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**PERCEPTION OF EDUCATIONAL ENVIRONMENT AMONG  
UNDERGRADUATE STUDENTS IN A MEDICAL EDUCATION  
CENTER, YALA HOSPITAL, THAILAND**

**Abstract:**

The aim of this study was to investigate the perceived educational environment in medical education center, Yala hospital, Thailand and possible perceptual difference among difference determinant groups. A descriptive cross sectional quantitative study was conducted on fourth, fifth and sixth year medical students using Dundee Ready Education Environment (DREEM). DREEM items focus on five sub-domains related to learning, teachers, academic, atmosphere and social perception. The determinants are gender; religion, year of class, having fail and professional attitude. The results were analyzed and interpreted in relation to standard norm of DREEM and determinants. A 92.5% response rate was obtained. The results indicated that overall the DREEM score was positive ( $123.8/200=62\%$ ). The five sub-domains score were also positive, its range from 59.7% - 64.9%. Gender was significant with three domains: teachers, academic and atmosphere perception sub-domain. Professional attitude was significant with atmosphere perception sub-domain

**Keywords:**

educational environment, DREEM, undergraduate medical students, medical education

## Introduction

It is agreed that an optimal educational environment is an important factor for learning effective. Educational environment or climate or atmosphere is an essential part of the curriculum, affecting the interaction between student, method and educational outcomes (Harden *et.al*, 1999).

The Dundee Ready Education Environment (DREEM) questionnaire is a robust instrument for measuring students' perception of the educational environment in relation to different domain and also has approved to have high internal consistency (Roff *et al*, 1997). This instrument is useful, adaptable and has been used in many settings. It has proven to be a useful diagnosis tool to measure the quality of educational environment as perceived by students. The DREEM was refined into 50 item self report questionnaire using a 5 point Likert scale, with scores reflecting a student's overall perception of the environment of 5 main aspects, namely: their learning, the teachers, atmosphere, academic self perception and social self perception.

Yala medical education center is the first medical center in the three southernmost provinces of Thailand that admits students mainly from local area. Students take the first three years of the course in Prince of Songkla University and then complete their clinical rotations in Yala hospital. There has been established since 2009 to provide graduated medical practioners for rural place. Nowadays there has no study about the quality of educational environment as perceived by students. The objectives of this study are to investigate the perceived educational environment in Yala medical education center, Thailand and possible perceptual difference among difference determinant groups such as gender, religion, year of class, having failed and professional attitude.

## Methods

### *Participants*

A cross sectional study was carried on 44 subjects of medical students in year four, five and six which studying in Yala medical center, Thailand. The study was launched in the last week of semester in year (April) 2014.

### *Questionnaire*

The questionnaire was divided in to 2 parts as follow:

Part 1 is about gender, religion, year of class, having failed and professional attitude.

Part 2 is about educational environment using the DREEM questionnaire which was translated in Thai language including 50 items divided into five domains such as students' perceptions of learning (*SPL*, 12 items), students' perceptions of teaching (*SPT*, 11 items), students' perceptions of atmosphere (*SPA*, 12 items), students' academic self perceptions (*SASP*, 8 items) and students' social self perceptions (*SSSP*, 7 items). A five point scale (Likert scale) will be employed in order to determined the variables ranging from 0 to 4, the following criteria are 4= strongly agree, 3= agree, 2= unsure, 1= disagree and 0= strongly disagree.

### *Data analysis*

Data was collected by a self administered. The data was entered into computer using a Microsoft excels. R programme was used for statistical analysis.

Characteristic of participants were described using frequency and percentage. *T*-test was used to compare the mean of binary type of determinant. Analysis of variance (*ANOVA*) was used to compare the mean of determinant which has more than two groups. A *p*-value < 0.05 was considered statistical significant.

## Results

The response rate was 92.5% (n=41). Table 1 shows frequency distributions of the determinants. There was 16 male (39%) and 25 female (61%). More than half (58.5%) were Muslims. The proportion of class in year 4, 5 and 6 were 36.6%, 26.8% and 36.6%, respectively. Most of them do not having failed in examination (75.6%). They have positive professional attitude 48.8% and they have negative professional attitude 39.2%.

Variables	Categories	Frequency	Percentage
Gender	Male	16	39
	Female	25	61
Religion	Muslims	24	58.5
	Buddhists	17	41.5
Year of class	Fourth	15	36.6
	Fifth	11	26.8
	Sixth	15	36.6
I have failed in examination (having fail)	No	31	75.6
	Yes	8	19.5
I may study in other course (professional attitude)	No	20	48.8
	Not sure	9	22.0
	Yes	7	17.2

*Table 1: Distribution of variables*

### *Reliability of instrument*

Internal consistency reliability was measured by Cronbach's alpha coefficient. The overall reliability coefficient alpha was 0.91. The reliability coefficient alpha of five domains *SPL*, *SPA*, *SPT*, *SASP* and *SSSP* were 0.83, 0.82, 0.81, 0.76 and 0.69 respectively.

The overall mean score was 123.8 out of 200 (61.9%). Figure 1 shows the proportion of educational environment among 5 domains *SASP*, *SPL*, *SSSP*, *SPT* and *SPA* were 64.88%, 63.11%, 61.68%, 61.59% and 59.69%, respectively.

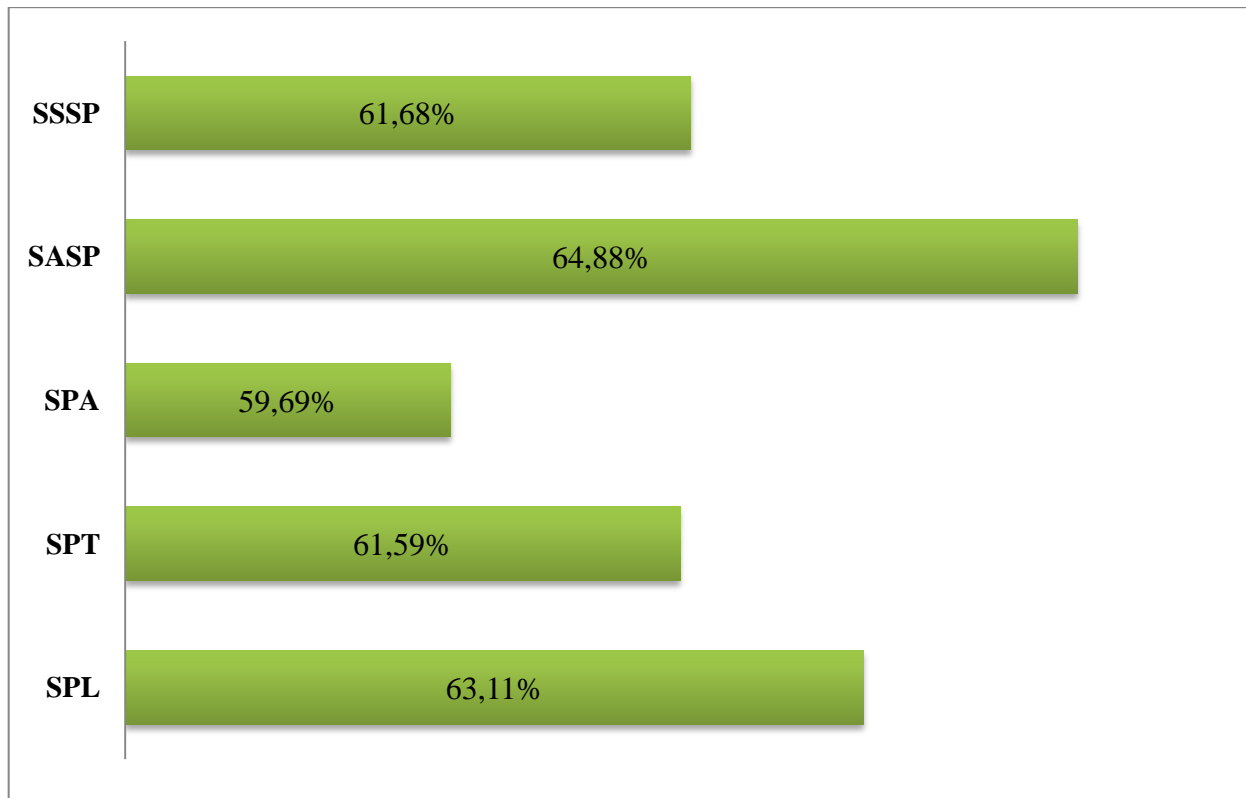


Figure1: The proportion of five domains

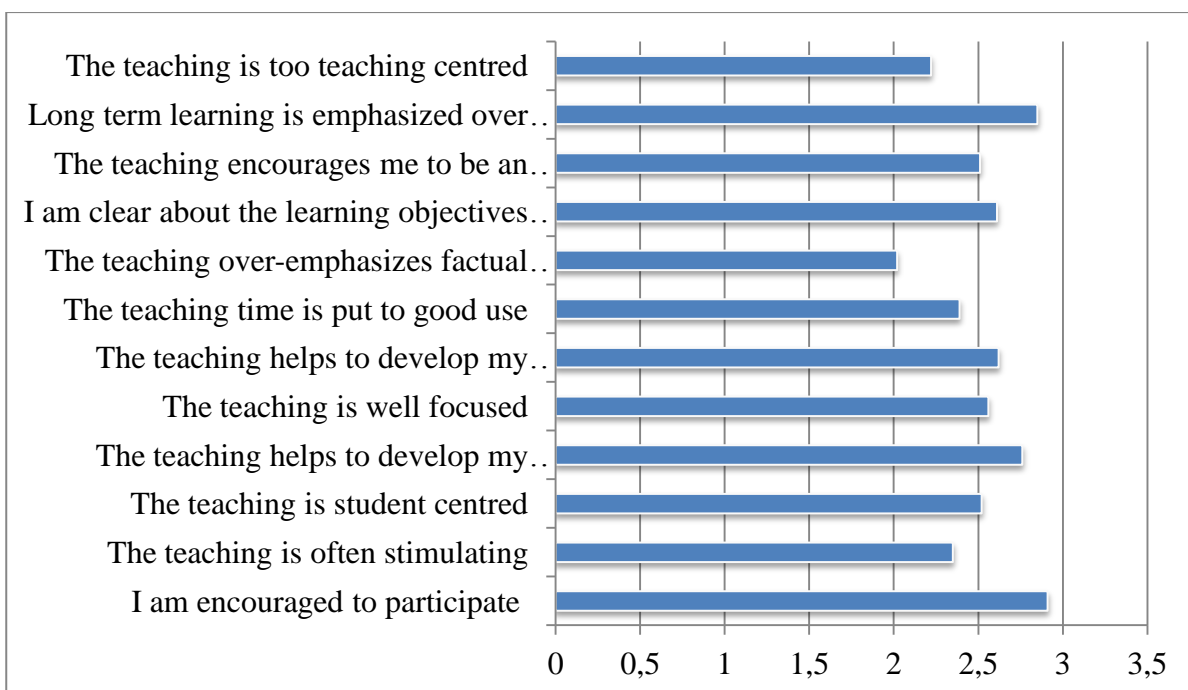
Domain	Score	Interpretation
<i>SPL</i>	0-12	Very poor
	13-24	Teaching is view negatively
	25-36	A more positive approach
	37-48	Teaching highly thought of
<i>SPT</i>	0-11	Abysmal
	12-22	In need of some retraining
	23-33	Moving in the right direction
	34-44	Model teachers
<i>SPA</i>	0-12	A terrible environment
	13-24	There are many issues that need changing
	25-36	A more positive atmosphere
	37-48	A good felling overall
<i>SASP</i>	0-8	Feeling of total failure
	9-16	Many negative aspects
	17-24	Feeling more on the positive side
	25-32	Confident
<i>SSSP</i>	0-7	Miserable

Domain	Score	Interpretation
	8-14	Not a nice place
	15-21	Not too bad
	22-28	Very good socially

*Table 2: Guideline for analysis of results and interpretations of DREEM domain scores suggest by McAleer and Roff*

#### *Students' perceptions of learning (SPL, 12 items)*

The mean domain score was 30.29/48. Table 2 shows guideline for analysis of results and interpretations of DREEM domain scores (McAleer and Roff, 2002). Results report that "A more positive approach". Figure 2 shows the mean score of each items of SPL domain. Mean score are used on the horizontal axis and the items of domain appear on the vertical axis. Medical students reported their perception of learning was highest in the item of "I am encouraged to participate" ( $\bar{x}=2.88$ ) while the lowest is "The teaching over-emphasizes factual learning" ( $\bar{x}=2.02$ ).



*Figure 2: The mean score of each items of SPL domain*

#### *Students' perceptions of teaching (SPT, 11 items)*

The mean domain score was 27.1 /44. It can be interpreted as "moving in the right direction" by following the guideline in Table 2. Figure 3 shows the mean score of each items of SPT domain. Medical students reported their perception of teaching was highest in the item of "The teacher are knowledgeable" ( $\bar{x}=3.27$ ) while the lowest is "The teachers get angry in class" ( $\bar{x}=1.95$ ).

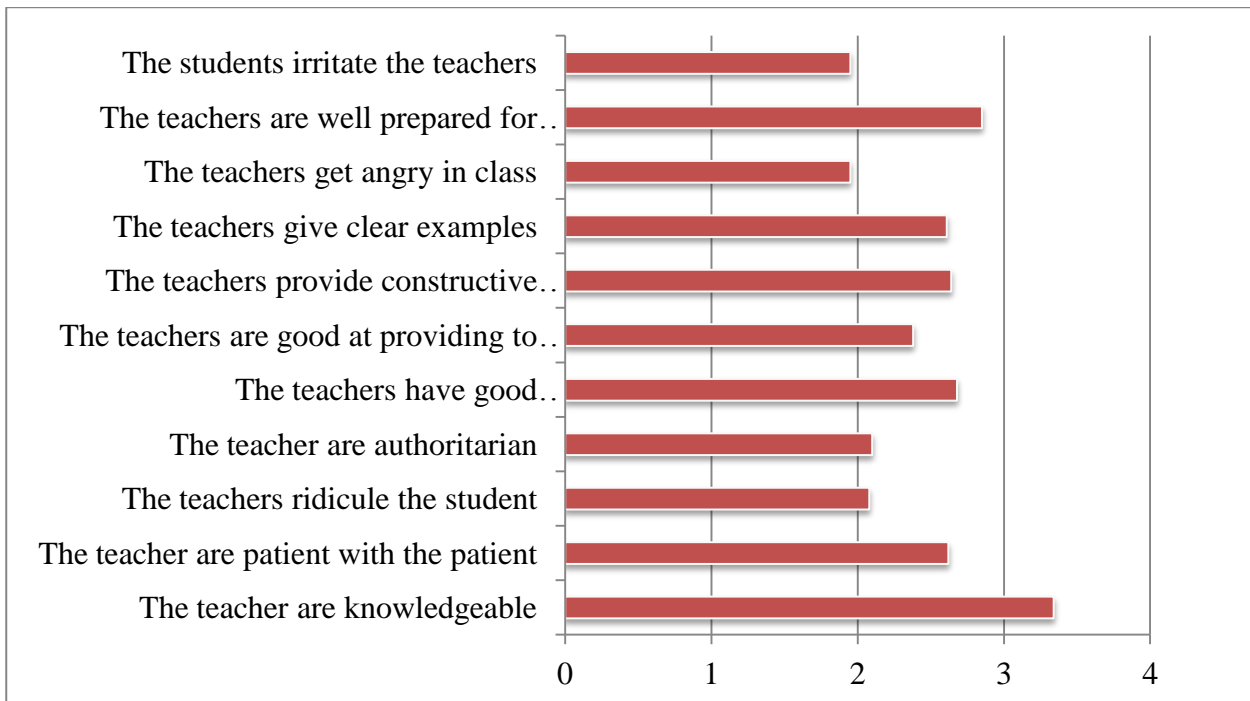


Figure 3: The mean score of each items of SPT domain

#### Students' perceptions of atmosphere (SPA, 12 items)

The grouped mean score was 28.65/48. It can interpret as "a more positive atmosphere". Figure 4 shows the mean score of each items of SPA domain. Medical students reported their perception of atmosphere was highest in the item of "I feel comfortable in class socially" ( $\bar{x}=3.10$ ) while the lowest is "Cheating is a problem in this school" ( $\bar{x}=0.83$ ).

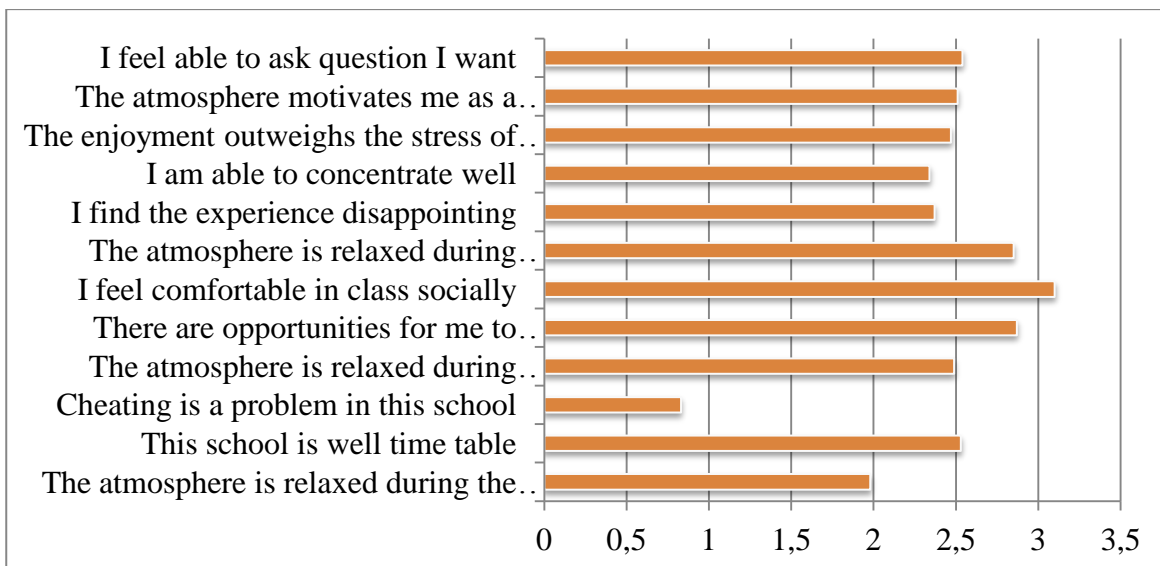


Figure4: The mean score of each items in SPA domain

#### Students' academic self perceptions (SASP, 8 items)

The grouped mean SASP score was 20.76/32. It can interpret as "feeling more on the positive side". Figure 5 shows the mean score of each items of SASP domain. Medical students reported their perception of atmosphere was highest in the item of "I have learn a lot about empathy in my profession" ( $\bar{x}=3.12$ ) while the lowest is "I am able to memorize all I need" ( $\bar{x}=1.91$ ).

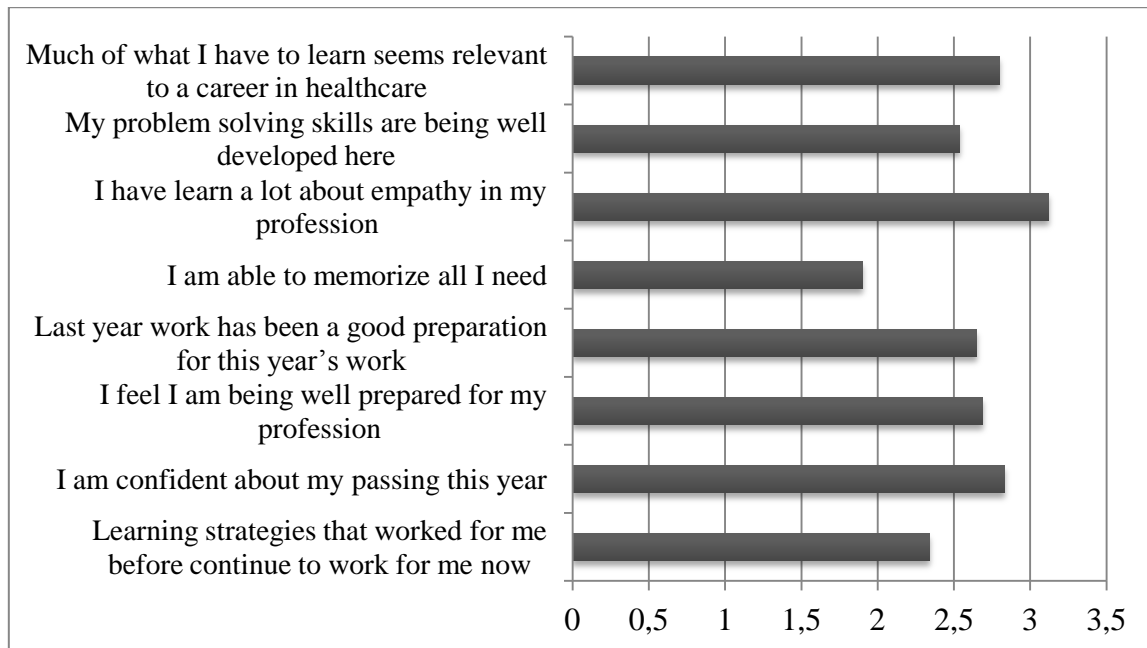


Figure5: The mean score of each items in SASP domain

#### Students' social self perceptions (SSSP, 7 items)

The grouped mean score was 17.27/28. It can be interpreted as “not too bad” by following the guideline in Table 1. Figure 6 shows the mean score of each items of SSSP domain. Medical students reported their perception of atmosphere was highest in the item of “I have good friend in this school” ( $\bar{x}=3.17$ ) while the lowest is “There is a good support system for student who get stress” ( $\bar{x}=2.07$ ).

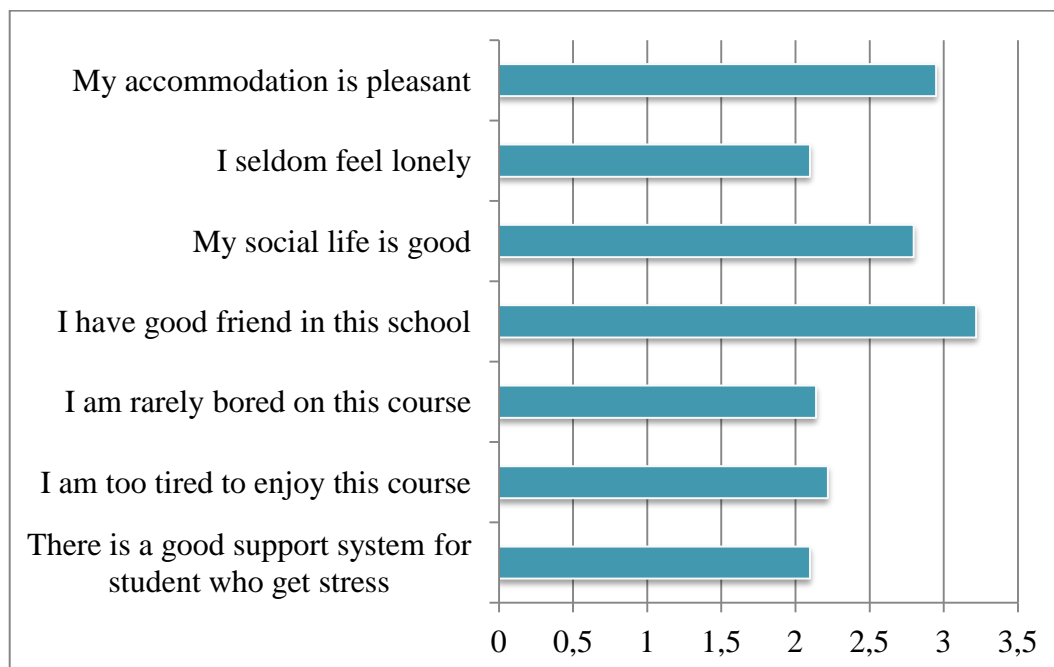


Figure6: The mean score of each items in SSSP domain

#### Association between each domain of DREEM and each determinant

Table 3 shows the association between each domain of DREEM and each determinant using two sample *t*-test and ANOVA. There were no statistically significant differences between different determinant groups in SPL and SSSP domain. Gender is associated with SPT (p-value=0.001), SPS (p-value=0.03) and SASP domain (p-value=0.03). Male

medical students indicated a more positive perception of their education environment than did females. Professional attitude is associated with *SPA* domain. Medical students who have positive professional attitude higher indicated a more positive perception of learning atmosphere than medical students who have negative professional attitude ( $p$ -value=0.04).

domains	Gender			Religion			Year of class				having fail			professional attitude			
	Male	Female	P value	Muslims	Buddhist	P value	4	5	6	P value	No	Yes	P value	No	Not sure	Yes	P value
SPL	2.6 (0.3)	2.5 (0.5)	0.21	2.5 (0.5)	2.5 (0.4)	0.88	2.4 (0.5)	2.6 (0.5)	2.5 (0.3)	0.52	2.5 (0.4)	2.6 (0.4)	0.78	2.5 (0.4)	2.6 (0.3)	2.2 (0.5)	0.08
SPT	2.7 (0.3)	2.3 (0.4)	<b>0.001</b>	2.5 (0.3)	2.4 (0.4)	0.50	2.4 (0.4)	2.6 (0.4)	2.5 (0.3)	0.32	2.5 (0.3)	2.3 (0.4)	0.10	2.4 (0.4)	2.4 (0.2)	2.3 (0.4)	0.74
SPA	2.6 (0.4)	2.3 (0.4)	<b>0.03</b>	2.4 (0.4)	2.4 (0.4)	0.63	2.3 (0.5)	2.6 (0.4)	2.3 (0.4)	0.28	2.4 (0.4)	2.3 (0.4)	0.48	2.5 (0.4)	2.3 (0.3)	2 (0.4)	<b>0.04</b>
SASP	2.8 (0.3)	2.5 (0.5)	<b>0.03</b>	2.7 (0.5)	2.6 (0.4)	0.46	2.4 (0.5)	2.7 (0.5)	2.7 (0.3)	0.16	2.6 (0.4)	2.5 (0.5)	0.30	2.6 (0.4)	2.6 (0.4)	2.3 (0.5)	0.18
SSSP	2.4 (0.4)	2.5 (0.5)	0.82	2.4 (0.5)	2.5 (0.4)	0.56	2.5 (0.5)	2.7 (0.4)	2.3 (0.4)	0.11	2.5 (0.5)	2.4 (0.4)	0.87	2.5 (0.5)	2.5 (0.3)	2.2 (0.4)	0.22

Table 3: The result of two sample t-test and ANOVA

## Discussion

Overall reliability in this study is 0.91. It is similar with published study (Palmgren and Chandratilake, 2011, Edgren *et al*, 2010, Pinparyon *et al*, 2000). It is indicate that the DREEM instrument can be used in a context of Yala medical education center which is rural center in Thailand.

The result of this study showed that total DREEM scores of Yala medical education center were high, indicating that student's perception of learning environments were quite positive. The mean of

123.8 (61.9%) fell well inside the range (101-150) said to indicate "a more positive than negative" perception of environment (Jiffry *et al*, 2005, Dunne *et al*, 2006). A few studies have gave higher total DREEM scores than the present study (Palmgern *et al*, 2011, Brown *et al*, 2011), which may reflect that these medical center are fairly innovative in terms of providing a student center approach to education (Roff, 2005). However, many published studies have given lower total DREEM scores than the present study (Kohli and Dhaliwal, 2013, Shankar *et al*, 2014).

When looking at mean scores of each domain ranged from 59.69%- 64.88%. Students' academic self perceptions (*SASP*) scored the highest and students' perceptions of atmosphere (*SPA*) scored the lowest in this study. The mean *SASP* score was 20.76/32. It can interpret as "feeling more on the positive side". Medical students reported their perception of atmosphere was highest in the item of "I have learned a lot about empathy in my profession" while the lowest is "I am able to memorize all I need". The mean *SPA* score was 28.65/48. It can interpret as "a more positive atmosphere". Medical students reported their perception of atmosphere was highest in the item of "I feel comfortable in class socially" while the lowest is "Cheating is a problem in this school".

Male medical students indicated a more positive perception of their education environment (*SPT*, *SPS* and *SASP*) than females. These result opposite with a study in Australia and Netherland (Brown *et al*, 2011, Shankar *et al*, 2014). Professional attitude is associated with *SPA* domain. Medical students who have positive professional attitude indicated a more positive perception of learning atmosphere than medical students who have negative professional attitude.



## Conclusion

This study suggested student's enrolled Yala medical center generally holds positive perception toward their course environment. This leads to positive outcomes for the students. Other findings in this study such as the five domains score were also positive, its range from 59.7% - 64.9%. Male medical students have a more positive perception than female. Professional attitude was significant with atmosphere perception domain.

## References

- Harden RM, Crosby JR, Davis MH. 1999. AMEE Guide no.14. Outcome based education. Part 1: An introduction to outcome based education. *Med Tech*; 21: 7-14.
- Roff S, McAleer S, Harden RM, et al. 1997. Development and validation of the Dundee Ready Education Measurement (DREEM). *Med Tech*; 19: 295-9.
- McAleer S, Roff S. 2002. AMEE Education (Dundee). Part 3: A practical guide to using the Dundee Ready Education Measurement (DREEM). In: Genn JM (ed). Guide No 23: Curriculum, environment, climate, quality and change in medical education: a unifying perspective. Dundee, UK: Association of Medical Education in Europe; 2002.
- Palmgren PJ, Chandratilake M. 2011. Perception of educational environment among undergraduate students in a chiropractic training institution. *The Journal of Chiropractic education*; 25: 151-163.
- Edgren G, Haffling AC, Jakobsson U, McAleer S, Danielsen N. 2010. Comparing the educational environment (as measured by DREEM) at two different stages of curriculum reform. *Med Tech*; 32: 233-8.
- Pinparyon PS, Roff S, McAleer S, Poonchai B, Pemba S. 2000. Educational environment, student approaches to learning and academic achievement in a Thai nursing school. *Med Tech*; 22: 355-64.
- Jiffry MTT, McAleer S, Roff S. 2005. Using the DREEM questionnaire to gather baseline information on an evolving medical environment in Sri Lanka. *Med Tech*; 27: 348-52.
- Dunne F, McAleer S, Roff S. 2006. Assessment of the undergraduate medical environment in a large UK medical school. *Health Educ J*; 65: 149-58.
- Brown T, Williams B, Lynch M. 2011. The Australian DREEM: evaluating student perceptions of academic learning environments within eight health science courses. *International Journal of Medical Education*; 2: 94-101.
- Roff S. 2005. The Dundee Ready Education Measurement (DREEM) a generic instrument for measuring students' perceptions of undergraduate health professions curricula. *Med Tech*; 27: 322-5.
- Kohli V, Dhaliwal U. 2013. Medical students' perception of the educational environment in a medical college in India: a cross-sectional study using the Dundee Ready Education Environment questionnaire. *J Educ Eval Health Prof.*; 10: 5.
- Shankar PR, Bharti R, Ramireddy R, Balasubramaniam R, Nuguri V. 2014. Students' perceptions of the learning environment at Xavier university school of medicine, Aruba: a follow up study. *J Educ Eval Health Prof.*; 11: 9.