IJCSY, 2026, vol. 1, no.1 1-14.
e-ISSN: 3092-4553

Journey from Volunteering to Research: A Bilingual Classification Guide and Case-Based Pathways for Para Sport Participation

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Abstract

Background: Para sport can advance rehabilitation, health, confidence, and social participation, yet newcomers often face information gaps and difficulty navigating classification and first steps. This project developed Power in Motion, a bilingual (English/Korean) plain-language guide that explains classification, links to official rules, and organizes impairment-based entry pathways. We paired the guide with case-mapped recommendations to test practical use.

Methods: We used a practical qualitative workflow integrating (1) participant observation at classification events, training sites, and hospitals in Korea (2018–2025); (2) development of a bilingual guide featuring classification basics, an impairment–sport mapping table, concise sport pages with current rule links and minimum impairment criteria, and curated federation/hospital contacts; and (3) individualized pathway design for two adults. Field notes informed thematic analysis and guide structure. Case work was retrospective, de-identified, and exempt from full institutional review.

Results: Observations highlighted three barrier domains: information/language (uncertainty about eligibility and where to begin), structural/administrative (classifier shortages, event-only scheduling, centralization), and psychological (early discouragement and fear of a "wrong class"). The guide enabled rapid scanning of eligible sports and direct access to authoritative

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documents, while EN–KR terminology harmonization and version/date stamps improved clarity and trust. Case pathways aligned options with functional profiles and preferences: seated precision and upper-limb sports after thoracic spinal cord injury; unilateral-friendly options (boccia, throws, rowing) after hemiplegia. Each pathway was staged across short-, mid-, and long-term goals to support shared decision-making.

Conclusions: Combining a bilingual, beginner-ready guide with case-mapped pathways offers a practical bridge between complex rules and newcomer needs, and may lower entry barriers where classification infrastructure is uneven. Future work should formalize update cycles, expand the case series, and integrate hospital-to-federation referral pipelines.

Keywords: para sport; classification; eligible impairment; sport class; participation barriers; rehabilitation

Introduction

Background and Rationale

For people with disabilities, sport contributes to rehabilitation, health promotion, confidence, and social integration (Blauwet & Willick, 2012; Park et al., 2025) . However, participation remains low due to multiple barriers: lack of clear information, psychological burden, transportation and facility constraints, and the complexity of sport classification and insufficient accessible information (Ham et al., 2023; Jaarsma, 2014). In the Paralympic movement, athletes who meet a sport's eligible impairment criteria—covering physical, visual, or intellectual impairment—are grouped into sport classes based on their functional ability, with class rules defined by each sport(International Paralympic Committee, 2025). Classification is essential for fair competition because it minimizes the impact of impairment so that performance decides results(International Paralympic Committee, 2025; Tweedy& Vanlandewijck, 2011). However, classification rules vary across sports and are often difficult to understand(International Paralympic Committee, 2025; Tweedy& Vanlandewijck, 2011; Wileman et al., 2025) Newcomers struggle to identify sports that fit their impairment and to navigate participation

requirements(Jaarsma et al., 2014). Additionally, in Korea, stable classification is difficult to carry out in certain sports, creating gaps in standardized procedural guidance and in information gathering (Han et al., 2023). These gaps widen the divide over ‘which sport, and how to begin,’ causing potential participants to become discouraged at the earliest stage.

Since 2018, I have volunteered at para sport events, training sites, and hospitals, witnessing these challenges first-hand. Prospective athletes and families repeatedly asked where to get classified, which sports suit which impairments, and how to begin. To address this gap, I launched a bilingual blog Power in Motion in 2024 to introduce Paralympic sports, explain classification in plain language, and provide impairment-based guidance(Park & Park, 2024). The goal was to run Korean and English side by side to improve information accessibility—especially for readers less comfortable with English—and to close the distance between official classification rules and the practical information beginners actually need.

Aim of the Study

This study offers a student-led, practical response to barriers identified through volunteering. Specifically, (1) I used participant observation to describe classification-related bottlenecks; (2) I developed a bilingual online guide that organizes IPC and IF classification rules by sport; and (3) with a physiatrist mentor, I prepared two impairment-matched case pathways (retrospective case reports) illustrating tailored sport recommendations, which were submitted to a medical journal (Park et al., 2025). By linking service, a digital resource, and case mapping, this project proposes a model that helps athletes find sports aligned with their impairments and preferences and demonstrates how high school student-initiated project can scale into academic output and community impact.

Methods

Design Overview

This was a practical, qualitative study that integrated three linked activities—volunteering-based observation, development of a bilingual classification guide, and case-mapped participation pathways—into one workflow.

Stage 1: Volunteering and Participant Observation (2018–2025)

Context and sites: Activities took place in Korea across classification events and training settings between 2018 and 2025 (e.g., ParaVolley—Yongpyong Resort, PyeongChang; Sports Rehabilitation Center, Cheonan; Olympic Hall, Seoul; Korean Paralympic Committee National Training Center, Icheon).

Roles:

- **Classification events support:** assisted venue preparation; guided athletes/families; supported consent/insurance checks; observed medical/functional classification; organized documents and data flow.
- **Training/event support (non-classification):** facilitated hands-on parasport experiences; maintained equipment/ice; organized practice areas; supported matches and national-team training; provided basic athlete support during training blocks.

To minimize potential bias arising from the researcher's multiple roles as a volunteer, observer, and resource developer, clinical evaluations and impairment assessments were conducted independently by licensed rehabilitation physicians. The student researcher did not participate in medical decision-making or classification judgments. Interpretation of findings and case summaries were reviewed collaboratively by all authors to ensure clinical accuracy and objectivity.

Data capture: Structured field notes and brief post-event memos targeted three domains: (a) information gaps, (b) structural/administrative barriers, and (c) psychological barriers.

Analysis: Observations from field notes were compared with a national-level report on Korea's classification infrastructure and discussed with my research mentor to derive themes that informed subsequent stages (Han et al., 2023).

Stage 2: Development of a Bilingual Classification Guide (Power in Motion)

Aim: Reframe Paralympic classification rules into beginner-ready, plain-language, Korean–English materials that answer three starter questions: Which sports are open to my impairment? Where and how do I read the rule? Whom do I contact?

Sources and extraction: I reviewed official documents from the International Paralympic Committee (IPC) and International Federations (IFs), national reports, and relevant web resources (International Paralympic Committee, 2025). For 22 Summer and 6 Winter sports, I extracted (a) eligible impairment criteria, (b) minimum impairment criteria, and (c) sport-class structures, recording each rule's version/date and a persistent link to the primary PDF or landing page.

Core products:

- **Impairment–sport mapping table:** A cross-walk of ~10 umbrella impairment categories (e.g., impaired muscle power/spinal cord injury, brain injury/cerebral palsy, limb deficiency, visual or intellectual impairment, etc.) × Paralympic sports, so users can see "what is open to whom" at a glance (Table 1).
- **Plain-language sport pages (EN/KR):** Brief sport overviews that define key class concepts in simple terms, summarize the classification pathway, and provide IF rule links and contacts using standardized terminology.
- **Curated links & contacts:** Consistent, one-page pointers to IF/IPC rules and to national/international federation (NPC/NF) or hospital contacts for accessing classification. These components are summarized in a poster-style overview (Figure 1).

Content & access: The Power in Motion blog hosts (1) classification basics and sport overviews; (2) the impairment–sport table; (3) direct IF/IPC rule links; (4) federation/hospital contacts; and (5) Q&A posts. All content is bilingual and open access (Park & Park, 2024).

Compilation note: Links were verified at build time and scheduled for periodic checks. Early usage patterns and impact are reported in Results.

Stage 3: Case-Mapped Participation Pathways

Aim: To apply the bilingual guide (Stage 2) to two adult cases and convert impairment and personal preferences into individualized para sport participation pathways.

Participants & ethics: Two adult patients seeking sport guidance were included. The activity received IRB exemption from Soonchunhyang University Seoul Hospital (IRB No. 2025-05-004). All data were de-identified, and written consent was obtained.

Data collection: We performed a retrospective review of medical records (diagnosis, neurological/functional assessments, mobility, upper-limb function, activities of daily living) and conducted brief interviews to capture prior sport experience, preferences, goals, and access to local facilities.

Pathway design: Using the Stage 2 impairment–sport mapping table (Table 1) and IF rules, we generated candidate sports for each case and filtered them by three weighted criteria: safety, accessibility, and preference. Recommendations were staged as short-term (start now), mid-term (after training/adaptation), and long-term (advanced/competitive or leadership goals). Final pathways were summarized in simple diagrams to support shared decision-making.

Results

Theme 1: Barriers Identified in Volunteering

Information/language barriers: Newcomers often did not know which sports accept which impairments, where to get classified, or how to begin; English-heavy, technical documents amplified confusion (Han et al., 2023; Jaarsma et al., 2014).

Structural/administrative barriers: Classification was concentrated in major cities or scheduled immediately before major events; shortages of classifiers/administrative staff led to last-minute changes and paperwork issues; event-only classification discouraged rural youth and first-timers (Han et al., 2023).

Psychological barriers: Negative first encounters, fear of failing to obtain the desired class, and guilt about “taking a spot” inhibited engagement, even when logistics were addressed; early positive experiences and peer mentoring appeared critical.

Bridge to next stages: These volunteer-derived themes directly motivated Stage 2 (development of the bilingual classification guide) and Stage 3 (case-mapped participation pathways), shaping both the content we produced and the decision rules used in pathway design.

Theme 2: Guide Output and Early Use

Guide features: By combining the impairment–sport table **(Table 1)** with short plain-language sport pages, users can quickly scan options and then click through to official IF/IPC PDFs for details. Version/date stamps and EN–KR term harmonization improved clarity and trust for first-time readers(Park & Park , 2024).

Use cases:

- **Clinical counseling:** In rehab hospitals, the table was opened during visits to show "eligible sports" for a given impairment, followed by the blog link for self-study of rules/steps before a deeper counseling session.
- **Volunteer/peer training:** Educators used the guide's classification overview and sport posts to teach the purpose/core concepts of classification and sport-specific features in a structured way.
- **Families & beginners:** Readers reported that they could understand sports and rules independently, contact listed national federations, and secure concrete next steps for "where to ask / what to prepare."

Early feedback: Informal comments suggested that English-heavy technical documents no longer created the same level of uncertainty or hesitation at the start; many felt it was "worth trying."

Bridge to Stage 3: These outputs and early use patterns directly supported Stage 3 by operationalizing the table and rule links into individualized participation pathways for two adults, with safety, accessibility, and preference used as explicit weighting factors during design.

Theme 3: Case-Mapped Participation Pathways

Case 1. Male, 31; lower thoracic SCI (paraplegia) due to transverse myelitis with mild spasticity; former fitness trainer; prefers accuracy-based individual sports; low interest in team/ball sports(Park et al., 2025). Upper-limb and trunk function were near normal; impairments aligned with IPC categories for muscle power and coordination/control. **Core recommendations:** para archery, para shooting, wheelchair fencing. Archery/shooting leverage hand–eye precision and seated posture and are commonly used, beneficial pathways after SCI, while wheelchair fencing systematically engages upper-limb strength and trunk stability(ActiveSG Circle, 2024; Quantum Rehab, 2025).

Staging:

• **Short-term:** connect with a local para-archery team; begin basic training and initiate classification.

• **Mid-term:** intensify training; target domestic events (e.g., national para games).

• **Long-term:** continue as an athlete toward elite goals or expand into coaching/classification roles for sustained involvement.

Case 2. Male, 45; right hemiplegia after left intracerebral hemorrhage; former high-school ice hockey player; recently tried para table tennis but struggled with agility demands; wants a sport change and potential career linkage; right-side limitation with relative preservation on the left **(**Park et al., 2025). Eligible impairments aligned with IPC categories for muscle power and coordination/control. We prioritized sports allowing unilateral emphasis: boccia, para-athletics throws (e.g., shot put), and para rowing. Boccia is precision/strategy-oriented, feasible even with severe mobility limits, and offers upper-limb benefits(Suarez-Iglesias et al., 2020) throwing events allow strong-side performance and are well documented for hemiplegia(Children's Hemiplegia and Stroke Association, 2025) rowing (including indoor ergometer) can improve endurance and lateral symmetry with adaptation(Camuncoli, 2023).

Staging:

• **Short-term:** join a boccia club and complete initial classification; trial left-arm throws; add adapted rowing (PR categories) for conditioning and bilateral coordination.

• **Mid-term:** based on short-term experience, select the best-fit sport and intensify training; aim for domestic competition and official athlete registration.

• **Long-term:** continue an athletic track or expand into coaching/administrative leadership while maintaining regular sport for health.

Commonalities and contrasts: Motivation rose in both cases when pathways started from "what I can do now." Tailoring diverged by impairment, function, preferences, and environment: Case 1 emphasized seated, precision individual sports; Case 2 emphasized unilateral throwing, target sports, and conditioning through rowing.

Role Shift: “Volunteer” → “Blog Developer” → “Student Researcher”
The project charted a student’s growth from event volunteer to bilingual information translator to co-researcher creating case pathways. Mentorship ensured ethical and clinical rigor. The sequence shows how youth-led, service-rooted inquiry can produce practical tools and academic writing.

Discussion

Theme 1: Barriers — Practice and policy implications

Through direct experience and a national report review, this study identified key issues in Korea’s para sport classification system. The most notable challenges included a shortage of trained classifiers, large infrastructure gaps across sports, centralization in Seoul, and a lack of accessible information(Han et al., 2023). Many sports lacked access to qualified physician classifiers, making classification functionally unavailable(Han et al., 2023). Others held classification at short notice or far from competition dates, mostly in the capital region, which discouraged participation by athletes living outside major cities. Additionally, many federations did not offer updated classification materials in Korean. These findings matched what families and prospective athletes frequently asked on-site: “Which sports are open to me?” and “How can I get classified?”

Theme 2: Utility and limitations of the bilingual guide

To address these gaps, I created the Power in Motion blog—an open-access, bilingual resource that uses plain language to explain classification and maps impairments to eligible sports (Figure 1). It provides structured access to sport-specific summaries, links to official rules, and federation contacts. However, the guide is not an official publication by the Korean Paralympic Committee (KPC), and it was not reviewed by certified classifiers for every sport. Therefore, while useful, it should not be treated as a final authority. It must also be updated regularly as IF and IPC rules evolve. I promoted the resource to relevant hospitals and organizations, and while usage remains modest, it has already been used in clinical settings and peer trainings, and

received positive early feedback for helping reduce entry-level confusion. In the future, if a formal government or federation-backed platform (like those in the U.S. or Australia) is launched(International Paralympic Committee, 2025), this student-led tool could serve as an interim support model during the transition.

Theme 3: Case-based pathways and clinical integration

Applying the guide to two real-life adult cases showed how individualized sport pathways can be created based on impairment type, function, and personal preference(Park et al., 2025). Both cases received short-, mid-, and long-term recommendations, presented in a format that supported goal-setting and decision-making. Of course, with only two cases, generalizability is limited. The student author also could not conduct impairment evaluations directly, which required clinician involvement. Still, the process demonstrated how student observations can grow into actionable tools and scholarly work with mentorship.

Limitations: Given the small number of cases and the study's grounding in the South Korean para sport system, the findings should be interpreted with caution. In addition, the Power in Motion guide is a student-led, non-official resource that requires ongoing updates as IPC/IF rules evolve and has not undergone comprehensive, sport-by-sport review by certified international classifiers. While the pathways illustrate a feasible model for impairment-based sport guidance, broader applicability across different healthcare systems and national contexts requires further investigation.

In conclusion, this study began with volunteer service, developed a digital guide, and applied it to two clinical cases, illustrating how youth-led initiatives can connect practical insight with academic and community contributions. With further policy or institutional support, such efforts may reduce confusion for newcomers and encourage wider participation.

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Appendix A Table 1. Eligible Impairments by Paralympic Sport. Legend*:* Adapted from Park JW, Park S. et al. Impairment-Based Para Sports Guidance, Soonchunhyang Medical Science

Paralympic Even	Impaired muscle power	Impaired passive ROM[a]	Limb deficiency	Leg length difference	Short stature	Hypertonia	Ataxia	Athetosis	Vision Impairment	Intellectual Impairment
Summer Games										
Para archery	√	√	√			√	√		√*	
para athletics	√	√	√	√	√	√	√	√	√	√
Para badminton	√	√	√	√	√	√	√	√		
Boccia	√	√	√			√	√	√		
Para Canoe	√	√	√							
Para Cycling	√	√	√	√		√	√	√	√	
Para Equestrian	√	√	√	√	√	√	√	√	√	
Blind football									√	
Goalball									√	
Para Judo									√	
Para Powerlifting	√	√	√	√	√	√	√	√		
Para Rowing	√	√	√			√	√	√	√	
Shooting Para Sport	√	√	√			√	√	√	√*	
Sitting Volleyball	√	√	√	√		√	√	√		
Para Swimming	√	√	√	√	√	√	√	√	√	√
Para Table Tennis	√	√	√	√	√	√	√	√		√
Para Taekwondo	√	√	√	√*	√*	√*	√*	√*	√*	√*
Para Triathlon	√	√	√			√	√	√	√	
Wheelchair Basketball	√	√	√	√		√	√	√		
Wheelchair Fencing	√	√	√			√	√	√		
Wheelchair Rugby	√	√	√			√	√	√		
Wheelchair Tennis	√	√	√	√		√	√	√		
Winter Games										
Para alpine skiing	√	√	√	√		√	√	√	√	
Para biathlon	√	√	√	√		√	√	√	√	
Para cross-country skiing	√	√	√	√		√	√	√	√	
Para ice hockey	√	√	√	√		√	√	√		
Para snowboard	√	√	√	√		√	√	√		
Wheelchair curling	√	√	√			√	√	√		

(√): checkmark indicates eligibility; (*): not at the Paralympic Games; (a) ROM: range of motion

Appendix B Figure 1. Poster overview of Power in Motion, a bilingual (EN/KR) guide to Paralympic classification, showing site structure and key resources. Source: Power in Motion blog, Park Suo & Park Suan