

CHAPTER 4 : FINDINGS

4.1 Introduction

In this chapter will discuss about overall findings of quantitative and qualitative studies.

4.2 Phase One: Findings of Quantitative Study

This section is focused on the sociodemographic characteristics of the respondents, determination of adherence, knowledge and attitude towards cupping practice guideline, bivariate analysis, and multivariate analysis.

4.2.1 Descriptive Statistics

4.2.1.1 Sociodemographic Characteristics

With the total respondents of 114 lead to a response rate of 75.5%. As shown in Table 4.1, the mean (SD) age of respondents was 38(11) years old. Majority of them were male (64.9%), Malay (99.1%), and possessed degree holders from various backgrounds (27.8%). Median (IQR) income of the respondents was RM1500(2580). Meanwhile, the mean (SD) duration of their working experiences was 4(2.6) years. Regarding to employment status, majority (69.9%) of the respondents were part timers and 37.7% never attended cupping training. Mean (SD) number of patients they

attended weekly was 9(9.0) patients. Moreover, 63.5% of respondents knew cupping guideline can be retrieved through the internet.

Table 4.1 The sociodemographic characteristics of cupping practitioners who attended two GAPERA events in Malaysia, 2018 (N=114)

Sociodemographic variables	Mean (sd)	n (%)
Age (years)	38 (11)	-
Gender		
Male	-	74 (64.9)
Female		40 (35.1)
Race		
Malay	-	113 (99.1)
Chinese		1 (0.9)
Education level		
PhD	-	1 (0.9)
Master		3 (2.8)
Degree		30 (27.8)
Diploma		23 (21.3)
Certificate (Technical & vocational)		23 (21.3)
Primary education		28 (25.9)
Working experiences (years)	4 (2.6)	-
Employment status		
Full time		34 (30.1)
Part time		79 (69.9)
Attended cupping training		
Yes		71 (62.3)
No		43 (37.7)
Number of patients/ weeks	9 (9.0)	-
Income (RM)	1500 (2580) *	-

*median (IQR)

4.2.1.2 Adherence to practice guideline

With regards to adherence items, as shown in Table 4.2, majority of respondents (73.7%) often sterilized cups after each treatment, 78.9% used disposable lancet to prick the skin, 62.3% washed hands before handling the patients, 64.9% washed hands after handling patients, 70.2% washed hands when exposed to fluid and bodily fluid, and 61.4% washed hands after disposing gloves. Also, the highest proportion was 86%

where participants wore gloves during treatment, 59.6% wore face mask during treatment, and 58.8% of respondents cleaned the spill area with chlorine. However, only 39.5% respondents disposed blood and bodily fluid to yellow clinical waste bin. A total 54.4% wipes the skin with alcohol before pricking, 58.8% applied each cup not more than 15 minutes, 76.3% monitored patients after cupping procedure, 49.1% advised patients not to work for up to 12 hours post procedure, 63.2% recorded the number of cups used, and 52.6% recorded the location of the cups during treatment. Nevertheless, only 19.4% recorded the estimated amount of blood that were released during cupping and 36.8% recorded any complications happened.

Table 4.2 Adherence to practice guidelines items among cupping practitioners in Malaysia, 2018 (N=114)

No	Item	n (%)				
		Never	Rarely	Sometimes	Frequent	Very often
1	I sterilized the cups of cupping after each treatment session.	3 (2.6)	1 (0.9)	7 (6.1)	19 (16.7)	84 (73.7)
2	I used disposable lancet to prick the skin.	12(10.5)	2 (1.8)	1 (0.9)	9 (7.9)	90 (78.9)
3	I washed hand according to 7 steps of proper hand washing before handling each patient.	2 (1.8)	0	7 (6.1)	34 (29.8)	71 (62.3)
4	I washed hand according to 7 steps of proper hand washing after handling each patient.	1 (0.9)	1 (0.9)	8 (7.0)	30 (26.3)	74 (64.9)
5	I washed hand according to 7 steps of proper hand washing when exposed to blood or body fluids.	1 (0.9)	0	4 (3.5)	29 (25.4)	80 (70.2)
6	I washed hand according to 7 steps of proper hand washing after disposing the gloves.	1 (0.9)	1 (0.9)	7 (6.1)	35 (30.7)	70 (61.4)
7	I wore gloves during treatment	1 (0.9)	0	7 (6.1)	8 (7.0)	98 (86.0)
8	I wore face mask during treatment.	5 (4.4)	2 (1.8)	17 (14.9)	22 (19.3)	68 (59.6)
9	I mopped the spill area using chlorine (eg: chlorox).	0	3 (2.6)	8 (7.0)	36 (31.6)	67 (58.8)
10	I disposed the contaminated waste of blood or any blood products into the yellow 'clinical waste'.	18 (15.8)	8 (7.0)	12 (10.5)	31 (27.2)	45 (39.5)
11	I cleansed the skin with 70% alcohol before scarification.	7 (6.1)	3 (2.6)	9 (7.9)	33 (28.9)	62 (54.4)
12	I applied each cup not more than 15 min.	0	3 (2.6)	15 (13.2)	29 (25.4)	67 (58.8)
13	I monitored patients after cupping procedure to prevent from excessive bleeding.	2 (1.8)	1 (0.9)	9 (7.9)	15 (13.2)	87 (76.3)
14	I advised patients to refrain from work for up to 12 hours post-procedure, especially if the total amount of blood drawn is the maximum allowed (450ml).	14(12.3)	4 (3.5)	10 (8.8)	30 (26.3)	56 (49.1)
15	I recorded the number of cups used during cupping.	6 (5.3)	5 (4.4)	14 (12.3)	17 (14.9)	72 (63.2)
16	I recorded the location of the cups used during the treatment.	9 (7.9)	9 (7.9)	14 (12.3)	22 (19.3)	60 (52.6)
17	I recorded the estimated amount of blood that was released during cupping.	38(33.3)	22(19.3)	25 (21.9)	7 (6.1)	22 (19.4)
18	I recorded any complications accordingly.	17(14.9)	8 (7.0)	18 (15.8)	29 (25.4)	42 (36.8)

Adherence questionnaire was made up of five constructs with its different number of items. There were 2 items in sterilization construct, 4 items in handwashing constructs, 4 items in standard precaution construct, 5 items in procedure and 3 items in documentation. In order to compare the means, the denominators were standardized into 20 across all constructs. Majority of respondents did well in handwashing component with the highest mean at 18.3 meanwhile the lowest mean was 14.8 for documentation (Figure 4.1). The respondents were least adhered to record number of cups used, location of the cups used during cupping, the estimated amount of blood and complications post cupping.

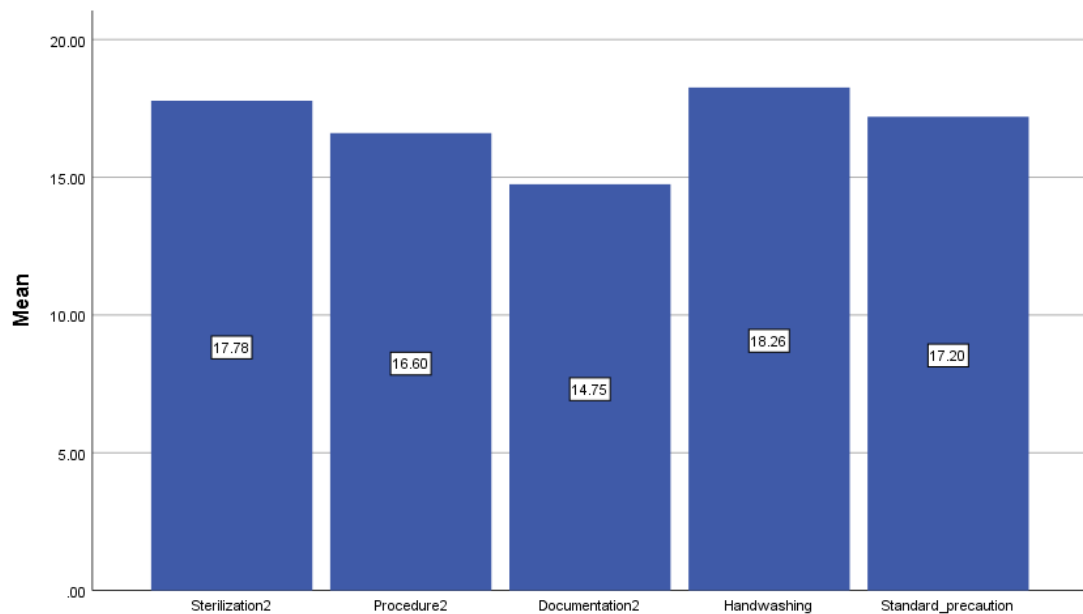


Figure 4.1 Bar chart representing the mean score of adherence constructs

In overall, upon summation of all 18 adherence items, the minimum score was 31 and the maximum was 90. The higher the score indicates better adherence to practice guideline. The median was 79. As shown in Figure 4.2, data was skewed to the left,

which represents data was not normally distributed, with the skewness and kurtosis values were beyond 2SE (standard error).

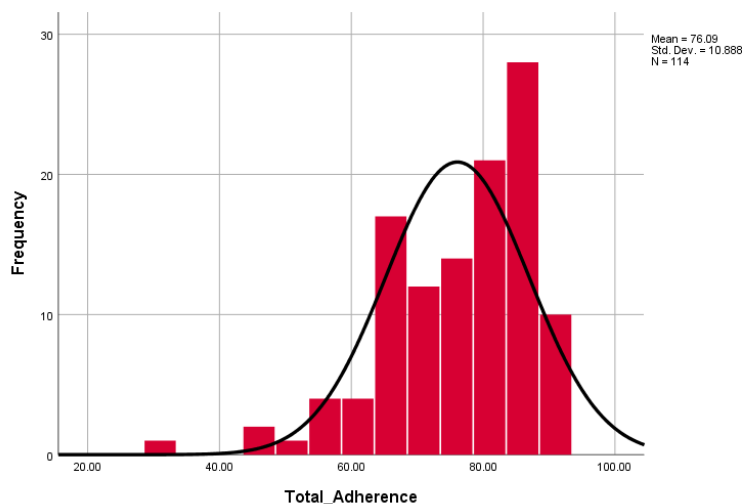


Figure 4.2 Histogram of total adherence score

The score was then categorized into adherence and non-adherence. Level of adherence was noted at 76.3% (Table 4.3).

Table 4.3 Overall adherence to practice guidelines among cupping practitioners in Malaysia, 2018 (N=114)

Adherence to practice guideline	Frequency (n)	Percentage (%)
Adherence	87	76.3
Non-adherence	27	23.7
Total	114	100.0

4.2.1.3 Knowledge on Cupping

With regards to knowledge on cupping, as shown in Table 4.4, majority of the respondents were 'agree' and 'strongly agree' to the following statement: 'HIV/AIDS, hepatitis B and hepatitis C can be transmitted through cupping if practitioner doesn't comply with infectious disease control measures' and 'emergency medical services must be contacted immediately if the patient fall unconscious (eg:999)', at 94.5%,

87.0%, 83.2% and 94.1% respectively. This showed participants were aware on the possibilities of the spread of blood borne diseases if they were not complied with the standard precautions during cupping treatment.

Nonetheless, only 21.3% of cupping practitioners disagreed on the knowledge statement of 'cupping can be done on cancer patients'. This shows majority of the respondents are still doing cupping to those contraindicated patients. Besides, only about half of the respondents had knowledge to not practicing cupping among patients with varicose vein, anticoagulant treatment (such as aspirin, warfarin, and heparin), and bone fracture at 46.9%, 47.6% and 64.1% respectively. These elements of knowledge are crucial for the cupping practitioners to know to prevent the occurrence of complications. Items 4, 5, 6 and 7 were negative statements, where respondents need to disagree with the statement, resulting in reverse scoring.

Table 4.4 Knowledge on cupping items among cupping practitioners in Malaysia, 2018

No	Item	n (%)				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	HIV/AIDS can be transmitted through cupping if practitioner does not comply with infectious disease control measures.	4 (3.7)	1 (0.9)	1 (0.9)	27 (24.8)	76 (69.7)
2	Hepatitis B can be transmitted through cupping if practitioner does not comply with infectious disease control measures.	6 (5.6)	1 (0.9)	7 (6.5)	33 (30.8)	60 (56.2)
3	Hepatitis C can be transmitted through cupping if practitioner does not comply with infectious disease control measures.	6 (5.6)	3 (2.8)	9 (8.4)	30 (28.0)	59 (55.2)
4	Bekam can be done on cancer patients.	10 (9.6)	12 (11.7)	32 (31.1)	22 (21.4)	27 (26.2)
5	Bekam can be done in areas with varicose veins.	29 (30.9)	15 (16.0)	28 (29.7)	7 (7.4)	15 (16.0)
6	Bekam can be performed on patients with anticoagulant treatment (eg: aspirin, warfarin, heparin)	22 (21.4)	27 (26.2)	25 (24.3)	15 (14.6)	14 (12.5)
7	Bekam can done in bone fracture.	38 (36.9)	28 (27.2)	18 (17.5)	12 (11.7)	7 (6.7)
8	Bekam cannot be performed on patients with bleeding problems (eg: hemophilia, low platelet).	6 (5.8)	10 (9.7)	10 (9.7)	38 (36.9)	39 (37.9)
9	Bekam may cause syncope	1 (0.9)	10 (9.3)	22 (20.6)	46 (43.0)	28 (26.2)
10	Bekam may cause excessive bleeding.	10 (9.3)	27 (25.2)	24 (22.4)	25 (23.4)	21 (19.7)
11	Bekam may cause infection at scarified area.	7 (6.5)	10 (9.3)	11 (10.3)	42 (39.3)	37 (34.6)
12	Bekam may cause bruises at the cupping site.	1 (1.0)	3 (2.9)	20 (19.0)	39 (37.1)	42 (40.0)
13	Emergency medical services must be contacted immediately if the patient fall unconscious (eg:999)	0	1 (1.0)	5 (4.9)	44 (42.7)	53 (51.4)

Knowledge questionnaire was measured by three constructs, namely precaution (5 items), contraindications (4 items) and side effects (4 items). Since its total items were varied, all constructs were standardized into 20 total score for the mean to be

compared. As shown in Figure 4.3, majority of respondents were knowledgeable in the precaution of doing cupping treatment such as HIV/AIDS, hepatitis B and C can be transmitted if they did comply to standard precautions. The lowest mean can be seen in the contraindication construct, where they were having less knowledge on cupping could not be done in patients with cancer, varicose vein, on bone fracture and patients with anticoagulant treatment.

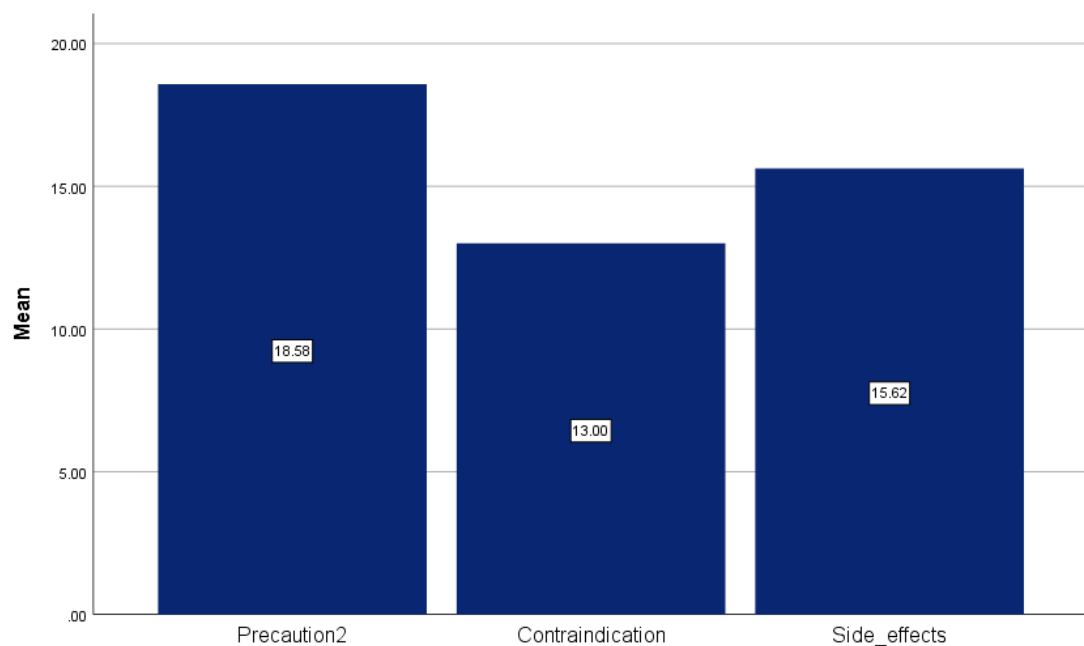


Figure 4.3 Bar chart representing the mean score of knowledge constructs

Upon summation of all 13 knowledge items, the minimum score was 32 and the maximum was 65. The higher the score indicates better knowledge on cupping therapy. As shown in Figure 4.4, data was normally distributed.

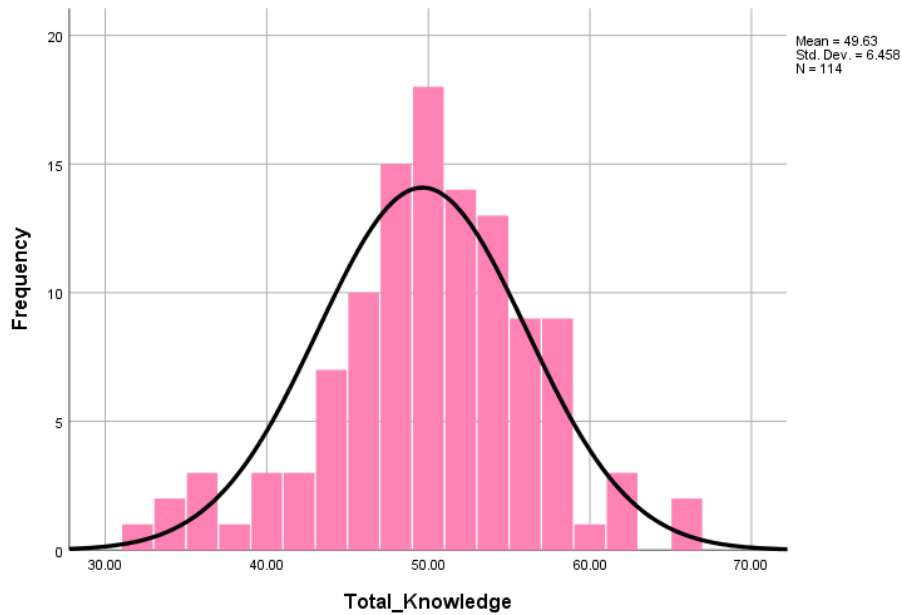


Figure 4.4 Histogram of total knowledge score

The score was then categorized into adequate and inadequate knowledge. Adequate knowledge in this current study was 60.5% (Table 4.5).

Table 4.5 Overall knowledge on cupping among practitioners in Malaysia, 2018 (N=114)

Knowledge on cupping	Frequency (n)	Percentage (%)
Adequate	69	60.5
Inadequate	45	39.5
Total	114	100.0

4.2.1.4 Attitude towards Cupping Practice Guideline

Table 4.6 represents attitude towards practice guideline. A total of 99.1% of the respondents were agree and strongly agree that cupping guidelines issued by the MOH are useful sources of advice. Meanwhile, 93.0% of cupping practitioners believe that cupping guidelines are based on strong scientific evidence. A majority of 97.3% believe that guidelines will ensure the safety of the patient. Nevertheless, despite all the positive

attitudes, 26.9% of the respondents have difficulty in changing their routine and habits to follow the guidelines and 17.9% of them being neutral on that.

Table 4.6 Attitude towards practice guidelines by Ministry of Health (MOH) Malaysia among cupping practitioners in Malaysia, 2018

Attitude	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I believe the cupping guidelines issued by the MOH are useful sources of advice.	0	0	1 (0.9)	27 (23.7)	86 (75.4)
2. I believe cupping guidelines are based on strong scientific evidence.	2 (1.8)	0	6 (5.3)	58 (50.9)	48 (42.1)
3. I believe that treating in accordance with practice guidelines will ensure the safety of the patient.	0	0	3 (2.6)	28 (24.6)	83 (72.8)
4. I believe lack of knowledge makes me difficult to treat according to practice guidelines.	0	0	3 (2.6)	69 (60.5)	42 (36.8)
5. I have difficulty in changing my routine and habits to follow the guidelines.	18 (23.1)	25 (32.1)	14 (17.9)	11 (14.1)	10 (12.8)

4.2.1.5 Treatment Facilities

Among all participants, 64.0% (n=73) have their own facility for cupping treatment and the components of treatment facilities, as shown in Table 4.7. Among all treatment facilities, the least possession was clinical waste bin (71.2%). The practitioners easily owned good lighting and ventilation, with 98.6% respectively.

Table 4.7 Components of treatment facility owned by cupping practitioners in Malaysia, 2018 (n=73)

Facility (n=73)		
Items	Yes	No
1. I have a treatment room equipped with a treatment bed.	65 (89.0)	8 (11.0)
2. I have a treatment room equipped with 'clinical waste bin'.	52 (71.2)	21 (28.8)
3. I have a well-equipped room with a 'sharp bin'.	58 (80.6)	14 (19.4)
4. I have a treatment room equipped with 'general waste bin' / black plastic.	68 (93.2)	5 (6.8)
5. I have a good lighting treatment room.	72 (98.6)	1 (1.4)
6. I have a good ventilation treatment room.	72 (98.6)	1 (1.4)

4.2.1.6 Possession of Basic Life Support and First Aid Kit

In terms of an emergency backup, only 14.6% of the respondents had basic life support certificate at least once, meanwhile 60.6% claimed to have first aid kit/ box at their premises, as shown in Table 4.8.

Table 4.8 Possession of BLS and First aid kit among cupping practitioners in Malaysia, 2018

	Yes n (%)	No n (%)	Total
Having BLS (basic life support) certificate (n=103)	15 (14.6)	88 (85.4)	103 (100.0)
Having First Aid Kit/box (n=104)	63 (60.6)	41 (39.4)	104 (100.0)

4.2.2 Bivariate Analysis

Table 4.9 shows the association between multiple factors associated with adherence to practice guideline. From the chi square analysis, variables that showed significant association were gender, education level, working experiences, income, number of patients treated in a week, employment status and cupping training. For gender, females had higher percentage of adherence (87.5%) as compared to male with significant association ($p=0.039$). For educational level, those with higher education were adhered to practice guideline (91.3% and 91.2% for diploma and PhD/master/degree respectively), while for working experience and income, those who had worked for more than 4 years (89.8%) and income of ≥ 2500 (94.1%) had higher adherence respectively. Those cupping practitioners who had more than 10 patients coming for treatment per week showed higher percentage of adherence (96.6%) with significant association ($p=0.003$). For employment status, those who worked as full-time cupping practitioners had higher percentage of adherence (94.1%), while for training, were those who had attended prior cupping training before practicing (83.1%), all showed significant association, at $p=0.003$ and $p=0.029$, respectively. Thus, all these variables were included in multivariate analysis of general linear model. There were no significant association noted for the other variables such as age, knowledge and attitude. However, knowledge and attitude variables will be included in multivariate analysis as these variables were regarded as prudent predictors towards adherence to practice guideline (Askarian et al., 2007; Ather et al., 2019; Quan et al., 2015).

Table 4.9 Sociodemographic factors associated with adherence to practice guideline among cupping practitioners in Malaysia, 2018

Variables	Adherence		Total	X ² value	p-value
	Yes	No			
Age					
<40	45 (70.3)	19 (29.7)	64 (100.0)	2.9 (1)	0.088
≥40	42 (84.0)	8 (16.0)	50 (100.0)		
Gender					
Male	52 (70.3)	22 (29.7)	74 (100.0)	4.26 (1)	0.039*
Female	35 (87.5)	5 (12.5)	40 (100.0)		
Education level					
PhD/Master/Degree	31 (91.2)	3 (8.8)	34 (100.0)	15.76 (3)	0.001*
Diploma	21 (91.3)	2 (8.7)	23 (100.0)		
Certificate(Technical & vocational)	12 (52.2)	11 (47.8)	23 (100.0)		
Primary & secondary education	19 (67.9)	9 (32.1)	28 (100.0)		
Working experiences (years)					
<4	39 (63.9)	22 (36.1)	61 (100.0)	9.8 (1)	0.002*
≥4	44 (89.8)	5 (10.2)	49 (100.0)		
Income (RM)					
<2500	29 (64.4)	16 (35.6)	45 (100.0)	Fisher's exact test	0.025*
≥2500	16 (94.1)	1 (5.9)	17 (100.0)		
Number of patients/ weeks					
<10	43 (68.3)	20 (31.7)	63 (100.0)	9.0 (1)	0.003*
≥10	28 (96.6)	1 (3.4)	29 (100.0)		
Employment status					
Full time	32 (94.1)	2 (5.9)	34 (100.0)	8.67 (1)	0.003*
Part time	54 (68.4)	25 (68.4)	79 (100.0)		
Attended cupping training					
Yes	59 (83.1)	12 (16.9)	71 (100.0)	4.79 (1)	0.029*
No	28 (65.1)	15 (34.9)	43 (100.0)		
Knowledge					
Adequate	51 (73.9)	18 (26.1)	69 (100.0)	0.6 (1)	0.455
Inadequate	36 (80.0)	9 (20.0)	45 (100.0)		
Attitude					
Agreement/good	75 (75.0)	25 (25.0)	100 (100.0)	Fisher's exact test	0.513
Disagreement/poor	12 (85.7)	2 (14.3)	14 (100.0)		

*p-value is significant at $P < 0.05$

4.2.3 Multivariate Analysis

Univariate general linear model is used to predict a quantitative dependent variable by a set of independent variables containing categorical or quantitative variables. Variable selection was based on previous bivariate analysis. Running a regression model with numerous variables including irrelevant ones will lead to an unnecessarily complex model. Main effect is chosen as it shows the overall effect of a factor.

After adjustment for sociodemographic factors and other variables in general linear model, only number of patients per week, gender and education level were significantly associated with adherence to practice guideline score and included in final model ($p < 0.05$). As shown in Table 4.11, there was a significant linear relationship between number of patients per week and adherence score ($p = 0.002$). Those practitioners with more than 10 patients per week seeking for treatment have higher adherence score by 3 (95% CI: 1.3, 5.3 score). Female had significantly higher adherence score as compared to male by 5 score at $p = 0.010$. There was also a significant association between education level and adherence. Education level was categorized into 4 groups, which consist of PhD, master and degree in group 1, diploma in group 2, vocational certificate in group 3, and school leavers in group 4 (reference group). The higher education attainment with PhD, master and degree holders had significantly higher adherence score as compared to primary and secondary school leavers ($p = 0.001$) by 7 scores. Meanwhile, practitioners with diploma holder had significantly higher adherence score than practitioners with primary and secondary education ($p = 0.005$) by 7 scores. However, there was no significant association identified between vocational certificate graduates and school leavers practitioners ($p > 0.05$). The final regression

model was adherence = 106.3 + 0.33 (number of patients treated per week) + 5.51 (female) + 7.31 (PhD/master/degree) + 6.89 (diploma).

Table 4.10 Factors associated with adherence to practice guideline using Bivariate analysis (Simple linear regression, T test, ANOVA) and General Linear Model among cupping practitioners in Malaysia, 2018

Variables	Bivariate Analysis					General Linear Model				
	B	Mean (sd)	95% CI	t (df) F (df)	p-value	B	95% CI	t	p-value	Partial Eta
Age (years) ^a	0.25	-	0.08, 0.42	-	0.005*	-	-	-	-	-
Working experiences (years) ^a	1.45	-	0.71, 2.19	-	<0.001*	-	-	-	-	-
Income (RM) ^a	0.001	-	0.0003, 0.002	-	0.008*	-	-	-	-	-
Number of patients per week ^a	0.41	-	0.19, 0.62	-	<0.001*	0.33	0.13,0.53	3.25	0.002*	0.113
Knowledge ^a	0.14	-	10.18, 0.45	-	0.398	-	-	-	-	-
Attitude ^a	0.28	-	-0.79, 1.35	-	0.606	-	-	-	-	-
Gender ^b (ref: male)	-	73.9 (11.4)								
Female	-	80.1 (8.8)	2.00,10.20	2.95 (112)	0.004*	5.51	1.33,9.68	2.62	0.010*	0.077
Employment status ^b (ref: full time)	-	81.7 (6.7)								
Part time	-	73.7 (11.6)	1.73,7.94	4.6 (101.6)	<0.001*	-	-	-	-	-

Variables	Bivariate Analysis					General Linear Model				
	B	Mean (sd)	95% CI	t (df) F (df)	p-value	B	95% CI	t	p-value	Partial Eta
Attended cupping training^b (ref: no)		73.0 (12.6)								
Yes		77.9 (9.3)	-9.0,-0.87	-2.4 (112)	0.018	-	-	-	-	-
Education level^c (ref: school leavers)	-	73.5 (12.7)	68.5,78.4	2.5 (3,104)	0.066					
-PhD/master/degree		79.9 (8.2)	77.1,82.8			7.31	2.25, 12.37	2.87	0.005*	0.091
-Diploma		76.0 (12.1)	70.8,81.2			6.89	1.10,12.68	2.36	0.020*	0.063
-Certificate (Technical & vocational)		73.6 (9.2)	69.6,77.6			1.67	-4.17,7.53	0.57	0.570	0.004

^a Simple linear regression, ^b t-test, ^c ANOVA
general linear model (adjusted R squared = 22.5%; The model reasonably fits well)
**p*-value is significant at *p*<0.05; Ref: reference

4.3 Phase Two: Findings of Qualitative Study

This qualitative study involved three participants with various backgrounds. The average length of interview was 63 min with range 41 – 84 min. There were 61 pages of transcribed text. Table 4.12 shows the characteristics of the three participants.

Table 4.11 Characteristics of the interview participants with lower score of adherence, 2018

Characteristics	Participant A	Participant B	Participant C
Gender	Male	Male	Female
Age	37 years old	40 years old	34 years old
Education level	Sijil Perubatan Islam Darusyifak 2008. Diploma Bekam Klinik USM Sijil Bekam Oxidant Drainage Therapy (ODT) Jakarta Indonesia Sijil Kemahiran Malaysia Urutan Tradisional Melayu Sijil Rawatan al Fasdhu Pengajian al Fasdhu Abu Zacky Jakarta Indonesia	Bachelor’s in engineering. Diploma in bekam.	“ <i>Sekolah pondok</i> ” – no formal education.
Job description	Full time (at premise), Banting	Full time (at premise), Nilai	Part time (mobile/home-based), Bangi
Working experiences	17 years	18 years	10 years

According to the revised version of Cabana’s Clinical Practice Guidelines Framework for Improvement (Espeland & Baerheim, 2003), there are three main categories of barriers; knowledge-related, attitude/ feeling-related and external barriers.

As shown in Table 4.12, the highest coded theme observed was increased cost (25.0%) with the frequency of 12 times being mentioned in the interview sessions, which fell under external barrier. It is followed by disagreement with the guidelines (22.9%), lack of knowledge on the guidelines (20.8%) and so forth.

Table 4.12 Code frequency table

Category	Code	Count (freq)	Codes %	Cases (n=3)	Cases %
Knowledge-related barriers	Lack of knowledge of the guidelines	10	20.8%	1	33.3%
Attitude/feeling-related barriers	Lack of agreement with the guideline	11	22.9%	3	100.0%
	Lack of feeling expectancy	3	6.3%	2	66.6%
	Surrender to Allah/ God (redha)	3	6.3%	2	66.6%
External barriers	Increased cost (Setting-related)	12	25.0%	3	100.0%
	Lack of time (setting-related)	5	10.4%	2	66.6%
	Increased malpractice liability concerns	4	8.3%	2	66.6%

Knowledge-related Barriers

According to the stages of behavioral change, practitioners primarily need to be familiarized with the guideline to develop an adequate understanding of it. Therefore, the most possible knowledge barriers are lacking in awareness and familiarity. By curbing this barrier may produce a lasting successful adherence among the practitioners. In relation to the inadequate knowledge on the guideline, the participant did not aware

and not familiar with the existence of the guideline itself even though the person has been practiced cupping therapy every now and then. This is evidently by:

“.....C: Ya, saya tahu panduan itu. Ada beli buku panduannya: buku sunnah rasul bekam. Ada terangkan cara-caranya, pasal darah tinggi dan macam-macam sakit lagi...”

“.....C: Yes, I did know about the guideline. I bought the book: sunnah on bekam (cupping). It explained about all the diseases such as hypertension etc.....” [referred to the wrong guideline].

.....C: saya tidak tahu panduan dari kementerian itu. Buat sahaja bekamnya....”

“.....C: I don't know about practice guideline from MOH. Just do it (cupping).....”

A participant had informal cupping training from the family members, instead of getting the education and training from certified institutions. This finding is worrisome as the users may exposing themselves with undesirable outcomes, mainly infection.

“.....C: Saya belajar bekam dari atok saya. Saya tengok je dia buat bekam dan belajar dari situ. Waktu tu umur saya kecil lagi, 3 tahun. Saya belajar point tempat bekamnya dari dia la....”

“.....C: I learnt doing bekam (cupping) from my grandfather. I observed him doing the procedure and learnt from that. I was 3 years old at that time. I learnt the cupping points from him.....”

One of the respondents also being oblivious on the knowledge of Hepatitis B and C, where it is a must know important diseases related to blood-borne infection. Unawareness may hinder them from heeding to precautionary measures.

“....C: apa? Penyakit apa tu? Tak tahu juga. Saya tak pernah dengar.....”

“.....C: what? What disease? I do not know. Never heard of that before.....”

Moreover, the prominent concern was the infection control element which involved the disposal of blood products and standard precautions that may introduce the possibilities of getting blood borne infections while conducting cupping therapy. One of the participants did not know on how to properly dispose all the blood residuals. The participant just thrown away the blood products in domestic dumping bin, in which this might spread the possibilities of contagions harming human and the ecosystem.

“.....C: saya buang darah di tong sampah [di rumah].....”

“.....C: I just throw away the blood in the bin (at home).....”

The next component they were lacking at was contraindication of cupping therapy. The ascended issues were cupping therapy can be done in babies and on varicose vein body parts. These were evidently explained in the guidelines as contraindications to perform cupping.

“.....C: kalau dekat urat timbul (varicose vein) ni, bole juga dibuat bekam. Ya bole dibuat bekam tapi jangan terus dalam begitunya. Takut nanti darah tak berhenti keluar lah....”

“.....C: At this site (varicose veins), we can do cupping. Yes, sometimes we can do cupping at the place (varicose vein) but need to do with little pressure because I'm afraid it will cause nonstop bleeding.....”

Nevertheless, the rest of the participants were aware on the practice guidelines and agreed to practice according to the recommendations.

Attitude/ feeling-related Barriers

Attitude can be defined as behavior based on conscious or unconscious views developed through living experiences (Altmann, 2017). After the practitioners being acquainted with the guideline, they should be able to develop a positive attitude towards it.

Lack of agreement with the guideline

The first barrier in relation to attitude was disagreement with cupping guideline. These included not using alcohol swab before skin pricking in wet cupping therapy and insisted to enable cupping on babies provided with the right technique.

“.....C: Takdelah. Kalau guna alkohol sebelum cucuk nanti darahnya keluar sikit je. Tak best....”

“.....C: no. if I use alcohol swab before pricking, there will be not much blood come out (during cupping).....”

“...B: Kalau ikutkan apa yang saya belajar, sebenarnya budak 2 tahun pon boleh buat bekam. Dan saya pernah bekam baby usia 7 bulan...”

“.....B: Based on what I've learnt, 2 years old kid also can do bekam (cupping). I once cupped 7 months old baby.....”

“...B: kita boleh buat bekam pada baby, tapi kaedah tu kene betul. Bila kaedah betul, kesan baiknya ada.....mereka kene masukkan seorang pengamal bekam sepatutnya masa buat panduan bekam tu....”

“.....B: We can do cupping on babies, but the methods need to be correct. With precise methods, the effects would be good.....they should include one of the practitioners in the meeting earlier when decided on the practice guidelines.....”

In addition, one of the participants felt the guideline is complicated to be heeded. For instance, disposal of blood products can be easily done by burying or throwing them into the garbage because in their judgement, company who took over this disposal might just do the same, where incineration may eventually lead to the air and ground pollution as well.

“.....A: Saya ada ikuti KKM seminar di USM. Dalam seminar tu memang la ada diterangkan safety procedure, tapi rumit! [perasaan

marah]. Dari segi apa? Nanti kalau darah dibuang di dalam tanah, akan menyerap pada tanah dan membawa kesan buruk kepada manusia dan haiwan. Bila fikir-fikir, ye la benda tu complicated sangat. Habis tu Radicare tu buang darah di mana? Dia [Radicare] akan bakar dan lupus juga bawah [tanah] kan? Sama ja.....”

“.....A: I’ve attended seminar by Ministry of Health conducted at USM (University Sains Malaysia). During the seminar, yes, they mentioned about the safety procedures and all, but it is (procedure) complicated! [in angry expression]. In what sense? When blood is discarded at the soil, it will diffuse into the soil and harm the environment that will affect the health of human and animals. When we think about it, it is indeed complicated. If that so, then where did the Radicare (disposable company) throw all the blood products? They will burn (incinerate) it and go to the soil eventually. So, it is the same...”

The participants also did not agree to ask for consent before procedure being done because as in their insight, when someone is coming to do the procedure, indirectly the patient has given their consent to proceed. Finally, they also doubted that there was no expert opinion from their community involved when this guideline was invented. As mentioned by one of the respondents,

B: “...bila pesakit datang untuk bekam, secara tak langsung memang dah bagi keizinan. Dia pun dah sukarela datang sini. So tak perlu la isi borang keizinan....”

B: “.....When people come for cupping treatment, indirectly they have given the consent. They came voluntarily. So, no need to fill in the consent form.....”

Lack of feeling expectancy

It is where they believe that by abiding to the guidelines might provoke difficult feelings. Some of the practitioners felt disturbed when they need to put on the personal protective equipment (PPE) such as gloves, mask, and apron in which it delayed their treatment process. This is as shown below:

“.....B: Kalau first time ikut garis panduan memang rasa terganggu lah. Sebab saya dah biasa dengan practice saya sebelum ni...”

“.....B: First time of implementing the guideline, I felt disturbed. Because I was familiar with what I’ve done all this while.....”

They also mentioned that by asking the patient’s *Human Immunodeficiency Virus (HIV)* status in history taking might offended them as they believed that this information is too sensitive to be shared.

.....A: kalau tanya pesakit ada HIV ke tak rasa macam tak elok dan rasa lain. Kita tak nak la buat pesakit rasa tak selesa dan fail to build rapport dengan pesakit. Kita baru first time jumpa. Jadi tak perlu la tanya pasal HIV tu...”

.....A: By asking whether the patient has HIV or not is not appropriate for me. We do not want to make patient to feel uncomfortable and fail to build rapport with the patient, since that

was the first time we met. So, asking about HIV history is not necessary... ”

Surrender to God-Allah/ Redha

There was a new sub theme emerged from the analysis, which was surrender to Allah/ God (*redha*). Majority of the participants stated that sometimes they did not adhere to the guideline especially in donning the PPE, as they believed God will never put them in trouble due to their good deeds. All of them are Muslim and thus believing in God is synonym with their pillar of religion.

“...C: takpe la kita tawakal kepada Allah lah...”

“.....C: It’s ok.. we just tawakal (surrender) to Allah (God).....”

....A: logiknya kita niat nak tolong orang, takkan tuhan nak zalim dengan kita dengan dapat segala penyakit tu. Jadi kita kene yakin dengan Allah and sangka baik dengan orang. Kita doa “ya Allah, aku nak tolong dia, selamatkanlah aku dari segala penyakit dia”. Saya ada seorang kawan yang takde dapat HIV sampai la dia mati walaupun tak pakai PPE...”

.....A: Logically, we intended to help people, therefore Allah (God) will never be cruel and merciless on us by giving us the diseases. So, we need to put trust in Allah and have good thought on others. We pray “ya Allah (O God), I want to help him, please keep me save from his diseases”. There was one friend of mine who never had HIV until he passed away albeit he didn’t wear any PPE.....”

External Barriers

Other than knowledge and attitude related barriers, external factors may limit the ability to perform the recommended behavior according to the guideline. This external or environmental barriers include inappropriate setting-related such as lack of time, lack of practice resources, increased cost and so forth may hinder the application of guideline. For example, a well-trained cupping practitioner is confident in conveying the treatment but is affected by environmental barrier such as insufficient cost in managing the needs of the patients. The persistence in this barrier may eventually affects the outcome of the guideline application.

Setting-related

Under external barrier, there were no guideline or patient-related barriers mentioned by the respondents. All external barriers to guideline use were connected to setting related. First and foremost, the entire participants were revealed about increased cost as one of the hindrances. They mentioned if they were to follow the guidelines, that might incur a lot of cost and therefore hampered them from abiding to it. One of the participants mentioned that alcohol swab is expensive and thus it was not included in skin preparation before puncturing in wet cupping. This might introduce bacteria and pathogens into the patient's bloodstream and put higher risk on patient's safety.

“.....C: saya tak letak alcohol [untuk bersihkan kulit sebelum tusukan] sebab mahal la...”

“.....C: I didn't use alcohol [to clean up the skin before puncturing] because it is expensive....”

Besides, they were mentioned about disposing clinical waste such as blood product to a private company handling with non-clinical hospital services like *Radicare* was expensive and impractical. This is because daily blood products amount was too little and not worthwhile to the cost of requesting the company to come and expose daily. The practitioners unable to accumulate the blood for disposal at one go as to reduce the cost because the blood will create bad and uncomfortable odor. To encounter this, one participant had enlightened that disposing blood products in domestic garbage is no wrong as it has the same condition with disposing menstrual blood among ladies.

“...B: setakat ni kita tiada sterilizer dan tong kuning. Mahal...”

“.....B: So far, we don't have sterilizer for cups and yellow bin. Its pricey.....”

“...B: saya masuk darah dalam plastic dan buang dalam tong sampah biasa je. Agak costly kalau nak panggil syarikat yang uruskan darah tu [Radicare]....”

“.....B: I put the blood in a plastic and throw it in regular waste bin. It is costly to call for a company to manage the blood [Radicare].....”

“...A: kalau nak panggil syarikat yang uruskan darah [Radicare] tu agak costly. Kadang-kadang pesakit yang datang bekam sikit je, so darahnya sikit je untuk harini. Darah ni walau sikit akan berbau. Jadi

buang dalam tong sampah. Procedure pelupusan tu kita tak dapat nak buat betul-betul lagi sebab perlu bayar banyak...”

“.....A: its costly to call disposal company [Radicare]. Sometimes, few patients come for cupping, therefore fewer amount of blood for that day. Even with small amount of blood will produce bad smell. Hence just throw it in waste bin. I cannot follow the disposal procedure yet because I need to pay a lot for that.....”

Moreover, all participants also mentioned about lack of time to practice the guidelines.

“...A: kadang-kadang saya tiada masa untuk ikut guideline...”

“.....A: sometimes I don't have time to follow the guideline.....”

“...A: kadang-kadang kita tak mampu nak ikut guideline. Salah satu sebab ialah masa. Contohnya, ya memang kita timbang berat pesakit dan ambil history. Tapi kadang-kadang pesakit tu dah sakit sangat so kita tak timbang dan tanya banyak soalan la. Terus buat bekam...”

“.....A: sometimes we are not capable to follow guideline, one of the reasons is time. For example, yes, we did weigh the patient and took the history but sometimes the patient was in intense pain, so we didn't do all the procedures that I mentioned but go straight to do cupping.....”

“...C: kalau orang yang tergesa-gesa, saya tidak pakai sarung tangan dan terus ke dapur untuk basuh tangan [sebelum bekam...”

“.....C: If patient is in a rush, I don't wear gloves but straight go to the kitchen (sink basin) to wash hand [before cupping].....”

Next factor under setting-related barrier is increase malpractice liability concerns. As one of the respondents stated that:

“...A: buat masa ini, undang-undang tu ada tapi dari segi pelaksanaan belum ada lagi. Tiada orang [dari KKM] yang check pon. Rasa lega la. Cuma bila kita dengar pasal akta tu seramnya rasa....”

“.....A: for the time being, there is the the law (Act 775) but the enforcement is not yet being implemented. Nobody [from MOH] come and do the inspection. So, we are a bit relief. When thinking about the act making me jittery.....”

As no enforcement was done by the authorities to date, hindered these practitioners from abiding fully to the guideline. Some of them reflected their worries if penalty is to be done to monitor their practices.

4.4 Conclusion

This chapter showed the findings for each phase starting with quantitative study, where the adherence level was found to be 76.3%, adequate knowledge was 60.5%, and as for the attitude, 99.1% of respondents agreed and strongly agreed that cupping guidelines were useful sources of advice, nonetheless, 26.9% had difficulty in changing

their routine and habits to follow the guidelines. Factors associated with adherence determined were number of patients treated in a week, gender, and education level ($p < 0.05$). In phase two, the findings of themes for in-depth interview were presented. The barriers of guideline use were identified as increase cost, lack of agreement with the guideline, and lack of knowledge on the guideline.