



## Effect of Viewing Emotionally Laden Paintings on Attitudes of Male Sex Offenders

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### **Abstract**

Creative arts are overly caricatured as non-essentially flossy and unmerited luxury particularly when executed in a jail setting. However, research suggests that art-based prison programs can significantly bear upon the lives of offenders. In this paper the authors make reference to this connotation in order to investigate the potential for an art-based prison program involving repeated viewing of emotionally laden paintings to influence attitudes towards crime among male sex offenders. Towards this goal the authors used a one group pretest-posttest quasi experimental design to assess the participants' general attitudes to offending (G scale), anticipation of re-offending (A scale), victim hurt denial (V scale) and evaluation of crime as worthwhile (E scale). Rape and defilement convicts aged 18-45 years from Nairobi West Prison participated in sessions that were facilitated three times a week during the 5 week program. A paired T- Test showed statistically significant improvements between post-test1 and pre-test ( $t=-3.117$ ,  $p\text{-value}=0.003$ ) and between post-test2 and pre-test ( $t=-2.161$ ,  $p\text{-value}=0.035$ ). Positive results were found for three attitude measures; G scale, A-scale and E-scale. The findings suggest that participation in art prison programs involving repeated viewing of emotive artwork can be an effective intervention resulting in attitude change among male sex offenders.

**Keywords:** *Creative Arts; Emotionally Laden Paintings; Attitudes of Male Sex Offenders; Art-Based Prison Programs*

### **1. Introduction**

Sexual offending is an issue of global concern with statistics showing that over one billion people fall victims annually. Kenya like other countries has continued to record high cases of sexual offending. Reference is made to the Kenya Prisons Headquarters 2012 report, which showed that sexual offenders accounted for 27.2% of the 12,315 prisoners incarcerated in six main prisons (Mutsotso, 2014). Crime reports for the years 2013 to 2017 showed an increase in cases of sexual offences by 15% as compared to 9% increase in general crimes. A survey on violence against children in 2010 indicated that 12% of boys aged 13–17 and 23% of girls had been sexually offended in Kenya (Mwangi et al., 2015). The survey further found that one in five males and one in three females are sexually offended before the age of 18 years (Republic of Kenya, 2012).

While the Kenya Sexual Offences Act (2006) lists a number of sexual offences, police crime report for the years 2016 and 2017 indicate that defilement and rape were the leading sexual offences. Recent reports indicate that in the first quarter of the year 2020 sexual offences accounted for 41% of crimes reported to the police (Ondeny, 2020). Rape and defilement constituted more than 35% of all cases sexual offences reported in the same period (Siele, 2020). The spike in cases of sexual offending was blamed on the closure of schools following the announcement of the first case of coronavirus in Kenya. Statistics further show that sexual recidivism in Kenya stands at 40% yearly (Musau, Otero & Mutuku, 2014) against a global average of 5% -15% (Jennings, 2015; Scurich & John, 2019). Nairobi County reported a higher rate of 43%, accounting for 19.5% of the total population of all recidivists, which was estimated at 34.8% (Aluda, 2012). The result has been largely overcrowded prisons operating above their normal capacity and reduced manpower to drive the governments' development agenda.

These patterns show that there is an urgent need for the justice system to explore additional sex offender specific intervention programs aimed at reducing rates of recidivism nationally. The use of art-based programs is one such method. Despite the widely confirmed benefits of prison-based art programs in countries like Canada, Australia and the USA, Kenya has recorded minimal use with only one documented study by Kuria & Wainaina (2019).

While research related to the effectiveness of art-based interventions among adult offenders has been conducted, (Turner, 2016; Brewster, 2014; Nugent & Loucks, 2011; Gussak, 2007), there is relatively little evidence about focusing specifically on arts based approaches for male sexual offenders. Only a limited number of the studies conducted have examined the relationship between art interventions in prison and offender's attitudes (Brewster, 2014). Further studies targeting attitudes and perception of offenders towards the crimes they commit are scarce.

Although most Kenyan prisons were previously designed to run on a system that was overwhelmingly authoritarian and oppressive, prison reforms introduced in the year 2003 however provided for vocational training and psychosocial support. Riding on this revelation, this study via a systematic review of the literature sought to clarify the current state of research regarding attitudinal effects of art therapy and also provide supporting findings on the effectiveness of offence focused rehabilitation programs as a success factor in addressing sexual recidivism in Kenya.

Art based programs in prison can take many forms including drama, music, dance, crafts, visual and theatre arts. Majority of these studies such as in Brewster (2014) have also used the intermodal approaches that embrace and integrate all arts modalities. A review of literature shows that most of art-based prison programs are activity based and involve practical engagement in creation or performance. Given that reduction of recidivism is the main purpose of offender intervention programs (Taxman & Sachwald, 2010), this study in taking a divergent approach was formulated to address the gaps by examining the effects that accrue from passive participation through art viewership. In seeking to determine if repeated viewing of emotionally laden paintings expressing the consequences of sexual crimes could change the offenders' perception of crime, the study used the single modality arts-based approach where only digital paintings were shown to the participants. Empirical research and theory suggest that change in attitude subsequently leads to behavioural change (Ajzen, 1991; Ajzen & Fishbein, 1980) giving credence the focus of the current study on offenders' attitudes towards crime.

Although Omondi (2015) suggested that an awareness of consequences of crime discourage likely offenders from wrongdoing; this study explored the awareness of consequences of sexual crimes using digital paintings with convicted offenders. In this way, the study drew attention to the audience's experience with a product of the creative skill.

## 2. Literature Review

The benefits of art intervention programs with regard to the prison environment in countries like Canada, Australia and the USA are cited in literature. According to Cheliots (2010), art-based programs make indirect contributions to desistance. Such contributions are partially covered by the concept of secondary desistance. Meekums & Daniel (2011) in reviewing the effectiveness of different modalities arts therapies in the offender context found overall positive effects in behavioral outcomes, improved mental health and decreased rates of recidivism among other outcomes. Nugent & Loucks (2011) in evaluating of arts programs for offenders acknowledged the significant rehabilitative benefits generated by the arts. This view is supported by Brewster, (2014) who linked the positive impact on inmates' attitudes and behavior to prison arts programs. Brewster (2014) found that in contrast to non-participants, 75% and 80.6% of participants in two different facilities had minimal disciplinary issues and improved mood. Gardner, Hager & Hillman (2014) reviewed 48 American prison art-based programs, with 19 and 29 addressed to juvenile and adult inmates respectively. Reports of positive changes among participants were noted in nearly every case. Argue, Bennett & Gussak (2009) have suggested that involvement in artistic projects can stimulate constructive attitudinal and psychological changes. In one study of community-based art projects with juvenile offenders, Clawson & Coolbaugh (2001) reported improvements in participants' attitudes toward school and a decrease in delinquent behaviour. Banks (2012) similarly reported success with the use of art therapy in treating offending behavior.

Koiv & Kaudne (2015) reported significant reductions in three out of five emotional and behavioral problems in young female offenders following participation in an integrated arts therapy program. A significant decrease in depressive symptoms completers of a prison art therapy program was also reported by Gussak (2007). Art has been found to lower depression among prisoners (Yoon, Slade & Fazel, 2017). Cheliotis & Jordanoska (2016) found increased effective communication, empathy, collaboration and improved social skills among participants following participation in arts-in-prisons schemes. Yu, Ming, Yue, Hi, & Ling (2016) in quasi-experimental study found lower pre-release anxiety rates among participant in the House-Tree-Person art therapy intervention. While Murphy, Beaty, & Minnick (2013) found an improvement in self-esteem from juvenile offenders who participated in a mural project, they recommended further research to examine whether these improvements would be sustained overtime and the subsequent effect on re-offending. Jarjoura & Krumholz (1998) found low reconviction rate (18.75%) among offenders who participated in prison arts programs. They argued for the effectiveness of art programs when enacted within a comprehensive system of punishment.

In the Kenyan context positive outcomes were realized while using drama therapy art with female offenders in Langat Prison, Nairobi City County (IPAL, 2011). Participants were able to reconstruct their beliefs by reconciling with self. Kuria & Wainaina (2019) also reported the successful use of art therapy as treatment for depression among female offenders in Langata Women Prison. Apart from these two studies, Kenya prisons have mainly focused of vocational training, faith based and educational programs to benefit offenders. Wambugu (2104) in examining the role of chaplaincy and rehabilitation of inmates in Kenya established that there was continued increase in prisoner populations and levels of recidivism coupled with moral decadence despite all attempts of intercessions by chaplaincy in rehabilitating inmates. Miriti & Kimani (2017) in analyzing prisons rehabilitation programs on behaviour reformation of offenders found positive impact on behavior reformation arising from educational training course. The study however found minimal impact arising from socio-psychological training programs. Ondeng (2018) in a study of women prisoners established that the rehabilitation programs did not effectively address the unique psychological needs of women offenders. Although the studies discussed are useful, they are lacking a focus on unique pathways to criminality by sex offenders and how their rehabilitation needs can be addressed.

The existing literature offers support for the beneficial use of arts in offender rehabilitation. Additionally, the cost effectiveness of arts therapy in offender rehabilitation has been demonstrated in an economic evaluation of three case studies (Johnson, Keen & Pritchard, 2011). However, research on attitudinal impacts of these art-based programs among incarcerated offenders remains largely unexplored, with Brewster (2014) being one of the major contributors to this area. This study therefore in assessing the effect of an art based program on offenders' perception of crime relied on the premise attitude towards a stimulus object is strengthened by repeated exposure (Inoue, Yagi & Sato, 2018). Although exposure concept through art viewership has been largely explored with art portraits and paintings (Cuttings 2003; Meskin, Phelan, Moore & Kieran, 2013; Van Paasschen, Bacci & Melcher, 2015), its effect has not been investigated among the offender population.

### **The Present Study**

In order to enhance literature on the place of art on offender rehabilitation, the present study examined the effect of repeated viewing of emotionally laden paintings on male sex offenders' attitudes towards crime. The study gauged the perceptions and attitudinal differences arising from art viewing as a way of addressing the gap in literature on lack of art viewing studies among the offender population.

### **3. Methodology**

The study used a one group pre-test post-test quasi experimental design. An attitude questionnaire modelled after Crime Pics II instrument was used in collecting quantitative data. The self-report instrument was developed by criminology and psychology scholars, professors Frude, Honess, & Maguire (2008). The same attitude questionnaire was administered to gather data at pre- and post-intervention. Focus Group Discussions (FGD) gathered qualitative data which was used in triangulation (Heale & Forbes, 2013).

Nairobi West Prison was the study site. The study is located in Nairobi County and is the only male offenders' facility without a remand section. The unit of analysis were convicts of rape and defilement aged 18-45 years. Rape and defilement convicts were selected based on police crime reports showing high numbers of defilement and rape cases reported in the years 2017 to 2020 as compared to other sexual offences. As opined by Cooper and Schindler, (2014), a sample is a segment of the population selected to represent the population as a whole. Stratified sampling was used to select 42 and 19 convicts of defilement and rape respectively. The paintings generated for this study were produced digitally. The paintings were scoped according to themes as expressing consequences on the victim, offenders' family and offender. Participants were randomly assigned to viewing canvas prints of digital paintings (Exhibition) and the digitized images on screen presentation (RSVP). The canvas prints of digital paintings were displayed in an exhibition hall in 15 sessions spread over five weeks with each lasting 35minutes, while for the second group, digitized copies of the paintings were flashed on large screen in serial Rapid presentations.

From the 61-finite sample, four respondents were not able to fully participate in the study, thus the final sample was 57. For the focus group discussion, the researcher performed a random sampling (selection) of inmates among the 57 finite sexual offender population. This led to eight (8) inmates selected per FGD to share their views towards the crimes they had committed and their new perceptions following the art viewing sessions.

At the end of the viewing sessions, a post-test was carried out to assess participants' attitudes towards sexual crimes. A second post-test was carried out two weeks after the end of the intervention to assess whether the change in attitudes was sustained. Computation of inferential statistics was carried out.

The paired t-test was based on the assumption that the paired differences follow a normal distribution thus a Shapiro-Wilk test of normality was carried out on the paired differences in attitude ahead of each t-test carried out. In cases where the paired differences were found not to follow a normal distribution, bootstrapping was carried out to cater for the violation of the normality. Descriptive analysis was adopted to assess the male sexual offenders' attitudes towards crime before viewing the paintings. Thematic analysis was done to explain the FGD information on the effect of repeated art viewing on perceptions and attitudes towards crime. Data was presented using graphs, tables, and direct quotes from the FGD member observations. Data coding was done in MS Excel. Additional descriptive analysis on the items resulting into frequency tables and mean scores as measures of central tendency was done using Statistical Package for Social Sciences (SPSS Ver 26).

Crime Pics II scale on which the attitude questionnaire is based has four indices for measuring offenders' attitudes in relation general attitudes to offending (G), anticipation of re-offending (A), victim hurt denial (V) and evaluation of crime as worthwhile (E). A lower score in any of the scales implies a positive change in attitude. The scale also measures offenders' perception towards life problems on P scale. The G- scale is used to assess the offender's belief regarding the acceptability of crime. A- scale measures an offender's likelihood to recidivate. The V- scale evaluates the offender's acknowledgment of the impact of their actions on the survivor. E- scale is used to rate the offender's assessment of the feasibility of crime. A lower score in each scale represents positive change in attitude.

#### 4. Results

The study had a population sample of 57 respondents, out of the targeted 61 persons. This resulted to a high response rate of 93.44% which according to Akinci & Saunders, (2015) provide greater credibility to the value of research findings. The calculated mean age of the respondents was 32.22. Majority (58.49%) of the respondents was married and another majority (50.00%) studied up to secondary school while only 2% had university education. Statistics showed that 46% of the participants were repeat offenders while the remaining 54% had no history of sexual offending.

##### Pre-Intervention Attitude Scores

Pretest responses in the attitude's questionnaire were entered into the Crime pics II software which generated scaled weighted scores of attitude measurement on an interval scale for the dimensions of attitude. A summary is provided in Figure 1:

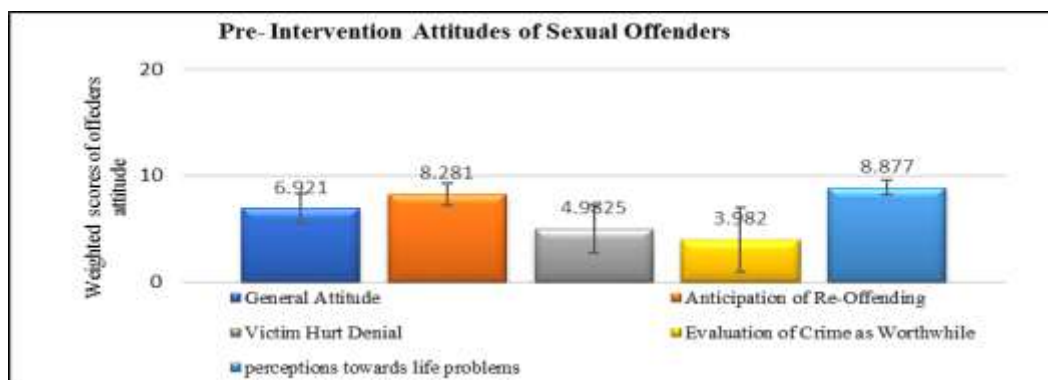
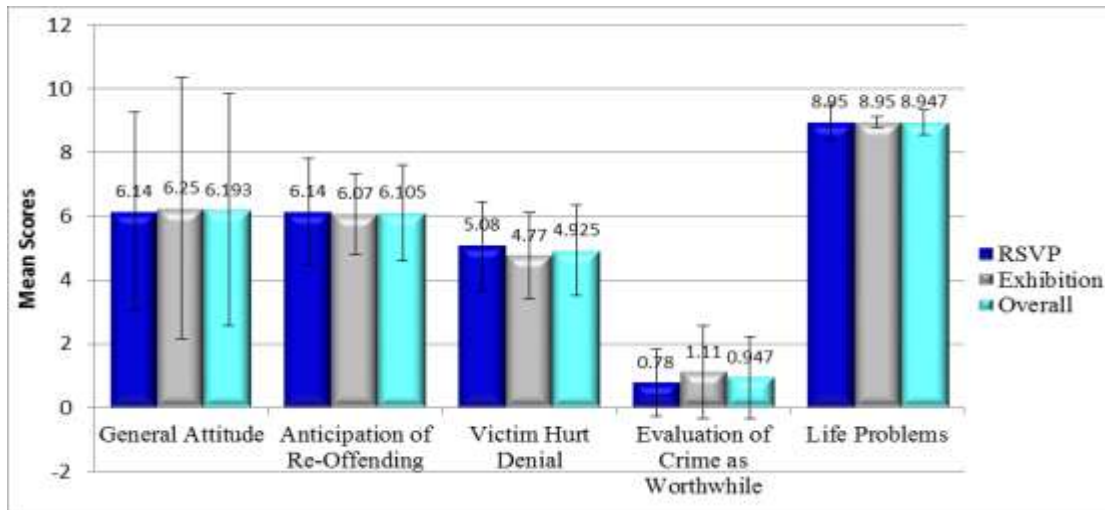


Figure 1: Attitudes of Male Sexual Offenders before Viewing Emotive Paintings

**Post Test- 1 Attitude Scores**

Figure 2 shows a summary of the descriptive statistics of the of the respondents post-test1 attitudes immediately after the intervention. Responses in the attitude questionnaire were entered in Crime Pics II software to generate the attitude measures from the indicators.

The results show post-test1 attitude scores for RSVP and exhibition participants and the overall post-test 1 attitude scores for both groups.

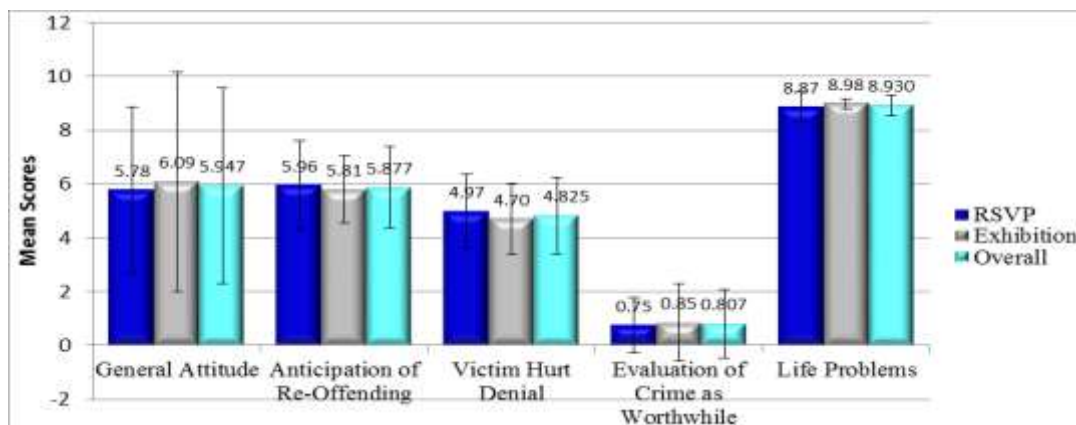


**Figure 2: Post-test 1 measures of male sexual offenders' attitudes towards crime**

The overall results showed minimal differences in the Post-test1 attitudes between participants in the two viewing contexts. Although statistically insignificant, a detailed scrutiny of the different dimensions of attitude measured show that exhibition participants scored slightly higher in G-scale by 0.11 and in E-scale by 0.67. The RSVP participants on the other hand scored slightly higher in A-scale) by 0.07 and in victim hurt denial (V-scale) by 0.31.

**Post Test -2 Attitude Scores**

Figure 3 shows a summary of the descriptive statistics of the respondents' post-test 2 attitudes assessed 2 weeks after the intervention. The results are broken down into post-test 2 attitude scores for RSVP, and exhibition participants as well as the overall post-test 2 attitude scores.

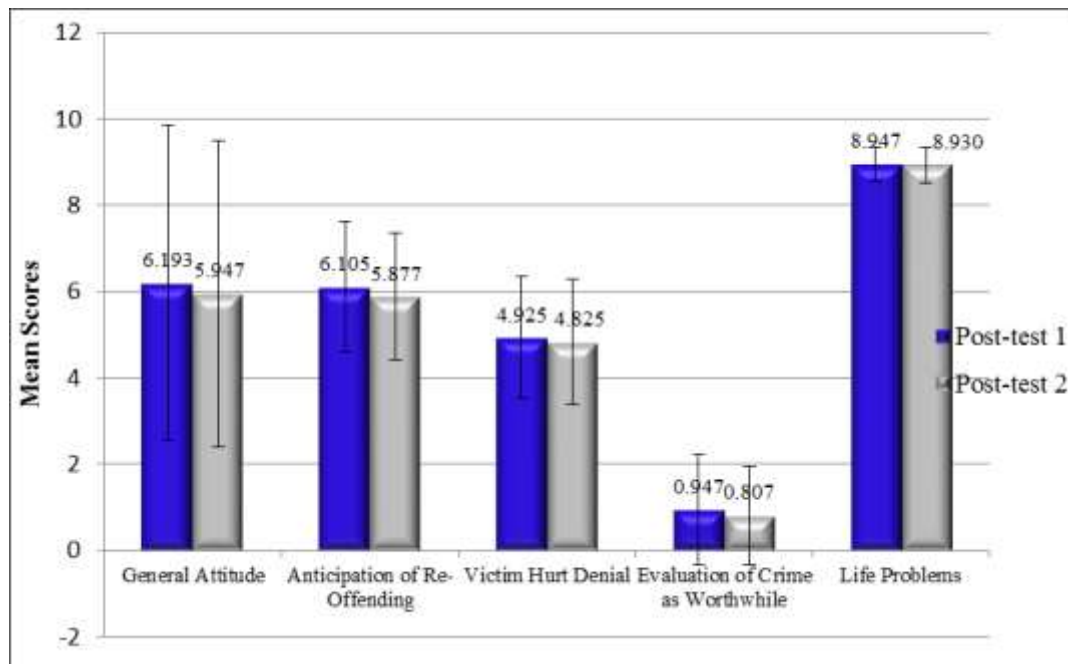


**Figure 3: Post-test 2 measures of male sexual offenders' attitudes towards crime**

Minimal differences were registered in the Post-test 2 attitudes scores between participants in both viewing contexts. Attitude scores of exhibition participants were slightly higher in G-scale by 0.31 and in E-scale by 0.1, while the RSVP participants scored slightly higher in A-scale) by 0.15 and in V-scale by 0.27.

### Overall Attitude Scores between Post Test -1 and Post Test -2

Figure 4 shows a comparative summary of overall attitude scores between posttest 1 and posttest 2.



**Figure 4: Comparative summary of attitude scores between posttest 1 and posttest 2**

In order to confirm the improvement in attitude over time after intervention, statistical tests on the differences in attitude scores between post-test1 and post-test 2 were carried out. The results show that the post-test assessment averages are had minimal difference, with post-test 2 averages only slightly lower than the post-test1 averages, suggesting sustainability of attitude improvement (effects). The findings suggest a slight improvement in attitudes after the sexual offenders stay for some time to reminisce over the images on consequences sexual crimes.

### Effect of Viewing Emotive Paintings on Attitudes toward Crime Among Sex Offenders

To confirm the effect of viewing emotive paintings on attitudes toward crime among sex offenders, a test was carried out to assess the paired differences in attitudes of the sexual offenders before and after intervention. This was done using the overall means for participants in both groups. The tests covered the following domains: general attitude towards offending (G- scale), anticipation for re-offending (A-scale), victim hurt denial (V- scale) and evaluation of crime as worthwhile (E- scale). A paired sample t-test was used since the quasi-experimental design of the study did not consider control group and intervention groups. Instead, a paired sample of respondents who all participated in the intervention program were assessed before and after intervention. The paired difference in attitude was determined for each respondent and the significance that the mean of the differences is not equal to zero was tested. The test is based on the assumption that the variable follows a normal distribution, thus an assessment of normality was carried out on the variable before the tests.

## Post Intervention Effects on General Attitudes to Offending

The test on the effect viewing emotionally laden paintings on male sex offenders' attitudes was carried out for general attitude to offending as generated from the attitude indicators using Crime Pics II software. Table 1 shows pre- and post-intervention normality test on difference in general attitudes to offending based on the Shapiro-Wilk statistics.

**Table 1: Pre and post intervention normality test on difference in general attitudes to offending**

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post-test 1 – Pre-test	0.166	57	0.000	0.955	57	0.034
Post-test 2 – Pre-test	0.137	57	0.010	0.956	57	0.041
Post-test 2 – Post-test 1	0.178	57	0.000	0.917	57	0.001

**Figure 5: Paired differences in General attitudes to offending Between Pre-Test and Post- Test1**

Post-test1 and post-test 2 are between the two post-tests. The Shapiro-Wilk statistics all have p-values less than 0.05 implying that they all deviated from normality. Due to the violation of the normality assumption of the paired sample t-test, a bootstrap was carried out for the test. Table 2 shows the t-tests of paired differences between the assessments of general attitudes to offending.

**Table 2: Pre and post intervention T-test on paired difference in general attitude to offending**

	Paired differences					Bootstrapped corrected test		Bias	
	Mean	Std. Dev.	Std. Error	t	df	Bias	Std. Error	Sig. (2-tailed)	Percentage Change
PsT1 - PrT	-0.965	2.337	0.310	-3.117	56	-0.003	0.312	0.003	-9.852%
PsT2 - PrT	-0.719	2.513	0.333	-2.161	56	0.004	0.329	0.035	-13.222%
PsT2- PsT1	-0.246	1.405	0.186	-1.32	56	-0.009	0.183	0.213	-3.395%

The results were bootstrapped for bias correction due to the violation of the normality assumption. As shown in the table, the tests on the paired differences were found to be significant between post-test1 and pre-test ( $t=-3.117$ ,  $p\text{-value}=0.003$ ) and between post-test2 and pre-test ( $t=-2.161$ ,  $p\text{-value}=0.035$ ). The p-values of the t-statistics are all less than 0.05, which shows that there were significant differences in the general attitudes of the sexual offenders before and after treatment. The differences between the post-tests and the pre-test are negative, showing lower scores in general attitude after intervention. This implied that there was a significant reduction in the general attitude scores. The scores translated to a 9.852% improvement in general attitude to offending occurring immediately after intervention.

During the FGDs, it was indicated that most of the participants appreciated the information passed on to them using the paintings. The unique experience provided by participation in this study caused respondents to think differently about sexual crimes. A 25-year-old convict of rape said;

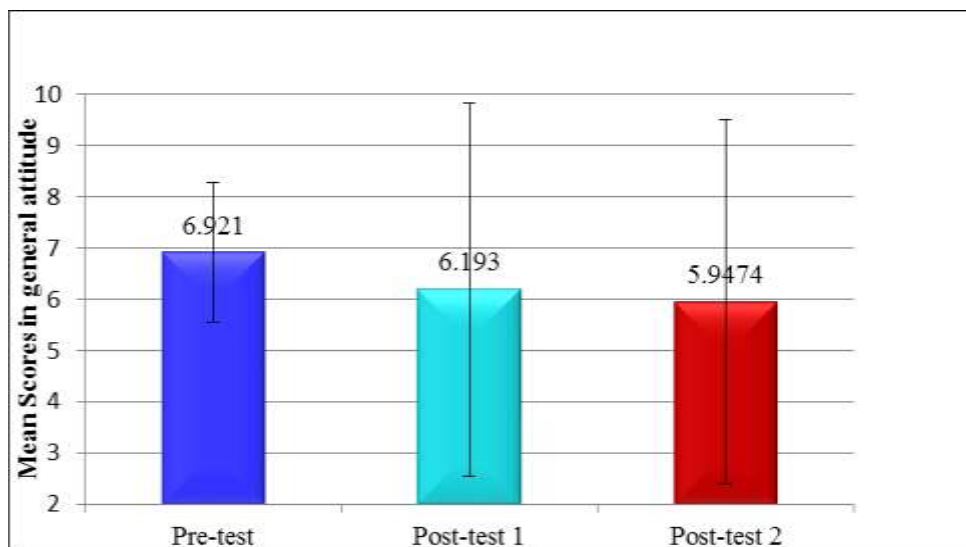
*“The paintings have communicated consequences of crime and enabled me to connect with my inner feelings by simply thinking or talking about them. I believe I will be a better citizen in future.”*

After viewing the digital paintings repeatedly, some of the respondents reported that they felt sorry about the crime committed. This explains the improved attitude scores in the various measures of attitude. The explanation provided during the FGDs was that;



*“After viewing the paintings repeatedly, I feel bad about the mistake I made. I wish I can be forgiven so that I can go back to society and educate others who might think of committing sexual crimes. I now fear it can happen that my child or sister becomes a victim”.*

The results however revealed that the paired differences between post-test 2 and post-test1 were insignificant ( $t=-1.32$ ,  $p\text{-value}=0.213$ ). The  $p$ -value is greater than 0.05, which shows that there was no significant difference in the general attitudes of the offenders as assessed immediately after the intervention and two weeks later. This implies that the improvement in attitudes was sustained 2 weeks after the intervention. Statistics further showed that the difference was higher between post-test 2 and pre-test than between post-test1 and pre-test. It was also noted that the actual mean scores of the differences between post-test 2 and post-test1 was negative. The mean attitudes assessed before intervention, immediately after intervention and two weeks after intervention were plotted with results showing that the mean scores of general attitudes dropped considerably from pre-test to post-test1 but only slightly between post-test1 and post-test 2. The plot is shown in Figure 5 below:



**Figure 5: Pre-test and post-tests mean difference plot of general attitudes to offending**

In Crime Pics II, a drop in the attitude score implies an improvement in attitude. The t-test revealed that the drop from pre-test to the post-test 1 was significant but that between post-test1 and post-test 2 was insignificant. The participants were grateful that for the first-time sexual offenders were receiving unique attention which they rarely did. They felt discriminated in prison and were often tagged as “soft offenders”. One participant highlighted this:

*“I’m glad that we as sexual offenders are finally receiving the attention we deserve. I think our type of crime is unique and has many underlying issues. The digital paintings have taught me many things. I wish I could show the paintings to my children so that they don’t get into trouble like I did”.*

Additionally, paintings showing the consequences of sexual crimes on the family reminded some convicts of their children and how deprived they were as they were growing up without parental guidance. Moreover, some feared the possibility of losing their family in case they truly faced the predicaments expressed in the paintings as captured by statement below:

*“It is sad to see family suffering. Those paintings make me remember my children and I really feel bad. I wish I could change things; I would never have committed crime”.*

### Post Intervention Effects on Male Sexual Offenders' Anticipation of Re-Offending

Table 3 shows the normality test of the paired differences between pre-test and both post-test1 and post-test2 and between the two post-tests.

**Table 3: Pre and post intervention normality test on difference in anticipation of re-offending**

	Statistic	df	Sig.	Statistic	df	Sig.
Post-test 1 – Pre-test	0.168	57	0.000	0.924	57.000	0.001
Post-test 2 – Pre-test	0.146	57	0.004	0.932	57.000	0.003
Post-test 2 – Post-test 1	0.185	57	0.000	0.942	57.000	0.009

The Shapiro-Wilk statistics all have p-values less than 0.05 implying that they all deviated from normality and do not follow a normal distribution. Due to the violation of the normality assumption of the paired sample t-test, a bootstrap was carried out for the test. Table 4 shows the t-tests of paired differences between the assessments of attitude on the sexual offenders' anticipation of re-offending.

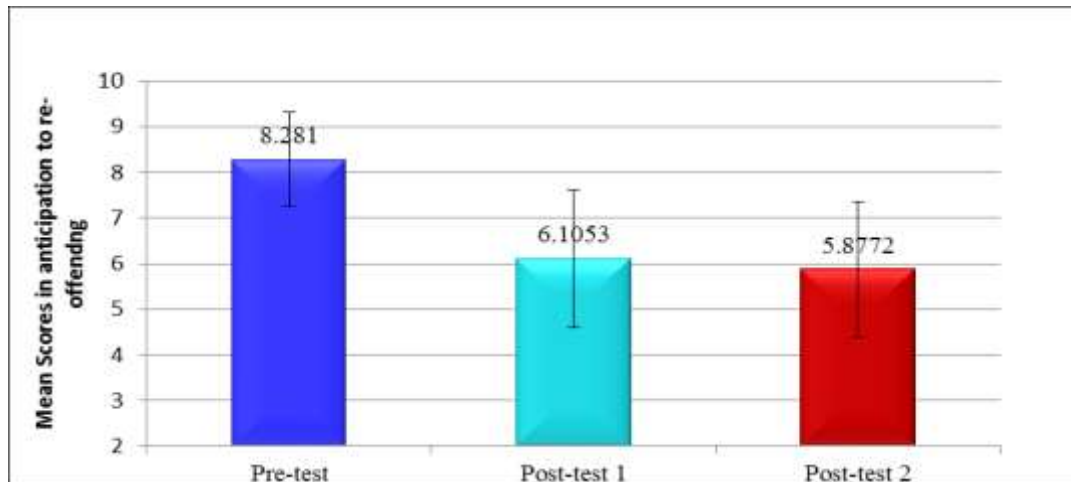
**Table 4: Pre and post intervention T-tests on paired difference in anticipation of Re-offending**

	Paired differences			t	df	Bootstrapped corrected test		Bias	
	Mean	Std. Dev.	Change			Bias	Std. Error	Sig. (2-tailed)	Percentage Change
PsT1 - PrT	-2.175	1.910	0.253	-8.600	56	0.006	0.258	0.001	-30.162%
PsT2 - PrT	-2.404	1.889	0.250	-9.609	56	0.000	0.256	0.001	-33.338%
PsT2-PsT1	-0.228	1.763	0.234	-0.977	56	-0.008	0.234	0.340	-3.735%

As shown in the table, the tests on the paired differences were found to be significant between post-test1 and pre-test ( $t=-8.600$ ,  $p\text{-value}=0.001$ ) and between post-test 2 and pre-test ( $t=-9.609$ ,  $p\text{-value}=0.001$ ). The p-values of the t-statistics are all less than 0.05, which shows that there were significant differences between the sexual offenders' anticipation of re-offending before and after treatment. The differences between the post-tests 1 and 2 and the pre-test are -30.162% and -33.338% respectively which show lower scores of the sexual offenders' anticipation of re-offending after intervention. This implied a significant drop in the sexual offenders' anticipation of re-committing a sexual offence after the intervention.

The results however revealed that the paired differences between post-test 2 and post-test1 were insignificant ( $t=-0.977$ ,  $p\text{-value}=0.234$ ). The p-value is greater than 0.05 indicating that there were no significant paired differences in the sexual offenders' anticipation of re-offending as assessed immediately after the intervention and two weeks later. This means that the time difference had no significant effect on attitudes. The table 4 shows that the difference was higher between post-test 2 and pre-test than between post-test1 and pre-test, while the actual mean of the differences between post-test 2 and post-test1 was negative.

The mean attitudes as assessed before, immediately after intervention and 2 weeks later were plotted as shown in Figure 6.



**Figure 6: Pre- and post-tests mean difference plot of anticipation of re-offending**

The figure shows that the mean scores of the sexual offenders' anticipation of re-offending dropped considerably from pre-test to post-test1 but only slightly between post-test1 and post-test 2. The t-test however revealed that the drop from pre-test to the post-tests was significant but that between post-test1 and post -test 2 was insignificant.

### Post Intervention Effects on Victim Hurt Denial

The test on the effect of viewing emotionally laden paintings on male sex offenders' attitudes on victim-hurt denial were also carried out. Table 5 shows a normality test based on the Shapiro-Wilk statistics.

**Table 4: Pre and Post intervention normality tests on difference in victim hurt denial**

	Statistic	df	Sig.	Statistic	df	Sig.
Post-test 1 – Pre-test	0.106	57	0.169	0.983	57	0.578
Post-test 2 – Pre-test	0.129	57	0.019	0.963	57	0.077
Post-test 2 – Post-test 1	0.145	57	0.005	0.959	57	0.065

The Shapiro-Wilk test statistics indicated that all had p-values were greater than 0.05, implying that they followed a normal distribution. As the assumption of normality was not violated, the paired sample t-test was carried out and results presented without bootstrapping. Table 6 shows the t-tests of paired differences between the assessments of the sexual offenders' attitude on victim hurt denial.

**Table 5: Pre and Post Intervention T-tests on Paired Difference in Victim Hurt Denial**

	Paired Differences							
	Mean	Std. Dev.	Std. Error	t	df	Sig. (2-tailed)	Percentage change	
<b>PsT1 - PrT</b>	0.017	2.594	0.343	0.051	56	0.959	-0.355%	
<b>PsT2 - PrT</b>	-0.157	2.462	0.326	-0.484	56	0.630	-3.278%	
<b>PsT2- PsT1</b>	-0.175	1.743	0.230	-0.76	56	0.451	-3.500%	

As shown in the table, the tests on the paired differences were all found to be insignificant between post-test1 and pre-test ( $t=0.0051$ ,  $p\text{-value}=0.959$ ), post-test 2 and pre-test ( $t=-0.484$ ,  $p\text{-value}=0.630$ ) and between post-test 2 and post-test1 were insignificant ( $t=-0.760$ ,  $p\text{-value}=0.451$ ). The p-values of the t-statistics are all greater than 0.05, implying no significant differences in the sexual offenders' victim hurt denial before and after intervention.

The difference was higher between post-test 2 and pre-test than between post-test1 pre-test and the actual mean of the differences between post-test 2 and post-test-1 was negative. The mean attitudes as assessed before intervention, immediately after intervention and 2 weeks later were plotted as shown in Figure 7.

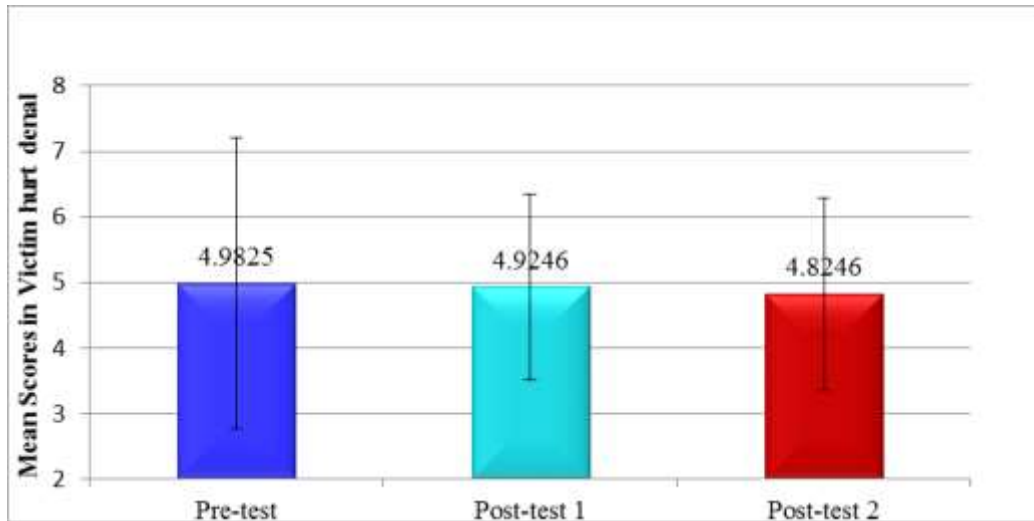


Figure 7: Pre-test and Post-Tests Mean Difference Plot of Victim Hurt Denial

Findings showed a slight increase in mean scores on victim hurt denial immediately after intervention but the improvement was considerably lower when tested 2 weeks after. The t-test however revealed that the improvement from pre-test to the post-tests as well as between post-test1 and post-test 2 were all insignificant.

### Post Intervention Effects on Male Sex Offenders' Evaluation of Crime as Worthwhile

The Table 7 shows the normality test of the paired differences between pre-test and both post-test1 and post-test 2 and between the two post-tests.

Table 6: Pre and post intervention normality test on difference in evaluation of crime as worthwhile

	Statistic	df	Sig.	Statistic	df	Sig.
Post-test 1 – Pre-test	0.096	57	.200*	0.966	57	0.106
Post-test 2 – Pre-test	0.101	57	.200*	0.967	57	0.121
Post-test 2 – Post-test 1	0.096	57	.200*	0.966	57	0.106

The Shapiro-Wilk statistics all had p-values greater than 0.05 implying that there were no deviations from normality and that the differences followed a normal distribution. Table 8 shows the t-tests of paired differences between the assessments of attitude on the sexual offenders' evaluation of crime as worthwhile.

**Table 7: Pre and post intervention T-test on paired difference in evaluation of crime as worthwhile**

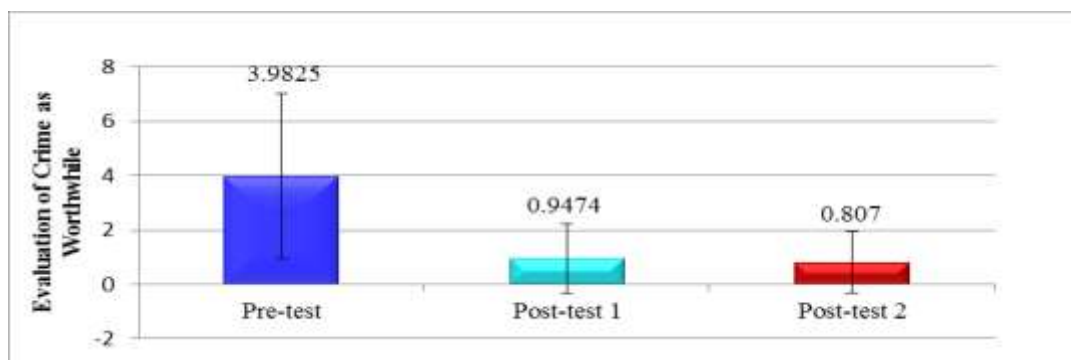
	Paired Differences						Percentage Change
	Mean	Std. Dev.	Std. Error	t	df	Sig. (2-tailed)	
<b>PsT1 - PrT</b>	-3.175	3.180	0.421	-7.539	56	0.000	-53.395%
<b>PsT2 - PrT</b>	-3.035	3.190	0.423	-7.183	56	0.000	-55.859%
<b>PsT2- PsT1</b>	-0.140	1.274	0.169	-0.832	56	0.409	-14.784%

The tests on the paired differences were found to be significant between post-test1 and pre-test ( $t=-7.539$ ,  $p\text{-value}=0.000$ ) and between post-test 2 and pre-test ( $t=-7.183$ ,  $p\text{-value}=0.000$ ). The p-values of the t-statistics are all less than 0.05 indicating significant differences in the sexual offenders' evaluation of crime as worthwhile before and after intervention. The differences between the post-tests 1 and 2 and the pre-test were -53.395% and -55.859% respectively which showed lower scores on the sexual offenders' evaluation of crime as worthwhile after the intervention. The significant drop in the sexual offenders' evaluation of sexual crimes as worthwhile implied a positive change in attitudes. The participants appreciated the paintings showing consequences of crime on the offender and felt touched directly, leading to the acknowledgement that communication through visual aids like paintings had enabled them appreciate the magnitude of their offence and the willingness to change upon release from prison. One participant expressed that:

*"I can now relate to what I see in the paintings showing the offender being punished. The paintings cause me to fear for what could have happened to me if I was not saved by the police. The crowds could have hurt me badly or maybe killed me. I survived narrowly. I don't think I ever want to try crime again, it is risky".*

The results however revealed that the paired differences between post-test 2 and post-test1 were insignificant ( $t=-0.832$ ,  $p\text{-value}=0.409$ ). The p-value is greater than 0.05, which shows that there were no significant paired differences in the sexual offenders' evaluation of crime as worthwhile as assessed immediately after intervention and two weeks after. This implied that improved attitudes remained largely unaffected by the lapse in time.

The difference was higher between post-test 2 and pre-test than between post-test1 pre-test. The mean attitudes as assessed before intervention, immediately after intervention and 2 weeks after were plotted as shown in Figure 8.

**Figure 8: Pre-test and post-tests mean difference plot on evaluation of crime as**

Findings show that the mean scores of the sexual offenders' evaluation of crime as worthwhile reduced considerably and was higher from pre-test to post-test1, but only slightly different between post-test1 and post-test 2. The t-test revealed that the improvement from pre-test to the post-tests was significant but that between post-test1 and post-test 2 was insignificant.

## Post Intervention Effects on Male Sexual Offenders' Perception towards Life Problems

A test on the effect of intervention on male sexual offenders' perception towards life problems was also carried out. Table 9 shows a normality test based on the Shapiro-Wilk statistics.

**Table 8: Pre and post intervention normality test on difference in life problems perception**

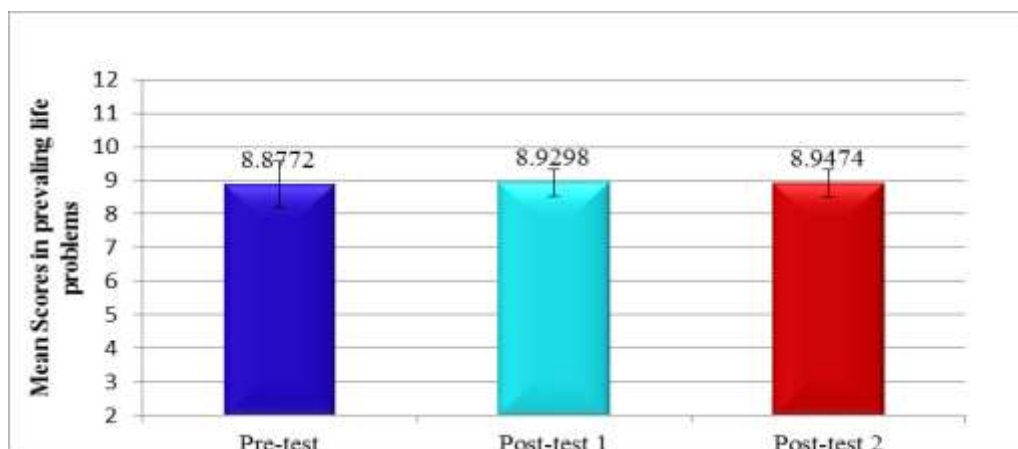
	Statistic	df	Sig.	Statistic	df	Sig.
Post-test 1 – Pre-test	0.473	57	0.000	0.317	57	0.000
Post-test 1 – Pre-test	0.482	57	0.000	0.28	57	0.000
Post-test 2 – Post-test 1	0.535	57	0.000	0.114	57	0.000

The Shapiro-Wilk statistics all had p-values less than 0.05 implying that they all deviated from normality and did not follow a normal distribution. Due to the violation of the normality assumption of the paired sample t-test, a bootstrap was carried out for the test. Table 10 shows the t-tests of paired differences between the assessments of the sexual offenders' attitude on perceptions towards life problems.

**Table 9: Pre and post intervention T-test on paired difference in perception of life problems**

	Paired differences					Bootstrapped corrected test		Bias	
	Mean	Std. Dev	Std. Error	t	df	Bias	Std. Error	Sig. (2-tailed)	Percentage Change
PsT1 - PrT	0.070	0.799	0.106	0.51	56	.0046	.1072	.568	-2.100%
PsT2 - PrT	0.018	0.132	0.018	0.322	56	.0098	.0136	.111	-0.540%
PsT2- PsT1	-0.053	0.811	0.107	-0.626	56	.0022	.1083	.685	-0.592%

As indicated in the table, the tests on the paired differences were all found to be insignificant between post-test1 and pre-test ( $t= 0.51$ ,  $p\text{-value}=0.568$ ), post-test 2 and pre-test ( $t= 0.322$ ,  $p\text{-value}=0.111$ ) and between post-test 2 and post-test1 were insignificant ( $t= -0.626$ ,  $p\text{-value}=0.685$ ). The p-values of the t-statistics are all greater than 0.05, which showed no significant differences in the sex offenders' perceptions of life problems before and after intervention. The paired differences were all insignificant indicating that the intervention resulted in no significant improvement in the way participants perceived life problems. The mean attitudes on the sex offenders' perceptions towards life problems as assessed before intervention immediately after intervention and 2 weeks after were plotted in Figure 9.



**Figure 9: Pre-test and post-tests mean difference plot on perception of life problems**

The figure shows that the mean scores of perceptions towards life problems increased from pre-test to post-test1 and post-test 2. The t-test however revealed that the difference in mean scores from pre-test to the post-tests and post-test 2 were insignificant. The results arising from the various attitude measures were used to test the null hypothesis of the study:

**H<sub>01</sub> There is no significant difference in attitudes of male sex offenders after viewing emotionally laden paintings**

The analysis carried out to assess the differences in the sex offenders' attitudes before and after intervention was based on a t-test on the paired differences between pre-test and post-test attitudes. The p-value of the statistics of the paired differences between pre-test and post-test levels were found to be less than 0.05 for general attitudes towards offending (G-scale), anticipation for re-offending (A-scale) and evaluation of crime as worthwhile (E-scale). The null hypothesis was thus rejected and the study deduced that there is a significant difference in attitudes of male sex offenders after viewing emotionally laden paintings. The implication is that subjecting male sex offenders to repeated viewing emotionally laden paintings significantly affected their attitudes towards sexual crimes.

## 5. Discussion of Findings

The study sought to determine the effect of viewing emotionally laden paintings on attitudes of male sexual offenders. The post intervention stage involved two posttests assessments, one carried out immediately at the end of the last exposure session and a second one done two weeks later. Evidence of change in attitude scores was assessed by subjecting the data to statistical tests. A paired sample T-test was deemed suitable, considering that the quasi-experimental design used in the study did not consider a control group and treatment group.

Findings show that repeated viewing sparked a cognitive process that enabled efficient processing of the paintings, leading to improved attitude scores among male sexual offenders. The theory of cognitive Dissonance (Festinger, 1957) explains the conflict which occurred when facts contradictory to the participants' beliefs were shown in the paintings. The theory posits that whenever a discrepancy between attitudes or behaviors arises, certain elements must be aligned to cater for the dissonance that accrues as result of the shift in position. This study regarded cognitive dissonance as a phenomenon that emerged in the post-intervention phase. A feeling of mental discomfort or duality occurred when respondents encountered the actual effect of the content in the paintings, which may have been comparatively contrary to their existing attitudes and beliefs. Attitude change was therefore seen as motivation to reduce the dissonance, thereby explaining the differences in attitude scores observed between pretest and the posttests.

In using emotionally laden paintings as a means of intervention with sexual offenders, this study builds on findings by other scholars who have investigated the use of arts in offender rehabilitations. For instance, like in the current study, Brewster (2014) also found positive impact of prison art programs on attitudes inmates. However, unlike the current study which only focused on using visual art (digital paintings), Brewster (2014) experimented with different creative arts including music, poetry painting and theatre. While Cheliotis & Jordanoska (2016) found increased empathy as one of the improvements following offenders' participation in an art programme, the current study reported minimal change in victim empathy scores on V-scale. The identified effects of this study confirm the literature-derived hypothesis, which reveals that repeated exposure to visual stimuli such paintings are an intervening factor that helps in positive evaluation of the stimuli and thus facilitated improvement in attitudes.

Although this study focused on attitudes towards crime among male sex offenders, the positive results compare with Brewster (2014) who found that 75% and 80.6% of participants in Arts Corrections programs at two facilities in California had less disciplinary infringements. The beneficial effect of viewing emotionally laden paintings was reported by 87% of the respondents who acknowledged that the experience had changed their views towards sexual crimes. A further 89% of the respondents recommended the use of digital paintings to educate other offenders who did not participate in the study. Whereas previous studies using arts in offender rehabilitation (Takkal et.al, 2017; Turner 2016; Brewster 2014) have explored active participation where participants produce the artwork, the current study explored passive participation involving viewing of prepared artwork.

The current study reported improved post scores in only three attitude domains unlike Feasey & Williams (2009) who reported improved attitude scores across all scales. Detailed analyses for each attitude domain found significant improvement from pretest to posttest in general attitudes toward offending (G- scale), anticipation of re- offending (A- scale) and evaluation of crime as worthwhile (E- scale). The p-value of the t-statistics of the paired differences in G scale, A- scale and E- scale were found to be less than 0.5 between pre- test and posttests 1 and 2. These findings suggest interdependency between improved attitude scores and repeated viewing of emotionally laden paintings. However, victim hurt denial (V scale) and perception of life problems (P scale) registered insignificant improvement, with p-values greater than 0.5. Findings by Williamson et al. (2018) also reported lower scores in scale V.

While the key objective of Feasey & Williams' (2009) Sycamore Tree programme was to improve participants' attitudes towards the victims of their criminal behaviour, leading to focus on V- scale, the interest of the current study covered all the four attitude dimensions and did not specifically target the scale V. This could explain the insignificant change reported in the scale V. This trend could also be attributed to the sensitivity of sexual offending as the crime under study as opposed to Feasey and Williams (2009) whose focused on various types of offenders. This view gains support from Williamson et al., (2018) who acknowledged the authors of Crime Pics II suggestion that the nature of offence is likely to have an impact on scoring in this scale.

In focusing their analysis on V and E scales, Feasey & Williams (2009) found 15.1% improvement in scale V and 9.5% improvement in scale A. Williamson et.al (2018) found significant changes ranging from 54% improvement in general attitudes to offending to a 16.2% improvement in the level of life difficulties reported. This implied that apart from improved attitude scores, there was a reduction in self-perceived difficulties among the participants. Similarly, the current study reported an improvement between posttest 1 and pretest of 53.94% in evaluation of crime as worthwhile, 30.17% in anticipation of re-offending and 9.85% in general attitudes to offending. Like Williamson et.al. (2018), scores for evaluation of crime as worthwhile (scale A) and anticipation of re-offending were higher than those for general attitudes to offending (scale G). However, this study found no insignificant improvement in V scale scores at both posttest 1 and posttests. The study also did not find a reduction in the level of life difficulties or problems reported as was the case in Williamson et al's (2018) study. Instead, the level of perceived difficulties and problems increased between the posttests.

Ratings on perception of current life problems found no significant changes in pretest and posttest scores across the groups of participants. Compared to the pretest mean score of 8.87, no significant statistical difference was found with mean scores of rising to 8.92 at posttest 1 and 8.94 at posttest 2 in the problem inventory. These findings are not unique given that Williamson et al., (2018) acknowledge the lack of a simple association between life problems and offending. They argued that despite the positive changes in attitudes and thinking patterns, a factor beyond the impact of an individual's thought and action would be in play. This study posits that personal resources impact how offenders manage what they consider to be a consequential or non-consequential problem in their lives.



The current study, like Williamson et.al, (2018) reported positive impact on attitudes of participants after the intervention. However, unlike Williamson et al (2018) where the change proved difficult to sustain with significant variations in terms of which attitudinal indices were best sustained, the current study found sustained attitudes in a second posttest carried out two weeks after the intervention.

## 6. Conclusion and Recommendations

The novel result of the study was that male sexual offenders' attitudes towards crime improved following repeated viewing of emotive paintings illustrating the consequences of sexual crimes. The findings suggest interdependency between improved attitudes towards crime and art viewing. While the present study expands on previous research and literature on art-based offender rehabilitation, focus has been shifted to the underexplored area of art viewing and its effects among the prisoner population.

Future research could explore how attitude scores related to V scale and P scale can be improved using art interventions. Art viewing studies in prison context could be expanded to include juvenile and female sex offenders. Specific contextual features could also be manipulated to explore other consequences of sexual crimes not covered by this study.

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