In Jordan, situated to the south of Syria, some 671,919 Syrians are registered as refugees with the UNHCR. Twenty-eight percent of the refugees have some kind of disorder. However, there are no studies regarding the Recognition and Intervention of Rehabilitation Professionals Handling the Health Conditions of Syrian Refugees with Disabilities (Person with Disabilities: PWDs) in Jordan. Therefore, the purpose of this study was to understand the challenges experienced by rehabilitation professionals who were providing rehabilitation services to Syrian refugees with disabilities through semi-structured interviews. The subjects of the study were Fifteen participants. Constant comparative analyses method was performed to assess them. As a result, the recognition and intervention of rehabilitation professionals who work with PWDs in Jordan were categorized under four main themes: [Deterioration of PWDs’ health conditions], [Lack of rehabilitation programs], [Difficulties in continuously providing rehabilitation to PWDs in urban areas], and [Forthcoming challenges facing rehabilitation programs by community-based organizations]. The study identified that rehabilitation professionals provided outpatient rehabilitation, home-visit rehabilitation and provision orthosis to PWDs. They also recognized the difficulties PWDs faced in accessing health care due to poverty, the spread of disuse syndrome, and the lack of caregivers in PWDs’ families. However, the prevention of disuse syndrome, the provision of nursing care methods, and the intervention of Activities of Daily Living (ADL) were not mentioned as future challenges. Therefore, it is essential that rehabilitation professionals conduct prevention of disuse syndrome, provide intervention for ADL.

Keywords: Syrian refugees with disabilities, intervention of rehabilitation professionals, disuse syndrome
program for Syrian refugee with disabilities living urban area of Jordan since 2015. The project has been implemented in cooperation and partnership with CBOs approved by the Ministry of Social Development in Jordan.

The Jordanian government has accepted many refugees due to the Syrian conflict, however, recommends that international agencies and CBOs support not only Syrian refugees and but also Jordanians for assistance program [8]. Furthermore, there are many reports of problems with employment opportunities and poverty of Syrian refugee in urban area [9, 10]. Meanwhile, due to the prolonged Syrian conflict, there was a shortage of funds for each CBOs handling the health conditions of Syrian refugees with disabilities in Amman. As of 2017, some CBOs have withdrawn their support activities to Syrian refugees with disabilities in urban area. Therefore, there is a tendency to reduce support for Syrian refugee with disabilities in urban area from CBOs in cooperation with ODA. Under these circumstances, it is presumed that Syrian refugees with disabilities in urban area face difficulties on their life.

The authors indicate that Syrian refugees with disabilities exhibited disuse syndrome related to their health conditions, and faced restrictions in terms of social participation through insufficient health literacy, lack of health care services, their vulnerable positions as refugees, and limitations on activities due to their physical disabilities. Therefore, it is essential that rehabilitation professionals support social participation by Syrian refugees with disabilities [11].

However, there is a lack of reports demonstrating support programs for Syrian refugees with disabilities in Jordan. Therefore, we conducted the present study to examine the current state of intervention for Syrian refugees with disabilities in Jordan and the recognition of rehabilitation professionals handling the health of Syrian refugees with disabilities through semi-structured interviews. The purpose of the present study was to clarify the challenges of intervention by rehabilitation professionals, including occupational therapists, on behalf of Syrian refugees with disabilities.

**Subjects and Methods**

1. **Study design**

   Constant comparative analyses method was used in this study. The method allowed us to obtain comprehensive and diverse data in a short period of time, and allowed us to investigate recognition and intervention of rehabilitation professionals handling the health conditions of Syrian refugee with disabilities in Jordan. Furthermore, there are few CBOs who support Syrian refugees with disabilities in urban area, and rehabilitation professionals who belong to the CBOs. However, very little empirical data are available from previous research related to this study.

   Therefore, a qualitative research design was used to clarify challenges through recognition of them in this study.

2. **Setting**

   Amman city is located in the Hashemite Kingdom of Jordan as capital. 196,068 Syrian refugees lived in the city [2]. As of 2017, three CBOs (A, B, C) were providing rehabilitation assistance to Syrian refugees with disabilities in the city. Approximately forty rehabilitation professionals belonged to those CBOs.

3. **Participants**

   The subjects of the study were rehabilitation professionals who had engaged in rehabilitation programs. We requested each CBOs to recruit participant for our research. and then, fifteen participants were chosen randomly for this study from a list of rehabilitation professionals in CBOs. During the recruitment, we excluded rehabilitation professional who do not have a Jordanian work permit or who support rebel. We explained that the study would comprise recorded interviews, followed by analysis of the interview data. We received letters of consent and acceptance from the 15 participants, and conducted study interviews with them.

4. **Questionnaire and Interview**

   This study involved the use of a questionnaire and a recorded semi-structured interview in Arabic. The interview was conducted with each participant individually between April 2016 and August 2017. The questionnaire inquired about the participant’s name, sex, age, official position, duration of support for Syrian refugees with disabilities in his/her organization, and length of work experience. The semi-structured interview was conducted with an interview guide.

   The interview covered the current situation of Syrian refugees with disabilities (“How are the health conditions of Syrian refugees with disabilities, and in what situations do they face difficulty?”); the details of the participant’s support for Syrian refugees with disabilities in urban areas (“What kind of support do you provide for Syrian refugees with disabilities?”); Difficult points of the current support program (“Do you face any difficulties in your program?”); and the recognition of necessary activities for assistance for Syrian refugees with disabilities in the future (“What kind of activities are needed for Syrian refugees with disabilities in urban areas?”). The interviews were recorded by IC recorder.
5. Data Analyses

The proceedings of the semi-structured interview were transcribed verbatim, and constant comparative analyses were used to analyze the data. The analyses were conducted by three researchers familiar with the international health field. The researchers listened to the interview data and transcribed the contents. To avoid language bias, we conducted back-translation. The verbatim transcriptions were then coded to identify elements of each participant’s comments. The codes were sorted into sub-categories and categories based on the similarities and differences in the responses, and the relevance of each category was analyzed. During the analyses of the qualitative data, specialists (SY, TA and HM) with immense experience in the field of international health including refugee with disabilities issue were discussed to ensure the reliability and validity of this study.

6. Ethical Considerations

The study carried out the research with the approval (Number 757) of the Kobe University Ethical Committee.

Results

1. Characteristics of Participants

There were 15 participants: nine male and six female. The total interview time was 344 minutes. The median interview time per participant was 22.9 minutes. The mean age of the participants was 29.7 ± 3.2 years. Fourteen participants were physical therapists, and one was an occupational therapist. Their duration of clinical experience was 5 ± 4.6 years, and their length of support experience for Syrian refugees with disabilities in community-based organizations was 2.5 ± 0.7 years (Table 2).

| No | Professional | Gender | Age | Clinical experience (years) | Support experience (years) | Interview time (min) | Affiliation of CBOs | Contents of Intervention |
|----|--------------|--------|-----|-----------------------------|---------------------------|---------------------|---------------------|------------------------|
| 1  | PT           | male   | forties | 22                           | 4                         | 22                  | A                   | Outpatient Rehabilitation |
| 2  | PT           | male   | thirties | 8                            | 3.4                       | 19                  | A                   | Outpatient Rehabilitation |
| 3  | PT           | female | thirties | 7                            | 3.1                       | 30                  | A                   | Outpatient Rehabilitation |
| 4  | PT           | male   | thirties | 7                            | 2.9                       | 23                  | A                   | Home-Visit Rehabilitation |
| 5  | PT           | male   | thirties | 8                            | 2.5                       | 26                  | A                   | Home-Visit Rehabilitation |
| 6  | PT           | female | thirties | 6                            | 3.1                       | 27                  | B                   | Outpatient Rehabilitation |
| 7  | PT           | male   | twenties | 4                            | 1.1                       | 21                  | B                   | Outpatient Rehabilitation |
| 8  | PT           | male   | twenties | 5                            | 3.4                       | 22                  | B                   | Outpatient Rehabilitation |
| 9  | PT           | male   | twenties | 4                            | 2.1                       | 24                  | B                   | Home-Visit Rehabilitation |
| 10 | PT           | male   | twenties | 4                            | 1.9                       | 19                  | C                   | Outpatient Rehabilitation |
| 11 | PT           | male   | twenties | 6                            | 2.2                       | 22                  | C                   | Outpatient Rehabilitation |
| 12 | PT           | female | twenties | 4                            | 3.5                       | 27                  | C                   | Outpatient Rehabilitation |
| 13 | PT           | female | twenties | 4                            | 2                         | 23                  | C                   | Home-Visit Rehabilitation |
| 14 | PT           | female | twenties | 3                            | 2.3                       | 20                  | C                   | Home-Visit Rehabilitation |
| 15 | OT           | female | twenties | 3                            | 2.1                       | 19                  | C                   | Outpatient Rehabilitation |

PT: Physical Therapist    OT: Occupational Therapist

(Table 1).

| Topics                                                                 | Question                                                                                     |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1. Current situation of Syrian refugees with disabilities             | “How are the health conditions of Syrian refugees in what situations do they face difficulty?” |
| 2. Details of support for Syrian refugees with disabilities           | “What kind of support do you provide for Syrian refugees with disabilities?”                   |
| 3. Difficult points of the current program                             | “Do you face any difficulties in your program?”                                               |
| 4. Recognition of necessary activities for assistance for             | “What kind of activities are needed for Syrian refugees with disabilities in urban areas?”    |
| Syrian refugees with disabilities                                      |                                               |

Table 1  Interview guide to rehabilitation professionals of community based organizations.

Table 2  Profile characteristics of participants (April 2016 and August 2017).
2. Current situation of Syrian refugees with disabilities and assistance programs for them

A total of 627 codes relating to the current situation of Syrian refugees with disabilities and assistance programs for them were extracted from the transcriptions. Sub-categories and categories were defined within the codes along with the “Recognition and intervention of rehabilitation professionals who work with Syrians refugees with disabilities in Jordan” (Table 3). Then, the categories, subcategories, codes and personal narratives were described as [Category], [Subcategory], and [Personal narrative], respectively.

The category [Deterioration of PWDs’ health conditions] comprised four sub-categories: [Lack of medical and rehabilitation services for Syrian refugees with disabilities], [Spread of disuse syndrome], [Inability to afford treatment costs due to poverty], and [Lack of caregivers in families]. One therapist discussed the [Lack of medical and rehabilitation services for Syrian refugees with disabilities] as follows: [In some patients, their health condition often became worse, because they didn’t receive medical treatment or rehabilitation services in Jordan after evacuating from Syria]. One therapist discussed [Spread of disuse syndrome] as follows: [Many patients suffer from contracture and disuse muscle atrophy, because they don’t know about disuse syndrome and are unaware of the need to prevent it...]. One therapist discussed [Inability to pay for treatment due to poverty] as follows: [Almost all refugees with disabilities are poor, as is the case with healthy refugees. So they don’t have money to pay for treatment. And if they need to take care of a family member, it is difficult for them to work]. One therapist discussed [Lack of caregivers in families] as follows: [One of my patients has no caregiver, because he evacuated from Syria without his family. Another patient can’t visit our rehabilitation center. His family members are working every day, so they can’t bring him here (to the rehabilitation center)].

The category [Lack of rehabilitation programs] comprised three sub-categories: [Implementation of outpatient rehabilitation], [Implementation of home-visit rehabilitation], and [Supply of orthosis and assistive products]. One therapist discussed [Implementation of outpatient rehabilitation] as follows: [Our unit supports Syrian refugees with disabilities in an urban area at our rehabilitation center. Once or twice a week, patients visit our center. However, there aren’t enough therapists registered because we don’t have enough money to pay their wages, so we can’t handle many patients. However, we provide rehabilitation services, for example, standing training, walking training and so on]. One therapist discussed [Implementation of home-visit rehabilitation] as follows: [Some patients can’t visit our center for rehabilitation, because their impairment is so severe, and it is difficult for their family members to bring them. Therefore, we visit to their house and perform rehabilitation there, for example, a various movement exercises, muscle training, and PNF for dysfunctions on the bed.]. One therapist discussed [Supply of orthosis and assistive products] as follows: [Among the wounded refugees, there are many amputees. They need orthosis and assistive products. So we provide them for some patients. However, lack of funds means we can’t provide prosthetics to all person with disabilities.]

The category [Difficulties in continuously providing rehabilitation to PWDs in urban areas] comprised...
four sub-categories: [Lack of budget for support programs for Syrian refugees with disabilities], [Lack of transportation for home-visit rehabilitation], [Lack of knowledge among Syrian refugees with disabilities and their family members regarding rehabilitation], and [Lack of information about Syrian refugees with disabilities in urban areas]. One therapist discussed [Lack of budget for support programs for Syrian refugees with disabilities] as follows: [As you know, the conflict has been continuing for six years. At the beginning of the conflict, many people were interested in this support. But recently...it’s been difficult to secure funds for our programs. So we can’t provide enough support for Syrian refugees with disabilities. For example, there aren’t enough health professionals, rehabilitation equipment or assistive products]. One therapist discussed [Lack of transportation for home-visit rehabilitation] as follows: [We don’t have transportation for home visits. Sometimes we visit to patients’ homes at our own expense. And the family of the patient can’t afford the transportation cost for visiting the rehabilitation center; so it is difficult for us to continue providing them with rehabilitation]. One therapist discussed [Lack of knowledge among Syrian refugees with disabilities and their family members regarding rehabilitation] as follows: [They don’t understand the necessity of rehabilitation. Generally speaking, their doctors often do not give them an adequate explanation of rehabilitation. So sometimes they are reluctant to receive rehabilitation]. One therapist discussed [Lack of information about Syrian refugees with disabilities in urban areas] as follows: [In urban areas, it is difficult to figure out where they live, unlike in refugee camps. Since many families are isolated in the region, it is hard for us to grasp their information].

The category [Forthcoming challenges facing rehabilitation programs by community-based organizations] comprised three sub-categories: [Development of human resources to work in rehabilitation], [Acquisition of operation funds], and [Necessity of cooperation with international organizations]. One therapist discussed [Development of human resources to work in rehabilitation] as follows: [We must provide rehabilitation for various diseases. There are amputations, spinal cord injuries, peripheral nerve injuries and so on. Therefore, we also want to gain knowledge ourselves, and we must develop more human resources for our program]. One therapist discussed [Acquisition of operation funds] as follows: [Many donors who supported us thus far have already left our program. So, securing funds is a high priority for us]. One therapist discussed [Necessity of cooperation with international organizations] as follows: [Unlike refugee camps, partnerships with international organizations are scarce in urban areas. It is important to cooperate with international organizations, not only for our support in the future].

Discussion

The study identified that rehabilitation professionals of community-based organizations (CBO) recognized deterioration in the health conditions of Syrian refugee with disabilities (PWDs: Person with Disabilities) in urban areas. They carried out programs of outpatient rehabilitation and home-visit rehabilitation for Syrian refugees with disabilities to alleviate their dysfunction. Furthermore, they faced difficulties relating to the poverty of PWDs, lack of management funds, lack of information about Syrian refugees with disabilities in urban areas, and lack of health literacy among PWDs and their family members.

In general, refugees face restrictions in terms of social participation (e.g., socio-economic deprivation or lack of access to fundamental human rights) in their new communities [12]. Syrian refugees are also in a vulnerable socio-economic position in Jordan. Therefore, they need various support, basic needs, education, food security, health, shelter, water, sanitation, and hygiene through humanitarian aid [13]. According to a previous study, disasters and conflict can result in increased incidence of impairment and subsequent disability. However, their dysfunction and restriction in terms of social participation prevent PWDs from accessing mainstream humanitarian assistance programs [14].

1. Deterioration of PWDs’ health conditions

Regarding the situation of Syrian refugees with disabilities in urban areas, rehabilitation professionals recognized that the deterioration of their health conditions correlated with difficulty accessing health care due to poverty, lack of caregivers, and spread of disuse syndrome. We previously reported that lack of health care and insufficient health literacy may contribute to the deterioration of their health conditions and the high risk of disuse syndrome [11]. Furthermore, previous studies clearly indicate the cycle by which poverty and disability are mutually reinforcing [15]. Therefore, it was estimated that the deterioration of their health conditions was related not only to their dysfunction but also to poverty, lack of caregivers, disuse syndrome, and their vulnerable position in Jordan.

2. Lack of rehabilitation programs

Regarding support programs for Syrian refugees with disabilities by rehabilitation professionals of community-based organizations, most of the rehabilitation
professionals engaging in these support programs were physical therapists. The reason is that a training school for physical therapy and occupational therapy has been established in Jordan; however, there are fewer qualified occupational therapists than physiotherapists, and many occupational therapists go and work abroad after acquiring qualification [16, 17]. In the present intervention by CBO, rehabilitation professionals have provided orthosis, outpatient rehabilitation and home-visit rehabilitation for improvement of dysfunction and transfer motion for Syrian refugees with disabilities in Amman. Those contents have been classified under “rehabilitation” and “assistance devices” in the CBR matrix of the World Health Organization [18]. There are no contents under “medical services,” “promotion” and “prevention.” The WHO recommends rehabilitation not only for impairment but also for intervention relating to restrictions in activities and participation [19]. However, it was shown that a lot of the current assistances for Syrian refugees with disabilities were interventions intended to improve dysfunction. There was also a lack of intervention in activity limitations including self-care, prevention of disuse syndrome, education for nursing care, and participation restrictions.

3. Difficulties in continuously providing rehabilitation to PWDs in urban areas

Rehabilitation professionals of community-based organizations recognized personnel expenses and movement expenses for visiting rehabilitation due to the lack of funds for management, and lack of information on Syrian refugees with disabilities in urban areas due to the fluid situation of the Syrian conflict as difficult points. Furthermore, rehabilitation professionals identified insufficient access to necessary health care services due to poverty and lack of health literacy among Syrian refugees with disabilities and their family members as problems.

4. Forthcoming challenges facing rehabilitation programs by community-based organizations

According to a report on the economic situation of support for Syrian refugees, a chronic shortage of management funds for support programs for Syrian refugees has been reported [20]. In this way, rehabilitation professionals faced economic difficulty in providing continuous support for Syrian refugees with disabilities. Therefore, rehabilitation professionals recognized that securing management funds, and collaborating with international support organizations were necessary. Persons with disabilities in urban areas presented a variety of diseases, disorders and conditions due to war injuries, congenital disorders and non-communicable diseases [21]. Therefore, rehabilitation professionals regarded the development of human resources for intervention in various diseases as a future challenge. However, they did not recognize the prevention of disuse syndrome, the provision of nursing care methods for family members, or intervention in self-care as future challenges. In general, persons with disabilities are at significant risk of disuse syndrome. It is important that comprehensive health promotion be included in the rehabilitation program [22]. In addition, recently we reported that Syrian refugees with disabilities in urban areas of Jordan have a high risk of disuse syndrome, and disuse syndrome is associated with restrictions on activities and participation [11]. Furthermore, rehabilitation professionals in Jordan tend to focus on approaches to the dysfunction of persons with disabilities [23]. Therefore, those results suggested that intervention in the case of disuse syndrome or restrictions on activities or participation are really needed in support programs for Syrian refugee with disabilities in urban areas of Jordan.

In general, occupational therapy plays an important role in intervention in the case of restrictions on activities including self-care and participation [24]. Effective intervention using occupational therapy have also been reported for disuse syndrome [25]. Therefore, it can be suggested that occupational therapists need to guide preventive measures of disuse syndrome, and intervention in the case of restrictions on activities and participation among PWDs. Our study was limited by the small size of the sample, because there are few rehabilitation professionals undertaking support for Syrian refugees with disabilities living in urban areas. However, this was the first time for a study to be conducted on the current situation of support programs for Syrian refugees with disabilities by rehabilitation professionals in community-based organizations in Jordan.

Limitation

Our study had four major limitations: the sampling bias for participants in a limited area, The small sample size, The limited geographic area, and the lack of statistical analysis. Because there are few rehabilitation professionals engaged in support for Syrian refugee with disabilities living urban area in Jordan. However, this study was the first survey to identify current state of intervention for Syrian refugees with disabilities in Jordan and the recognition of rehabilitation professionals handling the health of Syrian refugees with disabilities, and the challenges that they face in providing rehabilitation services. However, in our results, there was only one occupational therapy professional and no nursing or psychologist. Therefore, in occupational therapy point
of view how lack of occupations, routines, habits, crafting, and group-work can promote health and well-being, these knowledges are missing from this rehabilitation professionals. those can evade disuse syndrome. Further research is necessary to explore these issues.

Furthermore, participants in this study were rehabilitation professionals in the capital Amman. Syrian refugee with disabilities also lives in other large cities [2]. In the future, it is necessary to investigate rehabilitation professionals who are engaged in support activities in large cities other than the capital Amman.

As of 2019, The conflict in the Syrian Arab Republic has been ongoing. Furthermore, it is estimated that the situation of Syrian refugee with disabilities in urban areas of Jordan change in the future due to social conditions. Therefore, additional research is needed to confirm the situation of Syrian refugee with disabilities and intervention of rehabilitation professionals handling the health of Syrian refugees with disabilities in Jordan.

Conclusions

Our current study concluded that rehabilitation professionals of community-based organizations in urban areas of Jordan provided outpatient rehabilitation, home-visit rehabilitation and provision orthosis to Syrian refugees with disabilities in urban areas. They also recognized difficulties in access to health care due to the poverty of Syrian refugees with disabilities, the spread of disuse syndrome, and the lack of caregivers in PWDs’ families. Furthermore, they faced a lack of funds for their programs, and difficulty grasping information of Syrian refugees with disabilities in their field. Therefore, they regarded securing management funds, collaboration with international support organizations and development of human resources as challenges. However, the prevention of disuse syndrome, the provision of nursing care methods, and intervention in the case of restrictions on activities and participation were not mentioned as future challenges.

It is essential that rehabilitation professionals including occupational therapists engage in preventing disuse syndrome, and provide intervention in the case of restrictions on activities and participation for Syrian refugees with disabilities in urban areas of Jordan. therefore, there is a need to study the disuse syndrome and health status of Syrian refugee with disabilities in urban area. furthermore, it was suggested that rehabilitation professional should consider effective countermeasures for support programs.

Conflicts of Interest

We declare no conflicts of interest.

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