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Original Article

Perceived barriers to implementing occupation-based intervention[1]

Percepção de barreiras para implementar intervenções baseadas em ocupação

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Abstract

Introduction: Occupation-based intervention (OBI) is defined as an intervention using a clients' occupation and purposeful activities as a treatment medium to achieve the client's goals. Several barriers to practising OBI have been reported in previous studies. However, limited research has been done to identify these perceived barriers to applying OBI in Malaysia's various occupational therapy practice areas. **Objective:** This study aimed to identify perceived barriers to applying OBI in Malaysia's three main occupational therapy practice areas including physical, psychiatry and paediatric. **Method:** A cross-sectional study design was employed, and participants were recruited using a purposive sampling strategy. Data was collected using an online survey from a Delphi study. **Results:** Two hundred ninety-eight Malaysian occupational therapists aged between 22 and 56 years old participated in this study. The study identified several perceived barriers from the client factors, the contextual factors, occupation as treatment modalities and logistical issues. A statistically significant difference was found in the perceived barriers of applying OBI between different areas of occupational therapy practice (p=.013), working experience (p=.003), and position of occupational therapists (p=.001). **Conclusion:** This study suggests that perceived barriers to applying OBI were influenced by the area of practice, working experience and position of the occupational therapists. The results highlight the need to identify potential solutions to applying OBI through research and education.

Keywords: Occupational Therapy, Scope of Practice, Activities of Daily Living.

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Resumo

Introdução: Intervenção baseada na ocupação (OBI) é definida como uma intervenção usando a ocupação dos sujeitos e as atividades propostas como meio de tratamento, para atingir os objetivos dos sujeitos. Várias barreiras com relação à prática de OBI foram relatadas em estudos anteriores. No entanto, pesquisas limitadas foram feitas para identificar essas barreiras percebidas para a aplicação do OBI nas várias áreas de prática de terapia ocupacional na Malásia. **Objetivo:** Este estudo teve como objetivo identificar as barreiras percebidas para a aplicação do OBI nas três principais áreas de prática de terapia ocupacional na Malásia, incluindo áreas físicas, psiquiátricas e pediátricas. **Método:** Um desenho de estudo transversal foi empregado e os participantes foram recrutados usando uma estratégia de amostragem intencional. Os dados foram coletados por meio de uma pesquisa online de um estudo Delphi. **Resultados:** Duzentos e noventa e oito terapeutas ocupacionais malaios com idades entre 22 e 56 anos participaram deste estudo. O estudo identificou várias barreiras percebidas nos fatores contextuais das pessoas, na ocupação como modalidades de tratamento e nas questões logística. Uma diferença estatisticamente significativa foi encontrada nas barreiras percebidas da aplicação do OBI entre diferentes áreas da prática da terapia ocupacional (p = 0,013), experiência de trabalho (p = 0,003) e posição dos terapeutas ocupacionais (p = 0,001). **Conclusão:** Este estudo sugere que as barreiras percebidas para a aplicação do OBI foram influenciadas pela área de prática, experiência de trabalho e posição dos terapeutas ocupacionais. Os resultados destacam a necessidade de identificar soluções potenciais para a aplicação do OBI por meio de pesquisa e educação.

Palavras-chave: Terapia Ocupacional, Âmbito de Prática, Atividades Diárias.

Introduction

Occupational therapy is a client-centred health profession that helps people of all ages optimised their independence in daily life using occupations or therapeutic use of daily living activities (American Occupational Therapy Association, 2020). It aimed to promote health, prevent any illness or injury, maintain current abilities, and restore skills. The term 'occupation' had been reviewed and revised and currently defined as daily activities that people do, including nine domains of occupation such as activities of daily living (ADLs), instrumental activities of daily living (IADLs), health management, education, work, play, leisure, social participation, rest, and sleep (American Occupational Therapy Association, 2020).

Occupation-based intervention (OBI) represented the profession's unique identity, necessarily guided by evidence to improve their efficiency to promote participation and performance (Cahill & Beisbier, 2020). However, occupational therapists perceived and practised OBI differently. Most studies focused on occupation as means, where occupational therapists incorporated clients' preferred occupations as interventions (Ahn, 2019; Hansen et al., 2020; Kim & Park, 2019), redesigned clients' current occupational patterns (Olsson et al., 2019) or integrated occupation into intensive training approach such as the constraint-induced movement therapy (Rostami et al., 2017). Furthermore, occupational performance was the main focus rather than repetitive task practice (Skubik-Peplaski et al., 2017).

Recently, a growing amount of evidence showed positive effects of OBI on numerous occupational therapy practice settings. For example, functional outcome and accelerated recovery process were apparent in neurological rehabilitation settings among clients with traumatic brain injury (Powell et al., 2016), stroke (Ahn, 2019; Kim & Park, 2019; Tomori et al., 2015; Wolf et al., 2015), and spinal cord injury (Murad et al., 2016). While beneficial to the clients' functionality, OBI's benefits were identical to repetitive task practice in clients with stroke (Skubik-Peplaski et al., 2017). In hand and upper extremity rehabilitation, significant improvements were reported in clients with upper extremity musculoskeletal disorders (Weinstock-Zlotnick & Mehta, 2019), hand injuries (Che Daud et al., 2016c), and median and ulnar nerve injuries (Rostami et al., 2017). However, OBI yielded similar benefits in clients with hand-related disorders compared to physical exercise-based tasks (Hansen et al., 2020). Occupational therapists in mental health settings reported significant benefits of OBI among clients with stress (Olsson et al., 2019), traumatic experiences (Mangum et al., 2019), depression (Phadsri et al., 2021), addictive disorders (Wasmuth et al., 2016), and mild dementia (Ibrahim et al., 2021). OBI may be used with other interventions. For example, pharmacological treatment paired with OBI improved health outcomes in clients with Human Immunodeficiency Virus (HIV) (Armstead et al., 2021). Clients with visual deficits improved in visual scanning using a combination of occupation and component-based interventions. The growing trend of using evidenced OBI was promising; hence provided occupational therapists opportunities to expand their current evidence-based clinical practice.

From Malaysian occupational therapists' perspectives, OBI was defined as an intervention on meaningful occupational performances that meet the client's goals and use the client's occupations and purposeful activities as a treatment medium or healing agent (Che Daud et al., 2015). No specific occupation-based intervention modules were used compulsorily in Malaysian. Nevertheless, they were trained by the World Federation of Occupational Therapists (WFOT) accredited universities; hence prepared with foundations in occupational therapy. In addition, some Malaysian occupational therapists stated that OBI was less practical and more challenging to be used in an acute setting (Che Daud et al., 2016a). However, due to its small sample size, this result could not be generalised to a broader population; hence, it remains unclear if there are differences in barriers to implementing OBI in different areas of occupational therapy practice in Malaysia. To date, no study has been done to compare the perceived barriers of implementing OBI in different areas of occupational therapy practice in Malaysia.

This study aimed to identify perceived barriers to implementing OBI in Malaysian occupational therapy practice. It may hint at potential solutions to the barriers and emphasise OBI as a core intervention. It was hypothesised that there were differences in the perceived barriers to implementing OBI amongst the different occupational therapy practice areas. Hence, this study investigated the following specific research questions. (i) What are the barriers to the practice of OBI among Malaysian occupational therapists? (ii) What is the association between practice areas and perceived barriers to practise OBI? (iii) What is the association between occupational therapists' demographic characteristics and perceived barriers to practise OBI? These research questions were essential to explore each barriers prevalence and areas of practice that need more focus to implement OBI. In addition, sociodemographic factors were explored to identify relevant variables that may affect the implementation of OBI so that appropriate measures can be taken.

Methods

Study design

This study was conducted using a cross-sectional online survey via the Google Form platform as a data collection mode that allowed the researchers to collect data from a large sample in a relatively short period. A purposive sampling method was used to recruit the participants. This survey was distributed to occupational therapists working in Malaysia through a social media group on Facebook and WhatsApp from April to December 2018. The occupational therapists were only allowed to answer the questionnaire once. The online survey recorded participants written consent at the beginning of the survey. Participation in the study was voluntary, and the occupational therapists were not given any incentive for doing so. This study has obtained ethical approval from the Research Ethics Committee of Universiti Teknologi MARA (UiTM) (Approval no.: 600-IRMI (5/1/6)) and Medical Research and Ethics Committee (MREC), National Institutes of Health Malaysia (Approval no.: NMRR-18-2913-44105 (IIR)). Anonymity of participants were guaranteed, and the data was only used for research purposes only.

Participants

Participants were Malaysian occupational therapists who were: (1) working either in physical dysfunction, paediatric, or psychiatry and mental health areas; (2) working either in hospitals, independent centres, or non-government organisations in Malaysia; (3) able to read and understand simple English. They were excluded if they were working outside of Malaysia and never had experience practising in a Malaysian context. As of 2018, there are approximately 2500 occupational therapists in Malaysia. According to Krejcie & Morgan (1970), a sample size of 333 was required with a confidence interval, margin error and population proportion set at 95%, 5% and 50%, respectively.

Instruments

The questionnaire on the barriers in implementing OBI used in this study was developed from our previous study (Che Daud et al., 2015). The questionnaire consisted of twenty-seven questions and was divided into five categories: (i) client factors; (ii) occupational therapist factors; (iii) contextual factors; (iv) occupation as treatment modalities; and (v) logistical issues. The questionnaire used the four-point Likert's type scale: (1) totally disagree; (2) disagree; (3) agree; and (4) totally agree. The total score was calculated by summing up all statements in the questionnaire. The questionnaire had been developed through a three-round Delphi technique by a fifteen expert panel (Che Daud et al., 2015). Before the data collection, the questionnaire was pilot-tested and revised to reduce ambiguity and improve each question's clarity. Thirty-seven occupational therapists were invited to complete the survey and give feedback on the questionnaire. The questionnaire's internal consistency and test-rest reliability were tested with Cronbach's α ranged from 0.854 to 0.936, and intra-class correlations ranged from 0.721 to 0.889 for the five categories.

Data analysis

Data were analysed using Statistical Package for Social Sciences version 21.0. Before the analysis, data were cleaned and organised in a meaningful way. Incorrectly labelled, coded, formatted, or inserted data was identified, and any data duplication was removed. Missing data were treated using expectation maximisation (Kang, 2013), and the normality of the data was examined. The participants' demographic characteristics and perceived barriers in implementing OBI were analysed using descriptive statistics. The statements were considered barriers if the proportions in which participants agree to totally agree with the statements were higher than 50% (achieved simple majority) (Novak, 2014). All statements were summed up for total scores, with the higher scores indicating more barriers perceived by participants in implementing OBI. ANOVA was used to examine the differences in perceived barriers to implementing OBI in three main occupational practice areas. Independent t-tests were used to identify the association of other demographic characteristics with perceived barriers of OBI.

Results

Table 1 shows the demographic data of participants. Two hundred ninety-eight occupational therapists aged between 22 to 56 years old participated in this study with a mean and standard deviation of 31.68±6.25, and 71.1% of the participants were female. Most participants were practising in physical dysfunction, followed by paediatric and psychiatry and mental health.

Table 1. Descriptions of participants in the study (n=298).

Demographic characteristics	**n (%)**
Gender	
Male	86 (28.9)
Female	212 (71.1)
Area of occupational therapy practice	
Physical dysfunction	122 (40.9)
Paediatric	112 (37.6)
Psychiatric & mental health	64 (21.5)
Years of experience	
Less than five years	90 (30.2)
More than five years	208 (69.8)
Type of institution	
Governmental organisation	218 (73.2)
Non-governmental organisation	80 (26.8)
Working location	
Urban / city area	228 (76.5)
Sub-urban / rural area	70 (23.5)
Position	
Support staff / Junior OT	168 (56.4)
Professional / Senior OT	130 (43.6)

Table 2 shows the participants' agreement on the statements of the barriers in implementing OBI. From the client factors, Malaysian occupational therapists mostly perceived the client's understanding of the recovery process as an issue to implementing OBI. There were no barriers perceived by the participants from the occupational therapist factors. The Malaysian cultural value of serving sick clients, the dominance of the biomedical model, awareness of occupational therapists' roles and the view of multidisciplinary members about the function and their understanding of OBI were among the barriers perceived by participants in the contextual factor category. While for the occupation as treatment modalities category, OBI is less practical in an acute setting and providing good, observable, and measurable outcomes is challenging, were among the barriers perceived by participants in the occupation domain. Logistical issues, such as time constraints, heavy workload, unavailability of a specific guideline, context and environment of the intervention, set-up of department and lack of equipment and resources were the most perceived barriers to implementing OBI.

Table 2. Descriptive statistics of perceived barriers to implementing OBI (n=298).

Statements	Agree to totally agree n (%)
Category 1: Client Factors	
The client is more impressed and motivated by sophisticated and advanced equipment.	66 (22.1)
The client does not understand the purpose of the occupation-based intervention.	128 (43.0)
The client's understanding of the recovery process. e.g., the client is not ready to engage in occupations until they gain the maximal level of strength and are fully recovered is an issue in applying occupation-based intervention.	188 (63.1)
Category 2: Occupational Therapist Factors	
Rarely use a client-centred approach in practice.	48 (16.1)
Skill and knowledge in applying a client-centred approach are lacking.	114 (38.3)
Lack of creative skills to practise occupation-based intervention.	102 (34.2)
Lack of skill in grading activities/tasks/occupations.	76 (25.5)
Basic skills in task/activity analysis are lacking.	82 (27.5)
Rarely use occupation-based assessment in daily clinical practice.	72 (24.2)
Limited knowledge and understanding of occupation-based intervention.	110 (36.9)
Not sufficiently well prepared and well trained to practise occupation-based intervention.	106 (35.6)
Category 3: Contextual Factors	
Malaysian cultural value of relying on family members to serve "the sick/dependent client" is a challenge to implement the occupation-based intervention.	258 (86.6)

Table 2. Continued…

Statements	Agree to totally agree n (%)
Bureaucracy and power differential in Malaysia Healthcare System; e.g., occupational therapists must follow the doctor's order.	130 (43.6)
The dominance of the biomedical model in healthcare delivery makes it difficult to practice occupation-based intervention.	186 (62.4)
Lack of awareness about the role of occupational therapists by other professionals limits referral for occupation-based intervention.	254 (85.2)
Multidisciplinary members always perceive that movements and strength are essential requirements for function.	270 (90.6)
Multidisciplinary members do not understand the purpose of the occupation-based intervention.	228 (76.5)
Lack of cooperation from other multidisciplinary members makes it difficult to practise occupation-based intervention.	222 (74.5)
Category 4: Occupation as Treatment Modalities	
Limited evidence on the efficacy of the occupation-based intervention.	70 (23.5)
Occupation-based intervention is less practical in an acute care setting.	184 (61.7)
Providing good, observable, and measurable outcomes in the domain of occupation is difficult.	164 (55.0)
Category 5: Logistical Issues	
Practising occupation-based intervention consumes a lot of time.	206 (69.1)
Practising occupation-based intervention is difficult due to time constraints and heavy workloads.	202 (67.8)
Lack of specific guidelines on occupation-based intervention.	172 (57.7)
Providing a similar context and environment in which the client's occupations take place is challenging.	232 (77.9)
The department is not set up to practise occupation-based intervention.	186 (62.4)
Appropriate equipment and resources for practising occupation-based intervention are lacking.	238 (79.9)

The ANOVA was statistically significant, indicating that the practice area influenced the total perceived barrier of implementing OBI, $F(2, 295) = 4.409$, $p=.013$. Post hoc analysed with Bonferroni correction (using α of .05) revealed that participants who were working in psychiatry and mental health (72.71±10.98) had significantly ($p=.04$) more perceived barriers in implementing OBI than those who were working in physical dysfunction (68.33±10.95). Participants who were working in psychiatry and mental health (72.71±10.98) also had significantly ($p=.014$) more barriers in implementing OBI than those who were working in the paediatric area (67.57±12.35).

An independent t-test revealed that there was a statistically significant difference in the total perceived barriers of OBI between participants with less than five years

(M=72.02±10.33) and over five years (M=67.67, SD=11.97) experience, 95% CI (1.50, 7.20), t (296) = 3.00, p=0.003. A statistically significant difference was also found in the perceived barriers of OBI between occupational therapists' positions. Those who were holding a support/junior position (71.68±10.39) had more barriers in implementing OBI than those who were holding professional/senior positions (65.51±12.28), 95% CI (3.58, 8.75), t (296) = 4.70, p=0.001. There was no association found between other demographic characteristics and perceived barriers of OBI. Table 3 shows the association between demographic characteristics and perceived barriers of OBI.

Table 3. Association between demographic characteristics and perceived barriers of OBI.

Variables	Mean ± SD	t stats (df) /F stats (df)	*p*-value
Working experience			
Less than five years	72.02 ± 10.27	3.00 (296)	0.003†
More than five years	67.67 ± 11.97		
Type of institution			
Governmental organization	69.37 (11.55)	0.93 (296)	0.353†
Non-governmental organisation	67.95 (11.91)		
Working location			
Urban/city area	68.48 (14.00)	-1.35 (296)	0.178†
Suburban/rural area	70.63 (14.00)		
Position of OT			
Support/junior OT	71.68 (10.39)	4.70 (296)	0.001†
Professional/senior OT	65.51 (12.28)		
Area of Occupational Therapy Practice			
Physical dysfunction	68.33 (10.95)	4.41 (2,295)	0.013‡
Paediatric	67.57 (12.35)		
Psychiatric and mental health	72.71 (10.98)		

† T-test. ‡ One-way ANOVA.

Discussion

Client factors

Clients understanding of the recovery process was majorly deemed as a barrier to practice OBI. This finding was congruent with a Delphi study by Che Daud et al. (2015). It can be hypothesised that the clients will not engage in their daily occupations until they are fully recovered, as they thought movement and strength were required to be involved in everyday activities. Besides, almost half of the participants perceived those clients did not understand the purpose of OBI as another barrier to implementing OBI. Hence, in adjunct to empower clients and minimise the barrier to implementing OBI, occupational therapists may provide education and advocacy on clients' recovery

process. This approaches was crucial in efforts to modify the behaviour at the patient level (Bauer et al., 2015).

Occupational therapist factors

Despite minimal barriers reported from occupational therapist factors, some focus should be given to enhance our current occupational therapists' practice. With almost forty per cent of the participants perceived they had limited skill and knowledge on client-centred approach and OBI, future occupational therapists training should emphasise the use of evidence-based occupation-based interventions. Hence, a quality improvement approach may be adopted at the provider level (Bauer et al., 2015). This may be implemented by integrating the occupation-focused models into occupational therapy curricula using a multi-layered decision-making process (Ashby & Chandler, 2010). In addition, modules on OBI in the Malaysian clinical setting shall be considered to optimise the application of OBI.

Contextual factors

Most of the participants agreed that multidisciplinary members perceived movement and strength as essential for function, and they did not understand the purpose of OBI. Lack of understanding and awareness from multidisciplinary members about occupational therapist roles results in another issue; limiting the referrals for OBI. Che Daud et al. (2016a) emphasised that multidisciplinary members lack knowledge regarding the role of the occupational therapist and the services offered by occupational therapists. Therefore, they tend to request any specific interventions based on their professions judgement (Che Daud et al., 2015). Thus, occupational therapists may incorporate a proactive role to educate and publicise evidence-based OBI. For example, Anaby et al. (2020) demonstrated improved body functions, including motor function, cognition, affect, and performance, through clients' participation in community activities. These findings then highlighted the necessity for robust and rigorous research on OBI to optimise multidisciplinary understanding of OBI.

This current study has identified that the lack of cooperation from multidisciplinary members, and dominance of the biomedical model, made it more difficult for Malaysian occupational therapists to implement OBI in their practice. Various studies have found that the biomedical model in health care settings has impeded occupational therapists from practising OBI (Che Daud et al., 2015; De Klerk et al., 2016; McCormack & Collins, 2012), as the model viewed the disability resulting from the impairments in body function and structure. Thus, a reductionist approach minimises and eliminates the impairments to enhance the individuals' function. However, in parallel with previous issues, more research on OBI is needed to overcome the dominance of the biomedical model. Despite growing evidence on the benefits of OBI (Ahn, 2019; Anaby et al., 2020; Ibrahim et al., 2021; Kim & Park, 2019; Olsson et al., 2019; Rostami et al., 2017), more trials should be done to evaluate the effectiveness of OBI. Through the trials, the OBI itself will undergo the process of improvement to produce a better treatment protocol.

Other than barriers with the multidisciplinary team and the biomedical model dominance, the Malaysian cultural value of serving sick clients was also depicted as a barrier to practice OBI. In Malaysia, most clients rely on their family members to serve them until they are completely recovered. Family members caring for the sick in their family has always been an essential part of Asian culture. They assist in everyday activities, such as bathing, dressing and taking medications (Reinhard et al., 2008), and as a result, sick clients do not take an active role in the rehabilitation process.

Occupation as treatment modalities

Participants in this study perceived that OBI was less practical in the acute setting. OBI was difficult to be practised in the acute care setting as the biomedical model dominated the healthcare service delivery (Che Daud et al., 2016a). As more than half of the participants perceived that the provision of sound, observable and measurable outcomes in the occupation domain were challenging to achieve, it may be due to a lack of knowledge among occupational therapists (Moore & Lynch, 2018). However, none of the barriers came from the occupational therapist factors in this study, indicating that Malaysian occupational therapists had confidence and the ability to implement OBI with their clients. Thus, appropriate guidelines shall be developed to steer and enhance the implementation of OBI at the management level.

Logistical issues

All logistical issues were perceived as barriers to implementing OBI by participants in this study. It was highlighted that it was challenging to practise OBI due to the occupational therapists' time constraints and heavy workloads. Findings of previous studies suggest that practising OBI needs to be in a one-to-one session with the client, as it was found to be challenging to implement OBI in a group as the clients can have different occupational performance issues (Che Daud et al., 2016b; De Klerk et al., 2016; Moore & Lynch, 2018). Moreover, most occupational therapists perceived that their department was not set up for OBI, and equipment and resources for OBI were limited (Estes & Pierce, 2012). The occupational therapists found that providing a similar context and environment which could differentiate between rote exercise and OBI, in which the client's occupation occurs, was challenging. Specific guidelines on OBI were required to make it easier to practise the intervention. According to Cheung (2013), specific guidelines helped occupational therapists achieved greater practice and provided better treatment outcomes to clients.

Sociodemographic factors

Occupational therapists practise in a wide range of areas, from paediatrics to geriatrics. Surprisingly, this study demonstrated that the area of occupational therapy practice influenced perceived barriers in implementing OBI. Although other studies postulated that OBI is much more difficult to be practised in acute settings, such as hand rehabilitation (Che Daud et al., 2016b; De Klerk et al., 2016), the present study found that those who were working in psychiatry and mental health have more barriers

in implementing OBI. This incongruity may be due to the nature of working with mental illness clients who often have poor insight and have difficulty identifying meaningful and relevant occupations for them (Sutton et al., 2012), making it difficult to establish an occupational goal to be achieved.

Importantly, this study revealed occupational therapists who have working experience of fewer than five years perceived higher barriers of implementing OBI than those who have working experience of more than five years. Similarly, previous studies also reported that experienced occupational therapists have better clinical reasoning and practise a more client-centred approach than novice occupational therapists, making it easier for them to practise OBI (Kuipers & Grice, 2009; Unsworth, 2001). Even though it was reported that novice occupational therapists have better knowledge of occupation-based and client-centred approaches, their lack of clinical experience will impede their ability to integrate that knowledge into practice (Chan, 2007; Liu et al., 2000).

There are two occupational therapist positions in Malaysia. In the government sector, they are either support or professional staff, while in the private sector, it is either junior or senior occupational therapists. This study revealed that junior occupational therapists or support staff perceived more barriers to implementing OBI than senior occupational therapists or professional staff. To the best of our knowledge, no study has found the association between position and perceived barriers to implementing OBI. It is believed that junior occupational therapists or support staff have less experience than professional staff or senior occupational therapists. Therefore, they experience greater difficulty in practising OBI.

Implications for occupational therapy practice

This study identified the perceived barriers to implementing OBI in three different occupational therapy practice areas in Malaysia. Due to the importance of the OBI in representing the unique identity of the occupational therapy profession and the benefits of OBI in enhancing treatment outcomes for clients, the results of this study are beneficial for the occupational therapists to find possible potential solutions to overcome the barriers that impede them from practising OBI. However, to enhance the implementation of OBI, appropriate implementation approaches may be incorporated (Bauer et al., 2015; Nilsen, 2015). The approaches were necessary to address the quality gaps and disparity of practice across occupational therapy setting hence, warrants a future study to identify the most efficient and effective implementation approaches to implementing OBI.

This study highlighted logistical issues, such as time constraints, limited space, and limited resources were the barriers mostly perceived by occupational therapists in Malaysia. Hence, it is suggested that occupational therapists prepare simple occupation-based activities and utilise the equipment available to them wisely. The equipment can be kept in a small box in the department. For instance, occupational therapists may use the equipment to provide clients with simple OBI, such as writing, typing, dressing, wiping tables and grooming, if it is meaningful and relevant. In addition, education and training on OBI should be provided to the occupational therapists to upgrade their knowledge (Lynch et al., 2018; Mahani et al., 2015). Given that occupational therapists' position and experience were associated with the perceived barrier of

implementing OBI, this study suggests the need for mentorship in Malaysian occupational therapy practice. Previous studies have shown that mentorship in occupational therapy enhances occupational therapists' professional development and competency (Bucey & Provident, 2018; Jacobs et al., 2015). Furthermore, advocacy and education on OBI to multidisciplinary teams and clients are important to optimise others' understanding of OBI.

Conclusion

In conclusion, this study identified some of the barriers perceived by Malaysian occupational therapists in implementing OBI in three main areas of practice. The client factors, the contextual factors, occupation as treatment modalities and logistical issues remained the barriers to implementing OBI as identified in previous studies in Malaysia. Logistical issues and contextual factors were the most prevalent barriers for Malaysian occupational therapists in implementing OBI. This study revealed that the area of practice, position and experience of occupational therapists influenced the perceived barriers to implementing OBI. This study highlights the need for mentorship in Malaysian occupational therapy practice.

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References

Ahn, S. N. (2019). Effectiveness of occupation-based interventions on performance's quality for hemiparetic stroke in community-dwelling: a randomized clinical trial study. *NeuroRehabilitation*, *44*(2), 275-282.

American Occupational Therapy Association – AOTA (2020). Occupational therapy practice framework: domain and process. *The American Journal of Occupational Therapy*, *74*(Suppl. 2), 1-87. http://dx.doi.org/10.5014/ajot.2020.74S2001.

Anaby, D., Avery, L., Gorter, J. W., Levin, M. F., Teplicky, R., Turner, L., Cormier, I., & Hanes, J. (2020). Improving body functions through participation in community activities among young people with physical disabilities. *Developmental Medicine and Child Neurology*, *62*(5), 640-646.

Armstead, A. B., Wilkerson, J. M., Gemeinhardt, G., Nyitray, A., & Collins, D. M. (2021). Antiretroviral therapy adherence, functional independence, and falls among people with HIV. *Occupational Therapy in Health Care*, *35*(3), 318-335. http://dx.doi.org/10.1080/07380577.2021.1938337.

Ashby, S., & Chandler, B. (2010). An exploratory study of the occupation-focused models included in occupational therapy professional education programmes. *British Journal of Occupational Therapy*, *73*(12), 616-624.

Bauer, M. S., Damschroder, L., Hagedorn, H., Smith, J., & Kilbourne, A. M. (2015). An introduction to implementation science for the non-specialist. *BMC Psychology*, *3*(1), 1-12.

Bucey, J. C., & Provident, I. M. (2018). Strengthening school-based occupational therapy through peer mentoring. *Journal of Occupational Therapy, Schools, &. Early Intervention*, *11*(1), 87-105. http://dx.doi.org/10.1080/19411243.2017.1408444.

Cahill, S. M., & Beisbier, S. (2020). Occupational therapy practice guidelines for children and youth ages 5-21 years. *The American Journal of Occupational Therapy*, *74*(4), 1-19. http://dx.doi.org/10.5014/ajot.2020.744001.

Chan, S. (2007). Occupations and activities: A revisit of occupational therapy's core values in the local context. *Hong Kong Journal of Occupational Therapy*, *17*(1), 34-36.

Che Daud, A. Z., Judd, J., Yau, M., & Barnett, F. (2016a). Issue in applying occupation-based intervention in clinical practice: a Delphi study. *Procedia: Social and Behavioral Sciences*, *222*(23), 272-282. http://dx.doi.org/10.1016/j.sbspro.2016.05.158.

Che Daud, A. Z., Yau, M. K., & Barnett, F. (2015). A consensus definition of occupation-based intervention from a Malaysian perspective: A Delphi study. *British Journal of Occupational Therapy*, *78*(11), 697-705.

Che Daud, A. Z., Yau, M. K., Barnett, F., & Judd, J. (2016b). Occupation-based intervention in hand injury rehabilitation: experiences of occupational therapists in Malaysia. *Scandinavian Journal of Occupational Therapy*, *23*(1), 57-66. http://dx.doi.org/10.3109/11038128.2015.1062047.

Che Daud, A. Z., Yau, M. K., Barnett, F., Judd, J., Jones, R. E., & Nawawi, R. F. M. (2016c). Integration of occupation based intervention in hand injury rehabilitation: a randomized controlled trial. *Journal of Hand Therapy*, *29*(1), 30-40.

Cheung, S. K. I. (2013). *How do health professionals' Perceptions of the roles of occupational therapists affect occupational therapy practice in interprofessional home health teams?* (Master of science). Dalhousie University Halifax, Nova Scotia.

De Klerk, S., Badenhorst, E., Buttle, A., Mohammed, F., & Oberem, J. (2016). Occupation-based hand therapy in South Africa: challenges and opportunities. *South African Journal of Occupational Therapy*, *46*(3), 10-15.

Estes, J., & Pierce, D. E. (2012). Pediatric therapists' perspectives on occupation-based practice. *Scandinavian Journal of Occupational Therapy*, *19*(1), 17-25. http://dx.doi.org/10.3109/11038128.2010.547598.

Hansen, A. Ø., Kristensen, H. K., Cederlund, R., Möller, S., & Tromborg, H. (2020). An occupation-based intervention in patients with hand-related disorders grouped using the sense of coherence scale: A randomized controlled trial. *Journal of Hand Therapy*, *33*(4), 455-469.

Ibrahim, S. A. S., Dahlan, A., & Daud, A. Z. C. (2021). Effects of occupation-based intervention for older people with mild dementia in the institution. *Environment-Behaviour Proceedings Journal*, *6*(16), 119-125.

Jacobs, K., Doyle, N., & Ryan, C. (2015). The nature, perception, and impact of e-mentoring on post-professional occupational therapy doctoral students. *Occupational Therapy in Health Care*, *29*(2), 201-213. http://dx.doi.org/10.3109/07380577.2015.1006752.

Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology*, *64*(5), 402. http://dx.doi.org/10.4097/kjae.2013.64.5.402.

Kim, S. H., & Park, J. H. (2019). The effect of occupation-based bilateral upper extremity training in a medical setting for stroke patients: a single-blinded, pilot randomized controlled trial. *Journal of Stroke and Cerebrovascular Diseases*, *28*(12), 104335.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, *30*(3), 607-610.

Kuipers, K., & Grice, J. W. (2009). The structure of novice and expert occupational therapists' clinical reasoning before and after exposure to a domain-specific protocol. *Australian Occupational Therapy Journal*, *56*(6), 418-427. https://onlinelibrary.wiley.com/doi/10.1111/j.1440-1630.2009.00793.x

Liu, K. P., Chan, C. C., & Hui-Chan, C. W. (2000). Clinical reasoning and the occupational therapy curriculum. *Occupational Therapy International*, *7*(3), 173-183.

Lynch, H., Prellwitz, M., Schulze, C., & Moore, A. H. (2018). The state of play in children's occupational therapy: a comparison between Ireland, Sweden and Switzerland. *British Journal of Occupational Therapy*, *81*(1), 42-50.

Mahani, M. K., Mehraban, A. H., Kamali, M., & Parvizy, S. (2015). Facilitators of implementing occupation based practice among Iranian occupational therapists: A qualitative study. *Medical Journal of the Islamic Republic of Iran*, *29*(1), 1-10. PMID:26913270

Mangum, S. W., Doucet, B. M., Blanchard, M., & Alig, K. (2019). Survivors of sex trafficking: occupation-based intervention for executive functioning. *Occupational Therapy in Mental Health*, *35*(3), 300-313.

McCormack, C., & Collins, B. (2012). The affirmative model of disability: a means to include disability orientation in occupational therapy? *British Journal of Occupational Therapy*, *75*(3), 156-158.

Moore, A., & Lynch, H. (2018). Play and play occupation: a survey of paediatric occupational therapy practice in Ireland. *Irish Journal of Occupational Therapy*, *46*(1), 59-72. http://dx.doi.org/10.1108/IJOT-08-2017-0022.

Murad, M. S., Idris, S. N. H., Kannan, C., & Danis, A. (2016). Impact of occupationally based intervention program in relation to quality of life of spinal injury people. *Procedia: Social and Behavioral Sciences*, *222*, 442-449. http://dx.doi.org/10.1016/j.sbspro.2016.05.134.

Nilsen, P. (2015). Making sense of implementation theories, models and frameworks. *Implementation Science, 10, 53.* http://dx.doi.org/10.1186/s13012-015-0242-0.

Novak, S. (2014). Majority rule. *Philosophy Compass*, *9*(10), 681-688. http://dx.doi.org/10.1111/phc3.12164.

Olsson, A., Erlandsson, L. K., & Håkansson, C. (2019). The occupation-based intervention REDO™-10: long-term impact on work ability for women at risk for or on sick leave. *Scandinavian Journal of Occupational Therapy*, *27*(1), 47-55. http://dx.doi.org/10.1080/11038128.2019.1614215.

Phadsri, S., Shioji, R., Tanimura, A., Jaknissai, J., Apichai, S., & Sookruay, T. (2021). Nonpharmacological treatment for supporting social participation of adults with depression. *Occupational Therapy International*, *2021*, 1-13. http://dx.doi.org/10.1155/2021/8850364.

Powell, J. M., Rich, T. J., & Wise, E. K. (2016). Effectiveness of occupation-and activity-based interventions to improve everyday activities and social participation for people with traumatic brain injury: A systematic review. *The American Journal of Occupational Therapy*, *70*(3), 1-9. http://dx.doi.org/10.5014/ajot.2016.020909.

Reinhard, S. C., Given, B., Petlick, N. H., & Bemis, A. (2008). Supporting family caregivers in providing care. In R.G. Hughes (Ed.), *Patient safety and quality: an evidence-based handbook for nurses* (pp. 1-44). Rockville: Agency for Healthcare Research and Quality.

Rostami, H. R., Akbarfahimi, M., Hassani Mehraban, A., Akbarinia, A. R., & Samani, S. (2017). Occupation-based intervention versus rote exercise in modified constraint-induced movement therapy for patients with median and ulnar nerve injuries: a randomized controlled trial. *Clinical Rehabilitation*, *31*(8), 1087-1097.

Skubik-Peplaski, C., Custer, M., Powell, E., Westgate, P. M., & Sawaki, L. (2017). Comparing occupation-based and repetitive task practice interventions for optimal stroke recovery: a pilot randomized trial. *Physical & Occupational Therapy in Geriatrics*, *35*(3-4), 156-168.

Sutton, D. J., Hocking, C. S., & Smythe, L. A. (2012). A phenomenological study of occupational engagement in recovery from mental illness. *Canadian Journal of Occupational Therapy*, *79*(3), 142-150. http://dx.doi.org/10.2182/cjot.2012.79.3.3.

Tomori, K., Nagayama, H., Ohno, K., Nagatani, R., Saito, Y., Takahashi, K., Sawada, T., & Higashi, T. (2015). Comparison of occupation-based and impairment-based occupational therapy for subacute stroke: a randomized controlled feasibility study. *Clinical Rehabilitation*, *29*(8), 752-762. http://dx.doi.org/10.1177/0269215514555876.

Unsworth, C. A. (2001). The clinical reasoning of novice and expert occupational therapists. *Scandinavian Journal of Occupational Therapy*, *8*(4), 163-173.

Wasmuth, S., Brandon-Friedman, R. A., & Olesek, K. (2016). A grounded theory of veterans' experiences of addiction-as-occupation. *Journal of Occupational Science*, *23*(1), 128-141. http://dx.doi.org/10.1080/14427591.2015.1070782.

Weinstock-Zlotnick, G., & Mehta, S. P. (2019). A systematic review of the benefits of occupation-based intervention for patients with upper extremity musculoskeletal disorders. *Journal of Hand Therapy*, *32*(2), 141-152. http://dx.doi.org/10.1016/j.jht.2018.04.001.

Wolf, T. J., Chuh, A., Floyd, T., McInnis, K., & Williams, E. (2015). Effectiveness of occupation-based interventions to improve areas of occupation and social participation after stroke: an evidence-based review. *The American Journal of Occupational Therapy*, *69*(1), 1-11. https://doi.org/10.5014/ajot.2015.012195

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