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The barrier-free situation in ski areas in Hiroshima

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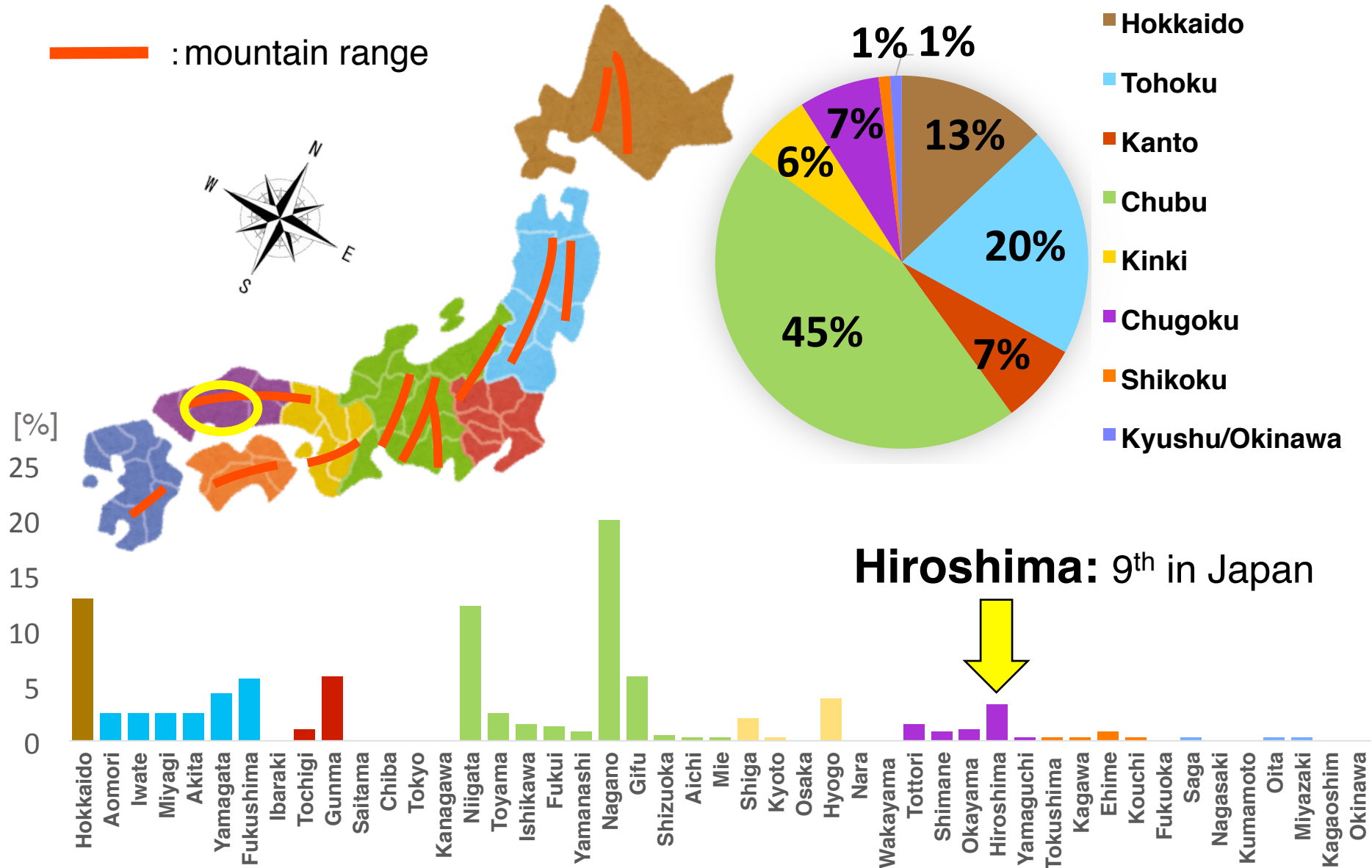
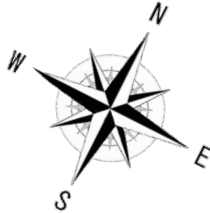
**Graduate School of Biomedical & Health Sciences,
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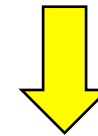


Introduction Ski areas in Japan

— : mountain range



Hiroshima: 9th in Japan



n=395

Distribution of the domestic skiing area (Ministry of Land, Infrastructure and Transport, 2015)

Winter sports for the disabled

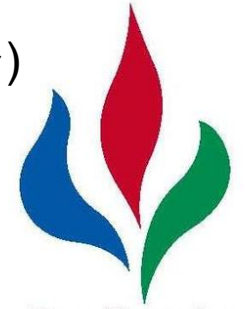
Winter Paralympic Games



- Alpine Skiing 1976~
- Cross-Country Skiing 1976~ (free: 1992~)
- Biathlon 1994~
- Ice Sledge Hockey 1994~
- Wheelchair Curling 2006~
- Snowboard 2014~

Winter sports for the disabled

Japan Para Championships (1994~)



Japan Para Championships

- Alpine Skiing



<http://www.shimizu12.com/ps/2014/20140129.html>

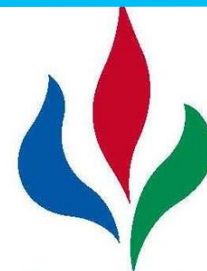
- Cross-Country Skiing



http://paratimes.jp/news/cat15/2014_2.html

<http://www.paraphoto.org/?cat=6&paged=12> <http://www.challengers.tv/photo/jpcc2013/2230.html>

Sport Classes



Japan Para Championships

- Alpine Skiing

 - Standing

 - Sitting

 - Visual impairment

 - Intellectual disability . . . not in IPC Alpine Skiing

- Cross-Country Skiing

 - Standing

 - Sitting

 - Visual impairment

 - Intellectual disability

 - Hearing impairment . . . not in IPC Cross-country skiing

Spread of skiing for the disabled in Japan

Ski Association of Japan for the Disabled (SAJD)

- Ski Association of Japan for the Handicapped (HSAJ)
 - **Japan Chair Ski Association (JCSA)**
 - Japan Cross-Country Ski Association for the Disabled (JCCSAD)
 - Ski Association of Japan for the Intellectually Disabled (SAJ-FID)
-
- Japan Ski Association for the deaf
 - Snow Board Association for the Disabled

Authorized club

- **Fukushima** prefectural ski association for the disabled
- **Tohoku** regional chair ski club
- **Hokuriku** chair ski club
- **Kanto** regional chair ski association
- **Hyogo** prefectural chair ski association



Ski ja~yoi

The benefits of skiing for the disabled

- Skiing amidst a magnificent snowy landscape

 - Psychological

 - ▪ ▪ Recovery of **liberation** from feeling repressed, **confidence** and **enthusiasm**

- Sport that takes advantage of gravity

 - Provides a **dynamic movement** and a **sense of speed** (physical)

 - ▪ ▪ Most sports requires power/force against gravity (e.g. running, jumping and throwing)

Skiers with disabilities in Hiroshima

Some ski areas refused us in the past

Support is necessary for us in ski areas





Objective

Investigate the situation regarding accommodation of skiers with disabilities and obstacles to their participation at ski areas in Hiroshima



Hypothesis

The barrier-free situation is probable to be poor in Hiroshima due to little information



Materials and methods

● Subjects of investigation

14 ski areas in Hiroshima

● Methods

Questionnaire survey and on-site field survey

Questionnaire survey

● **Methods**

Send questionnaires to ski areas after asking for study cooperation by telephone in advance

● **Question items**

Resorts' acceptance of skiers with disabilities

Facilities' barrier-free situation

Acceptance of skiers with disabilities

Permitted

(Not necessary to inform the ski resort in advance)

Negotiable

(Necessary to inform the ski resort in advance and will be judged by the skier's disability level and the presence of a companion etc.)

No permission

※Multiple answers allowed

※Enter the total number of users in the past

② 障がい者スキーヤーの受け入れ状況・姿勢

※()内は、今まで受け入れた人数をご存知の施設でご記入ください。

-車いす利用者 ()

許可 (事前連絡なしでも可)

要相談 (事前連絡ありで、障害・能力の程度、同伴者の有無によって判断)

許可していない

wheelchair users

-義足・義手利用者 ()

許可 (事前連絡なしでも可)

要相談 (事前連絡ありで、障害・能力の程度、同伴者の有無によって判断)

許可していない

prosthesis users

-探触球利用者 ()

許可 (事前連絡なしでも可)

要相談 (事前連絡ありで、障害・能力の程度、同伴者の有無によって判断)

許可していない

people with
visual impairment

-聴覚球利用者 ()

許可 (事前連絡なしでも可)

要相談 (事前連絡ありで、障害・能力の程度、同伴者の有無によって判断)

許可していない

people with
hearing impairment

-知的障害利用者 ()

許可 (事前連絡なしでも可)

要相談 (事前連絡ありで、障害・能力の程度、同伴者の有無によって判断)

許可していない

people with
intellectual disabilities

Facilities' barrier-free situation

- Parking area for people with disabilities
- There is always a special parking area
- Uncertain

- Accessible independently
- Assistance available from resort staff
- Accessible with one companion
- Accessible with two companions
- Difficult to access
- Uncertain

- Multi-purpose toilet
- Enough space to be entered by wheelchair
- Narrow to be entered by wheelchair
- Difficult to use
- Uncertain

※Multiple answers allowed

③ 施設のバリアフリー状況

駐車場

- 障がい者専用の駐車スペースがある（ゲレンデまでの距離：約 m）..
- いつでも特別な駐車許可エリアがある（ゲレンデまでの距離：約 m）..
- 平日は特別な駐車許可エリアがある（ゲレンデまでの距離：約 m）..
- わからない..

Parking area

ゲレンデアクセス

- ゲレンデまで一人で車いす自走できる..
- アシストサポート体制良好（段差少々or スタッフ協力的、スノーモービル等あり）..
- スタッフのサポートなしだが、同伴者一人可..
- 同伴者二人以上必要..
- 利用不可能（リフトなしor ロープトウのみ）..
- わからない..

Ski slopes

レストハウスアクセス

- レストハウスまで一人で車いす自走できる（スロープ等あり）..
- アシストサポート体制良好（段差少々or スタッフ協力的）..
- スタッフのサポートなしだが、同伴者一人可..
- 同伴者二人以上必要..
- エレベーターがある..
- 利用不可能（レストハウスが2階等）..
- わからない..

Rest houses

トイレ

- 車いす用またはユニバーサルトイレあり..
- 車いすからトイレに移乗しやすい、トイレに車いすが入るスペースあり..
- 車いすからトイレに移乗しにくい、トイレに車いすが入りにくい..
- 利用不可能（和式トイレ、入口に2段以上の段差あり）..
- わからない..

Restrooms

On-site field survey

● Methods

Questionnaire

Ask whether the investigation could be carried out or not

Agreement obtained

Visit ski area

● Question items

- Facilities' barrier-free situation
- Interview for support related to barrier-free

Facilities' barrier-free situation

● Question items

Items in the questionnaire survey



Rest houses

Braille blocks
Voice guidance device
Handrails

Restrooms

Handrails
Opening and closing method of doors
Open width of doorways

Interview for support related to barrier-free

● Question Items

- Manual which describes how to support skiers with disabilities
- Disclosure of information about the resort's barrier-free situation
- Staff can talk using sign language
- Disability discount
- Assistance dogs are allowed
- Episodes of supporting people with disabilities

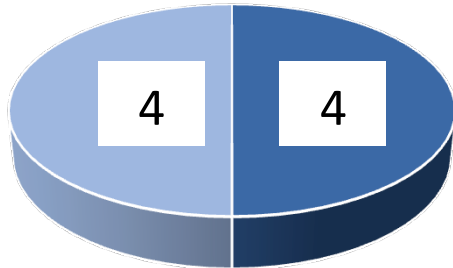


Results

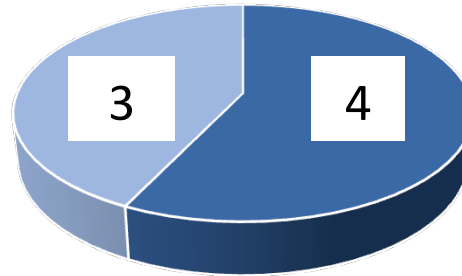
- Questionnaires were sent to all 14 ski areas
- Response rate was 50% (7 of 14)
- All ski areas that returned the questionnaire agreed to the on-site field survey

Acceptance of skiers with disabilities

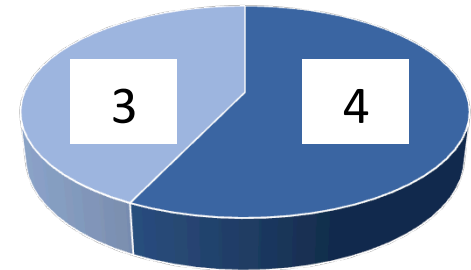
Wheelchair users



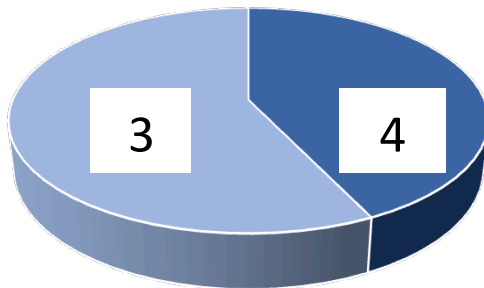
Prosthesis users



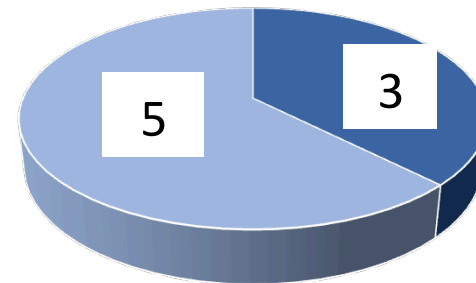
People with hearing impairment



People with visual impairment



People with intellectual disabilities



■ Permitted
■ Negotiable

- None of the respondents selected “no permission”

Facilities' barrier-free situation

● Parking area

| | Parking area for people with disabilities | Special parking area | No parking area specially kept for people with disabilities |
|----------------------|---|----------------------|---|
| Questionnaire survey | 2 | 2 | 1 |
| On-site field survey | 2 | 4 | 1 |



Facilities' barrier-free situation

● Access to ski slopes

| | Accessible independently | Assistance available from resort staff | Accessible with one companion | Accessible with two companions | Difficult to access |
|----------------------|--------------------------|--|-------------------------------|--------------------------------|---------------------|
| Questionnaire survey | 0 | 3 | 1 | 1 | 1 |
| On-site field survey | 0 | 5 | 1 | 0 | 1 |



Rope tow

Facilities' barrier-free situation

● Access to rest houses

| | Accessible independently | Assistance available from resort staff | Accessible with one companion | Accessible with two companions | Difficult to access |
|----------------------|--------------------------|--|-------------------------------|--------------------------------|---------------------|
| Questionnaire survey | 1 | 3 | 1 | 0 | 1 |
| On-site field survey | 2 | 6 | 0 | 1 | 0 |



● Equipment

Braille blocks: 1

Voice guidance devices: 0

Handrails: 4

Facilities' barrier-free situation

● Restrooms

| | Multi-purpose toilet | Enough space to be entered by wheelchair | Narrow to entered by wheelchair | Difficult to use |
|----------------------|----------------------|--|---------------------------------|------------------|
| Questionnaire survey | 3 | 0 | 1 | 2 |
| On-site field survey | 3 | 0 | 2 | 2 |



Facilities' barrier-free situation

- Equipment
Handrails: 3



- Opening and closing method of doors

| | | |
|--------------|-----------------|----------------|
| Sliding door | Outward opening | Inward opening |
| 3 | 4 | 6 |



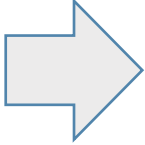
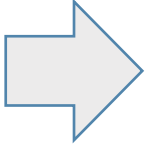
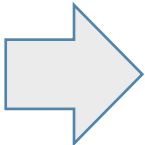
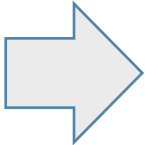
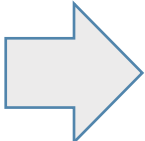
Multi-purpose toilet

- Open width of doorways

| | |
|---------------------------|-----------------|
| More than 80 cm (31.5 in) | Less than 80 cm |
| 3 | 7 |



Interview for support related to barrier-free

| | | |
|---|---|---|
| Manual which describes how to support skiers with disabilities |  | 0 |
| Disclosure of information about the resort's barrier-free situation |  | 0 |
| Staff can talk using sign language |  | 1 |
| Disability discount |  | 1 |
| Assistance dogs are allowed |  | 7 |

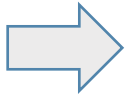
Episode of supporting people with disabilities

| user group | Total | Episodes |
|---------------------------------------|-------|--|
| Wheelchair users | 110 | <ul style="list-style-type: none">• Sent skiers to ski slopes by snowmobiles• Supported them getting on lifts• Supported them overcoming steps, going up hills |
| Prosthesis users | 40 | None |
| People with visual impairment | 25 | <ul style="list-style-type: none">• Resort staff notice that the person had disabilities, however, continued the ski lesson |
| People with hearing impairment | 40 | <ul style="list-style-type: none">• Resort staff notice that the person had disabilities, however, continued the ski lesson• Communicated by writing. |
| People with intellectual disabilities | 200 | <ul style="list-style-type: none">• Moving a person to a safe place who suffered an epileptic seizure |



Discussion Acceptance of skiers with disabilities

- None of the respondents selected “no permission”

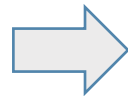


Ski areas in Hiroshima are willing to accept skiers with disabilities

- Prosthesis users and people with hearing impairment were more accepted even without prior notice

Wheelchair users

People with
visual impairment
intellectual disabilities

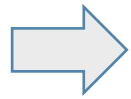


Would need more assistance moving around, collecting or understanding information

Facilities' barrier-free situation

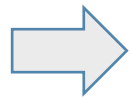
● Items in low installation

Braille blocks and voice guidance devices



It costs for maintenance though there are few users

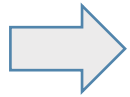
Multi-purpose toilet



- Other single toilet rooms were difficult to be entered by wheelchair
- **Assistance may be difficult to be provided by resort staff in restrooms**

Support related to barrier-free

- None of the ski areas had a manual which describes how to support skiers with disabilities



- There are still few skiers with disabilities
- **Prevention of accidents** from the lack of knowledge to assist people is necessary

For example

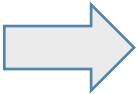
- Preparing supporting manuals for getting on and off lifts
- Holding classes of supporting chair-ski



Episode of supporting people with disabilities

In ski areas, transportation of baggage, walking on snow and getting on and off lifts were main problems (Ohkubo, 1989)

Assistance could be provided from resort staff on ski slopes and rest houses

- 
- Being fully equipped imposes an **economic burden** on ski areas and there are many scenes to depend on human support
 - Installing equipment such as slopes may reduce burdens on both ski areas and users



Help





Limitations and future work

- Question items may be insufficient to address the needs of skiers with disabilities
- Considering the impact of snow on access is also necessary
- Careful investigation is required to avoid accidents when sharing the same area with skiers with healthy bodies



Conclusion

The barrier-free situation in ski areas in Hiroshima

- Assistance could be provided by resort staff
- Accessing independently is difficult in the present circumstances
- It is necessary that facilities' barrier-free situation will be improved and human support is strengthened in order that people with disabilities can enjoy and participate in winter sports