figoni, Stephen F. "Accommodation of Wheelchair-Reliant Individuals by Community Fitness Facilities." *Spinal Cord*, vol. 53, no. 7, 2015, pp. 515-519.

Freeman, Lauren, and Stewart, Heather. "Microaggressions in Clinical Medicine." *Kennedy Institute of Ethics Journal*, vol. 28, no. 4, 2018, pp. 411-449.

Okuyama, Fumio, and Oka, Kochiro. "Correlates of Physical Inactivity among Individuals with Physical Disabilities." *International Journal of Sport and Health Science*, vol. 7, 2009, pp. 69-78.

Max-Neef, Manfred. "Development and Human Needs." Edited by Des Gasper, and Asuncion L. S. Clair. *Routledge*, 2010. [www.alastairmcintosh.com/general/resources/2007-Manfred-Max-Neef-Fundamental-Human-Needs.pdf](http://www.alastairmcintosh.com/general/resources/2007-Manfred-Max-Neef-Fundamental-Human-Needs.pdf). Accessed November 24, 2020.

Petersen, Jeffrey C., and Piletic, Cindy K. "Facility Accessibility: Opening the Doors to all." *Journal of Physical Education, Recreation & Dance*, vol. 77, no. 5, 2006, pp. 38-44.

Richardson, Emma V., Smith, Brett and Papathomas, Anthony. "Crossing Boundaries: The Perceived Impact of Disabled Fitness Instructors in the Gym." *Psychology of Sport and Exercise,* vol. 29, 2017, pp. 84-92.

Rimmer, James H., et al. "Fitness Facilities Still Lack Accessibility for People with Disabilities." *Disability and Health Journal*, vol. 10, no. 2, 2017, pp. 214-221.

Mace, Ronald. “What is Universal Design.” *National Disability Authority.* [www.universaldesign.ie/What-is-Universal-Design/The-7-Principles/#p1](http://www.universaldesign.ie/What-is-Universal-Design/The-7-Principles/#p1). Accessed November 16, 2020.

Yen, Chia-Feng, et al. "Development of Activity and Participation Norms among General Adult Populations in Taiwan." *International Journal of Environmental Research and Public Health*, vol. 14, no. 6, 2017, pp. 603.