CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the findings of this study, which were obtained from the various analyses. The chapter starts with the respondents' profiles and is supported by demographic data. Normality tests were performed for the preliminary analyses section to ensure sample normality. Subsequently, descriptive analyses were executed for each item and variable. Furthermore, inferential analyses were performed, Pearson's correlation. The bivariate analysis examines the relationship between the independent and dependent variables.

4.2 Respondents' Profile

Data were collected from 3 May 2023 until 5 May 2023, involving 170 samples. During the survey, the total population involved in phase 2 under Human Development Programme (HDP) was about N = 296 inmates. In prison rehabilitation management, HDP is categorised into four phases which involve orientation (phase one), character strengthening (phase two), vocational and industry (phase three) and pre-release inmate (phase four). Therapeutic community, a type of rehabilitation module for drug-addicted addicts, was implemented in phase 2 to reform, and build dominant and positive characteristics in inmates to help them in achieving drug sobriety. Thus, inmates' engagement during phase 2 is very crucial determining the success of the rehabilitation programme. Based on Krejcie & Morgan's (1970) sample size table, 165 respondents were needed for an almost accurate population study result **(Table 2).**

Table 2

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367

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130	97	650	242	9000	368

Note: N is the population size, S is the sample size

(Source: Rewrite from Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607–610.)

The respondents' demographic data as described in this section. A detailed overview of the demographic profiles of the respondents is presented in **Table 3**. Based on the sample, 170 respondents were males detained because of drug-related cases. Most respondents are from the age group of 31 to 40 years old, which involves 91 respondents (54%), followed by 41 to 50 years old, 46 respondents (27%). Subsequently, respondents age from 21 to 30 years old, about 18 (10%), and lastly, respondents who are 50 years above, which is 15 (9%).

Regarding ethnicity, Malay precedes others' races which are 148 respondents (87%). This follows by Indians n=13 respondents (8%) and Chinese n=9 respondents (5%). The survey finds that all respondents took more than one type of drug during their lifetime. Based on several interviews with respondents, most start with marijuana before changing to opioid and stimulant drugs to satisfy their drug needs and overcome their drug tolerance.

Most of the respondents enter prison more than 3 times during their lifetime, consist n=130 respondents (77%), 2 times representing 17% or 29 respondents. Only 11 respondents, or 6%, enter prison once. The frequency of inmates entering prison counts only if convicted of drug-related cases.

Table 3

The Demographic Profiles of the Respondents (N=170)

		Frequency,n	Percentage, %
Gender	Male	170	100
	Female		
	Total	170	100
Ethnicity	Malay	148	87
	Chinese	9	5
	Indian	13	8
	Total	170	100
Age	20 years and below		
	21- 30 years	18	10
	31- 40 years	91	54
	41- 50 years	46	27
	50 years and above	15	9
	Total	170	100
Primary Drugs	Stimulant		
	Marijuana		
	Opioid		
	More than 1 types	170	100
	Total	170	100

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Frequency entering prison	1	11	6
	2	29	17
	3 and above	130	77
	Total	170	100

(Source: Data collected by the author from 3rd May 2023 until 5th May 2023)

4.3 Preliminary Analyses

In this section, several analyses were performed to answer the research questions for this study.

4.3.1 Normality test

Normality is described by a symmetrical bell-shaped curve with the greatest frequency of scores in the middle, with smaller frequencies towards the extremes (Pallant, 2007). In this study, after the normality tests were conducted, extreme outliers were found in the findings. All fell behind the acceptable range. Hence the total sample size of N= 170 remained. The normalised findings are presented in **Table 4**.

4.3.2 Descriptive Statistics

The normality of the sample is construed from the values of the Skewness and Kurtosis tests. However, Skewness and Kurtosis tests alone are unreliable for small to moderate sample sizes since they cannot account for standard error (Mishra et al., 2019). As the standard errors decrease with increasing sample size, z-tests under the null hypothesis of normal distribution tend to be easily rejected in large samples with

distributions that do not differ significantly from normality. In contrast, in small samples, the null hypothesis of normality tends to be more easily accepted than necessary (Wiedermann et al., 2015).

According to Kim (2013) and Wiedermann et al. (2015), for modest sample sizes (n 50), z values of 1.96 are sufficient to establish data normality. However, medium-sized samples (50 n 300) with an absolute z-value of 3.29 infer that the sample distribution is normal. The histograms and the absolute skewness and kurtosis values for sample sizes greater than 300 determine the normality of the data. For determining significant normalcy, either an absolute skewness value 2 or an absolute kurtosis (excess) 4 might be utilised as reference values. Details of the normality test findings are shown in **Table 4**.

Table 4: Statistical normality tests for scale data from the sample (*N*=170)

		Circumstances	Motivation	Readiness	CMR	DASES
N	Valid	170	170	170	170	170
	Missing	0	0	0	0	0
Skewness		-.847	-1.007	-.235	-1.244	.251
Std. Error of Skewness		.186	.186	.186	.186	.186
Kurtosis		.744	.975	.113	2.769	-.873
Std. Error of Kurtosis		.370	.370	.370	.370	.370
Z-score Skewness		-4.55	-5.41	-1.26	-6.69	1.35
Z-score Kurtosis		2.01	2.64	0.31	7.48	-2.36

(Source: Data Analysis Using IBM Corp. Released 2022. IBM SPSS Statistics for Windows, Version 29.0. Armonk, NY: IBM Corp)

The negative skewness value for Circumstances, Motivation and Readiness (CMR) scales indicates that the tail on the left side of the distribution is longer than the right, and the bulk of the values lie to the right of the mean. Contradicting with Drug-Avoidance Self-Efficacy (DASES), skew values show positive means that the tail on the right side of the distribution is longer than the left, and the bulk of the values lie to the left of the mean. For Kurtosis analysis, CMR, circumstances, motivation and readiness are considered as leptokurtic since distributions with high kurtosis (fat tails); meanwhile, DASES shows platykurtic because distributions with low kurtosis (thin tails). The illustration of the data is represented in **Figure 4**.

Z score shows that some variables exceeded the absolute z-value between +3.29 and -3.29. Circumstances resulted -.4.55 for skewness, 2.01 for kurtosis, Motivation resulted in -5.41 for skewness and 2.64 for kurtosis, Readiness -1.26 for skewness and 0.31 for kurtosis, CMR -6.69 for skewness and 7.48 for kurtosis and lastly for DASES 1.35 for skewness and -2.36 for Kurtosis. In conclusion, only Readiness and DASES show normal distribution data, whilst circumstances and motivation are vice versa for CMR.

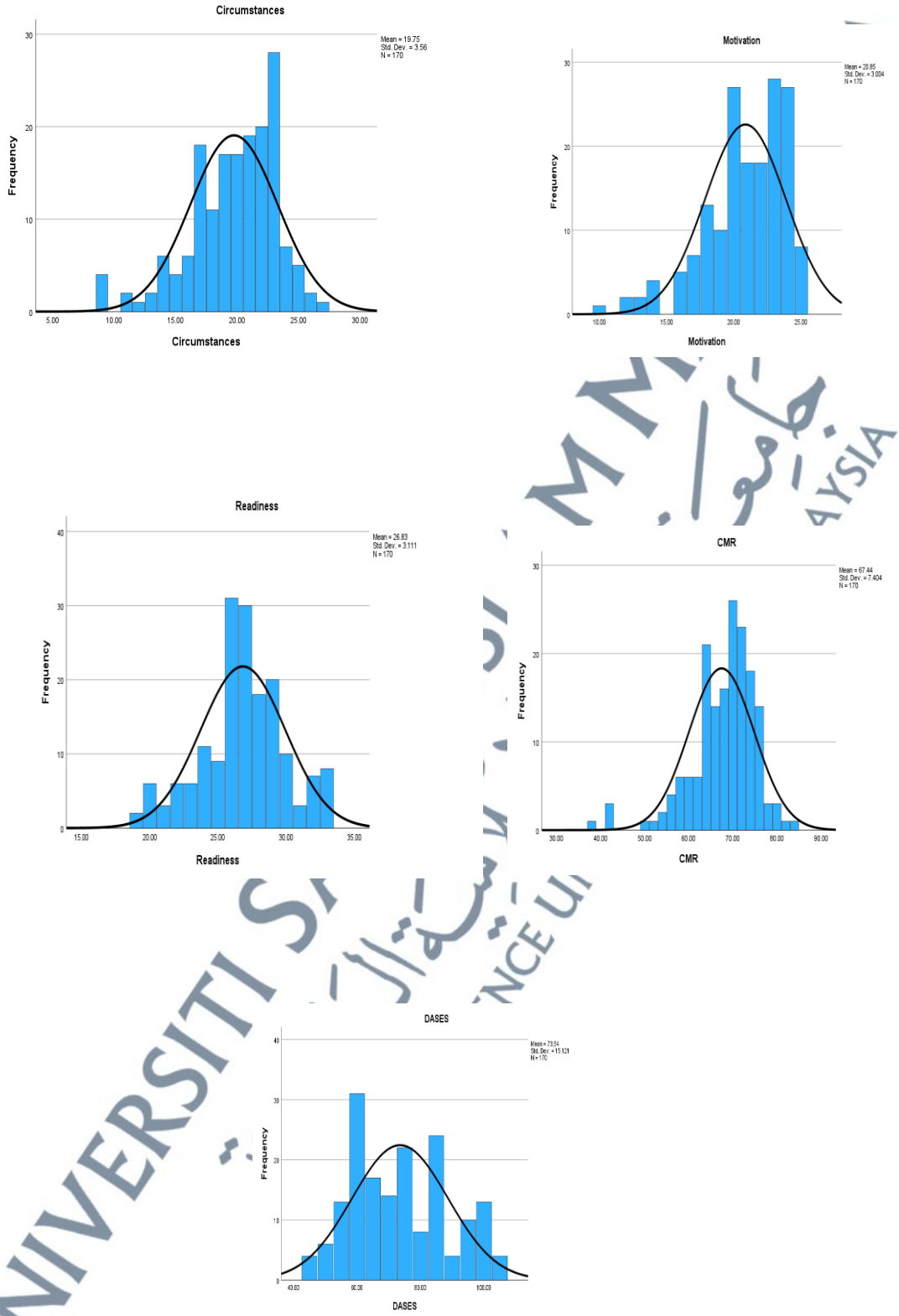

Figure 4: Illustation of normal distributon on histagram

4.4 Descriptive Analysis

The output of this study answered Research Questions in Chapter One, which are stated below:

RQ1: What was the level of circumstances, motivation, and readiness according to CMR scales among inmates at the prison?

RQ2: What was the level of self-efficacy according to DASES scales among inmates at the prison?

The survey was conducted based on two instruments consisting of 33 items. CMR is formed from 18 items, whilst DASES is 15 items. Descriptive analysis was conducted to find both instruments' mean, mode, median, maximum and minimum scores (**Table 5 and 6**).

These instrument scores were used to divide the respondents into four categories to identify those at risk for treatment engagement and retention. To identify respondents at greatest risk for early dropout, a mean (X) and standard deviation (SD) were calculated for each scale and the total score (De Leon & Melnick, 1994). The mean and standard deviation of the results were used to divide people into four groups based on how likely they were to drop out and participate positively in treatment. The low group (L) scores are 1 SD or more below the mean. These people are thought to be the most likely to quit school. The moderately low (ML) group results are between the mean and one standard deviation (SD) below the mean. There is a modest chance that these clients will drop out and have less engagement during rehabilitation. The moderately high (MH) group scores are between the mean and 1 standard deviation (SD) above the mean.

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The high (H) group scores are 1 SD or more above the mean. People with MH are thought to have a good chance of staying in treatment, thus creating more positive engagement, and people with H are thought to have the best chance (**Table 7**).

Table 5

Summary of descriptive analysis (N=170)

		Circumstances	Motivation	Readiness	CMR	DASES
N	Valid	170	170	170	170	170
	Missing	0	0	0	0	0
Mean		19.7529	20.8529	26.8294	67.4353	73.5353
Std. Error of Mean		.27303	.23042	.23863	.56784	1.15975
Median		20.0000	21.0000	27.0000	69.0000	72.5000
Mode		23.00	23.00	26.00	64.00	61.00
Std. Deviation		3.55982	3.00426	3.11140	7.40374	15.12126
Variance		12.672	9.026	9.681	54.815	228.653
Range		18.00	15.00	14.00	45.00	60.00
Minimum		9.00	10.00	19.00	38.00	45.00
Maximum		27.00	25.00	33.00	83.00	105.00

(Source: Data Analysis Using IBM Corp. Released 2022. IBM SPSS Statistics for Windows, Version 29.0. Armonk, NY: IBM Corp)

Table 6

Distribution of respondents according to CMR and DASES scores

Distribution of respondents according to CMR and DASES scores	Circumstances	Motivation	Readiness	CMR	DASES
High	15 (8.82%)	35 (20.59%)	28 (16.47%)	22 (12.94%)	31 (18.24%)
Moderately High	112 (65.88%)	64 (37.65%)	108(63.53%)	83 (48.82%)	54 (31.76%)
Moderately Low	36 (21.18%)	50 (29.41%)	26 (15.29%)	47 (27.65%)	62 (36.47%)
Low	7 (4.12%)	21 (12.35%)	8 (4.71%)	18 (10.59%)	23 (13.53%)
Total	170	170	170	170	170

(Source: Data Analysis Using IBM Corp. Released 2022. IBM SPSS Statistics for Windows, Version 29.0. Armonk, NY: IBM Corp)

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Table 7

Scores calculated for risk engagement, retention and self-efficacy (N=170)

	Circumstances	Motivation	Readiness	CMR	DASES
High	>24	>24	>30	>75	>89
Moderately High	18-23	21-23	25-29	67-74	73-88
Moderately Low	13-17	18-20	21-24	59-66	58-72
Low	<12	<17	<20	<58	<57
Mean ± SD	19.75±3.56	20.85±3.00	26.83±3.11	67.43±7.40	73.53+15.12

(Source: Adapted from De Leon, G., Melnick, G. J., Kressel, D., & Jainchill, N. (1994). Circumstances, Motivation, Readiness, and Suitability (The CMRS Scales): Predicting Retention in Therapeutic Community Treatment. *American Journal of Drug and Alcohol Abuse, 20*(4), 495–515.)

CMR is derived from 3 subscales which are circumstances, motivation and readiness. The average CMR score is 67.44 and has a median of 69. The minimum value is 38, and the maximum is 83. Most of the respondents get a CMR score of 64. Circumstances subscale results mean 19.75, a median of 20 out of a total score of 30. The maximum score for circumstances is 27, meanwhile the minimum score 9. Out of 170 respondents, most of them score 23. The motivation subscale generates an average of 20.85, a median of 21 and a mode of 23. The maximum and minimum score is 25 and 10, respectively. The total score for motivation is 25. Lastly, the readiness subscale

averages 20.83, and the maximum and minimum scores are 33 and 19. Most of the respondents get 26 from a total of 35. The median score for readiness is 27.

For Circumstances subscales, respondents with a score of 12 or less were classified as Low and respondents with a score between 13 and 17 as Moderately Low, while respondents with scores between 18 and 23 were classified as Moderately High, and those with scores of 24 and above as classified with High. The study shows that most inmates were classified as moderately high, which means that external conditions influence them to seek and maintain treatment centres. Social support like family, legal provisions, financial management and personal threats were identified as external pressure for inmates to initiate behaviour change.

Motivation subscales represent how far an individual acknowledges his internal recognition of the need to change behaviour. The reason may be positive or negative forms. Positive motivations include goals for a new lifestyle, possessing the good things in life, personal development, and enhanced interpersonal relationships. Disapproving self-evaluations resulting from sentiments of shame and self-hatred associated with substance dependence and drug-related lifestyles are examples of negative reasoning. In motivation subscales, respondents with a score of 17 or less were classified as Low, respondents with a score between 18 and 20 were classified as Moderately Low, respondents with a score of 21 and 24 were classified as Moderately High, and those with scores of 24 and above were classified with High. Most respondents were classified as Moderately High, meaning they have more positive reasons to make changes.

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In the CMR scale, "Readiness" describes the degree to which an individual considers therapy necessary, as opposed to other means of effecting personal change, such as reliance on oneself (willpower) or the use of external support. One possible interpretation of a high value for treatment readiness is that the patient recognises therapy as a means of rehabilitating problematic behaviours. According to the results, those who scored 20 or less were classified as Low, those who scored 21 to 24 were classified as Moderately Low, those who scored 25 to 29 were classified as Moderately High, and those who scored 30 or more were classified as High. The study indicated that most participants scored in the Moderately High range, indicating that they saw treatment as a viable option for maintaining sobriety upon release. They were eager to participate constructively in the recovery plan.

According to the Stages of Change model (Prochaska & DiClemente, 1984), behavioural change occurs through a series of processes, including pre-contemplation, contemplation, preparation for change, action, and maintenance. These constructs are conceptually consistent with this paradigm. The preparedness subscale conceptually corresponds to the action and maintenance stages, whilst the circumstances and motivation subscales correspond to the Stages of Change model's pre-contemplation, contemplation, and preparation stages. A person in the pre-action stages sets goals to improve their substance use behaviours and commits to obtaining treatment based on external conditions and internal motivation. Based on their readiness for treatment, the individual advances to the action phase of completing the substance abuse treatment course. According to the study, respondents with a score of 58 or less were classified as Low, moderately low for those with a score between 59 and 66, moderately high for those with a score between 67 and 74, and high for those with a score of 75 or above.

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Most respondents were classified as Moderately High, indicating they are in the contemplation and action stages of changing their behaviour. Respondents understand the significance of changing their conduct and are working to implement their plans.

The DASES scale, which assesses respondents' efficacy (e.g., confidence in refraining from drugs in 20 common drug-taking scenarios), was strongly correlated with the treatment outcome. It has been proven to be a reliable self-measurement tool that can increase motivation for behaviour change. Compared to respondents with lower scores, those with higher scores reported higher self-efficacy. This is more likely an indication that these individuals have strong and efficient coping mechanisms, more resilience to high-risk situations, and increased susceptibility to drug use. According to the survey, most respondents fell into the fairly low category, meaning they were still susceptible to scenarios brought on by drugs. If the environment prompts people to use drugs, there is a chance they will do so. Low respondents are those who scored 57 or lower, Moderately Low respondents are those who scored 58 to 72, High respondents are those who scored 89 or above, and Moderately High respondents are those who scored 73 to 88.

4.5 Correlation Test

The main objective of this study was to examine the relationship between the stage of change (CMR scale) and self-efficacy (DASES scale). The Research Questions that were highlighted by the author liked below:

RQ3: What was the relationship between CMR (motivation) score and DASES (self-efficacy) score among inmates at the prison?

RQ4: What was the relationship between CMR subscales and the DASES scale among inmates at the prison?

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This section employs Pearson's correlation to examine the relationship between the independent variables (IVs) and the dependent variable (DV). To test the relationship, the CMR scale is treated as IVs, while DASES is treated as DV. Correlation coefficients can provide a numerical overview of the direction and strength of the linear relationship between the IVs and DV. Pearson's correlation coefficients (r) range from -1 to +1 to indicate a positive or negative correlation. According to Pallant (2007), the size of the absolute value formulates information on the strength of the relationship. The findings of the correlations between the independent variables and the dependent variables are summarised and presented in **Table 8** and **Table 9**.

TABLE 8
Correlation between variables

		1	2	3	4	5
1.Circumstances	Pearson Correlation	-	.304**	.268**	-	-.343**
	Sig. (2-tailed)	-	<.001	<.001	-	<.001
2.Motivation	Pearson Correlation	.304**	-	.589**	-	.516**
	Sig. (2-tailed)	<.001	-	<.001	-	<.001
3.Readiness	Pearson Correlation	.268**	.589**	-	-	.343**
	Sig. (2-tailed)	<.001	<.001	-	-	<.001
4.CMR	Pearson Correlation	-	-	-	-	.486**
	Sig. (2-tailed)	-	-	-	-	<.001
5.DASESS	Pearson Correlation	-.343**	.516*	.343**	.486	-
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	-

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N	170

**. Correlation is significant at the 0.01 level (2-tailed).
(Source: Data Analysis Using IBM Corp. Released 2022. IBM SPSS Statistics for Windows, Version 29.0. Armonk, NY: IBM Corp)

TABLE 9

Interpretation of Pearson's and Spearman's correlation coefficients.

Correlation Coefficient		Dancey & Reidy (Psychology)	Quinnipiac University (Politics)	Chan YH (Medicine)
+1	-1	Perfect	Perfect	Perfect
+0.9	-0.9	Strong	Very Strong	Very Strong
+0.8	-0.8	Strong	Very Strong	Very Strong
+0.7	-0.7	Strong	Very Strong	Moderate
+0.6	-0.6	Moderate	Strong	Moderate
+0.5	-0.5	Moderate	Strong	Fair
+0.4	-0.4	Moderate	Strong	Fair
+0.3	-0.3	Weak	Moderate	Fair
+0.2	-0.2	Weak	Weak	Poor
+0.1	-0.1	Weak	Negligible	Poor
0	0	None	None	None

The naming on the 1) Left: Dancey & Reidy.2) Middle: The Political Science Department at Quinnipiac University, 3) Right: Chan et al .
(Sources: Adapted from Akoglu, H. (2018). User's guide to correlation coefficients.

Turkish Journal of Emergency Medicine, *18*(3), 91–93.)

4.5.1 Relationship between Circumstances and DASES

There is a significant, weak and negative correlation between Circumstances and DASES (r =<.001, p < .01). In testing the relationship between variables, 0.70 is strong,

within the range of 0.30 to 0.60 is considered moderate and less than 0.30 would be weak. The relationship between the variables is stated as -.343, which further reinforces the relatively weak relationship between the IV and the DVs. This correlation indicates that the lower the circumstances score, the higher the DASES score (self-efficacy).

4.5.2 Relationship between Motivation and DASES

There is a significant, moderate and positive correlation between Motivation and DASES (r =<.001, p < .01). In testing the relationship between variables, 0.70 is strong, within the range of 0.30 to 0.60 is considered moderate and less than 0.30 would be weak. The relationship between the variables is stated as .516, which further reinforces the relatively moderate relationship between the IV and the DVs. This correlation indicates that the higher the motivation level, the higher the DASES score (self-efficacy).

4.5.3 Relationship between Readiness and DASES

There is a significant, weak and positive correlation between Readiness and DASES (r =<.001, p < .01). In testing the relationship between variables, 0.70 is strong, within the range of 0.30 to 0.60 is considered moderate and less than 0.30 would be weak. The relationship between the variables is stated as .343, further reinforcing the relatively weak relationship between the IV and the DVs. This correlation indicates that the higher the readiness level, the higher the DASES score (self-efficacy).

4.5.4 Relationship between CMR and DASES

There is a significant, moderate and positive correlation between CMR and DASES (r =<.001, p < .01). In testing the relationship between variables, 0.70 is strong, within

the range of 0.30 to 0.60 is considered moderate and less than 0.30 would be weak. The relationship between the variables is stated as .486, further reinforcing the relatively moderate relationship between the IV and the DVs. This correlation indicates that the higher the readiness level, the higher the DASES score (self-efficacy).

4.6 Summary of the Chapter

All the performed analyses were extensively discussed in this chapter. The normality tests indicate that the sample is not normally distributed. The total CMR scale indicates that most respondents are categorised with moderately high scores. This means respondents know the need to make changes and are in the action stages to do it. The same result goes for its subscales, Circumstances, Motivation and Readiness, which fell into the moderately high score level. External pressure recognition, besides the insight to make changes, had driven respondents to accept and undergo treatment as a mechanism to facilitate their recovery. Since respondents are still in a rehabilitation programme, the DASES scale shows most of the clients were classified with a moderately low score, which means they are still vulnerable to drug-induced situations. Correlation analyses used the mediating variable to build the relationship between IVs and DV. The study shows a significant, weak and negative correlation between Circumstances and DASES, a significant, moderate and positive correlation between Motivation and DASES, a significant, weak and positive correlation between Readiness and DASES and a significant, moderate and positive correlation between CMR and DASES. Further discussions of those findings are presented in **Chapter 5**.

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