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# The Indirect Effects of Participative and Abusive Supervisions on Talent Development through Clinical Learning Environment

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## Abstract

This chapter aims to examine the indirect effect of clinical learning environment in the relationship between supervisory styles (participative and abusive supervisions) and talent development in the healthcare setting. A questionnaire-based survey was implemented to collect the data. The data was collected from 355 junior doctors in six Malaysian public hospitals. The partial least squares based structural equation modeling (PLS-SEM) was used to test the hypotheses. The main findings are: (1) clinical learning environment has a strong positive indirect effect on the participative supervision-talent development link. This reveals that a conducive clinical learning environment that allows empowerment leads to talent development and (2) clinical learning environment has a strong negative indirect effect on the abusive supervision-talent development link. This implies that junior doctors who feel abused have reduced capacity to work and participate in the learning environment which consequently affects their talent development. The result of this study is consistent with theoretical propositions that clinical learning environment indirectly affects the relationship between participative supervision-talent development and abusive supervision-talent development. This study contributes to the clinical learning environment literature by providing empirical support towards identifying clinical learning environment as the underlying mechanism that accounts for the participative supervision-talent development and abusive supervision-talent development relationships.

**Keywords:** participative supervision, abusive supervision, clinical learning environment, talent development, public hospitals

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## 1. Introduction

Human capital is an organization's greatest asset. Attracting and retaining the right talents are critical to the success of an organization. An organizations' main priority is in human resource development (HRD) to ensure high productivity and performance [1]. Thus, there is a need to tap into the pool of capable young individuals who can be developed further for performance enhancements in the workforce. Attracting talents and developing them for higher positions are highly challenging for organizational management [2]. Majority of the literature, in the context of management positions, indicates that talent is "conceptualized as a code for the most effective leaders and managers at all levels, who can help a company fulfil its aspirations and drive its performance" [3]. Talent can also be viewed as referring to a limited pool of workplace individuals who possess unique competencies [4]. An employee's manifestation of skill can be used as a platform for judging whether one has a talent or just an ordinary competence in a given activity [5].

According to Rubino, healthcare is being viewed by numerous individuals as a very special type of work setting toward helping people [6]. In the case of Malaysia, healthcare organizations have a complete span of health services and they are divided into private and public organizations. Healthcare in Malaysia is primarily under the responsibility of Ministry of Health, which ensures quality healthcare through extensive range of countrywide networks of clinics and hospitals [7]. In Malaysia, upon completion of undergraduate studies, graduate medical officers need to undergo housemanship (supervised training) at identified government hospitals for 2 years [8]. In several countries, undergraduate medical education completes with housemanship. However, in Malaysia, housemanship is imposed only upon graduation in accordance with Medical Act 1971.

The term houseman refers to an advanced student or graduate in medicine obtaining supervised medical practice. In Malaysia, it is essential for doctors to undergo housemanship for 2 years after graduating with a medical degree. During the housemanship, junior doctors undergo mandatory training for 4 months in each department: emergency, medical, orthopedic, pediatrics, general surgery, anesthesia and intensive care, as well as obstetrics and gynecology [9]. The purpose of housemanship is to transform these junior doctors into medical practitioners, who are fully conversant with the treatment, types of medicines to be administered, daily necessities, workload and the complexities of the doctors' tasks. It is regarded as an essential stage in the journey of medical practitioners [10]. There is a raising concern pertaining to the disparity in the quality of junior doctors joining the medical workforce [11]. For instance, the curriculum, training and clinical exposure in various medical universities are different; the junior doctors' values and respect for a multi-ethnic, multi-cultural and multi-religious population [11] can vary with individuals. These circumstances may affect patient safety and the future of medical practice [11]. Thus, there is a need to address the issue of talent development in healthcare organizations.

Professional and medical competencies are important for junior doctors as they aid in producing competent professionals who have acquired the requisite skills, knowledge and expertise that are essential for medical practice [12]. As reported by prior researcher [13], effective talent

development approach requires the existence of strong supervision and as well as talented supervisees. Specifically, it was identified that supervisory styles (participative and abusive supervisions) influence junior doctors' talent development [14]. Competence in medicine can be regarded as a latent talent that can be aroused and developed in a clinical learning environment that allows the nurturing of such innate talents [12]. Furthermore, a good clinical supervision is important toward developing an effective learning environment [15]. This implies that the junior doctors' development of professional and medical competencies (talent development) is highly dependent on the existence of strong supervision and effective repetitive experiences through exposure to a high volume of cases in clinical learning environment [15].

For a junior doctor who is undergoing housemanship, his/her accomplishment of talent development is dependent on effective supervision and through the provision of a conducive clinical learning environment [16]. A conducive clinical learning environment is termed as the atmosphere that offers social, organizational and instructional support to junior doctors in gaining knowledge from actual patients, curriculum, situation, and during individual interactions [17]. With regards to effective supervision, it has been argued that junior doctors prefer supervisors who allow participation in decision-making that promotes reciprocal and helpful work processes [18]. For instance, participative supervision stimulates a conducive clinical learning environment which leads toward developing the skills needed to be active lifelong learners throughout junior doctors' medical careers [15]. Supervisees being belittled or experiencing unfair supervisory conduct such as hostility, public criticism, and loud and angry tantrums performed by their superiors (abusive supervision) exhibit negative reactions [19]. A review of literature reveals the gap that exists in analyzing the roles of supervisory styles and clinical learning environment on the talent development of young medical professionals. This study contributes by investigating the indirect effect of clinical learning environment in the relationship between supervisory styles (participative and abusive supervisions) and talent development in the healthcare setting.

## 2. Theoretical and hypotheses development

A majority of the researchers pertaining to medical arena have examined the learning environment (or the immediate context of learning) based on the perspectives of experiential learning theory [15]. The experiential learning includes experiencing, observing, conceptualizing and retrying activities [20]. Experiential learning is very important for the learning process that is associated to medical arena. Prior scholar [20] posits that thoughts are not fixed, but are formed and modified throughout the acquired and prior experiences of junior doctors. These notions support the existing notions in medical field and the shift from apprentice to specialist positions [20]. Furthermore, studies pertaining to the management of expertise support the premise that supervisors play an important role in learning, particularly in providing exposure to expertise [15]. The model in this study incorporates the constructs derived from experiential learning theory which describes the supervisory styles (i.e., participative and abusive supervisions) and explains learning at work (clinical learning environment) and the development of expertise (talent development).

## 2.1. Indirect effect of clinical learning environment

With regards to adequate supervision for junior doctors, the contemporary learning theory stresses the “participation metaphor” (collective learning) which is termed as participative supervision [11]. Participation metaphor regards learning as a progression through participation in a collective way compared to an internal way of learning among individuals [21]. Through this approach, the individual learner becomes a member of the subject community in a gradual manner through participation in several activities in their learning arena [21].

Pertaining to healthcare environment, junior doctors recognize and value supervision approaches that support participation and engagement which are interrelated to knowledge sharing and identity formation [15]. This suggests that junior doctors can be more productive if supervisors consult junior doctors and request for opinions and recommendations to assist decision-making [6]. The perceptions within junior doctors that they are being respected and valued by their supervisors can affect junior doctors’ talent development [18]. Nevertheless, as mentioned earlier, talent development among junior doctors is supported by adequate supervision and the provision of a conducive clinical learning environment [16].

A conducive clinical learning environment is an essential requirement for competent supervisees to respond to the challenges of everyday clinical practice. This is in contrast to traditional classroom approach that generates continuous development based on abstract conceptual understanding [22]. As such, it is not possible to predict or reproduce the uniqueness of real cases or the context of the clinical environment in academic environments. The junior doctors learn regularly by managing and solving the real problems of patients [23].

Talent is an individual’s possession that can be enhanced through an enabling environment [5]. This reveals that supervisees feel empowered and are able to learn in an environmental and organizational system that affects their learning ability and competency management. This can be viewed according to communities of practice (COP) theory that stresses on learning compared to teaching and supported participation in practice as the central condition for junior doctors’ learning [24]. The above arguments suggest that participative supervision enhances junior doctors’ talent development through a conducive clinical learning environment. Thus, it could be hypothesized that:

*H1: Participative style of supervision will have a positive and significant indirect effect on junior doctors’ talent development through their clinical learning environment.*

Prior scholars have stated that the impact of supervisor aggression is significant in understanding how workplace can reduce destructive behavior and generate an effective and productive environment for employees [25]. Supervisor aggression can be regarded as similar to abusive supervision [26]. Abusive supervision includes behaviors such as, belittling supervisees, emphasizing their shortcomings through negative evaluations, lying to supervisees, threatening, and behaving rudely to supervisees [19].

Abusive supervision has an emotional impact on supervisees at both mental and physical levels [27]. As depicted by social learning theory, supervisees impersonate the destructive behavior of their supervisor in the form of workplace [28], which depicts the relationship between

destructive supervisory style (e.g., abusive supervision) and negative consequences on the supervisees. For instance, abusive supervision has been found to be associated with poor work performance and it is not likely to nurture future talent [14]. In addition, social integrationists have the view that abusive supervision may lead to supervisees being exhausted and becoming incompetent. This is because the supervisees rate their environmental quality (for instance, challenge, work control and workload) as poor compared to those who did not witness abuses in their workplace [29]. When abusive supervision takes place, the clinical learning environment becomes negative for supervisees and leads to reporting of serious medical errors by supervisees [27]. Thus, it could be hypothesized that:

*H2: Abusive style of supervision will have a negative and significant indirect effect on junior doctors' talent development through their clinical learning environment.*

### 3. Materials and methods

#### 3.1. Data source

The study was conducted in Malaysia, one of the fastest-developing countries in South-East Asia. Junior doctors from six Malaysian public hospitals participated in this study. The hospitals are located in Klang Valley, a heavily industrialized urban area in Malaysia. Permission to carry out research in these six public hospitals was obtained from the Ethics and Research Committee of Ministry of Health Malaysia. The permission helped in gaining access to the junior doctors in these hospitals.

For this study, the sample size was computed by using the Sample Size Calculator [30]. The calculator suggested a minimum sample size of 302. A minimum required sample of 302 junior doctors from a total population of 1388 junior doctors was specifically selected from hospitals in and around the capital city of Kuala Lumpur. The sampling procedure performed was systematic sampling. Every 5th person starting from a random number of 1 to 5 was sampled ( $1388/302 = 4.60$ ). In this case, since the random number is 5, the junior doctors numbered in the sequence of 5, 10, 15, 20, and so on, were sampled till reaching the required number of samples.

The questionnaires were distributed to junior doctors with the assistance of the Human Resource (HR) Training Unit at each hospital and the person in charge of the junior doctors in respective hospitals. The junior doctors were requested to send back the completed questionnaire directly to the HR Training Unit within 2 weeks from the date of distribution. Then, the completed questionnaires were personally collected from the hospitals. From the total of 450 distributed questionnaires, 355 (response rate = 79%) were completed and had tangible responses.

#### 3.2. Measures

Measures and scales used in this study were adopted from prior literatures, which were applied and empirically tested before. The scales that were applied for each of the constructs are elaborated briefly in the following paragraphs.

### 3.2.1. Participative supervision

Participative supervision was measured using a 6-item scale [31]. Sample items for participative supervision include: “Encourages us to express ideas/suggestions” and “Uses our suggestions to make decisions that affect us,” The perception of junior doctors toward the immediate supervisor’s behavior in relation to participative supervision was measured using a 5-point Likert scale ranging from 1 (*Do not facilitate*) to 5 (*Highly facilitate*).

### 3.2.2. Abusive supervision

Abusive supervision scale [32] measured the non-physical aspect of abusive supervision through 15 items. Sample items for abusive supervision include: “Reminds us of our past mistakes and failures” and “Expresses anger at us when he/she is mad for another reason.” In order to measure the perceptions of the junior doctors toward their immediate supervisor on abusive supervision, a 5-point rating scale that ranges from 1 (*Do not facilitate*) to 5 (*Highly facilitate*) was used.

### 3.2.3. Clinical learning environment

Clinical learning environment was measured using 10 items that were adapted from Emilia et al.'s study pertaining to the survey on junior doctors, which is based on the original version by Rotem et al. [33, 34]. This measure was applied on the aspects of environment that could facilitate talent development among junior doctors. The measurement scale for clinical learning environment was segregated into three dimensions: (1) conditions for learning (6 items), (2) general learning activities and resources (2 items) and (3) opportunities to perform rotation-specific clinical skills and assessment (2 items). Sample items for *conditions for learning* subscale include: “Extent to which we are given an appropriate level of responsibility and to carry out learning activities independently.” Sample items for *general learning activities and resources* subscale include: “Extent to which learning resources and facilities were provided.” Sample items for *opportunities to perform rotation-specific clinical skills and assessment* subscale include: “Extent to which we had the opportunity to practice a variety of clinical skills.” The agreement of the junior doctors with the aspects of clinical learning environment was measured on a 5-point Likert scale ranging from 1 (*Do not facilitate*) to 5 (*Highly facilitate*).

### 3.2.4. Talent development

The measurement scale for talent development comprises of 13 items [35], which includes a number of competency related items representing different types of constructs of clinical and professional performances. Each item was in relation to both professional and medical competencies and computed several different aspects of an overarching competency needed by junior doctors for independent practice [30]. The main construct of professional and medical competencies was segregated into four dimensions, which include: (1) clinical competence (5 items), (2) communication competence (2 items), (3) personal competence and professional competence (6 items). Sample items for *clinical competence* subscale include: “Adequate

knowledge of basic and clinical sciences and application of this knowledge." Sample items for *communication competence* subscale include: "Ability to communicate effectively and sensitively with patients and their families." Sample items for *personal and professional competence* subscale include: "Shows respect for patient autonomy and quality information sharing." Each of the items related to competencies were rated on a 5-point rating scale, ranging from 1 (*Not competent at all*) to 5 (*Highly competent*).

### 3.3. Pilot study

As part of the procedure to validate the questionnaire and to ensure the clarity of the items in the questionnaire, a pilot study was carried out to pre-test the questionnaire. For the purpose of this research, the questionnaire was administered randomly to a group of 30 junior doctors. These doctors were undertaking housemanship at various public hospitals in Malaysia.

### 3.4. Ethical considerations of the study

Toward ensuring compliance with the ethical principles, three areas were explained in the letter addressed to the hospital authorities: (1) the purpose of the study, (2) its potential benefits and (3) what is required from the junior doctors. The explanations were conveyed by providing a letter of explanation and consent form attached together with the questionnaire. The junior doctors agreed to participate by signing the attached consent form before completing the questionnaire. In order to ensure confidentiality and anonymity throughout the execution of the study, the junior doctors were not required to disclose personal information in the questionnaire.

### 3.5. Data analysis technique

In order to analyze the preliminary data, SPSS 22.0 was utilized. The data were then analyzed and interpreted using the SmartPLS 3 software [36], using partial least squares structural equation modeling (PLS-SEM). PLS-SEM was utilized as it is an ideal approach when the research objective is theory development and prediction oriented [37]. Furthermore, PLS is known as the family of alternating least squares algorithms that extends principal component and canonical correlation analysis [38]. Likewise SEM, in comparison with confirmatory factor analysis (CFA), extends the possibility of associations among the latent constructs and contains two elements: (1) a measurement model (essentially the CFA); and (2) a structural model [39]. A bootstrapping procedure (500 resamples) was utilized to test the significance of the *hypothesized indirect effects* which includes a 2-step procedure: (1) first, the significance of direct effect is ensured (if the significance of direct effect cannot be determined, there is no mediating effect) by utilizing bootstrapping without the presence of the mediator in the model; and (2) second, path coefficient ( $\beta$ ), path significance (t-value) and significance of indirect effect (p-value) are examined when the mediator is integrated in the model [35]. If the significance of indirect effect cannot be determined, there is no mediating effect. Encompassing a significant indirect effect is the root to ascertain the mediator's magnitude [40].

### 3.6. Common method variance

Common method variance is required to be tested when data collection is carried out through self-reported questionnaires when the predictor and criterion constructs are answered by the same person [41]. As posited by prior researchers, "Invariably, when self-reported measures obtained from the same sample are utilized in research, concerns over same-source bias or general method variance arise" [42]. One of the procedures utilized to identify this issue is the Harman's single factor test, which is carried out by inserting all the principal constructs into a principal component factor analysis [43]. Proof of the appearance of method bias is when a general factor accounts for most of the covariance among the measures [41]. The findings returned an 11-factor solution with 72.7% total variance explained. The first factor accounted for only 33.93% (lower than 50%) which indicates that common method bias is not a major problem in this study.

## 4. Results

### 4.1. Assessment of measurement model

The assessment of the measurement model has the following elements: internal consistency reliability, indicator reliability, convergent validity and discriminant validity, as follows:

- Internal consistency reliability: Cronbach's alpha and composite reliability (CR) of each construct should be higher than 0.70 [44].
- Indicator reliability: Outer loadings should be higher than 0.70 [44].
- Convergent validity: The average variance extracted (AVE) should be higher than 0.50 [45, 46].
- Discriminant validity: The square root of AVE is greater than the correlations between the latent constructs [47].

Based on the assessment, the measures used within this study falls within the acceptable levels, consequently supporting the internal consistency reliability, indicator reliability, convergent validity and discriminant validity of the constructs (see **Table 1**). In addition, all of the correlations between latent constructs were below the cut-off value of 0.8, which confirms the absence of multicollinearity problems [48].

### 4.2. Structural model results

Upon validating the measurement model, the next stage is to examine the structural model. Multiple indicators were used to assess the quality of the structural model, [49] including the collinearity, the  $R^2$  for exogenous-endogenous relationships, effect sizes and predictive relevance of the model [44]. To assess collinearity, variance inflation factor (VIF) values for each set of predictor constructs were calculated. As shown in **Table 2**, the VIF of all constructs was

Variable	Mean	SD	Outer loadings	Cronbach's alpha	CR	AVE	1	2	3	4
1	3.78	0.85	0.85 to 0.92	0.93	0.95	0.78	<i>(0.88)</i>			
2	2.25	1.15	0.78 to 0.92	0.98	0.98	0.77	-0.17	<i>(0.88)</i>		
3	3.85	0.73	0.79 to 0.88	0.96	0.96	0.71	0.56	-0.29	<i>(0.85)</i>	
4	3.85	0.58	0.71 to 0.84	0.92	0.94	0.62	0.30	-0.20	0.43	<i>(0.79)</i>

Italic denotes square-roots of average variance extracted (AVE) (provided within parentheses).  
 Legend: 1—participative supervision, 2—abusive supervision, 3—clinical learning environment, 4—talent development, SD—standard deviation, CR—composite reliability, and AVE—average variance extracted.

**Table 1.** Measurement model results.

Predictor variables	Dependent variables	
	3	4
	VIF	VIF
1	1.03	1.47
2	1.03	1.09
3		1.55

Legend: (1) participative supervision, (2) abusive supervision, (3) clinical learning environment, (4) talent development, VIF—variance inflation factor.

**Table 2.** Collinearity assessment.

below 5.0, which indicates that the level of collinearity is low [44]. To evaluate the structural models' predictive power,  $R^2$  was calculated.  $R^2$  denotes the total of variance explained by the exogenous constructs [50]. All three constructs together explained 20.1% of the variance, which demonstrates moderate predictive power [51].

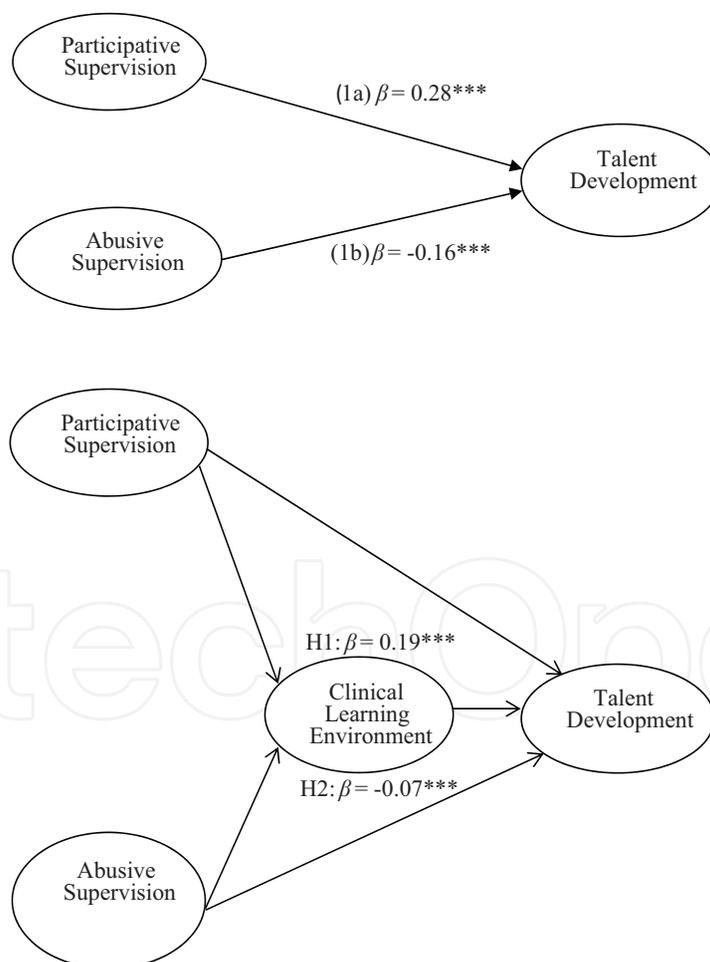
The effect size  $f^2$  assesses an exogenous construct's contribution to an endogenous latent construct's  $R^2$  value. The  $f^2$  values of 0.02, 0.15, and 0.35 reveal an exogenous construct's small, medium, or large effect, respectively [44]. In this path model, the exogenous constructs participative supervision, abusive supervision, clinical learning environment for explaining the endogenous latent construct talent development has effect size of 0.106, which reflects the small to medium effect of these factors on talent development. Finally, the predictive accuracy,  $Q^2$ , of the model was assessed using the blindfolding procedure. The resulting  $Q^2$  value of talent development is 0.12. The  $Q^2$  value is larger than 0, which reveals that the model is within the acceptable fit for predictive relevance [44].

### 4.3. Assessing the indirect effect of clinical learning environment

In order to test the indirect effect of clinical learning environment, the respective construct (clinical learning environment) was removed from the model. The direct path coefficients from (1) participative supervision to talent development ( $\beta = 0.28, t = 4.68, p = 0.000$ ) and (2)

abusive supervision to talent development ( $\beta = -0.16$ ,  $t = 3.01$ ,  $p = 0.000$ ) in the absence of a clinical learning environment were significant. Bootstrapping procedure [52] was utilized to test the indirect paths from participative supervision to talent development and abusive supervision to talent development. The indirect effects of (1) participative supervision on talent development ( $\beta = 0.19$ ,  $t = 4.28$ ,  $p = 0.000$ ) and (2) abusive supervision on talent development ( $\beta = -0.07$ ,  $t = 3.16$ ,  $p = 0.002$ ) mediated by clinical learning environment were significant. Thus, this indicates that hypotheses H1 and H2 were supported. The summary of findings is illustrated in **Figure 1**.

After confirming the significance of indirect effects by bootstrapping, variance accounted for (VAF) was computed [44]. The VAF determines the size of the indirect effect in relation to the total effect (i.e., direct effect + indirect effect). VAF is calculated as a proportion of total effect ( $VAF = \text{indirect effect}/\text{total effect}$ ). The VAF values of 0.69 (68.81%; greater than 20% and less than 80%) and 0.46 (45.81%; greater than 20% and less than 80%) indicate that clinical learning environment partially mediates the relationship between (1) participative supervision



**Figure 1.** Direct and indirect model. Legend: (1a) and (1b) = Value without the intervening construct; \*\*\*significant at level  $p = 0.001$ .

and talent development and (2) abusive supervision and talent development. In other words, the influence of participative and abusive supervision on talent development partially affects clinical learning environment and then, in turn, affects talent development.

## 5. Discussion

The findings demonstrate a significant indirect effect of clinical learning environment on the participative supervision-talent development and abusive supervision-talent development links. In general, the result of this study is consistent with prior scholars who asserted that clinical learning environment indirectly affects the relationship between participative supervision and talent development [15, 53, 54]. Participative supervision through a conducive clinical learning environment plays an important role in enhancing junior doctors' development of professional and medical competencies [15]. This finding suggests that junior doctors should be provided opportunities to establish their competencies by allowing them to participate in on-the-job decisions in the clinical environment. A conducive clinical learning environment that allows empowerment can lead to development of competencies such as clinical, communication, professional and medical. The junior doctors should be allowed to learn from errors committed by them and the errors made by others. The supervisors of junior doctors should infuse confidence among their supervisees' so that the junior doctors can carry out their work and generate appropriate method to formulate decisions on the job when the supervisor is not present in the department. As the junior doctors are closest to the details, the decisions made by them can be better than decisions made by their supervisors.

This result is in line with previous studies to predict abusive supervision is a determinant of clinical environment in influencing junior doctors' talent development (development of professional and medical competencies). According to Carl Rogers who pioneered theories on counseling, believes in an environment in which individuals are able to express themselves in an open manner [55]. Consequently, such an uncritical environment encourages confidence in the supervisee as they feel free to explore new knowledge without fear of reproach [55]. Thus, a good learning environment is one in which the junior will not be frightened to ask questions for fear of being criticized and reprimanded [56]. In contrast, an under-resourced clinical environment with inadequate infrastructure or personnel (1) impedes junior doctors' accomplishment of clinical tasks [57], (2) impacts patient safety [27], and (3) is associated with serious medical errors [58, 59]. It is clear that abusive supervision influences junior doctors' turnover intention through an unconducive clinical learning environment. Thus, junior doctors who feel abused have reduced capacity to work and participate in the learning environment, which consequently affect the junior doctors' talent development (development of professional and medical competencies).

### 5.1. Theoretical implications

The empirical evidence on the indirect effect of clinical learning environment on the relationship between supervisory styles (participative and abusive supervisions) and junior

doctors' talent development is an essential theoretical contribution of this study. In other words, this study enhances our understanding about potential underlying mechanisms that are responsible for the relationship between the supervisory styles (participative and abusive supervisions) and talent development among junior doctors. The findings herein confirm that participative supervision through a conducive clinical learning environment plays an important role in enhancing junior doctors' talent development. Thus, a conducive clinical learning environment that allows empowerment leads to talent development. The abusive supervision is a determinant of clinical environment in influencing junior doctors' talent development. The junior doctors who feel abused have reduced capacity to work and participate in the learning environment which consequently affects their talent development.

## 5.2. Practical implications

This study also offers practical implications. The finding of this study indicates that participative supervision influences talent development of public hospital junior doctors through a conducive clinical learning environment. Thus, public hospital administrators should provide opportunities for junior doctors to develop real-time professional experiences, including applying their skills and enhancing their professional and medical competencies in a clinical environment. For instance, administrators can build up junior doctors' professional and medical skills through participative supervision and problem solving activities.

The findings of this study also indicate that abusive supervision indirectly affects talent development in the presence of clinical learning environment. It shows the need to provide a conducive environment to junior doctors at public hospitals to nurture and enhance their ability to professional and medical competencies. Public hospital administrators should execute training programs that can support junior doctors in developing their professional and medical competencies. For instance, junior doctors could be trained to challenge the situation and become confident in facing the negative consequences in their learning environment. Furthermore, public hospital administrators should provide a grievance system [60] to prevent supervisors' abusive behavior that may occur during the housemanship training.

The administrators of public hospitals can develop programs to train immediate senior medical officers and specialists (supervisors) to be aware of their interactions with the junior doctors (supervisees). Immediate senior medical officers and specialists should be warned that abusive supervision will have harmful effects on junior doctors. Additionally, by providing a conducive clinical learning environment which involves increasing junior doctors' associations with patients and colleagues, the workplace will be able to increase the competencies of supervisees.

Overall, the result of this study demonstrates that conducive clinical learning environment is critically important for junior doctors to have effective housemanship learning and training processes. These findings have identified some interesting views on the supervisors' role that may be possible to apply to hospital settings. For instance, supervisors have the responsibility of designing the learning conditions that provide sufficient structure and support to optimize junior doctors' learning. The amount of structure and assistance offered should vary based on

the developmental level of the junior doctors [61]. The supervisor's assessment of the developmental level of the junior doctors will aid in identifying the type of learning environment that is optimal for training. Furthermore, public hospital administrators can develop training modules relative to the needs of junior doctors and generate an environment that will encourage the junior doctors to manage their professional and medical competencies.

## **6. Limitations and directions for future research**

This study has a few limitations. The first limitation is the cross-sectional character of this study. As such, a longitudinal model can be carried out to further explore the links among participative supervision, abusive supervision, clinical learning environment and talent development. The second limitation is the small percentage of explained variances on the talent development of junior doctors. As mentioned before, the model explained 20.1% of the variance in talent development. The small percentage of explained variances of junior doctors' talent development could be related to other constructs apart from the studied ones. Again, this particular gap can be further explored. Third, the study samples herein are restricted to public hospital junior doctors only. Therefore, caution must be taken in applying the results outside of this spectrum. For example, precautions need to be taken in generalizing the findings of this study to the private hospitals as well. Thus, future research can consider junior doctors from the private hospitals to generalize and harmonize the present findings. A comparison study involving both public and private hospital junior doctors can be undertaken to confirm the associations between the constructs and justify the dissimilarities, if any.

## **7. Conclusion**

In particular, the result of this study is consistent with theoretical propositions that clinical learning environment indirectly affects the relationship between participative supervision-talent development and abusive supervision-talent development. This study contributes to the clinical learning environment literature by providing empirical support toward identifying clinical learning environment as the underlying mechanism that accounts for the participative supervision-talent development and abusive supervision-talent development relationships. Finally, it is hoped that this study will induce and trigger more research interests in this field for future researches.

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