THE SINERGY OF KNOWLEDGE AND SKILLS DURING HOUSEMANSHIP

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ABSTRACT

Housemanship, also known as medical student learning, emphasizes the coherence of knowledge and competence over the course of two years. This study had four goals: I determine the level of knowledge; (ii) determine the level of skill; (iii) investigate the relationship between trainee doctors' knowledge and skills; and (iv) develop a synergy framework for trainee doctors during housemanship. A simple random sample method was used to distribute questionnaires to respondents. There were 303 responses from trainee doctors from three Johore hospitals. The outcomes were evaluated using both descriptive and inferential methods. Pilot tests, confirmatory factor analysis, normality tests, and Kolmogorov-Smirnov tests were among the other analyses carried out by the researchers. The studies revealed that the levels of the instruments reach and are normally distributed. The objective illustration demonstrates that trainee doctors demonstrated advanced knowledge and skills. Finally, researchers discovered that during housemanship, a trainee doctor's knowledge and skill have a significant correlation.

Keywords: *housemanship, organizational learning, knowledge, skills, framework model of knowledge, skill synergy*

1.0 INTRODUCTION

In the context of employees' working lives, an organisation is referred to as a "workplace." Employees or human resources in an organisation must adhere to work systems and codes of ethics to progress successfully (Veelan, Sleegers, & Endedijik, 2017). The organization's existence is significant because it serves as a venue for employees' potential development through learning and training. Resource considerations, according to Ethan, Maureen, and Rognvaldur (2021), influence the effectiveness of organisational learning. The resources of the organisation can be used for training and learning, allowing for the necessary phase period. Factors such as essential learning, current changes, and importance to employees' careers and organisational development all influence the length of training. In fact, if the training is to be completed in the long run, a systematic planning timetable and the appointment of a competent consultant should be imposed (Bonvillian, 2018; Foray, 2019; Nor Shela, Hashim Fauzy, & Mohd Shafie, 2015).

A few countries have implemented learning and training. The Chinese development mechanism appears to be experiencing vicissitudes in the field of social innovation in digital empowerment (Yuanzhu, 2020). Mediocre is one of the actions performed by advanced social media as a communication and interaction tool. Among the factors influencing intervention implementation were responses from China's population. In fact, Yuanzhu (2020) explained that China conducted their study due to a variety of other factors. To begin, 772 million Chinese people have access to the Internet. Second, China has twice as many Internet users as the United States. This fact supports the report's claim that the United States has 312 million Internet users. Third, social media is used by nearly 40% of China's population. Social media usage in China differs from that of Malaysians or other users. Variations include Sina Blog (a Twitter replacement), Tencent WeChat (a WhatsApp replacement), Youku (a YouTube replacement), and others. These distinctions suggest that China has its own social media platform that is used for interaction, including peer communication in the development of organisational competencies (Yuanzhu, 2020). This study was classified as empirical because it was conducted on 13 advanced and reputable organizations.

In general, the explanation demonstrates numerous methods for developing an organisation through training and learning approaches (Gifford et al., 2020). As a result, in the current situation, the researcher focused on the flaws associated with trainee doctors' housemanship learning. The two main aspects of trainee doctors' learning are knowledge and skill requirements. Joris and Piotr (2020) discovered that the level of knowledge determines the learning probability of housemanship. However, Marin (2019) believes that housemanship requires a combination of skills and assertiveness. However, the studies of Carey (2016) and Antommaria (2020) emphasise the importance of housemanship based on essential knowledge and skills.

2.0 LITERATURE REVIEW

Current issues recognise the significance of physicians' and medical professionals' daily lives. This includes specialists like doctors and nurses. The COVID-19 pandemic situation requires the most appropriate approach. In addition to carrying out tasks during a pandemic, knowledge and skills are two priorities in risk management (Antommaria, Goldhamer et al., & Hall et al., 2020). The pandemic period, which runs from December 2019 to December 2021, demonstrates that regulatory steps and initiatives are being taken to teach trainee doctors how to be competent and survive a pandemic. Regarding the sacrifices and efforts of doctors classified as frontline workers, the government is committed to providing budget allocations to the Ministry of Health Malaysia (MOH). The vicissitudes and intensification in the budget that increased compared to 2020 and 2019 demonstrate the government's significance in assisting the MOH as a significant front line for the sustainability of human health. The budget rate increase in 2019 is worth RM28.7 billion, and the increase in 2020 is worth RM30.6 billion. Dr. Noor Hisham Abdullah, as Director-General of Health Malaysia, informed us that his party will always supply energetic medical doctors through the development of training and learning.

Medical training and learning are two important factors in producing competent trainee doctors (Vlieghe & Zamojski, 2017; Guckian, Eveson, & May, 2020). The brilliance of knowledge and skills is critical in training and learning for the effectiveness of training and learning transfer (Rita, Andreas, and Anita, 2021; Atherley et al., 2019; DeBenedectis, 2019). As a result, Rani (2018) stressed the importance of applying appropriate approaches and interventions to the learning context of trainee doctors. This includes the teaching staff as well as the development of knowledge and skills that are essential for high professional competence. It was also important to communicate. The required communication divisions include upward communication, downward communication, and peer communication in response to counterpart evidence and data on the knowledge and skills gained during learning (Carey, 2016; Mohd Izham & Nurul Sahadila, 2018; Nor Shela, Hashim Fauzy, & Mohd Shafie, 2015). This is because clear communication covers the information required to network the data of desired knowledge and skills while learning.

According to Rita, Andreas, and Anita's (2021) research, trainee doctors' knowledge refers to current knowledge learned during the learning stage of medical learning prior to being commissioned as graduates. In contrast, Olle et al. (2021) define knowledge as trainee doctors' ability to reproduce while learning. The skills revealed, according to J.W. Grijpma et al. (2020), are used to assess competence in using knowledge. The result of skills is the driving force behind output and productivity. The learning outcomes of trainee doctors include supervisor assessments, interaction ability, patient treatment ability, and so on, as mentioned by Miriam et al. (2021) and Nor Shela and Hashim Fauzy (2015). However, it is still unclear how these knowledge and skills are related to one another. In fact, the question raised is the extent to which knowledge is related to skills and how skills are related to knowledge. These are two issues that must be addressed. As a result, researchers are uniquely qualified to advance a synergistic model of trainee doctors' knowledge and skills during housemanship. The method employed is a quantitative approach to data collection from study respondents. The data was gathered using a questionnaire form and analysed using inferential and descriptive methods. The researcher perceives the level of knowledge, the level of skills, and the relationship between knowledge and skill synergy in the development of the model's framework. The findings of this study are expected to serve as a reference and monitor the contribution of the field of knowledge, which is the learning of trainee doctors during housemanship.

2.1 Research Theory

This research focuses on two major components: knowledge and skills. Knowledge refers to trainee doctors' cognitive abilities, whereas skills correspond to trainee doctors' behaviour when performing housemanship tasks. Researchers identified two ideas that can be connected in the context of human resource development, particularly cognitive theory, and behaviourism theory. The theoretical emphasis of the investigation needs to be attached to the study's main foundation. The study's goal is to inquire about the knowledge and skills that are employed to achieve organisational learning throughout housemanship.

Cognitive theory, according to James et al. (2023), relates to knowledge-based learning. It is also related to the ability to think based on one's mental strength. This idea is commonly applied in organisations that involve the relationship between memory and conceptual power (Dario et al., 2023). Cognitive psychologists discovered that cognitive theory functions passively throughout the learning process of acquiring and transforming information (Torre & Daley, 2023). Cognitive theory divides learning into three stages: cognitive response, cognitive contradiction, and cognitive progress (Antonios et al., 2023). The individual is attracted, and changes naturally based on what is viewed, resulting in a cognitive reaction (Ashlie et al., 2023).

However, this response requires additional theoretical backing as a reinforcement of the observational response. The scientists discovered that trainee doctors will go through a cognitive process during housemanship and draw judgements. The findings can be memorised and related to their medical theory. Second, cognitive dissonance emerges because of the learned orientation towards tension and conflict with other people. This theory is supposed to be related to the domain of thought in the organisation that opposes the law of necessity. Gender studies can be connected to the rule of organisational need. Gender criteria are immaterial in the context of housemanship when it comes to treating patients with the needs of student doctors. This is since doctor training in hospitals is limited and can only include a few genders. For example, pregnant women should be treated by specialists who specialise in childbirth without regard for gender. Third, cognitive development theory considers mental formation and the mental strength that drives learning outcomes (Dogus et al., 2023).

Piaget's theory is widely used in organisational learning in Europe. This theory employs a psychological approach to the human mind (Kachalia, Gandhi, and Puopolo, 2007). Many philosophers are drawn to Piaget's viewpoint because it is divided into four major domains: schema, assimilation, accommodation, and balance. Schemata are associated with adaptation modifications; assimilation is information reception; accommodation is schema modification; and balance is adaptation from assimilation and accommodation (Dario, Rakesh, & John, 2023;

Gardener, 2008). The study discovered that Piaget's viewpoint was heavily focused on the use of information and the achievement of the conceptual phase only during organisational learning.

The notion of behaviourism is also known as behaviour-based learning theory. This theory aids employees in acting actively during the learning process. This idea was developed by three individuals: Watson, Pavlov, and Thornike. The three founders of this philosophy all have different ideas on behaviourism. During learning, humans inherit three natural emotions: fear, love, and anger. Furthermore, this approach explains learning outcomes through cause and effect and individual responses to learning (Geran and Tate, 1995). Meanwhile, Woolfolk and Nicolich (1984) believe that the effectiveness of this theory is dependent on a 'try and win' approach. This demonstrates that various assumptions and laws in the field of organisational learning have been generated by this theory. Cause and effect are two very crucial aspects of housemanship, according to the learning principles of behaviourism. This is since housemanship learning entails procedures for producing things and goals (Knowles, 1983). Through planned and regulated behaviourism, forms of systematic learning in organisations are highly prioritised. The study's setting views housemanship learning as requiring norms and procedures because it is tied to trainee doctors' ethics.

Failure to follow the regulations can lead to trainee doctors making mistakes. Mistakes committed by trainee doctors during housemanship influence other people, particularly patients receiving treatment. In this regard, appropriate stages and actions throughout organisational learning must be streamlined. This clearly demonstrates the need for skills in housekeeping. Work methods must adhere to norms and procedures (Nicholas et al., 2023). According to the idea of behaviourism, student doctors must analyse the probability and do a risk analysis while performing their jobs (Matthew, 2008). Processes and procedures must be carried out in accordance with theory and skills for the results to be effective and efficient.

2.2 Previous Research for Hypotheses Development

Learning is a strategy for increasing the potential for organisational development (Bokosmaty et al., 2019; Mohammadi et al., 2020). It is carried out by trustworthy employees and helps to improve the community and human development (Mumford, 1995). In contrast to Senge's (2000) viewpoint, organisational learning entails making contributions to clients or customers. This relates to the concept of customer satisfaction. Recognizing the value of learning, various approaches and enhancements must be encouraged to improve customer satisfaction, job satisfaction, and organisational performance (Natalie & Anderson, 2021; Ali, 2012). When the trainee's responsibilities include working with patients in large community clusters, this is also related to the study's concept. In fact, the patient community is diverse not only in terms of estimation terminology but also in terms of identity, age, life status, ethnicity, culture, language, and so on (Charlotte, 2021). To meet current demands, knowledge and skills must be of higher quality. Several current vicissitudes necessitate the acquisition and practise of various knowledge and skills by trainee doctors. Throughout their careers, trainee doctors are reassessed by their supervisors. However, they must work and complete tasks such as patient care (Randall et al., 2021). Charlotte (2021) conducted research and discovered some learning strategies for trainee doctors. A doctor's professional life should end in accordance with the modern world's vicissitudes and desires. Thus, educational eminence should be achieved gradually and continuously.

According to Martha et al. (2021), a cohort of trainee doctors requires professional educators as well as experts in managerial knowledge and skills. Approach techniques based on knowledge and skills should be used as desired. Raise the theories, techniques, principles, and responsibilities that are related to the task and are scrutinised before being implemented. The dedication of instructors is one of the motivators for trainee doctors to put forth effort and focus on their studies. Whereas instructors act as mentors, they must be given authority and specific manifestos to be one of the trainee doctors' draws. The liberty and autonomy decided upon are based on instructor monitoring to ensure that the practical knowledge and skills are accurate and precise with respect to the objective (Fereshte et al., 2021; Tamara et al., 2021).

Some approaches allow trainee doctors to apply their knowledge and skills professionally and meritoriously in an indirect manner. Thus, knowledge and skills must be transferred into the context of the task in accordance with the practical needs of learning (Nurun & Irmawati, 2020). However, it is difficult to transfer knowledge and skills because it considers several factors found in the Baldwin and Ford models. The transfer of training must consider the predicted outcome of the action as well as the impact on the organisation and the individual. For example, during a COVID-19 pandemic, several factors must be considered due to knowledge and skill constraints and challenges encountered while carrying out the mission (Martin et al., 2020; Merali et al., 2020). Workload and emotional stress increase the efficiency with which knowledge and skills are transferred. This is because a heavy workload has a negative impact on doctors' credibility. In fact, the dangers and risks are extremely high (Baker et al., 2019). According to a BERNAMA report, 20 doctors in other countries have died because of the COVID-19 infection. This is a very concerning phenomenon because we need to eliminate it from our doctors, particularly in Malaysia. An approach is required to ensure emotional and psychological stability as well as contented spirits among the organization's employees (Khairunesa & Asliaty, 2019).

Prior to thoroughly investigating the research problems, the researchers developed a few key points based on previous studies' models and theories that discovered the field of organisational learning. According to previous researchers' perspectives, two domains in the organisational learning model and theory have become the focus of many researchers. First, the cognitive domain discusses thought, idea processing, and conceptual development (Ten Cate, 2014). Second, behaviouristic learning is based on actions, movements, and attitudes. The behaviourist discusses the study's imposed and pragmatic components as performed by trainee doctors. Understanding extraordinary comprehension, according to Lajoie et al. (2019), requires a combination of cognitive and behaviourist theories. These domains emphasise the same aspects as Honey and Mumford (1986) and Kolb (1984). In contrast, Honey, and Mumford's (1986) theory has four organisational learning foundations: activist, reflective, theoretical, and pragmatic. In contrast, Kolb (1984) emphasises four stages of learning: experience, observation, conceptualization, and experimentation. Based on these two theories, the research uncovered elements of knowledge and skills. The knowledge element, according to Honey and Mumford's theory, is reflective theory, whereas the skill element is associated with activists and pragmatists. According to Kolb (1984), the conceptual phase is concerned with knowledge reflection, while the experimental phase is concerned with skill reflection. Lynam, Mc, and Michaelsen (2011), on the other hand, discovered that Kolb's theory's experience and observation phases were used to pursue management strategies. As a result, the importance of knowledge and skills in learning is recognised in organisational learning approaches, theories, and models. In contrast, this study significantly improved trainee doctors' perceptions of their level of knowledge and skills during housemanship (Nor Shela & Hashim Fauzy, 2014).

Based on previous research, the researchers focused on three major difficult issues in the study, namely knowledge skills and synergy elements for trainee doctors during housemanship. The primary issue is clarified by significant knowledge requirements associated with various workplace problems (Marcussen et al., 2019). The knowledge approach necessitates appropriate utilisation during learning for competency development (Aherne et al., 2016). Knowledge adaptation and application are seen as difficult to control if they are not in line with learning requirements (Wolfson et al., 2017). In fact, if there are problems with thinking and emotional disorders, the application of knowledge suffers. Emotional disturbances have an impact on the stability of concepts that are attempted to be built during the learning process. However, the focus of this study is not on emotional challenges but rather on the researcher's expression in the context of learning to confirm trainee doctors' ability to accomplish emotions, particularly when dealing with patients in accordance with medical etiquette (Li-Chuan et al., 2020). This is because previous research has focused on emotional issues that impede knowledge acquisition in organisations. According to the findings of this study, the knowledge approach is a means for trainee doctors to apply their theory and capacity to draw connections while performing their jobs. As a result, the cognitive theory reference accurately describes the cognitive value of housekeeping learning. The second issue is one of skill. Skills is a learning strategy that is difficult to implement when there are distractions or when learning effectiveness is low. Kilgour, Grundy,

and Monrouxe (2016) discovered that emotional stability and drastic job changes are frequently issues and barriers to effective skill application. Among the actions highlighted is the study by J.W. Grijpma et al. (2020), in which skill synergy was performed in the context of small-group active learning (SMAL) to improve trainee doctors' learning compatibility. Such an approach, however, has drawbacks if each member of SMAL has a different skill level. The skills acquired have a variety of applications. This may pose a challenge for teamwork implementation due to unequal levels of difficulty in producing comprehensive and optimal outputs (J.W. Grijpma et al., 2020). However, because housemanship learning focuses on individual competence, the researcher focuses solely on individual learning. Ability is used to measure skills. Furthermore, not all tasks are completed in groups. As a result, the focus of this research is guided by individual abilities (Judith et al., 2020). The researcher observes that cognitive theory concentrates on the attainment of thinking, whereas the behaviourism theory focuses on the issue of achieving skills. This demonstrates that these two things are connected.

Benjamin, Oscar, and Oscar (2020) conducted a study that focuses on fostering the development of the next generation of experts to aid in the improvement of competent trainee doctors. The synergy of skills and knowledge is highlighted as a method of developing expertise while working. Equipment skills-based training necessitates knowledge and skills for the operation of the equipment required while on duty. Nonetheless, supervisor or specialist supervision is required while trainee doctors operate learning-related equipment (Benbassat & Gilon, 2020; Cutrer et al., 2020). This clearly demonstrates the knowledge and skill synergy that occurs during trainee doctor learning. Previous studies, on the other hand, have been lacking in explaining the level of knowledge-skills relationship as well as the level of skills-knowledge relationship. As a result, this factor is the primary focus of this investigation. The study also focused on second-year trainee doctors' housemanship. Researchers use selection to avoid bias during data collection. According to some previous research, there is no significant relationship between knowledge and skills. As a result, researchers have proposed the following hypothesis.

H_o: There was no statistically significant relationship between trainee doctors' knowledge and skills during housemanship.

3.0 METHODOLOGY

The study included a chronology in addition to data collection. The researcher looks back on previous studies for reinforcement while developing the research framework. Through the previous study's exploration, the researcher developed a hypothesis based on the previous researcher's criticism, predictions, and support. In the non-experimental category, this study used a quantitative research design. The non-experimental approach is used because this is not an experimental study but rather a cross-sectional survey method. The cross-sectional study concept used incorporates a time span of data collection in which the researcher only gathers data once. The reason for this is because pre- and post-study procedures are not necessary.

The questionnaire tool was created by modifying prior investigations. The questionnaire has the advantage of being simpler, more accurate, and less time-consuming. It also includes data collection and analysis methods such as descriptive and inferential analysis. This study was limited to three hospitals in the state of Johor, as authorised by the State Health Department. After obtaining approval to conduct the study, the prerequisite is to follow the rules established by the State Health Department. During the study, a total of 431 populations were engaged in terms of population and sampling. Due to the limitations in getting enough respondents, the researcher employed a basic random sampling procedure to meet the study's aims. According to Kreijie and Morgan (1970) and Cohen (1988), the researcher used two methods of reference sampling.

According to Kreijie (1970), researchers must collect at least 201 samples from 431 populations. According to Cohen (1988), the required sample size is 250, with a sampling error rate of 5.0 percent and a confidence level of 99 percent. If the researcher desires accurate results, Cohen (1988) recommends a confidence level of 99 percent with a sampling error value of 1.0 percent, or 391 samples. The sample size was limited to 250 by the researcher. However, the

study's findings garnered a total of 303 study participants. This study makes use of expert services to validate the questionnaire in terms of accuracy, precision, and comprehension of the items in the study. Pilot study analysis was used to assess the study's reliability. The normality test was also performed as a reinforcing step in performing research analysis using Pearson correlation, since this type of analysis only allows for the usage of a normal distribution. The study also used confirmatory factor analysis to confirm the model's fit. In summary, descriptive, and inferential analysis are used in the study to determine the mean value, frequency, percentage, and relationship of the study variables.

4.0 RESULT AND DISCUSSION

The researcher developed several study objectives based on the findings of previous studies that supported the formation of hypotheses. Determine the level of knowledge among trainee doctors during housemanship first. Second, to assess trainee doctors' skill level during housemanship. Third, determine the relationship between the knowledge and skills of the trainee doctor during housemanship. Finally, during housemanship, a synergy framework for trainee doctors' knowledge and skills will be developed.

4.1 Instruments for Research

The researchers completed the instrument construction using several approaches proposed by Mohd Najib (2003) and Mohd Majid (2000). A questionnaire-based survey was used. During the instrument's development, the researcher referred to Sekaran's (2003) views on three factors that affect the questionnaire's accuracy. The first criterion is language comprehension. The second is scale planning, and the third is the accuracy of the questionnaire content. Furthermore, the researcher ensured that no questions were biased to avoid interference after respondents completed the questionnaire. This study employs an adaptation of research instruments based on previous research studies.

This study involved trainee doctors from three hospitals in Malaysia. The researchers selected 431 people at random from the population. The researcher employed a sampling technique that he was familiar with (Kreijie and Morgan, 1970). The study found that a total of 303 study samples were obtained. The dependability of the research instrument specifications is critical in determining the validity of the study. Babbie (2002) conducted reliability studies to determine the interoperability of the questionnaire's items. This study will employ facial validity through expert review in the field of study. Professionals are academics who have at least nine years of experience and hold positions as professors or associate professors. Reliability studies were performed to identify errors in the questionnaire instruments. To correct the errors discovered during the study reliability process, appropriate corrective action should be taken (Cooper & Schindler, 2001; Hair, 2007). The researcher conducted a pilot study analysis to determine the instrument's reliability value and level of reliability. However, according to Ayob and Chua (2006), if the alpha range is between 0.6 and 0.99, the instrument performs well in terms of reliability. If the alpha value is less than 0.6, the reliability level is considered low.

The pilot study yielded three probabilities, according to Babbie (2002). First, the data is trustworthy but incorrect. Second, valid but untrustworthy data; and third, valid but trustworthy data. According to the results in Table 1, if items were dropped, all knowledge items had a high level of reliability (range = 0.7 to 0.8). When items 1, 2, 4, and 6 are removed from the skill, the items achieve moderate reliability. If dropped because it was less than 0.6, items 3 and 5 in the skill had a low level of reliability. Only one item in the skill had a good reliability range, which was item 7 if it was dropped. Nonetheless, using a combination of pilot study analysis, the researcher discovered that knowledge reliability was good (0.756), and skills reliability was moderate (0.675). In addition, the researcher uses a combination of knowledge and skills to determine the item's overall level of reliability. The analysis results show that the instrument has a high level of dependability, with a cumulative coefficient of 0.715.

Following data collection, the researcher performed confirmation factor analysis (CFA) to strengthen the instrument's validity. CFA analysis is used to determine the compatibility of items in an element while maintaining the instrument's accuracy. The goal of CFA is to achieve model fitness, after which a calculate estimates, analysis is performed to obtain the model fitness strength values, which are CMIN/DF3, RMR0.08, CFI0.9, GFI0.9, and RMSEA0.08. Among the things that have been done is an examination of the conditions for meeting the model defaults via values in modification indices (MI). If all conditions, including M.I., are met, the researcher will use the standardised regression weight values to calculate the estimated values in the default study model. If the estimated value is 0.3 or less, the item must be dropped. The model fitness analysis method was repeated by the researcher until the model was satisfied. When the model fitness is met, the researcher assumes that the instrument is perfect and moves on to objective result analysis (Krehbiel, 2004).

Table 1: Level of reliability of knowledge and skills

A VALUE (KNOWLEDGE)		0.756
If Item Deleted	Item 1	0.788
	Item 2	0.789
	Item 3	0.735
	Item 4	0.744
	Item 5	0.718
	Item 6	0.794
	Item 7	0.739
α Value (Skill)		0.675
If Item Deleted	Item 1	0.633
	Item 2	0.601
	Item 3	0.599
	Item 4	0.614
	Item 5	0.597
	Item 6	0.653
	Item 7	0.700
α Cumulative: Knowledge + Skill		0.715

Table 2 shows the CFA analysis that was performed by the researcher. This CFA analysis showed that the knowledge and skills met the model fitness requirements in the one-factor analysis model with values of χ^2df = 1.832, RMR = 0.050, CFI = 0.902, GFI = 0.939 and RMSEA = 0.052. The match was found, and two skill items with loading factors less than 0.3 were discovered. As a result, both items (items 3 and 5) with loading factors of 0.284 and 0.250 were dropped. All items become model fitness matches and have loading factor values ranging from 0.301 to 0.676. As a result, the knowledge and skills CFA analysis was able to achieve a one-factor model fitness at values of χ^2df = 1.337, RMR = 0.039, CFI = 0.939, GFI = 0.954, and RMSEA = 0.033.

Table 2: CFA analysis achievement for the knowledge and skills model fitness

MODEL	*X²/DF*	RMR	CFI	GFI	RMSEA
1 Factor	1.832	0.050	0.902	0.939	0.052
1Factor[a]	1.337	0.039	0.939	0.954	0.033

Note: a is the result of the CFA analysis after 2 items were discarded

Using skewness and kurtosis draughts, normality tests were used to determine the position of the study findings distribution in the diagram. According to Chua (2006), the normality distribution is evaluated based on the angulation and height of the data distribution, with the coefficient of determination ranging from -1 to +1. (71). Because the distribution is classified as symmetrical, the study's findings show that the normal distribution of knowledge and skills is normal. Furthermore, no evidence of a floor or ceiling effect in the distribution was found (refer to Figure 1).

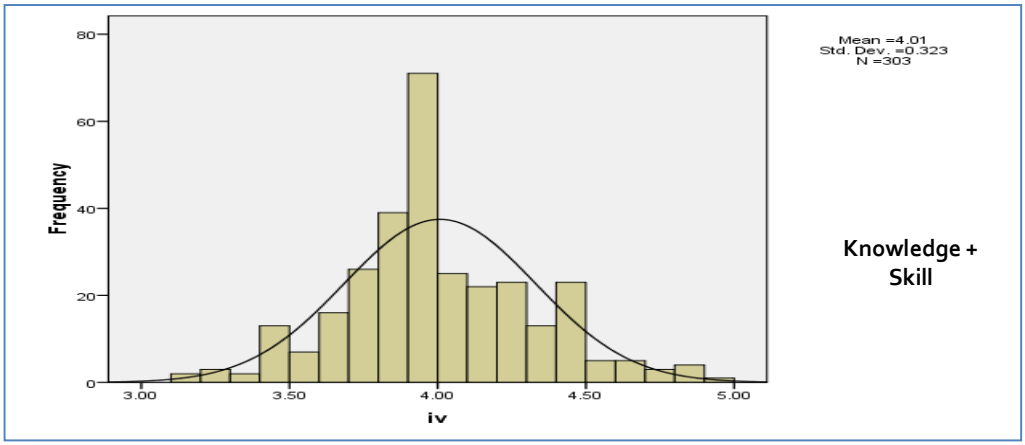

Figure 1: Normality testing for knowledge and skill

The Kolmogorov-Smirnov test was used by Hair et al. (2007) to confirm the assumption of normality. The distribution is considered normal if the alpha-significant value is greater than 0.01. If the alpha significant value is less than 0.01, the distribution is considered abnormal. Table 3 displays the results of the Kolmogorov-Smirnov test with a finding value of 0.001. This confirms that the distribution is normal, with knowledge values greater than 0.01 (0.050) and skill values greater than 0.01 (0.049).

Table 3: Kolmogorov-smirnov testing for knowledge and skill

INDEPENDENT AND DEPENDENT VARIABLE	ALPHA VALUE
Knowledge	0.050
Skill	0.049

4.2 Objective Findings

The findings for the objective one is summarised in Table 4. According to the analysis, 302 respondents scored highly, while only one scored moderately. There were no respondents with a low level of knowledge achievement, however. In general, the mean knowledge level of the trainee doctor was 3.94 (high) with a standard deviation of 0.37. In contrast, a minimum mean value of 2.67 and a maximum mean value of 5.00 were published. Vos (2009) discovered that high-level knowledge achievement correlates with higher theory and creative thinking in trainee doctors. However, to ensure sustainability and survival while on duty, Veelan, Sleegers, and Endedijik (2017) must have a critical and precarious thinking attitude. The researcher examined the scope of this study. The researcher examined the scope of knowledge and current capabilities of trainee doctors in this study based on their perceptions of liability. In contrast, while establishing learning requirements, different aspects of knowledge were considered. Similarly, Fabrizio's study (2021) controls and emphasises the experiential aspect of conveying novel

knowledge. The researcher, however, did not emphasise the aspect of the experience that advanced a piece of new knowledge, instead focusing on trainee doctors' perceptions.

The trainee doctor's skill levels are discussed in Table 4. According to the results of the analysis, all respondents demonstrated a high level of skill. This result agrees with the obtained mean value of 4.07 (high). The findings have a standard deviation of 0.42. The minimum value is 2.83 and the maximum value is 5.00. The skills of trainee doctors refer to the range of competencies developed during the study. Interpersonal skills, according to Casey et al. (2014), are linked to credibility and ethics at work. Work ethic is essential for ensuring that trainee doctors follow the MOH's always work procedures. As a result, the ability to carry out the strategy is required for methodically and efficiently planning work procedures. This demonstrates that the study respondents have a strong ability to strategize while at work, particularly in identifying difficulties, making an analysis of work factors, and carrying out tasks with caution. This finding is consistent with the findings of Jories and Piotr (2020), who discovered that highly skilled trainee doctors could plan and complete tasks systematically. In fact, it yields superior results and is consistent with quantity. The study's findings also show that the trainee doctors have good communication skills. Communication skills are essential because trainee doctors interact with patients, physicians, colleagues, and the public (Carey, 2016; Rani, Sulaiman, & Mahboob, 2018; Confederation, 2014). Indeed, this study agrees with Carey (2016) and Feng et al. (2011) in that highly communicative and interactively skilled trainee doctors discuss and diagnose patients.

Table 4: Trainee doctors knowledge and skill (level)

Knowledge	Level	Frequency (N=303)	Percentage	Mean	Standard Deviation	Minimum	Maximum
	High Moderate Low	302 1 0	99.66 0.34 0	3.94	0.37	2.67	5.00
Skill	High Moderate Low	300 1 0	100.00 0.34 0	4.07	0.42	2.83	5.00

Table 5: Knowledge and skills correlation test for trainee doctors

Item	Correlation (r)	Sig.
The relationship between knowledge and skills	0.459**	0.000

**Significant Level 0.01 (2-tailed)

Table 5 displays the third objective finding. We discovered a significant relationship between trainee doctors' knowledge and skills. The null hypothesis was rejected with r = 0.459 **, p = 0.01. The fourth objective's findings successfully demonstrate that there is a significant association between knowledge and skills of 45.9 percent. This data clearly demonstrates that 45.9% of knowledge and abilities are connected and dependent on one another in assisting trainee doctors in learning. This demonstrates that the remaining 54.1 percent are unconnected. Although this number does not reach 50%, the study discovered a significant contribution and relationship that leads to the conclusion that knowledge and skills are associated throughout housemanship. This finding parallels Ai Tomotaki, Hiroki, and Ikuko's (2018) research on knowledge that affects nursing students' skills in Japan, which was conducted on 843 nursing students. The Japanese version of the Evidence-Based Practice Questionnaire (EBP) was used in the study. Despite the importance of knowledge and skills, the researcher discovered that attitude plays a role in learning achievement. Bajgoric, Joseph, and Wass's (2014) research demonstrated that skills influence thinking ability. This demonstrates the acquisition of new knowledge and skills through practise.

The results for the fourth objective are shown in Figure 2. This demonstrates the relationship between knowledge and skills. This suggests that the model's framework confirms that knowledge and skill procedures have a synergy in trainee doctors' learning during housemanship. In terms of knowledge and skill synergy, trainee doctors must scrutinise and strengthen their cognitive skills while remaining enthusiastic about the principles of medical knowledge in an ever-changing environment. Fabrizio et al. (2021) discovered that the COVID-19 pandemic situation aided trainee doctors in acquiring knowledge and skills for survival and career development. Task sustainability is exact, exceptional, and oppressive. This is evident in other countries, such as Italy, where intelligence has suffered numerous losses. Fabrizio et al. (2021) also stated that in Italy alone, up to 1,000,000 positive cases have been reported, with approximately 44,000 deaths because of this pandemic through October 2020. This eruption clearly denotes a massive and radical statistical movement. In fact, in some cases, it disrupts the excitement, physical load, and logic of those on the front lines, specifically doctors who provide treatment (Armocida et al., 2020).

4.3 Discussion

Knowledge and skills have advanced significantly because of the creation of this model framework. Both are linked and interconnected. Researchers observe a strong dynamism between knowledge and skills. Furthermore, it is consistent with the findings of Martin et al. (2020), who demonstrated that knowledge is linked to skills. Similarly, the initiators of skills are influenced by a person's level of knowledge. These expressions demonstrate extensive knowledge, which aids in the development of capable skills. Nonetheless, the researchers obtained novel conclusions: the skill level was greater than the knowledge level. As a result, the relationship formed is also prudent. A two-item dynamic in the skills released during the instrument reliability procedure may influence this. As a result, the researcher advocated for items in the instrument to be further apart and stable among knowledge and skill items.

This study demonstrates a link between knowledge and skills. Knowledge and skills are references to prior and existing knowledge that aid in the progression of housemanship learning (Deslauriers et al., 2019; Kilgour, Grundy, and Monrouxe, 2016; Marcussen, 2019). Nonetheless, there are immovable differences in the relationship between the concepts of knowledge and skills. This is because knowledge is concerned with theoretical concepts, whereas skills are concerned with output and learning outcomes. However, effective skills are influenced by knowledge. Temporarily, good knowledge results in effective learning skills (Li-Chuan et al., 2020). A knowledge explanation has been developed by Martin et al. (2020). That is, knowledge is classified as either tacit or explicit. Tactical knowledge is either acquired naturally or recognised by peers. Conversely, explicit knowledge includes transcribed documents that can be touched, such as reading materials, books, and so on. Furthermore, Nor Shela et al. (2019) provide an explanation of skills, stating that skills include characteristics of a person's competence, abilities, and credibility. In the context of the study, trainee doctors were evaluated based on their performance skills, punctuality, ability to interact, commitment, and the quality of tasks that were confidential as housemanship learning skill levels. The possibility of skills is consistent with the findings of Zakaria (2006) and Hall et al. (2020), who discovered that some competencies are classified as skills during organisational learning. Interpersonal skills, planning skills, problem identification and resolution skills, communication skills, logical thinking skills, teamwork skills, and proactive skills while performing tasks are all included. Individuals are said to be highly skilled if they could encounter every feature of competence required in an organisation (Charlotte et al., 2021; Randall et al., 2021; Benjamin, Oscar, and Oscar, 2020).

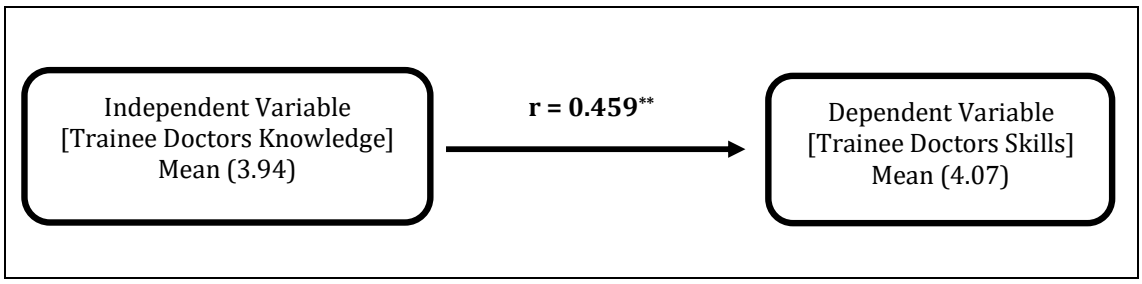

Figure 2: A synergy framework for trainee doctor's knowledge and skills during housemanship

5.0 CONCLUSION

In summary, the researcher was able to prove two major conclusions in the study. To begin with, trainee doctors make extensive use of information and skills. This study demonstrated by the study's findings that the level of usage of knowledge and skills reaches a high level. According to James et al. (2023), as trainee doctors do their jobs, thinking becomes a priority in producing reflections and working on knowledge, particularly while conducting observations on patients. This process is linked to the decision-making phase since it involves the nurturing of ideas and the precision of smart thinking. Similarly, Dario et al. (2023) justifies skills that are done properly and thoroughly. During treatment, specific processes and standards are followed in accordance with medical ethics and integrity. This study also discovered if knowledge and skills mix or are separate. This study discovered that they are linked and have a relationship. However, the relationship between knowledge and abilities does not exceed the value of 50% of the study because it can only be applied in certain conditions. The researcher concluded, based on the findings and arguments presented, that the effort to create a synergy model of trainee doctors' knowledge and skills during housemanship is a massive obstacle. Consistent performance requires accuracy and systematic preparation. Medical education can be transformed into one of the 21st century's learning domains. Professional, subjective, and organisational development necessitate the application of knowledge and skills (Yuanzhu et al., 2020; Rita, Andreas, & Anita, 2021; Mohd Izham & Nurul Sahadila, 2018; Kamri et al., 2016). This is because medical practitioners play an important role in the development of a healthy community and a prosperous society. In dealing with the various global challenges and paradigms impacted by the COVID-19 pandemic, contingency planning is critical.

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