

## **HOUSEKEEPING SKILLS TRAINING FOR INDEPENDENT LIVING AMONG MALAYSIAN ADOLESCENTS WITH SPECIAL NEEDS: A CASE STUDY**

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*Despite a life-long disorder to live with, Adolescents with Special Needs (ASNs) ought to be equipped with adequate skills and knowledge in order to successfully lead an independent life. This study provides knowledge and exposure to assist the ASNs to participate in household chores to take care of their living space and prepare them for future employment. This study aimed at exploring (1) the mastery of housekeeping skills; (2) the application of housekeeping skills at their own home; (3) the application of housekeeping skills in the homestay environment among adolescents with special needs who have undergone the housekeeping skills training programme; and (4) to determine the supports required in sustaining the housekeeping skills among ASNs. This study used a qualitative approach with case study design. Three ASNs participated in a home-based housekeeping skills training programme. The study concluded that although the participants are still encountering problems such as could not fully generalise the skills to different situations, taking extra time to complete the tasks, waiting for the cue to execute the skills, some areas were not cleaned after cleaning, the participants have required lesser to no prompt in conducting the targeted house chores at home. It is hoped that this study could offer valuable understandings toward establishing skills-based training as a preparatory step in developing independent living for ASNs in Malaysia. One of the limitations of this study is the generalisability of the findings from a case study with qualitative data analysis. The case study results may apply to particular population groups who share similar characteristics.*

**Keywords:** Housekeeping skills training, independent living, adolescents with special needs

### **INTRODUCTION**

Adolescence is the vital stage of growth and development and transition from childhood to independent adulthood. It signifies a time of many changes and challenges for adolescents. By entering adulthood, adolescents face critical challenges and changes such as experiencing cognitive and physical changes, leaving care from caregivers, living away from family, entering post-secondary education, or participating in employment to sustain a living. These transformations involve a fair share of independence for every adolescent to develop during this critical period in life.

For adolescents with atypical development, however, transitioning into independent adulthood can be significantly challenging. Life skills are continually delayed for them compared to age-matched non-developmental delay among peers (Green & Carter, 2014). The experiences of entering independent adulthood for adolescents with special needs (ASNs) are further compounded by disabilities-related difficulties in many areas or the comorbid conditions (Anderson et al., 2014). Many ASNs do not follow the norms due to developmental impairments they live with (United Nations Children's Fund (UNICEF) Malaysia, 2016). A study revealed that deficits in general mental abilities limits and restricts persons with special needs' participation and performance in one or more aspects of daily life such as personal independence (Weiss & Burnham Riosa, 2015). Independent living requires a series of skill sets. Those skills are often particularly challenging for adolescents to acquire without proper support and guidance.

To sustain a successful adult functioning, ASNs need to acquire specific skills typically demanded in those settings in which the person must function (Patton & Kim, 2016). Adequate skill sets allow ASNs to be competent in conducting their daily living activities and live their life to their fullest potential (Wertalik & Kubina, 2017). The capability to manage the living space is the basic foundation to support independence and achieve a better standard of living among ASNs. Mainly, taking part in house chore responsibilities can measure both adolescents' competence and independence. For instance, when ASNs cannot care for their living condition, such as maintaining a clean living environment, it indicates their increased reliance on caregivers and limited independent functioning in their natural environment (Sosnowy et al., 2017).

Achieving adult status has been associated with markers such as starting a job, leaving the family home, and living independently (Plotner et al., 2017). To meet adult life outcomes positively requires self-determination and the capabilities to apply certain functional levels of independence skills and knowledge to complete tasks (Carroll et al., 2018). The proficiencies on skills needed for daily living have rapidly inclined to be predictors to ensure a greater likelihood of success in sustaining independent living in adulthood. With that, life skills have been regarded as one of the required provisions for persons with special needs to achieve a better standard of living (Jaya et al., 2018).

There has been a long history of supporting ASNs to participate and function independently in the local community in Malaysia. To accommodate participation of people with disabilities in the local community, the government has provided various essential skills training such as self-management, vocational skills, and social development for people with disabilities. Furthermore, several authorities have reduced the phenomenon of "institutionalisation" and promoted independent living among people with disabilities in the local community. In 2021, the Department of Social Welfare, the Ministry of Health Malaysia, and Voluntary Welfare have provided voluntary home-based support for senior citizens and people with disabilities living with limited assistance. During the program, volunteers conduct regular home visitation to provide service and care as social-emotional supports for the targeted groups (Official Portal Department of Social Welfare Malaysia, 2017). The programme, however, is developed and executed as a voluntary effort by volunteers. It is least likely to regard the programme as structured and consistent training for ASNs when the programme duration and frequency and the qualification of volunteers to carry out the programme remains uncertain. Without properly planned activity to focus on the long-term benefit of an individual, ASNs can hardly acquire and maintain the necessary skill sets to cope with adulthood independently.

## **LITERATURE REVIEW**

Over the years, increasing state efforts have been seen in policy development and practices on providing equal and inclusive education for individuals with special needs. At the secondary school level, the Special Education Division of the Ministry of Education has started collaboration programmes with governmental training institutions, such as community colleges, People's Trust Council (MARA) training centres, and private colleges to equip students with vocational and work-related skills (Harun et al., 2019). In 2019, the Ministry of Education Malaysia also introduced the Career Transition Programme (CTP). The programme is in partnership with the schools, skills centres, industries, and Non-Government Organisations (NGOs) to provide sufficient employment skills to suit the ability level of secondary school students with special needs (Shaffeei et al., 2020).

The government is committed to improving post-secondary education and lifelong learning ecosystems at the post-secondary level, encompassing community colleges, polytechnics, and universities in the public and private sectors. After students obtain the Malaysian Certificate of Education, commonly known as *Sijil Pelajaran Malaysia* (SPM), various post-secondary education programmes are available to continue higher education. Post-secondary education is a preparatory course for SPM holders to pursue higher education at the university level. Post-secondary education in Malaysia includes entering Form Six studies, matriculation, foundation studies, pre-university programmes, or private sector alternatives (Official Portal of Ministry of Education Malaysia, n.d.).

School leavers who could not cope with post-secondary education can also opt for skills school or vocational colleges to receive job-related training. Services such as *Pusat Latihan dan Kemahiran Bestari* (PLKB) from the Ministry of Education were established to provide professional qualifications for school leavers and working adults to improve their employability (Pusat Latihan dan Kemahiran Bestari, n.d.). The ministry has also set up vocational special education schools and colleges, offering several skills training and vocational programmes such as the Malaysian Skills Certificate, *Sijil Kemahiran Malaysia* (SKM) for several skill areas (Nasa, 2017). Courses such as hairdressing, housekeeping operation, furniture, and batik production and operation have been certified by the Skills Development Department (Jabatan Pembangunan Kemahiran). The SKM certification comprises training and assessment and industrial placement for students with special needs (Official Portal of Department of Skills Development, n.d.). Moreover, the Department of Social Welfare has also initiated job placement programmes with several established supermarkets and fast food industries (Harun et al., 2019). Job coaches are available in the country to enhance the job sustainability of young adults with disabilities.

Opportunities for ASNs to participate in vocational or post-secondary education, however, are minimal. One of the main reasons is that students with moderate or severe learning disabilities do not have equitable and accredited certification to enrol in post-secondary education. For instance, to enrol in the skills school, also known as *Pusat Latihan dan Kemahiran Bestari* (PLKB), the entry requirement for school leavers is SPM with pass results or PT3 with two years working experience or equivalent (Pusat Latihan dan Kemahiran Bestari, n.d.). This group of students is unlikely to compete with the mainstream standard of meritocratic evaluation since it is the only way to obtain accredited certification from the government (Nasir & Efendi, 2016).

## **RESEARCH PURPOSE**

This research is dedicated to providing training on the vital housekeeping skills for ASNs to assist them in mastering and applying the targeted skills at home. The purpose of this research is to provide housekeeping skills training to facilitate ASNs' performances of the targeted housekeeping skills to enhance the ASNs' development of independent living in terms of house chores participation and vocational job experience by utilising the environmental system of ASNs. Moreover, this study also aims at promoting generalisation of housekeeping skills in different settings: home and homestay. Lastly, research also discusses the support from a broader system for ASNs to sustain the learned skills.

## **RESEARCH QUESTIONS**

Thus, this study aims at answering the following research questions:

1. To what extent can the adolescents with special needs master the housekeeping skills after they have undergone the housekeeping skills training programme?
2. To what extent can the adolescents with special needs apply the housekeeping skills at home after they have undergone the housekeeping skills training programme?
3. To what extent can the adolescents with special needs apply the housekeeping skills in the homestay environment after they have undergone the housekeeping skills training programme?
4. What are the support systems required in sustaining housekeeping skills among adolescents with special needs?

## **METHODOLOGY**

### **Research Design**

This study is a case study with qualitative data analysis. The researcher employs purposive sampling method for selecting the participants. Three participants were selected based on the inclusion criteria, which are:

- Malaysian
- Have a disability record;
- Chronological age above 17 years old
- In need of support to independently conduct daily living tasks;
- Have basic understanding of instructions through verbal and/ or non-verbal language;
- Demonstrate interest to participate in the housekeeping skills training programme.

### **Participants**

Participant A is 25 years old and currently living with his retired mother in the Klang Valley area. Participant A is diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and Asperger.

Participant A has an average understanding of instructions through verbal language and is able to perform simple household chores such as wash the plates and cups, hang out the laundry, set the dining table, serve the food and mop the table. However, Participant A has difficulties doing other chores such as preparing a simple meal, tying the trash bag and taking out the trash, mop the floor, and changing the bed-sheets.

Participant B is 25 years old and currently living with his retired mother, grandmother and younger sister in the Klang Valley area. Participant B is diagnosed with Global Developmental Delay (GDD) and Attention Deficit Disorder (ADD). Participant B has an average understanding of instructions through verbal language. Participant B is unfamiliar with most of the house chores as they used to have a part-time cleaner to clean the house weekly.

Participant C is 18 years old and currently living with his parents and grandmother in the Klang Valley. Participant C is also diagnosed with GDD. Participant C seldom gets involved in the house chores due to his unwillingness. Participant C refuses to do the house chores at home, and the parents mostly do the house chores.

### **Intervention Plan**

In this study, the researcher implemented a housekeeping skills training programme to help the participants acquire five targeted housekeeping skills, improve their participation in the house chores at home, and generalise the learned skills in a vocational setting to foster their vocational job experience. It was a three-month programme, and the participants received sessions twice a week. Each session was one and a half hours long. Throughout the training period, the researcher had completed 24 lessons with 5 targeted housekeeping skills. A summary of the housekeeping skills training programme is presented in Table 1.

**Table 1**

*Summary of Housekeeping Skills Training Programme*

Total of Lessons	Training Objectives	Housekeeping Skills Involved
1 lesson	Baseline data collection	
4 lessons	Training period	Taking out the trash
3 lessons	Training period	Washing the dishes
3 lessons	Training period	Vacuuming the floor
1 lesson	(Practice taking out the trash, washing the dishes and vacuuming the floor)	
4 lessons	Training period	Washing the toilet bowl
4 lessons	Training period	Making the bed
2 lessons	(Practice all the 5 skills)	
1 lesson	Assessment at home and interview with parents	
1 lesson	Assessment at homestay and interview with an independent observer	

## **Procedures**

Before the training, the researcher had collected the baseline data on the participants' existing abilities in applying their housekeeping skills before the intervention. Next, the housekeeping skills training commenced. The researcher had provided one-to-one guidance and assistance for the participants to obtain the targeted housekeeping skills and apply the housekeeping skills at home. During the training period, the researcher recorded the participants' performances and responses.

At the end of the training sessions, an assessment was conducted at the participants' homes to determine the training outcomes. An interview with the participants' parents was conducted to collect their responses toward implementing housekeeping skills training. Furthermore, to explore participant readiness to generalise the learned skills in a different environment, the participants were required to perform a simple home cleaning at a homestay environment by applying the housekeeping skills they learned in the training programme. An independent observer had been invited to observe and assess their performance in the homestay environment. The independent observer had been required to observe the participants according to the observation protocol, and the researcher had rated the participants' performance by filling the housekeeping skills checklist.

## **Data Collection Techniques**

The researcher administrated a checklist and interviews to identify the participants' ability to master the housekeeping skills after undergoing the housekeeping skills training programme. The researcher also took observation notes of the problems and challenges the participants encountered while learning the skills according to the observation protocol. The researcher rated the level of prompt needed for the participants to conduct each of the housekeeping skills step-by-step. The researcher also interviewed the participants' parents to explore the extent the participants completed the skills at home. Moreover, the researcher had collected parent feedback to discover how participants applied the learned skills to manage their daily living after undergoing the training programme.

In addition, the researcher used observations, administration of checklist and interviews with an independent observer to identify the participants' performances in applying the learned skills at the homestay. The independent observer took descriptive notes while the participants were cleaning at the homestay using the learned skills. The researcher used the checklist to identify the level of prompt needed for the participants to perform each of the housekeeping skills. After completing the assessment, the researcher interviewed the independent observer to discuss the potential of the participants obtaining a job at homestay cleaning. The researcher also interviewed the participants' parents to explore the broader support systems required to sustain the participants' housekeeping skills.

## **Data Analysis**

To analyse the data collected, the researcher first transcribed and converted all the collected data into Microsoft Word format, including interview transcripts, observational field notes, and checklist responses.. The researcher then checked the transcript accuracy, interpretations, and meanings with the participants' parents as member check to ensure no errors existed in the

transcripts. After transforming the data into text form, the researcher had carefully read the transcripts, source by source, case by case, to seek out patterns in the data. The researcher then identified the broad ideas, concepts, behaviours or phrases from the data and set up proper codes to compress and label the data that reveal important information.

After the data were coded, the researcher applied constant comparative methods to review the coded data from each source. Similar codes were clustered together for triangulation. The researcher compared and contrasted the identified patterns within and across each case to form emerging themes to answer the research questions. All themes were reviewed to ascertain if extracts within each theme cohered and had enough supporting data.

## **RESULTS**

The following section denotes the findings based on the Research Questions for the study.

### **Participants' Mastery of Housekeeping Skills**

The following denotes the mastery of the housekeeping skills among the ASNs:

#### ***Take out the Trash***

All three participants have mastered the skills of taking out the trash after the housekeeping skills training. According to the housekeeping skills checklist, all the participants required repeated prompts to take out the trash before the training. According to the observation notes, while learning to take out the trash, two participants were found having trouble with tying the trash bag because of weak motor planning. The participants were having difficulties coordinating their hands to tie the trash bag. After being guided by the researcher, the participants repeatedly practised tying a trash bag. After repeated practices, all participants have been found able to tie the trash bag. The parent also reports this outcome during the interview. Parent of participant A highlighted that:

*"He has the problem with tying things due to his coordination problem. After you taught him how to tie a knot, he started to practise it every day. When the trash is too full, he needs to compress the trash to make space to tie; that part is more difficult for him. He would take a longer time to do it, yet he managed to get it done now."*

After the training, all the participants were rated "independent" in all the necessary steps to take out the trash. A comparison of the housekeeping skills checklist results from the baseline and after the training is presented in Table 2.

**Table 2**

*Comparison of the Housekeeping Skills Checklist's Results – Take out the Trash*

Participants	Baseline	After the training
Participant A	Require promptings on 13 steps out of 16 steps to take out the trash.	No prompting was needed to take out the trash.
Participant B	Require promptings on 7 steps out of 16 steps to take out the trash.	No prompting was needed to take out the trash.
Participant C	Require promptings on 10 steps out of 16 steps to take out the trash.	No prompting was needed to take out the trash.

***Wash the Dishes***

All three participants have mastered the skills of washing the dishes after the housekeeping skills training. Parent of participant B indicated that: *"Before the training, I have to check the dishes he washed as it wasn't clean, can see it is still oily all that but now ... he will wash it nicely, wipe it dry and keep it back."* However, observation notes showed that the participants were lacking in generalisation skills and required prompting while washing other kitchenware. For instance, they were able to wash the dirty plates, bowls and cups but still needed prompting to wash some dirty kitchenware or cookware such as wok, pot and spatula. According to the housekeeping skills checklist, all the participants required repeated promptings to wash the dishes before the training. After the training, all the participants could conduct the steps required to wash the dishes independently. Table 3 shows comparison of the housekeeping skills checklist results at the baseline and after the training..



**Table 3**

*Comparison of the Housekeeping Skills Checklist's Results: Wash the Dishes*

Participants	Baseline	After the training
Participant A	Require promptings on 6 steps out of 16 steps to wash the dishes.	No prompting needed to wash the dishes.
Participant B	Require promptings on 2 steps out of 16 steps to wash the dishes.	No prompting needed to wash the dishes.
Participant C	Require promptings on 7 steps out of 16 steps to wash the dishes.	No prompting needed to wash the dishes.

***Vacuum the Floor***

Results from the housekeeping skills checklist indicated that all the participants required repeated promptings on the steps to vacuum the floor before the training. In the observation note, although the participants knew how to manipulate the vacuum cleaner, they could not identify if the floor was still dusty. For instance, some areas were still unclean after being vacuumed by Participant A, Participant B and Participant C. Also, as they could not identify the area needing to be cleaned, Participant B and Participant C would constantly look at the trainer and wait for a cue to indicate they should stop vacuuming. After participating in the housekeeping skills training, all the participants needed less prompting to vacuum the floor compared to their performance before the training. A comparison of the housekeeping skills checklist results at the baseline and after the training is presented in Table 4.

**Table 4**

*Comparison of the Housekeeping Skills Checklist's Results - Vacuum the Floor*

Participants	Baseline	After the training
Participant A	Require promptings on 9 steps out of 16 steps to vacuum the floor.	Require promptings on 1 step out of 16 steps to vacuum the floor.
Participant B	Require promptings on 14 steps out of 16 steps to vacuum the floor.	Require promptings on 2 steps out of 16 steps to vacuum the floor.

Participant C	Require promptings on 12 steps out of 16 steps to vacuum the floor.	Require promptings on 1 step out of 16 steps to vacuum the floor.
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### ***Wash the Toilet Bowl***

All the participants have required less promptings on washing the toilet bowl compared to their performance before the training. The parent of participant B mentioned that: *"Before the training, I soaped the toilet, and he scrubbed it. Now, I would leave it to him, and he could do it all by himself pretty well."* Based on the housekeeping skills checklist, all the participants needed repeated promptings on washing the toilet bowl before the training. The observation notes had noted that Participant A splashed the water and played with the mop while washing the toilet bowl and needed a reminder to concentrate on the task; participant C showed a plodding pace to scrub the toilet bowl and required a constant reminder to speed up to complete the task. However, after participating in the housekeeping skills training, all the participants required fewer promptings on the steps to wash the toilet bowl. A comparison of the housekeeping skills checklist results at the baseline before the training and after the training is presented in Table 5.

**Table 5**

*Comparison of the Housekeeping Skills Checklist's Results – Wash the Toilet Bowl*

Participants	Baseline	After the training
Participant A	Require promptings on 15 steps out of 16 steps to wash the toilet bowl.	Require promptings on 1 step out of 16 steps to wash the toilet bowl.
Participant B	Require promptings on 15 steps out of 16 steps to wash the toilet bowl.	Require promptings on 1 step out of 16 steps to wash the toilet bowl.
Participant C	Require promptings on 15 steps out of 16 steps to vacuum the floor.	Require promptings on 4 steps out of 16 steps to wash the toilet bowl.

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### ***Make the Bed***

All the participants required less prompting on the necessary steps of making the bed. From the housekeeping skills checklist results, all the participants have required repeated promptings on the steps to make the bed before the training, and fewer promptings were needed after the training. For instance, participant C was reported to require assistance to change the bedsheet because of weak motor planning. Parent of participant C highlighted in the interview that: *"He still needs monitoring or guidance as changing bedsheet is quite challenging for him as he has a problem carrying up the weighted mattress and changing the bedsheet."* A remark from the observation

notes showed that some participants were still confused to find the fitted bedsheets, pillowcase and bolster case, tuck in the sides of the bedsheets at the foot of the bed and ensure creases in the pillowcase are lined up with the side seams of the pillow. Although promptings are still needed for the participants to complete the targeted skills, they have shown improvements in all the targeted skills. A comparison of the housekeeping skills checklist results from the baseline and after the training is presented in Table 6.

**Table 6**

*Comparison of the Housekeeping Skills Checklist's Results: Make the Bed*

Participants	Baseline	After the training
Participant A	Require promptings on 19 steps out of 23 steps to make the bed.	No prompting is needed to make the bed.
Participant B	Require promptings on 15 steps out of 23 steps to make the bed.	Require promptings on 1 step out of 16 steps to make the bed.
Participant C	Require promptings on 22 steps out of 23 steps to make the bed.	Require promptings on 3 steps out of 16 steps to make the bed.

### **Participants' Application of Housekeeping Skills at Home**

Overall findings indicate that the participants are yet to apply the learned skills at home independently. However, the participants have shown improvements in their readiness to use the learned skills at home, the transformation from dependence to independence at home and confidence to apply the learned skills at home. Three emerged themes are (1) readiness, (2) transformation from dependence to independence, (3) confidence.

#### ***Readiness***

All the participants' parents indicated that they had seen readiness in the participants to apply at home the housekeeping skills that they have learned. The parent of participant A mentioned that:

*"I noticed he understands that this training is helping him and he understands that he is learning something important .... after you (trainer) taught him about how to tie a knot (which he is weak in), he started to practise it every day at home".*

In the observation note Participant A was reported as showing cooperation and enthusiasm while he was requested to practice tying a knot at different trash bags repeatedly. Participant A also showed happiness when he could tie a knot independently. The parent of participant B also mentioned that:

*".... sometimes when I'm outside, and he is at home with his grandmother, he will tell me 'no worry, I can handle.' He doesn't need my reminder now as he knows it is his duty to do the house chores too."*

Observation notes have captured a similar remark too. Participant B would share with the researcher his stories of how he independently helped with the house chores without being told to do so.

### ***Transformation from Dependence to Independence***

The participants showed growth in transforming from dependence to independence to apply the learned skills at home. During the interview session, the parent of participant B also noticed that participant B has been taking over more responsibilities for cleanliness at home after receiving the training. The parent of participant B expressed that:

*"All the while, he has depended on the cleaner to do the chores... now, he will insist on doing the chores by himself, and I do not have to prompt him anymore.... he will offer help when I am doing house chores at home. Also, when he sees something not clean or dirt around the house, he will clean it himself without me telling him to do."*

In the observation notes, Participant B was observed able to remember what he had learned previously and could answer impromptu questions that the researcher asked.

### ***Confidence***

The participants have shown increased confidence in applying the learned skills in their daily life. The observation notes also captured the confident spirit of participant B. Participant B had shared with the researcher about how he encouraged his peers at the workplace to be involved in the house chores at home like him. The parent of participant B also reported that participant B is getting more confident and continued improving from the experiences. The parent expressed:

*"... he involves more now, and he is more confident and wants to learn more to take care of a house.... At the workplace, I have been receiving feedback that he commands people with increased confidence and giving instructions to his colleagues! I think now that he achieves more, he is proud of that."*

The parent of participant C reported that knowing the steps to perform the skills had helped participant C to attain confidence in doing the house chores. With that growing confidence, it allows the family to introduce more house chores to participant C now. As quoted from the parent of participant C:

*"As he knows better on how to conduct the common house chores, we see more opportunity to introduce him [to] more chores now."*

### ***Participants' Application of Skills at Homestay***

The participants were able to follow the chart to conduct the cleaning jobs and use appropriate tools to conduct the cleaning jobs at the homestay. However, they were unable to manage time efficiently, lacked attention to detail, and required constant supervision/ prompting/assistance

while cleaning the homestay. Table 4 summarises the five emerged themes in skill application.. The five themes developed from the data analysis, are: (1) able to follow the chart to conduct the cleaning, (2) able to use appropriate tools to conduct the cleaning, (3) unable to manage time efficiently, (4) lack of attention to detail, and (5) require supervision/prompts/assistance to complete the tasks.

### ***Able to Follow the Chart to Conduct the Cleaning***

Data show that the participants were able to follow the house chores chart prepared for them to identify the cleaning tasks at the homestay. In the housekeeping skills checklist, all the participants were rated "independent" in following the house chores chart to identify and execute the 5 cleaning duties at the homestay (wash the dishes, vacuum the floor, wash the toilet bowl, make the bed and take out the trash). The participants were also observed to follow the chart to conduct the 5 cleaning tasks at the respective areas. During the interview, the independent observer also highlighted that:

*"I think they are doing well as they can do most of it (the five tasks) by themselves."*

### ***Able to Use Appropriate Tools to Conduct the Cleaning***

All the participants were reported able to use appropriate cleaning tools to conduct the cleaning at the homestay. According to the observation notes, the participants were observed able to identify and select the proper cleaning tools to perform the cleaning. For instance, they were able to locate the dishwashing soap and sponge to wash the dishes; vacuum cleaner to vacuum the floor; grout brush and toilet bowl cleaner to wash the toilet bowl; the correct size of bedsheets, and insert the new and correct size of wastebasket liners into the emptied wastebasket. However, results from the housekeeping skills checklist show that participants required prompts to identify the location of some cleaning tools such as vacuum cleaners, toilet bowl cleaners and grout brushes in the new environment.

### ***Unable to Manage Time Efficiently***

The participants were found to lack ability to manage the cleaning time efficiently while performing the homestay cleaning tasks. Each participant was given one hour to follow the house chores chart to clean the homestay. The participants, however, had exceeded the given time and required extra time to complete the five targeted tasks. For instance, participant C was observed very slowly washing the dishes and cleaning the bathroom in the observation note. The housekeeping skills checklist also captured that the participants required verbal prompts to

speed up the cleaning process. The independent observer had mentioned similar findings repeatedly during the interview session. As quoted from the interview, the independent observer said that:

*"We need them (the participants) to be able to work fast... they need to know how to act fast and efficiently to make the house ready before the next guest arrive(s).... They must be able to work fast without any guidance to speed up the whole cleaning process so they can proceed to the next unit."*

### ***Lack of Attention to Detail***

The data also showed that the participants could not pay attention to detail, especially identifying the areas that needed to be cleaned while cleaning the homestay. The observation notes revealed a few similar incidents at the homestay. For instance, all the participants were unable to vacuum the floor until it was clean, as dust and hair could still be seen on the floor after they vacuumed. According to the checklist, all the participants required gesture prompts to continue vacuuming until the floor area is all vacuumed. The participants also required verbal prompts to rinse all parts of the toilet bowl thoroughly and move portable furniture and small floor-standing items out of the way while vacuuming and scrubbing the dirty dishes until the food residues are clear. The independent observer also mentioned a similar remark in the interview:

*"...they (the participants) need to be observant while cleaning the house, if there are any damages or any necessary to report, they need to tell us immediately so that we can solve it before the next guest arrives."*

### ***Require Supervision/Prompting/Assistance to Complete the Tasks***

The participants required constant supervision, prompting and assistance while performing the cleaning job at the homestay. One participant was continually asking for help on things that he was supposed to complete himself. For instance, while vacuuming the floor, he kept asking for help to set the hose, wand and brush on the vacuum cleaner; while changing the bedsheet, he called for help to lift the bed, move the blocking items and move the bed for more space instead of doing it by himself. During the interview session, the independent observer mentioned similar findings that:

*"They seem lost without guidance. For example, while washing the toilet, they were supposed to get the tools first, but they seemed lost without [someone] telling them what to do. When you tell them what to do, then they can do it."*

### **Types of Support**

To assist the ASNs to sustain the skills they have learned, the parents have suggested a few supports that could help the ASNs to sustain the housekeeping skills, which are consistency in applying the skills at home, opportunities to apply the skills in external settings, continuous learning and social support group. Four themes have been generated from the data analysis, which are (1) consistency

in applying the skills at home, (2) opportunities to apply the skills in external settings, (3) continuous learning, and (4) social support group.

### ***Consistency in Applying the Skills at Home***

All three participants' parents responded that participants would sustain their learned skills if they consistently applied them at home. If they do not, the family members have to play the role to remind them and insist they be involved in the house chores. The parent of participant B mentioned:

*"... he can sustain the skills as long as I let go and allow him to do. Of course, there is still some room for improvement as he is just starting doing it, but I believe as long as he continues to do it, he will be able to learn from experience and get better .... "*

The parent of participant C also mentioned:

*"... to help him sustain the skills, we need to make sure we are disciplined and consistent to remind and insist him to do the chores."*

### ***Opportunities to Apply the Skills in External Settings***

All three participants' parents suggested that opportunities to practice the skills outside the home would be helpful for them to sustain the skills in the future. One parent of a participant mentioned:

*"As I can see, he can take care of himself at the basic level at home. I would want to see him progress with the skills out of home like what is safe to do, what is not safe to do."*

### ***Continuous Learning***

All three participants' parents also suggested continuing learning on further skills development to help the participants sustain the skills. The parent of participant A expressed:

*"If only he could learn when he should do the chores like washing the toilet, vacuuming the floor, changing bed sheets...He has the skills, but he doesn't know when to do it."*

### ***Social Support Group***

The parent of participant A suggested that social support groups in the community help provide emotional support and encouragement to encourage ASNs to continue practising their skills in the future. The support group will allow the ASNs to be part of a community to meet people who share similar challenges and to support each other on their life journeys. As quoted from the parent of participant A:

*"If there's a support group for them and also for us as a parent, maybe once a month to share problem, solutions and encouragement ... So it can help them to stay connected with the community and realise they are part of the community and they can make more contributions."*

## **DISCUSSION**

Analysis of the training outcomes showed that skill-based training offered constructive support for ASNs to acquire independence. The participants showed a breakthrough in mastering the targeted skills, which has successfully achieved this study's research objectives. The results support the note taken from Jaya et al. (2018) that learners with special needs are more likely accustomed to a

specific skill and mastered it in practice when given repetitive training. However, certain skills remained challenging for the participants. Findings from Cornelis et al. (2019) highlighted that performing activities of daily living is sophisticated and requires a synergy of cognitive-motor, psychological skills, and appropriate environmental conditions. Hence, it is possible that the attention span and cognitive capabilities involved in vacuuming the floor may have been too taxing for the participants with global developmental delay and attention deficit disorder in this study which contribute to such outcomes. In addition, the participants are lacking in higher level of motor planning required in performing those tasks. While washing the toilet, having to squat down on the soapy floor in the narrow bathroom to scrub the toilet bowl requires a high level of motor planning. Rinsing the soapy toilet bowl and floor with a water ladle requires good hand eye coordination. Those skills are challenging for the participants with developmental delays.

Through the training, participants have shown readiness in applying the housekeeping skills at home. They are more aware of the cleanliness of their living space and paying more attention to their surroundings now. They begin to show more interest in applying the skills in their daily living. Such interests contribute to the growth of independence among participants, making them helpful family members instead of depending on care from others. Amaral et al. (2014) highlighted that active involvement in daily living activities might help establish favourable attributes such as initiative and agency, relevant to developing a sense of competence and positive identity in ASNs.

The participants were facing many challenges in cleaning the homestay. While performing a cleaning at the homestay, they were found unable to manage time efficiently to complete the tasks, lacked attention to detail to identify areas needing to be cleaned, and required constant supervision and assistance to complete the tasks. Participants' mental disorders conditions may be one of the factors contributing to the results. For instance, according to the *Diagnosis and Statistical Manual of Mental Disorders (DSM-V)*, individuals with ADD may display difficulty giving close attention to details or make incautious errors in activities, have difficulty maintaining attention in tasks, and are easily diverted by extraneous stimuli, and so on American Psychiatric Association (APA), 2013). In this study, all the participants were diagnosed with either ADD, ADHD, Asperger or GDD. The participants were unfamiliar with the new environment and lack executive functioning to accomplish the tasks.

Hume and his colleagues (2014) mentioned that impairment in executive functioning that is responsible for cognitive processes such as working memory, task initiation, planning and prioritising in multi-step sequences of events and mental flexibility make it particularly difficult for ASNs to deal with new situations and process complex information. In addition, as it was the first time that they conducted a cleaning job at a homestay, it may be that they were unfamiliar with the new environment and settings such as different cleaning tools used at the homestay; thus they performed poorly for the first time. A similar finding has been found by Jaya et al. (2018). The participants may have performed better if given more practice to apply the learned skills in different settings.

The independent observer shared the worries on the participants' productivity, such as the ability to complete the tasks independently, the ability to manage time efficiently to complete the tasks, and the efficiency of work. These concerns are similar to the existing literature that employers show common problems over the safety, attendance, punctuality, social skills, appearance, productivity, and other employment skills for people with special needs when it comes to considering integrating people with disabilities into their organisation (Bachrach, 2015). Roux



et al. (2013) also mentioned that employees are required to be independent and productive to carry out respective tasks. Failure to do so may negatively affect their employability.

### **IMPLICATIONS OF THE STUDY**

The research results indicate that ASNs skill acquisition can be improved through structured skills-based training. A productive training must prioritise improving independence with skills and teaching skills that enable autonomy with self-care to promote independent living for ASNs (Burns et al., 2019). Participants' skills were gradually enhanced through guidelines from the trainer and repetitive practices in real-life scenarios in the training programme. Results were consistent with the existing literature on promoting functional independence through skills-based training. Studies have highlighted that life skills curriculum should be a focus of treatment plan to promote functional independence for ASNs who are transitioning to adulthood (Bridges et al., 2019; Cruz-Torres et al., 2019; Jaya et al., 2018; Kingsnorth et al., 2019; Oursler et al., 2019; Wertalik & Kubina, 2017).

The results from this study also indicate that parental involvement is critical for the success of interventions for the ASNs. The collaboration with the researcher allowed the parents to gain strategies and knowledge that can help them navigate the adolescent period of ASNs. During the training in this study, parental involvement in the in-home individual supervision with the participants helped to improve the consistency of intervention and the application of skills to the home environment (Burns et al., 2019). These findings also address the issues mentioned in the literature that parents often encounter pressures as they desperately hope to better understand and communicate with their children (Maxey & Beckert, 2017). Moreover, parents earned a new realisation of their ASNs' capabilities when they witnessed their children learning new skills and becoming independent (Holmes et al., 2018). With a unique perspective on the capabilities of the ASNs, parents see more opportunities to introduce more skills to ASNs, which contribute to ASN growth and independence.

Findings also have implications for employers from different industries. ASNs need help getting into the field of work that interests them where they can achieve their full potential (Shaffeei et al., 2020). As ASN skills competency can be significantly enhanced and sustained through proper guidance and repeated practice, opportunities from employers are essential to ensure ASNs can utilise their skills to function meaningfully in the job market. Given that findings indicate the potential of ASNs working in the cleaning industry, disability inclusiveness should be considered for employers from relevant sectors. The promotion of employment for persons with disabilities provides extra support for a company's social responsibility image and increases revenue as it attracts guests from diverse backgrounds (Miethlich & Oldenburg, 2019b). Continuous signals from top management to create a disability-friendly culture would allow ASNs to gain emotional support in the workplace. Efforts such as training and development, performance management for ASNs are essential to enhance their long-term productivity in the company.

### **LIMITATIONS**

There is a need to address several limitations in this study. One of the limitations is the generality of the findings from a case study with qualitative data analysis. The results from the case study may apply to particular population groups who share similar characteristics. Still, the conclusions drawn from the study may not represent the broader populations, which may be less likely

transferable and difficult to replicate to other settings (Fraenkel et al., 2015). Also, another limitation found in this study is that it is unlikely to make causal inferences from a case study with an analysis of qualitative data. Moreover, this study involves consistent data collection from ASNs in training for three months. Withdrawal of participants from the training due to unforeseen circumstances may be one of the few limitations beyond the researcher's control.

### **CONCLUSION AND SUGGESTIONS FOR FUTURE STUDY**

Based on the preceding discussions, it is hoped that a skills-based treatment plan should be the focus preparatory to developing of independent living for young children to adults with special needs. Findings have revealed that a skills-based treatment plan provides constructive support to increase ASNs independence in daily living. A skills-based treatment plan on life skills allows ASNs to obtain the necessary skill sets to deal with their everyday lives. Second, the results suggest that caregiver training should be considered while planning the intervention for ASNs. Teaching behavioural intervention techniques to caregivers of ASNs can create stimulating learning outcomes. Third, findings from this study suggest that learning can be best improved by the active synergic interactions between individuals and the environment; thus, a structured environment that provides essential stimuli related to the purpose of the treatment plan should be taken into consideration in a treatment plan for adolescents with special needs. Lastly, based on the findings from this study, it is crucial to ensure that ASNs are given opportunities to practise the learned skills in external settings. More agencies should play a role in facilitating independent living for ASNs in Malaysia to promote economic development and social progress in an inclusive way.

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