

TEACHERS' KNOWLEDGE ON ADHD, OPINIONS ON ADHD STIMULANT
MEDICATION AND THE TEACHING OF STUDENTS WITH ADHD

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To my beloved parents

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ABSTRACT

This study intends to identify kindergarten's teachers' knowledge on ADHD, their opinions on the use of stimulant medication, and also on the teaching of students with ADHD. The study involved private kindergarten teachers within the area of Johor Bahru. A total of 160 respondents were selected to be involved in this study but only 92 of the respondents gave their full commitment in this study. The data was collected using questionnaires consisting of two main sections namely Section A (Demography) and Section B (Questions). Section B was divided into 3 subsections namely Section B1 (Teachers' Knowledge on ADHD), Section B2 (Teachers' Opinions on the use of ADHD Stimulant Medication) and Section B3 (Teachers' Opinions on the Teaching of Students with ADHD). The collected data was then analyzed by means of descriptive statistics (percentage and mean) and inferential statistics (Spearman Rho Correlation). Generally, the findings showed that the teachers' do not have sufficient knowledge on ADHD. Also, the teachers were generally unsure about the use of ADHD stimulant medication and were quite reluctant be involved in the assessment of students with ADHD. Besides that, analysis also showed that there was no significant relationship between the teachers' teaching experience and their knowledge on ADHD. However, analysis showed that there is a significant positive relationship between the teachers' education background and their knowledge on ADHD. In conclusion, the teachers do not have sufficient knowledge on ADHD. They were also uncertain about the use of ADHD stimulant medication and were reluctant to get involved in the assessment of students with ADHD. Finally, this study provides several recommendations in order to help future researchers.

ABSTRAK

Kajian ini bertujuan untuk mengkaji pengetahuan guru tadika tentang ADHD, pendapat mereka tentang penggunaan ubat perangsang ADHD, dan juga tentang pengajaran pelajar dengan ADHD. Kajian ini melibatkan guru tadika swasta dalam kawasan Johor Bahru. Sejumlah 160 responden telah dipilih untuk terlibat dalam kajian ini tetapi hanya 92 responden yang telah memberi komitmen penuh dalam kajian ini. Data telah dikumpulkan dengan menggunakan soal selidik yang terdiri daripada dua bahagian utama iaitu Bahagian A (Demografi) dan Bahagian B (Soalan). Bahagian B telah dibahagikan kepada 3 bahagian kecil iaitu Bahagian B1 (Pengetahuan Guru tentang ADHD), Bahagian B2 (Pendapat guru tentang penggunaan Ubat Perangsang ADHD) dan Bahagian B3 (Pendapat Guru tentang Pengajaran Pelajar dengan ADHD). Data yang diperolehi dianalisis dengan menggunakan statistik deskriptif (peratusan dan min) dan statistik inferensi (Spearman Rho Korelasi). Secara umumnya, kajian ini menunjukkan bahawa guru-guru tidak mempunyai pengetahuan yang mencukupi tentang ADHD. Selain itu, guru-guru secara amnya tidak pasti tentang penggunaan ubat perangsang ADHD dan enggan untuk melibatkan diri dalam penilaian pelajar dengan ADHD. Selain itu, analisis juga menunjukkan bahawa tidak terdapat hubungan yang kuat dan penting antara pengalaman mengajar guru dan pengetahuan mereka mengenai ADHD. Walau bagaimanapun, analisis juga menunjukkan bahawa terdapat hubungan positif yang kuat dan penting antara latar belakang pendidikan guru dan pengetahuan mereka mengenai ADHD. Kesimpulannya, guru-guru tidak mempunyai pengetahuan yang mencukupi mengenai ADHD. Selain itu, terdapat ketidak pasti tentang penggunaan ubat perangsang ADHD dan keengganan guru untuk terlibat dalam penilaian pelajar dengan ADHD. Akhir sekali, kajian ini juga memberikan beberapa cadangan untuk membantu pengkaji akan datang.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

One of the most widely recognized and most commonly diagnosed psychiatric disorder of childhood is Attention Deficit Hyperactivity Disorders (ADHD). Children diagnosed with Attention Deficit Hyperactive Disorder (ADHD) have difficulties in concentrating, will show impulsive behavior and have an abnormally increased activity. According to Hallahan and Kauffman (2006), the wide recognition of ADHD is due to the children's frequent reference to guidance clinic. This implies that majority of the children who were referred to guidance clinics for behavioral problems are the ones with ADHD. In line with the statement made by Hallahan and Kauffman, a research conducted by Richters et al. (1995) has found out that there are approximately 50 to 75 percent of the cases referred to guidance clinics are for ADHD. The National Institute of Mental Health (2005) in the United States estimated that there are between 3 to 5 percent of the children with ADHD. This implies that it is likely that there will be at least one child in a class with ADHD. However, this is just an estimate. If this number is to be seen on a national level, the number of children with ADHD will range from thousands to millions depending on the amount of children in school nationally.

Usually, the children or students who are diagnosed with ADHD have difficulty in focusing on a task, is unable to sit still, act based on impulsivity, and they rarely complete the works that have been given to them at school or even at

home. In order to help these children or students who have been diagnosed with ADHD, psycho stimulant medications are often used for their treatment. One of the most common psycho stimulant medication used is methylphenidate (e.g., Reeve, 1990; Kwasman, Tinsley, and Lepper, 1995; Runnheim, Frankenberger, and Hazelkorn, 1996). However, the high demand of methylphenidate for the treatment of ADHD had caused a dramatic increase of 900 percent in the production of methylphenidate in the United States from 1990 to 2001. The shocking part is actually that 90 percent of methylphenidate produced was consumed for the treatment of ADHD (U.S. Drug Enforcement Agency, 2002). Besides methylphenidate, another stimulant medication for ADHD, amphetamine is also commonly used for the treatment of ADHD. According to U.S. Drug Enforcement Agency (2002), the production of amphetamine has increased by an overwhelming 5,767 percent from 1993 to 2001. By 2001, 44 percent of the stimulants produced in the United States is amphetamine, and the shocking part is that the vast majority of amphetamine produced is used for the treatment of ADHD.

The statistics regarding the vast increase of the stimulants produced has created concern among both parents and teachers in the United States. Parents had put the blame of the increased production of stimulant medications on the cause of over diagnosis of the children with ADHD. The concerns of parents regarding the usage of stimulant medication were so great that it led to political solutions. In some states in the United States, schools are recommended to consider alternative, nonmedical solution for students with ADHD. This resolution is a result of the concern that teachers, without considering other possible alternatives, are too quick to recommend medication to parents of the children with ADHD (Porter, 2000).

Usually, behaviors associated with ADHD will be first observed in a classroom setting. According to Snider, Frankenberger, and Aspensen (2000), teachers were involved in making the initial referral nearly 40 percent of the time. This shows the importance of the role played by the teacher in the initial screening for ADHD. With the current concern of the parents regarding the treatment of ADHD using stimulant medication, it is important for the teachers to be knowledgeable and objective in the diagnosis of ADHD. Due to the importance of the knowledge and objectivity the teachers should have in the diagnosis of ADHD,

this study aims to investigate the teachers' opinions on stimulant medicines, knowledge and experience with ADHD students.

1.2 Background of Study

Since the introduction of the term "Attention Deficit Disorder" (ADD) in 1980, attention deficits and related behaviors have received substantial attention. According to the American Psychiatric Association (1987), the awareness of this disorder increased dramatically after the revised Diagnostic Statistical Manual of Mental Disorder (DSM) was published in 1987. In the revised DSM, the term for ADD was changed to "Attention Deficit Hyperactivity Disorder" (ADHD).

There is an ongoing argument about ADHD as a valid diagnosis. Although there is a widespread agreement about the validity of ADHD diagnosis, there is still no definitive neurological cause for ADHD (NIH Consensus Statement, 1998) and at the same time there is no valid neurological or physiological test that can be used to diagnose ADHD (Agency for Health Care Policy and Research, 1999). Similarly, Agency for Health Care Policy and Research (AHCPR) (1999) in the United States has found out that medical screening tests were not usable for the diagnosis of ADHD. Due to these findings, there is a widespread agreement that stimulant medication does not treat the cause of ADHD but only ameliorate the symptoms that are associated with ADHD.

The usage of stimulant medication always raises some issues. NIH Consensus Statement (1998) states that although the medication used to treat ADHD have some therapeutic value, there are also some potential for abuse of the medication. There is little information regarding the long-term effects of psycho stimulant medication but at the same time, there is also a lack of conclusive evidence that moderate, controlled used of the stimulant medication is harmful. However, there are cases that children experience side effects from the stimulant medication of ADHD. These side effects include headaches, stomachaches, mood changes, reduced appetite, weight loss, and insomnia (Fitzpatrick, Klorman, Brumaghim, and Borgstedt, 1992; Swanson,

McBurnett, Christian, and Wigal, 1995). In addition to the side effects, Moline and Frankenberger (2001) stated that the side effects of stimulant medication on children with ADHD may increase if the children have built a tolerance to stimulant medication as a result of prolonged usage, which caused the stimulant medication to lose its effectiveness. Hence, it is vital for the dosage of the stimulant medication to be carefully monitored in order to maintain the medication's maximum effectiveness and at the same time avoiding the harmful side effects of the medication.

Currently, there is a common misconception of people regarding the diagnosis of ADHD. Most people used effectiveness as a measurement for the diagnosis of ADHD which implies that if a child's behavior improves after receiving medication, then the diagnosis of ADHD is confirmed (Snider, Busch, and Arrowood, 2003). However, this is an untrue assumption by the people and this will cause the over diagnosis of ADHD. This is because children without ADHD will respond to low doses of stimulant medication similarly to the children with ADHD (Peloquin and Klorman, 1986). Thus, it can be seen that stimulant medications do not have a paradoxical effects on children with ADHD and hence the reasoning cannot be used to verify a diagnosis.

As can be seen, there are quite a number of arguments against the usage of stimulant medication for the treatment of ADHD. However, for the treatment of the core ADHD symptoms such as inattentiveness, hyperactivity, and aggression, there is little doubt regarding the benefits of stimulant medication (Forness, Kavale, Sweeney, and Crenshaw, 1999). However, stimulant medication does not improve academic performance of the children with ADHD. Frankenberger and Cannon (1999) found out that children treated with stimulant medication did not show any improvement in terms of academic even after four years of continuous treatment and instead, the children fall further behind in academic achievement.

As stated by Snider, Frankenberger, and Aspensen (2000), teachers were involved in making the initial referral nearly 40 percent of the time. This shows that teachers play a vital role in the initial screening and assessment for ADHD. Because of the vital role played by the teacher in the identification and treatment of ADHD, it is essential for the teachers to be knowledgeable on ADHD so that they have a

current and accurate knowledge base as they interact with parents, physicians, and other professions. However, there are a number of documented research regarding the teachers knowledge on ADHD that shows that teachers have little or no training on ADHD or issues related to stimulant medication for ADHD.

In the research done by Kasten, Coury, and Heron (1992), it is found out that 96 percent of the teachers stated that they receive little or no training at all on ADHD. Besides that, they also found out that 50 percent of the teachers did not know the side effects that might occur due to stimulant medication for ADHD. Similar to the study done by Kasten, Coury, and Heron in 1992, the results of a study done by Jerome, Gordon, and Hustler (1994) showed that 89% of the elementary school teachers reported that they receive no training on ADHD during their college education and 92% of them only received minimal training on ADHD after graduation. However, there are also cases in which the teachers are knowledgeable on ADHD. In a study conducted by Kos, Richdale, and Jackson (2004) to investigate the knowledge about ADHD of pre-service and in-service teachers, results obtained showed that both the pre-service and the in-service teachers are actually quite knowledgeable about ADHD. The in-service teachers managed to answer 60.7 percent of the questions correctly while the pre-service teachers managed to answer 52.6 percent of the questions correctly.

Although there are numerous studies that have been done to investigate the knowledge, opinions and experiences of teachers about ADHD, most of these studies are done in the United States. Until now, there is still no proper documented research regarding the knowledge, opinions and experiences of teachers on ADHD in the local context. Therefore, it would be important to investigate the teachers' knowledge on ADHD, opinions on ADHD stimulant medication and the teaching of students with ADHD and compare it to the other research (e.g., Kasten, Coury, Heron, 1992; and Jerome, Gordon, Huster, 1994) done.

1.3 Statement of problem

In Malaysia, preschools/kindergartens are divided into two main types which are the government and private kindergartens. According to Educational Information Management System (EMiS) in 2012, there were approximately 21,759 private kindergartens in Malaysia which 4,495 of those kindergartens are in the state of Johor, Malaysia. Also, EMiS (2012) stated that there were approximately 188,168 preschoolers in 2012 in Malaysia. With approximately 22,000 private kindergartens in Malaysia, the total numbers of private kindergarten teachers are 20,878 (EMiS, 2012). This means that on average there are not more than 2 teachers in 1 kindergarten. This is a surprisingly low workforce. Kindergarten teachers play a very important role because they are the main influence in the lives of the children during their developmental years. Handling preschoolers with ADHD is a very challenging task and it demands tolerance and understanding from the teachers. Hence, preschool teachers must have sufficient knowledge in order to be able to handle and work effectively with the students with ADHD.

However, from the research done by Jerome, Gordon, and Hutler (1994), it was found out that 89 percent of the teachers involved in the study reported that they had no training on ADHD during their college education and 92 percent of them only received minimal training on ADHD after graduation. As can be seen from the research done, majority of the teachers have inadequate educational training in the area of ADHD. However, in order to be able to handle the challenging situation and work effectively with the students with ADHD, it is important for the teachers to have a comprehensive understanding of the causes and common characteristics related to ADHD. Therefore, an assessment of the preschool teachers' knowledge, opinions and educational experiences related to ADHD is vital for the preschoolers as majority of the teachers of preschoolers are not required for college education and hence may have insufficient knowledge and educational experiences in this area.

Therefore, in order to be an effective teacher for the students of ADHD, the teacher must be equipped with sufficient knowledge regarding the well-being of ADHD. This includes the knowledge on stimulant medication, the characteristics of the children with ADHD and also must have enough experience in teaching the

children with ADHD. Based on the explanation above, this study will explore the teachers' knowledge on ADHD, their opinions on the use of ADHD stimulant medication and the teaching of the students with ADHD.

1.4 Purpose of Study

The purpose of this research is to examine the teachers' knowledge on ADHD, opinions on the use stimulant medicines and opinions on the teaching of students with ADHD. Apart from that, this research also aims to investigate the relationship between kindergarten teachers' experience and their knowledge on ADHD and also the relationship between the kindergarten teachers' education background and their knowledge on ADHD.

1.5 Objectives of Study

1. To identify kindergarten teachers' knowledge regarding ADHD.
2. To find out the opinions of kindergarten teachers regarding the use of ADHD stimulant medication.
3. To investigate kindergarten teachers' experience in the teaching of students with ADHD.
4. To establish a correlation between teaching experience and knowledge on ADHD.
5. To establish a correlation between background knowledge and knowledge on ADHD.

1.6 Research Questions

1. What is the level of knowledge of the preschool teachers on ADHD?
2. What are the opinions of preschool teachers regarding the usage of ADHD stimulant medication?
3. What and how are the teaching experiences of preschool teachers in teaching students with ADHD?
4. Is there a significant relationship between teaching experiences with the knowledge on ADHD?
5. Is there a significant relationship between education background with the knowledge on ADHD?

1.7 Research Hypotheses

Based on the research questions, the following hypothesis is constructed:

1. Null Hypothesis for Research Question 4:
H₀1 There is no significant relationship between teaching experiences and the knowledge on ADHD.
2. Null Hypothesis for Research Question 5:
H₀2 There is no significant relationship between education background and the knowledge on ADHD.

1.8 Scope of Study

This study will be conducted using a questionnaire adapted from Snider, Busch and Arrowood (2003) involving almost 100 kindergarten teachers from private kindergartens within Johor Bahru, Johor. There are no restriction regarding the age and gender of the teachers. They will rate their level of agreement on a 5-point Likert scale to test their knowledge on ADHD, opinions regarding the use of ADHD stimulant medication and opinions on the teaching of students with ADHD students.

1.9 Significance of the Study

Children with special needs are heavily affected and influenced by preschool teachers. It is known that children with ADHD will have behavioral problems which are very difficult to handle. Thus, teaching the children with behavior disorders is an extremely challenging task which requires the teachers to understand their individual needs and the nature of their disorders. If kindergarten teachers do not have any knowledge on ADHD, they may blame the children's behavior problems on poor parenting. This may cause the teachers to be less supportive and accommodating to the children with ADHD in the classroom environment. However, if kindergarten teachers have sufficient knowledge on ADHD, they will know the biological basis that caused the behavioral problems of the children. Thus, they will be more understanding, more supportive of the individual differences and more accommodating to the children with ADHD while they are in the classroom environment.

This study is important because it serves as an investigation of the kindergarten teachers' knowledge, and opinions in the area of ADHD. The results obtained from this study will aid in the identification of the possible needs of the preschool teachers for professional development. For example, in the past documented research, it was found out that there were a majority of kindergarten teachers who claimed that they did not receive any or little training on ADHD (e.g.,

Kasten, Coury, and Heron, 1992; Jerome, Gordon, and Hustler, 1994). Thus, it can be seen that majority of the kindergarten teachers involved in the past research have insufficient knowledge on ADHD. Thus, their possible area of needs is to understand and acquire more knowledge on ADHD.

As had been mentioned earlier, this research is important for the identification of the possible needs of the preschool teachers' professional development. In this study, the purpose is to examine the kindergarten teachers' knowledge on ADHD, opinions on the use of ADHD stimulant medication and opinions on the teaching of students with ADHD. This investigation is important because by examining whether the kindergarten teachers have enough knowledge on ADHD, their opinions on the use of ADHD stimulant medication, and also their opinions on the teaching teaching children with ADHD, their possible needs area may be identified and further professional development can be arranged if necessary. These needs area are extremely important to determine the area of professional development of the teacher. Professional development is essential to fulfill the needs area of the preschool teachers. This is to avoid the kindergarten teachers from giving inaccurate causes and assessment procedures which if done will have a devastating effect on the children with ADHD. Thus, the result of this research is important to all the kindergarten teachers. This is because in order for teaching to be effectively conducted, especially when dealing with children with ADHD, the teachers must have sufficient knowledge on ADHD (i.e., the needs area of the kindergarten teachers). However, there may be some teachers who do not know their which needs area they are lacking. Thus, this research serves as an important informant to all the kindergarten teachers regarding what area of needs they are lacking and also the importance of these areas of needs.

It is believed that this research will provide the information on the needs area of the kindergarten teachers. This information will be useful and important to all the kindergarten teachers so that they will know what are they lacking and what professional development is essential for them. With the needs area identified and fulfilled; kindergarten teachers will be able to conduct assessment and teaching more effectively with the students with ADHD.

1.10 Theoretical Framework

Teachers play a vital role in education, this is especially true for kindergarten teachers in which they are the ones who lay the foundations of the knowledge of the children. Teaching children from age 2 to 7 is already a challenging task. The teaching will become more challenging if a teacher is required to teach children with ADHD. Thus, in order for teaching to be smooth and effective, teachers must have sufficient knowledge on ADHD in order to know how to handle children with ADHD in a classroom setting.

This study is conducted to investigate kindergarten teachers' knowledge, opinions on ADHD stimulant medication and opinions on the teaching of students with ADHD. Thus, two theories have been related to support this study. The first theory is the schema theory proposed by Bartlett (1932). Schemata is used by people to organize their current knowledge and provide a framework for future use of the knowledge. The schema theory serves as the basis of this study to explain the relationship between academic qualification and knowledge on ADHD. The schema theory will provide explanation the relationship of the schema of knowledge acquired when studying for higher academic qualification and the knowledge on ADHD.

The second theory that is related to this study is the experiential learning theory proposed by Kolb (1984). Experiential learning is basically learning through experience. The experiential learning theory will be used to explain the relationship between the teachers' teaching experience and their knowledge on ADHD.

The theories (i.e., schema theory and experiential learning theory) will be discussed in further detail in the next chapter. These theories are related to the teachers' knowledge on ADHD. It is hoped that by highlighting the interrelation between the theories in this theoretical framework, the key to understanding the underlying process has been provided.

The theoretical framework of this study is shown in Figure 1.1

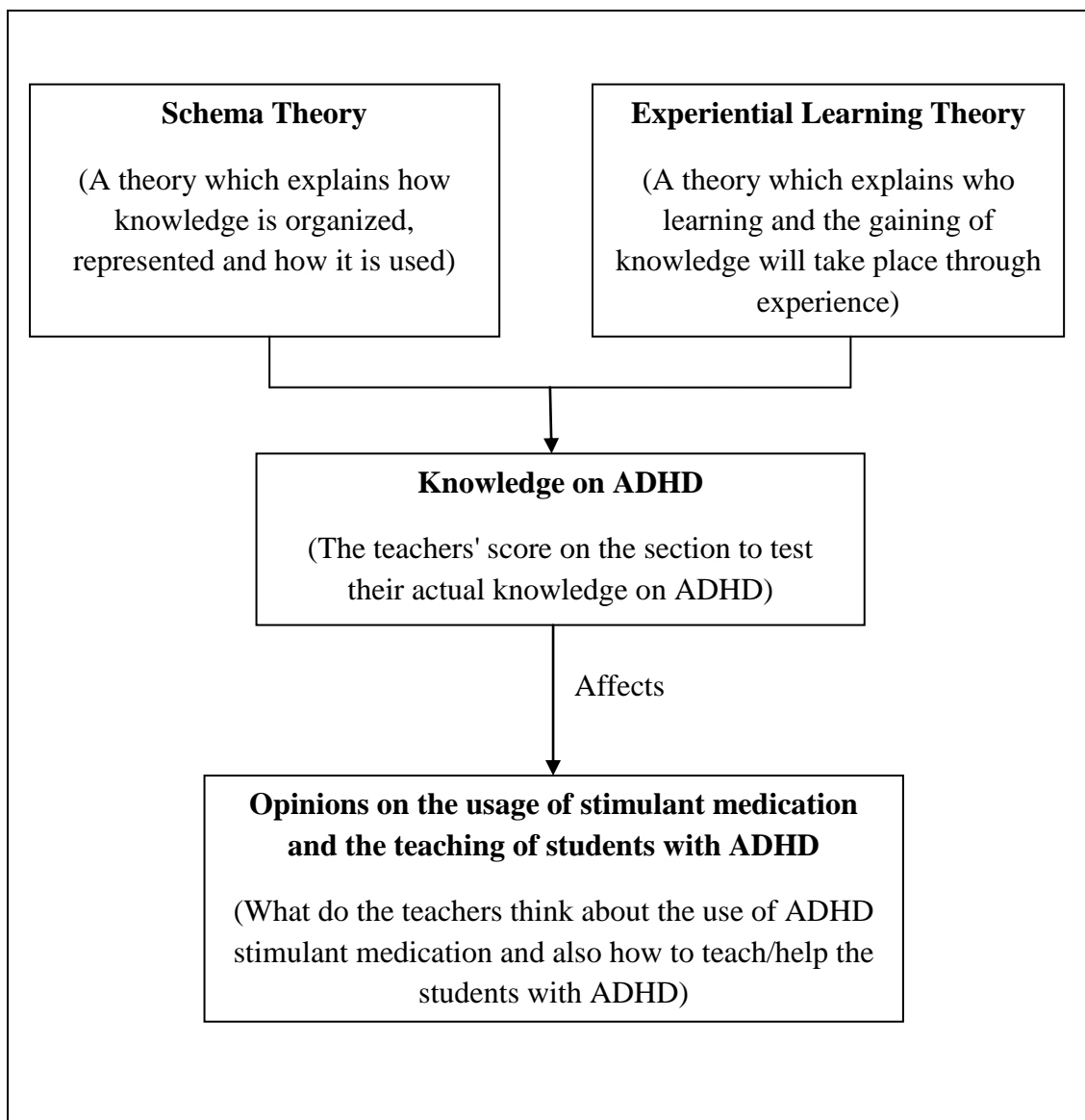


Figure 1.1: Theoretical Framework.

1.11 Conceptual Framework

The conceptual framework is based on the theoretical framework of this study. The conceptual framework is shown in Figure 1.2.

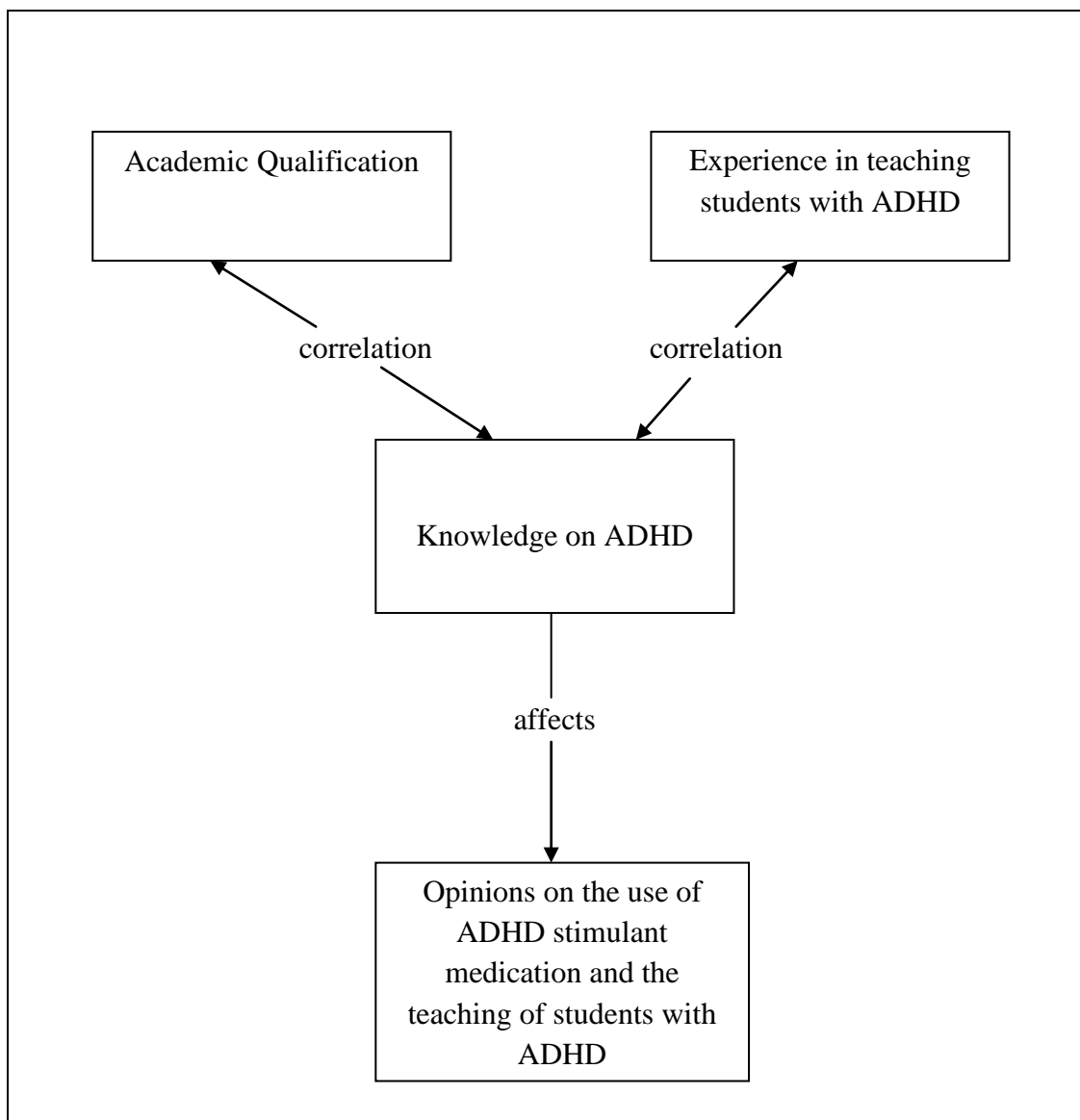


Figure 1.2: Conceptual Framework.

The conceptual framework of this study is developed based on the theoretical framework of this study. It shows the academic qualification and teaching experience of the teachers and the relationship of these two variables with their knowledge on ADHD. Besides that, the conceptual framework also highlights the effects of the teachers' ADHD knowledge have on their opinions on the use of ADHD stimulant medication and the teaching of students with ADHD.

1.12 Limitations of study

This study was conducted to investigate the kindergarten teachers' knowledge on ADHD, opinions on the use of ADHD stimulant medication, and also their opinions on the teaching of children with ADHD. However, this study is not conducted on a big scale. The kindergarten teachers involved in this study are only from the several areas within Johor Bahru, Johor. This is one of the limitations of this study. Besides that, the sample for this study is restricted to only kindergarten teachers. This has caused the results of this study being unable to be applied to all the teachers.

1.13 Conceptual and Operational Definition

Definitions are provided for the key variables and key terms related in this study. These variables are ADHD, stimulant medication, kindergarten, opinions, education background, and teaching experience.

1.13.1 Attention Deficit Hyperactivity Disorder (ADHD)

ADHD is a psychiatric disorder characterized by inattention, distractibility, impulsivity and hyperactivity. The symptoms of ADHD will usually emerge before the age of 7 (DSM-IV-TR). In recent years, ADHD has become the most common diagnosed disorder for children. Dudley (2005) stated that ADHD does appear to have a genetic component but the isolation of the genetic cause was unable to be proven. However, there are also other possible causes of ADHD. The other possible causes of ADHD include nutrition, viral infections, and brain injuries. Usually, ADHD is treated by stimulant medication and the most common one in use is Ritalin.

In this study, ADHD is the main concern, in which the investigation is on the respondents' knowledge on ADHD, opinions on ADHD stimulant medication and the teaching of students with ADHD.

1.13.2 Stimulant Medication

The term 'Stimulant' refers to drugs which are used to induce temporary improvements in either physical or mental functions. Stimulant medication is the most common used treatment for people with ADHD. It is believed that stimulant medication do help approximately 70% of the people with ADHD in terms of improvement in behavior and attention span. However, stimulant medication does have a side effect and there is also potential of abuse of the medication.

In this study, the respondents were asked for their opinions regarding the use of ADHD stimulant medication (e.g., Adderall, Ritalin, and Dexedrine). There was no correct or wrong response as it was just an investigation of opinions.

1.13.3 Opinion

Generally, opinion is like a belief that an individual have on something (e.g., statement). An opinion is far from certainty. Opinion can be interpreted as a result of an individual's belief, desire or even emotions. Most individuals do not change their opinion easily unless new argument are presented and are supported by facts and figures.

In this study, there were two subsections in the questionnaire designed for the investigation of opinions. Those two were the investigation of the teachers' opinions regarding the use of stimulant medication and the investigation of the teachers' opinions on the teaching of students with ADHD.

1.13.4 Kindergarten

Kindergarten is a setting in which the children receive their first classroom experience before proceeding to formal education in the primary school setting. Kindergarten usually starts with children who are 5 years old and above in which is very different from preschool. Preschool is a setting in which the children learn the basic concepts before proceeding to kindergarten. Preschool is for children at the age of 2 to 3. Although different, preschool and kindergarten in Malaysia are sometimes used interchangeably. Most private kindergartens in Malaysia is the same as preschool in which they also have children as young as 2 years of age in the institution.

In this study, private kindergarten teachers were the main and only respondents of this study. Kindergarten teachers were chosen for the investigation of ADHD related matters and issues because of the symptoms of ADHD which will start surfacing before the age of 7 and intervention is more effective if done in the earlier stages of life.

1.13.5 Knowledge

Knowledge can be referred as an understanding of a subject matter. These may include facts, information or even skills. Knowledge is something that can be acquired through cognitive processes either by learning or experience or both.

In this study, the knowledge of the teachers on ADHD was being tested in order to identify their level of understanding on ADHD.

1.13.6 Teaching Experience

Teaching experience refers the amount of time (usually counted in years) a teachers teaches in an educational institution. It is usually believed that the more teaching experience a teacher has; the better or more effective in teaching that particular teacher is.

In this study, teaching experience was a variable that was investigated for the purpose of identifying the relationship between teachers' teaching experience and their knowledge on ADHD.

1.13.7 Education Background

Education background is the schooling an individual has completed. SPM, STPM, Diploma, Degree, Vocational Certificate, and Certification on the completion of training are all considered education background.

In this study, education background was a variable investigated for the purpose of establishing a relationship between the teachers' education background and their knowledge on ADHD.

1.14 Conclusion

This chapter highlighted the problems of the teachers' knowledge on ADHD. The focus of this study is on identifying the kindergarten teachers' knowledge on ADHD as the symptoms of ADHD usually surfaced before the age of 7. However, this study also aimed to investigate the kindergarten teachers' opinions on the use of ADHD stimulant medication and also their opinions on the teaching of the students with ADHD.

As guidance for this study, everything will be conducted based on the objectives and research questions to the respondents involved. The following chapter will discuss the related literature on ADHD and ADHD stimulant medication.

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