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Africa Gil Socorro

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Abstract

Consumption and distribution of pornographic material is vast and a cross-cultural phenomenon. The exploration of the effects of pornography on attitudes has revealed that this material causes a range of effects amongst its male consumers, including stereotypical sex-role beliefs, anti-women thought and adherence to rape myths. This paper used a classic pre-posttest design to elucidate what effects this material has on female participants (N= 242). Through use of the Attitudes towards Women Scale and the Attitudes toward Men scale it was found that females did not experience significant attitude changes towards other females, upon exposure. However, they do show changes in their hostile male beliefs for clips depicting sexual aggression, and benevolent beliefs for clips depicting a flirtatious interaction, a romantic erotic scene, and, for a scene depicting rape. These findings are reviewed and discussed in light of the Gender-Schema Theory, Sexual Objectification Theory and Empathetic Viewer Theory.

Introduction

Sexually explicit forms of media— pornography—have existed for millennia. However, technological advances over recent decades (i.e., the internet) have revolutionized the distribution and consumption of such material (Prices Patterson, Regnerus, & Walley, 2016). The exploration of the effects of pornography on attitudes has been widely reviewed in the psychology literature (for review, Peter & Valkenburgs 2016). However, effects of this material remain poorly understood and documented across different samples (Kohut, Baer & Watts, 2016; Attwood, 2005) due to theoretical disagreements and empirical inconsistencies (for a review of some of the limitations in the literature see Short et al., 2012). These inconsistencies have been attributed to methodological issues including the use of male-centric samples, the negative bias found in the literature (i.e. the tendency to research the negative effects of pornography and obviating the exploration of any positive effects associated with its consumption, e.g. Fisher et al., 2018; Ley, Prause, & Finn, 2014), and the profoundly limited ecological validity of findings from laboratory experiments, which do not contribute to the understanding of the effects of pornography in natural settings (Brannigan & Goldenberg, 1987a, 1987b). This study aims to investigate the effects soft-core pornographic clips (defined below), varying in levels of aggression, and a control condition, on a female sample. By measuring the existence of hostile and benevolent beliefs towards males, and

attitudes to other females pre- and post-exposure to the stimuli, in a non-laboratory setting, it is hoped that some of the above limitations may be countered.

Prevalence of Consumption

Cross-culturally, studies on pornography consumption show that substantial majorities of individuals have viewed internet pornography; for example, in Sweden, Canada, Germany, and U.S., 77% of college students report engaging with different forms of sexually explicit material online, at some point in the week, in the past 3 months (Döring, Daneback, Shaughnessy, Grov, & Byers, 2017). Males are commonly reported to be the more frequent pornography consumers (Foubert, Brosi, & Bannon, 2011). However, pornography use among females is rising (Seidman, 2004), with a sizable proportion of women using it (30–86%) (Hald et al., 2014).

Aggression in Pornography: Prevalence and Perceptions

The vast proliferation of pornographic material has led researchers to perform content analyses on the top most viewed pornographic videos online, in order to understand exactly what it is that the public are being exposed to (Bridges, et al., 2010). The content analysis by Bridges and colleagues revealed that 88.2% of the 304 pornography videos examined, encompassed physical aggression, and 48.7% contained verbal aggression. On the other hand, a content analysis by Klaassen and Peter (2014), examining 400 of the top most viewed videos in the month of February 2013, revealed that acts of aggression occurred on approximately 40% of videos. Of the 40% of videos which depicted aggression, women the recipients of aggressive acts in 37.2% of the cases, whereas men only in 2.8%.

Despite these alarming results, it is important to note that the way in which aggression is coded in content analyses can be quite problematic (Appendix A explores the problems with defining aggression in the context of pornography). Therefore, caution is advised when reviewing findings in content analyses since these may present more inflated rates of aggression than may be perceived by others reviewing the same content. In considering this issue, an operational definition of soft-core, aggressive, pornographic material is outlined below. Despite this, aggressive content in popular Internet pornography is present. Hence, there is a need to evaluate how females, not just males, engage with such material.

Effects of Pornography on Attitudes: Is it the sex or the aggression?

Exploration of the effects of pornography on its consumers has been a contentious topic in the literature. With more than four decades of peer-reviewed papers on the topic (Grubbs, Wright, Braden, Wilt, & Kraus, 2019), a thorough exploration of the effects found is beyond the scope of this paper (see Hald, Malamuth, Yuen, 2010 for a comprehensive overview). Nevertheless, a short review of the effects reported in the literature can be found below.

On the one hand, it has been suggested that it is the sexual cues (always present in pornography) which bias subsequent evaluations of individuals relating to physical and sexual desirability, and, most relevantly, to traditional gender-roles (e.g., Gan, Zillmann, & Mitrook, 1997; Rudman & Borgida, 1995).
On the other hand, studies examining both sexual and sexual-and-aggressive stimuli (on males) found that when aggression is present, samples report a)an increased acceptance and inclination toward aggression against women (Weaver et al., 2011), b) a desensitization effect to female victims of aggression following sexually or non-sexually explicit aggression, but not to non-aggressive sexually explicit material (Linz, Donnerstein, and Penrod,1988), c) and an increased degradation of relationship satisfaction (Muusses, Kerkhof, & Finkenauer, 2015) mental health and well-being (as measured by the Pornography Distress Scale, see Bechara et al., 2003).

With respect to specific effects to women, the study by Krafka and colleagues (1997) exposed a sample of female participants to one of four film categories a day. The film categories varied in the levels of sexuality and/or aggression depicted. Following exposure, participants served as jurors in a mock-trial. Findings showed that exposure to aggressive stimuli elicited a desensitizing effect where they rated the stimuli as less degrading to women (i.e. they became more accepting of the aggression toward the female party and attributed less blame to the perpetrator). Furthermore, when exposed to mildly sexually explicit, but graphically aggressive stimuli participants showed less sympathy towards the victim of a rape trial as compared to other subjects exposed to a different film.

Despite the fact that these findings have not, to my knowledge, been replicated in other female samples since Krafka, they seem to suggest that it is the aggression, irrespective of the sexual explicitness, that causes the anti-woman attitudes in women. With respect to gender attitudes, Davies and colleagues (2012), found that women who endorse rape myths and victim-blame, were more likely to hold more stereotypical views about males, and their

dominant role, and females, and their submissive role. Following from this, it is expected that exposure to sexual aggression (from a male perpetrator to a female target) will not produce an increase in hostile attitudes toward males. This is because, aggression, as a sign of male dominance, is to be expected from the perpetrator and thus should be accepted from the target (Kelley, 1985).

Theoretical Frameworks:

A number of theoretical frameworks have been proposed to explain the effects of pornography in the population. Considering the impact of both sexualised and aggressive behaviour, and that judgements are made on both female and male parties, no single theory is able to account for all possible attitude change outcomes. Three theories that could account for attitude changes towards males and females when exposed to sexually explicit and /or aggressive material are reviewed below.

Gender Schema and Sexual Objectification: Findings by Krafka and colleagues and Davies can be explained through the Gender Schema Theory (GST, Bem, 1981). This theory posits that viewers are primed to access more traditional gender role-role beliefs, after exposure to stereotypic portrayals of sexual interaction (i.e. women framed as more submissive, and males as more dominant in a variety of ambits). Furthermore, Jansma and colleagues (1997) contended that it is especially the exposure to degrading or aggressive pornography which primes cognitive schemata related to the content of the stimuli (i.e. if the female is shown as a passive receptor of aggression) viewers will find cognitive structures which support these behaviours activated (Kelley, Miller, Byrne, & Bell, 1983).

Sexual Oobjectification theory (SOT, Frederickson & Roberts, 1997; Szymanski, Moffitt, & Carr, 2011).Explains female objectification through the repetitive representation of sexualized women within a culture. This way, males learn norms on how to treat women, and females learn to resign to their status as "objects" (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996). Thus, due to the content of popular pornography (Bridges et al., 2010; Klaassen & Peter, 2015), the consumption of such objectifying and sexually aggressive material will trigger a process by which society views females as sexual objects and aggression toward them as normative.

The Empathetic Viewer Theory (EVT): Findings suggest that women engage with pornographic material differently to men (Ashton, McDonald & Kirkman, 2017). Parvez (2006) suggests that empathy with the parties may be a main factor for female engagement with pornography (Smith, 2013; McCutcheon & Bishop, 2015). It has been claimed that females put attention on actors' facial expressions and make judgements on whether they are enjoying the act or not, which would then influence their attitude toward the scene witnessed (Boynton, 1999; Shaw, 1999), and subsequent attitudes towards the parties participating in it (e.g. if the scene is shown in a context where consent and enjoyment of both parties is visible, females will engage with the material by improving their attitudes to both parties, Salmon, 2012).

Operational Definitions

For the purposes of this paper, conceptualisation of pornography, aggression and attitudes will be as follows:

Pornography and Aggressive-Pornography. For the purposes of this study, the term *pornography and sexually explicit material,* will be used interchangeably and will refer to any sexually explicit material that has intended to have a sexually arousing effect in its consumer (Carroll et al., 2008). Because the clips employed in this study only depict the sexual interactions between the actors, it is argued that they are meant to be perceived as arousing, albeit only through simulation of the sexual acts. As such, the material used is categorized as soft-core pornography (Schouppe, 2016). Furthermore, the stimuli presented will include aggressive and non-aggressive pornography (a further categorization system often used in the investigation of pornography; Donnerstein, 1984). Sexually explicit material that depicts any sort of "non-consensual, coercive and/or violent" sexual behaviour is categorized as sexually aggressive content (pp. 144, Senn & Radtke, 1990).

Attitudes. The widely accepted definition for ''attitudes'' includes three components, namely measures of affective responses, cognitive evaluations (i.e. effects of external influences on beliefs about a certain subject, Boyle, 2001), and behavioral predispositions towards an entity (Hald et al., 2010). Hald and colleagues used the aforementioned components when conceptualizing "attitudes supporting violence against women'' (p 15). In this study, only cognitive evaluations are investigated by means of exploring pre- and post-exposure attitudes and attitude change.

The present study:

Pornography is experienced in an inevitably gendered (Attwood, 2005; Laqueur, 1990) social and cultural (Hall & Bishop, 2007), thus it is vital to explore attitude changes towards the genders following exposure to pornographic material. This study focuses on the measure of female evaluative cognitions about men and women, following exposure to pornography. Insight into said evaluations will help elucidate whether there is a significant effect of (aggressive) pornography exposure on females ascribing to more positive attitudes to men and women; or whether it will have the opposite effect and females will demonstrate more gender hostile beliefs. In an effort to palliate previous studies´ limitations, this project will only use a female sample and will first determine a base-line for participant's gender attitudes to then assess whether exposure to certain scenes causes a change.

Because this is the first study to look explicitly at female attitude changes towards males and females, and based on the notion that different theories support different predictions of attitude change, this study uses research questions to elucidate the effect of pornography on female attitudes to the genders:

Research Questions

RQ1. Will both pornography and depictions of sex and aggression material produce a change in attitudes toward males?

RQ2. Will both sexual and depictions of sex and aggression material produce a change in attitudes toward females?

RQ3. Will there be a significant attitude change toward males between clips depicting aggressive and sexual themes and clips depicting only sexual themes?

RQ4. Will there be a significant attitude change toward females between clips depicting aggressive and sexual themes and clips depicting only sexual themes?

Methods

Participants and Design:

Based on a G*Power analysis (Appendix B) 333 participants (all females) took part in the study by completing an online survey. Participants were recruited through convenience sampling, by advertising the link to the survey in different social media sites (including Reddit, Facebook, and Twitter). Participants had to be 18 or over, and female. Participants

were precluded from participating if they had a history of abuse or trauma (this was because of ethical considerations based on the triggering nature of some of the clips). Of the total sample, 242 participants' results were retained for analysis. Excluded results included any participants who did not complete the consent form, participants who did not satisfy the inclusion criteria, and participants who either watched all 4 clips or did not indicate which one of the four they had viewed (hence impeding pre- and post-exposure comparisons). Sociodemographic information on participants, per condition, can be found in Appendix C.

By being able to complete the questionnaire online, it is hoped that the experience of watching the clips more closely resembles that of when a person engages with sexual material in day-to-day life. Furthermore, because of the sensitive nature of the scenes, confidentiality and anonymity had to be ensured, in an effort to reduce social desirability bias effects.

Measures and Materials:

The Short version of the 'Attitudes towards Women Scale'(AWS) (Spence & Helmreich, 1972). This is a 25-item-scale containing statements addressing "the rights and roles of women" (pp. 219) in vocational and educational areas, in intellectual activities, their sexual behaviour and marital relationships. Participants were asked to indicate whether they agreed, disagreed or neither agreed nor disagreed with the statement on a 3-point Likert scale. Lower scores indicated more traditional views, whereas higher scores indicated more pro-feminist views.

"Ambivalence toward Men Inventory" (AMI) (Glick & Fiske, 1999). Female attitudes toward males were measured using a 20-item questionnaire which acknowledges women's hostile and benevolent biases and stereotypes toward men. The scale consists of *Hostility toward Men* (HM) *and Benevolence toward Men* (BM) subscales. HM observed female perceptions of male-dominance in society as an inevitability and BM looked positive beliefs supporting traditional gender-roles and power structures (Silván-Ferrero & Bustillos López, 2007). Items were scored on a 6-point Likert scale (1= strongly disagree, 6= strongly agree).

Pre and Post Test Division of Questionnaires (Appendix D-E). These were compiled by performing a split-half reliability tests (AWS Spearman-Brown coefficient= .86; AMI Spearman-Brown coefficient= .81) which deemed the highest coefficient scores were yielded

by dividing all items in each scale between odd and even items and placing one half of items in the pre-test questionnaire and the other half in the post-test questionnaire. Very good internal reliability for the AWS (Cronbach's alpha= .85) and the AMI (Cronbach's alpha= .83) are reported

Conditions. Following the design by Fisher and Grenier (1994), this study used four different scenes which escalated in the levels of sexual interaction and aggression depicted. Of the four scenes, Scenes 2-4 were deemed the experimental conditions and contained sexual material, and Scene One was used as a control. All scenes were obtained from R-Rated, commercially-released 21st Century American films. Each clip lasted between three and half to four minutes, enough time to induce a change in attitude (Donnerstein et al., 1986). In an effort to standardize all the scenes, the level of nudity, the actions depicted, and the sexual orientation of the actors in the scenes were considered. All experimental conditions only showed portrayals of sexual activity and/or sexual aggression, so as to not pollute effects with competing themes and images (Check & Guloien, 1989; Linz, Donnerstein, & Penrod, 1988).

Furthermore, most of the literature looking at the effects of pornography in experimental settings use scenes depicting Neutral, Erotic and Sexually Aggressive interactions between men and women. This study will split the "sexually aggressive" condition into positive (condition three) and negative outcomes (condition four) i.e. a scene which depicts a woman succumbing to the sexual aggression and engaging in it, despite initial resistance, and a scene depicting a women resisting such sexual aggression. The incorporation of this extra scene has been shown to promote more antiwomen attitudes and behaviour (Fisher & Grenier, 1994).

Condition One (Pitt, Grey, King & Scorsese, 2006) consisted of a short scene depicting a man and a woman flirting in an elevator on their way to work. This scene was chosen as a control and shows no depiction of aggression, albeit there being very subtle sexual connotations (i.e. Flirting).

Condition Two (Howell, Orlovsky, Patricof & Cianfrance, 2010) shows a couple during intercourse with no instances of aggression. Both parties engage in the sexual activity consensually and appear to enjoy it.

Scene Three (Bender, Spink & Cronenberg, 2005) has a man and a woman engaging in a mutually aggressive heated verbal argument which escalates to physical and sexual

aggression but ends with the woman consensually engaging in the sexual interaction, albeit does not appear to be enjoying it.
Condition Four (Rudin, Sondberg, Staermose, Chaffin & Fincher, 2011) shows a young women being raped by a man. In this clip there is no consent to the sexual activity and the women appears to be seriously distressed by the events.

Procedure:
The experiment was carried out via a Jisc online survey (Jisc, 2019).

Participants were asked to carefully read an information sheet (Appendix F), also containing contact details in case participants had any questions for the Chief Investigator or supervisor, and to fill in the consent form (Appendix G). A socio-demographic Questionnaire followed (Appendix H). Then, the pre-test questionnaire was administered (see Measures).

After completing the first questionnaire, participants were presented with a choice of four links (which should be opened in a separate tab) and their chosen link directed them, blindly, to one of the four scenes- this served to guarantee randomized allocation of participants to the conditions. The scenes were saved in different folders in Google Drive and could only be accessed through the link. Within each folder a short vignette providing some context for the scene (provided in a Word Document- Appendix I) was also be provided. This helped reinforce the stimulus themes under study (Fisher & Byrne, 1978). Once participants read the vignette, they were instructed to play the video-clip. Once watched, they were asked to complete the second questionnaire.

Due to ethical considerations participants were then debriefed as to the purpose of the study (Appendix J) and given an extensive list with contact details for helplines and institutions, in case they still felt distressed following stimuli.

Results
This study aimed to answer four research questions regarding attitude changes in females, following exposure to one of four video clips. Data was collated and analysed through Microsoft Excel and SPSS version 24 (IBM Corp, 2016).

Due to the uneven number of questions for the pretest and posttest AWS questionnaires all individual scores were converted into percentages out of the total score available. In order to procure reliable comparisons, the scores of the AMI questionnaires were also converted into percentages- Table 1-2 shows the descriptive statistics for this data set. Since the main experimental questions were regarding changes in attitudes, differences in pre-post test scores were computed by subtracting pre-test scores from post-test scores- Figures 1 and 2 show mean percentage change in scores, per condition, for each (sub)scale.

Table 1. Descriptive Statistics of Pre-, Post-test Score Percentages and Percentage Mean Gain for the Attitudes toward Women Scale (AWS)

Clip		N	Mean Score (%)	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Clip 1	Pre-test Score	59	65.3065	6.30444	-.530**	.311	1.534*	.613
	Post- test Score	59	65.9915	6.61623	-.233	.311	.737	.613
	% Difference	59	.6849	9.17040	-.463	.311	1.739*	.613
	Valid	59						
Clip 2	Pre-test Score	63	64.0212	6.40714	-1.524**	.302	3.772**	.595
	Post- test Score	63	66.7888	7.51352	-.535*	.302	1.354*	.595
	% Difference	63	2.7676	7.29727	-.092	.302	1.861*	.595
	Valid	63						

Clip 3	Pre-test Score	55	64.6634	7.16064	-1.408**	.322	3.803**	.634
	Post- test Score	55	65.6778	6.65599	-.834*	.322	2.550*	.634
	% Difference	55	1.0144	7.23111	.019	.322	.931	.634
	Valid	55						
Clip 4	Pre-test Score	68	65.6563	4.55982	-.408	.291	.523	.574
	Post- test Score	68	65.6170	6.54085	-.266	.291	.199	.574
	% Difference	68	-.0393	7.38327	-.577*	.291	1.013*	.574
	Valid	68						

*Moderate skewness/kurtosis but not to the point of affecting normal distribution

**High skewness/kurtosis to the point where using a strict criteria it would be breaching normal distribution

Table 2. Descriptive Statistics of Pre-, Post-test Score Percentages and Percentage Mean Gain for the Attitudes toward Men Inventory (AMI)

Clip		N	Mean Score (%)	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Clip 1	Pre-test HM Score	59	44.1356	20.06838	.244	.311	-.250	.613
	Post- test HM Score	59	40.2034	21.57168	.153	.311	-.568	.613
	Pre-test BM Score	59	20.0000	16.98681	1.311**	.311	2.554*	.613

	Post- test BM Score	59	25.7627	19.59974	.527*	.311	-.544	.613
	Pre-test Overall Score	59	32.0678	14.86475	.403	.311	.020	.613
	Post- test Overall Score	59	32.9831	16.94361	.026	.311	-.780	.613
	HM % Difference	59	-3.9322	16.68353	-.248	.311	.468	.613
	BM % Difference	59	5.7627	15.72648	-.305	.311	4.269**	.613
	Overall % Difference	59	.9153	13.31487	-.894**	.311	4.499**	.613
	Valid	59						
Clip 2	Pre-test HM Score	63	34.8571	17.61859	.436	.302	.207	.595
	Post- test HM Score	63	32.3175	20.26026	.132	.302	-.908*	.595
	Pre-test BM Score	63	19.2381	13.70391	1.027**	.302	1.157*	.595
	Post- test BM Score	63	29.3333	16.12852	-.177	.302	-.630	.595
	Pre-test Overall Score	63	27.0476	12.22297	.174	.302	-.083	.595
	Post- test Overall Score	63	30.8254	16.06292	-.109	.302	-.605	.595
	HM % Difference	63	-2.5397	14.93732	-.375	.302	.181	.595

	BM % Difference	63	10.0952	14.91234	-.329	.302	.550	.595
	Overall % Difference	63	3.7778	11.44474	-.402	.302	.453	.595
	Valid	63						
Clip 3	Pre-test HM Score	55	41.3091	25.32227	.276	.322	-.671	.634
	Post- test HM Score	55	36.5818	19.63245	.443	.322	.601	.634
	Pre-test BM Score	55	17.5273	13.02967	1.006**	.322	1.176*	.634
	Post- test BM Score	55	20.4364	12.89669	.077	.322	-.787	.634
	Pre-test Overall Score	55	29.4182	15.22022	.251	.322	-.361	.634
	Post- test Overall Score	55	28.5091	13.41761	.339	.322	.144	.634
	HM % Difference	55	-4.7273	17.07658	.155	.322	1.281**	.634
	BM % Difference	55	2.9091	12.49485	-.365	.322	-.816	.634
	Overall % Difference	55	-.9091	10.77596	.335	.322	1.408**	.634
	Valid	55						
Clip 4	Pre-test HM Score	65	35.7538	17.78872	.057	.297	-.404	.586
	Post- test HM Score	65	34.8923	18.82163	.273	.297	-.199	.586

Pre-test BM Score	65	16.3692	13.59638	1.216**	.297	3.007**	.586
Post- test BM Score	65	23.9385	20.76647	.890*	.297	.273	.586
Pre-test Overall Score	65	26.0615	12.04143	.443	.297	1.110*	.586
Post- test Overall Score	65	29.4154	16.32760	.536*	.297	.417	.586
HM % Difference	65	-.8615	15.33774	-.449	.297	2.039**	.586
BM % Difference	65	7.5692	14.81761	.310	.297	.476	.586
Overall % Difference	65	3.3538	10.51254	-.473	.297	.216	.586
Valid	65						

*Moderate Skewness/ Kurtosis, but not to the point of affecting normal distribution

**High skewness/kurtosis to the point where using a strict criteria it would be breaching normal distribution.

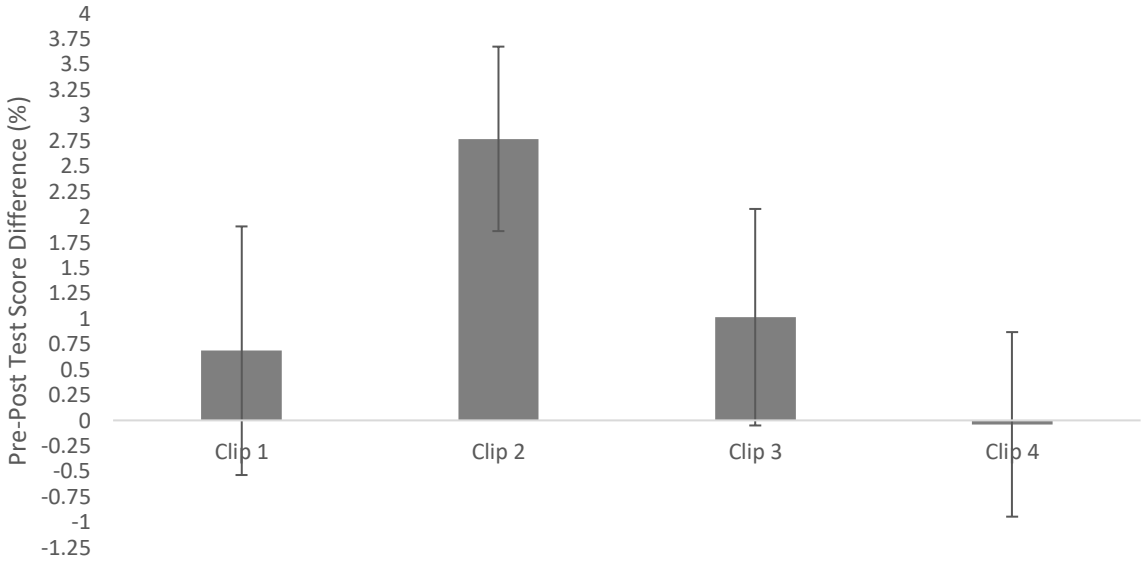


Figure 1. Percentage difference in pre- and post-test scores for the Attitudes to Women Scale (AWS).

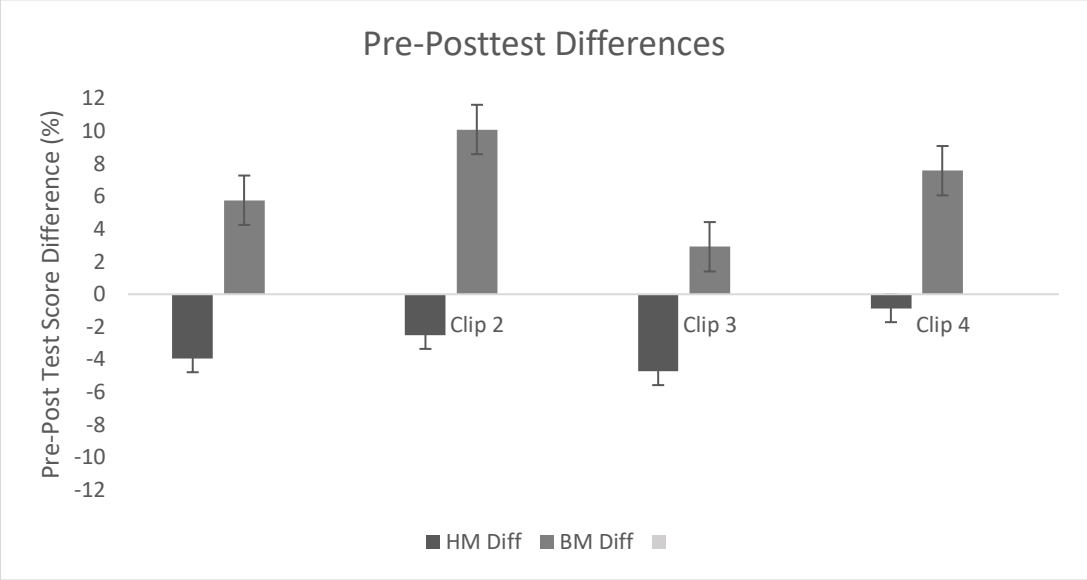


Figure 2. Percentage difference in pre- and post-test scores for the Attitudes to Men Inventory (AMI).

Preliminary Analysis.

Firstly, pre-exposure mean percentage scores for the AWS and the AMI-HM and BM were computed. It was shown that females have a baseline attitude toward women above average (M=65%). With respect to males the AMI, and in accordance to findings by Glick and colleagues (1999a, 2004b), show women exhibiting greater hostility (M= 38.5%), than benevolence (M= 18%), toward men at baseline.

In an effort to test the above research questions, four main assumptions were tested, namely whether mean difference in residuals per (sub)scale, per group, were normally distributed, whether dependent variables (post-scores) were continuous and independent of one another, and whether outliers were present. The first two assumptions were satisfied.

It was found that the AWS pre- and post-test percentage difference in scores for Condition 1 was slightly mesokurtic. Condition 2 and 4 were slightly leptokurtic. Furthermore, Condition 4 appeared to be moderately negatively skewed. Condition 3 appeared to be normally distributed. Skewness and Kurtosis found in these data was not high enough to breach the normal distribution assumption (see Tables 1-2).

On the other hand, Condition 1 and 2 pre-post difference in the AMI HM subscale scores were found to be normally distributed. Differences in Condition 3 and 4 appeared to be very mesokurtic, to the point of affecting normal distribution of data.
Differences in AMI BM subscale scores for Conditions 1 were shown to be very mesokurtic. Condition 2, 3 and 4 appeared to have normally distributed differences.

These findings, plus the presence of outliers for the dependant variables (Appendix K), supported the choice to run a non-parametric tests

RQ 1 & 2:

A Wilcoxon test was used to compare whether the pre-and post-test score for the AWS, per conditions, changed. The same test was used to compare pre-post test score changes, on the AMI HM (for conditions 1 and 2), and on the AMI BM (for conditions 2, 3 and 4). For the remaining conditions (those which violated normal distribution of score differences), pre-and post-test scores changes per condition were analysed using the Sign Rank Test.

No condition elicited a statistically significant mean percentage change from pre- to post-test scores in the AWS, except for Condition 2 ($Z= -3.296$, $p= 0.001$) which showed a significant increase in post-test scores following exposure to the clip.

Furthermore, no condition elicited a significant mean percentage change from pre- to post-test scores in the AMI HM subscale, except for Condition 3 ($Z= -2.042$, $p= .041$) which showed a decrease from pre- to post-scores.

For the AMI BM subscale, it was found that Conditions 1, 2 and 4 elicited a significant mean percentage increase from pre- to post-test scores ($Z= -2.571$, $p= .010$; $Z= -4.596$, $p< 0.001$; $Z=-3.688$, $p< 0.001$). Tables 3-5 show the all results for the above analysis.

Table 3. Results for the Wilcoxon Signed Rank Test for the AWS scores.

Clip	N	Z	Asymp. Sig. (2-tailed)
	Statistic	Statistic	Statistic
Clip 1	59	-1.196[b]	.232
Clip 2	63	-3.296[b]	.001
Clip 3	55	-1.363[b]	.173
Clip 4	68	-.556[b]	.578

a. Based on negative ranks

Table 4. Results for the Wilcoxon Signed Rank Test for the AMI HM and BM scores.

Clip	N	Z	Asymp. Sig. (2-tailed)
	Statistic	Statistic	Statistic
Clip 1			
HM	59	-1.715[b]	.086
BM	59	--	--
Clip 2			
HM	63	-1.010[b]	.312
BM	63	-4.596[c]	.000
Clip 3			
HM	55	--	--
BM	55	-1.629[c]	.103
Clip 4			

HM	68	--	--
BM	68	-3.688[c]	.000

a. Based on negative ranks

b. Based on positive ranks

Table 5. Results for the Signed Rank Test for the AMI HM and BM scores.

Clip	N	Z	Asymp. Sig. (2-tailed)
	Statistic	Statistic	Statistic
Clip 1			
HM	59	--	--
BM	59	-2.571	.010
Clip 2			
HM	63	--	--
BM	63	--	--
Clip 3			
HM	55	-2.042	.041
BM	55	--	--
Clip 4			
HM	68	.000	1.000
BM	68	--	--

a. Based on negative ranks

RQ3 and 4.

Whether the difference between pre- and post-test scores for the AWS, the AMI BM and HM subscales was statistically different between clips was assessed using the Kruskal-Wallis H test. It was revealed that there was no statistically significant differences in scores between the clips for the AWS ($\chi^2(3)= 4.431$, $p= 0.219$). Thus no post-hoc test was necessary.

On the other hand, the Kruskal Wallis H test revealed there to be significant differences between conditions in test scores for the AMI BM ($\chi^2(3) = 8.575$, $p = 0.036$). There was no significant difference between scores differences across conditions for the HM subscale ($\chi^2(3) = 7.634$, $p = 0.054$).

Mann-Whitney, post hoc tests run on significant results (i.e. HM scores) revealed there to be significant difference in pre-post test scores for BM only between groups 2-3 (Z=-2.642, p= 0.008). Table 6-8 shows all results.

Table 6. Kruskal Wallis test results for AWS score differences

Clip	Chi-Square	df	Asymp. Sig. (2-tailed)
	Statistic	Statistic	Statistic
AWS Diff	4.431	3	.219

a. Grouping Variable: Group (Min: 1, Max: 4)

Table 7. Kruskal Wallis test results for AMI BM and AMI HM score differences

	Chi-Square	df	Asymp. Sig. (2-tailed)
	Statistic	Statistic	Statistic
Diff HM	3.109	3	.375
Diff BM	7.634	3	.036

a. Grouping Variable: Clip (Min: 1, Max: 4)

Table 8. Post-Hoc Mann-Whitney U tests for between-group caparisons of BM score differences

Clip		Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
		Statistic	Statistic	Statistic
Clip 1-2	Diff BM	1488.000	-1.909	.056
Clip 1-3	Diff BM	1493.500	-7.35	.462

Clip 1-4	Diff BM	1763.500	-.775	.439
Clip 2-3	Diff BM	1245.000	-2.642	.008**
Clip 2-4	Diff BM	1798.500	-1.193	.233
Clip 4-3	Diff BM	1512.000	-1.458	.145

a. Grouping Variable: Group (1-2; 1-3; 1-4;2-3; 2-4; 4-3)

b. **Significant

Discussion

Participants' attitudes toward women (AWS) and men (AMI) were measured pre-exposure to one of four clips, which varied in the level of sexual activity and aggression depicted. It was found that females have higher attitudes toward other females, than they do toward males, at baseline. Furthermore, post-exposure, only for Condition 2 did females experience a significant increase in their AWS scores. With regards to their attitudes to males, females experienced a significant decrease in hostile beliefs towards men for Condition 3. In terms of their benevolent attitudes, females experienced an increase in benevolent beliefs about men for Conditions 1, 4 and 2. Within the different experimental groups, it was found that there was a significant difference in benevolent attitude scores between Conditions 2 and 3.

Below, results will be examined in line with the theoretical frameworks highlighted previously. As will become apparent, no one theory is able to account for the findings in this paper. It is proposed that in order to explain attitude change following sexual and/or aggressive material an integration of the above-mentioned theories is necessary to account for the complex and multifaceted way in which females engage with pornography (Ashton, McDonald, & Kirkman, 2017).

RQ1.

In line with research by Ashton and colleagues (2017), it is suggested that, when making judgments on the male party, females engage different mechanisms depending on the content and context of the scene. As such, when exposed to sexually explicit material, sans aggression, females will engage with it as empathetic viewers making judgments on males

according to the perceived level of enjoyment and consent exhibited by *both* actors. Depictions of sex and aggression, on the other hand, seem to disengage the female as empathetic viewers. Instead, it is suggested that participants' traditional gender-role schemas are activated, in an effort to organize and find justifications for behaviours presented. This allows females to evaluate the male party in a more favourable light, despite the depictions of aggression toward a female target.

Historically, men in society have been held as the more dominant and powerful group, while females have been considered as reliant on that power hierarchy in order to gain things (e.g. status, protection…) (Silván-Ferrero & Bustillos López 2007). This has forced females to react to male power. Reactions to male dominance include the acceptance of it as a cultural inevitability, or the resistance against it (Stephens, 2013). It is argued that, higher scores in hostile beliefs and lower in benevolent beliefs, pre-exposure, demonstrate females potentially rejecting male dominance by showing resentment towards the patriarchy.

Upon exposure, females across groups decreased their hostile beliefs and increased their benevolent ones. This rise in benevolent scores show females' increased adherence to traditional gender-power relations (Silván-Ferrero & Bustillos-López, 2017). The adoption of more benevolent attitudes perpetuates the upholding of traditional gender-roles since it overemphasizes women in the traditional female role (i.e. their main role is being mothers), and increase their acceptance of traditional, male-dominant, hierarchical systems. As with much of the pornography available online (Klaassen & Peter, 2014), the stimulus used showed males as the more dominant and sexually aggressive parties, and women as the subdued, passive recipients of it (Gossett & Byrne, 2002). In light of the GST, it is posed that the stimulus used served as a priming device through which gender-stereotypic schemas were activated and influenced their subsequent evaluations of males, causing a fall in hostile attitudes.

HM. Condition 3 transmits a dissonant message, where the female initially rejects the power advantage exhibited by the male but ends up succumbing to (and enjoying) it. It is suggested that, although females initially resent male-dominant power structures (i.e. higher pre-exposure HM), exposure to a clip which shows the female succumbing to this power structure activates sexual-objectification schemas which teach women to find aggression toward them as normative. In this sense, expectations of being seen and used as a sexual object are met

and cannot elicit hostility towards the male party, who is only behaving in accordance to the social script ascribed to them in society (Smith & Winkler, 2006; Fredrickson & Roberts, 1997). This causes hostility scores to significantly decrease, by not attributing blame for the aggressive act perpetrated to the male party because it is not their fault, they behave in such a way (Edwards, Hearn, Hearn, & Popay, 1998)

BM. Fittingly with the GST, it is suggested that it is the depictions of "traditional" (sexual) interactions (i.e. the male initiating the interaction) by a couple that activate stereotypic gender-role schemas (Milburn, Mather, & Conrad, 2000). Thus, showing material where males take the more active role, by initiating flirting and sex, females are reminded of traditional gender-roles between a couple, where the man "should" take the initiative in the pursual of a (sexual) interaction with a women.

Perhaps most perplexing are the findings for Condition 4, which showed females significantly increase in BM post-exposure to a scene depicting rape of a female. In an attempt to explore this result, this paper turns to the GST. In being primed to stereotypical gender-role schemas concerning power and male-dominance, exposure to a scene concerning sexual aggression elicited females to increase their adherence to beliefs justifying hierarchical power structures. Themes of male-dominance and sexual aggressiveness are aplenty within Condition 4, and thus exposure to said themes activates the belief that males are meant to behave in such a way and so aggression is justified and seen as normative (Gregor, 1990). It is argued that future research should include adherence to rape myths as another variable in order to check whether this increase in BM positively correlates with, or even predicts, an increase in rape myth acceptance by female participants, as has been found in previous literature (Krafka et al., 1997).

RQ2.

It is argued that, when exposed to sexually explicit material females judge the female party in terms of the Empathetic Viewer Theory (Parvez, 2016), where they *only* observe whether the female party appears to be enjoying and consenting to the act, and this elicits a significant change in positive attitudes towards the female (Boynton, 1999; Shaw 1999), regardless of whether the male is shown to be enjoying the act on his part. This theory would explain why females demonstrated a significant increase in positive attitudes towards other females when

exposed to Condition 2 (where the female party is enjoying and consenting to the sexual interaction).

No significant change was observed for Conditions 3 or 4. However, the trend in the data exhibits a slight increase in positive attitudes towards females for Condition 3, and a slight decrease in positive attitudes for Condition 4.

With regards to Condition 3 it is argued that, even though the woman is not instigating the sexual activity and is seemingly "forced" into it, she ends up "succumbing" and actively participating in it. This sends a mixed message to the audience. On the one hand the female party does not want to engage in sex, but on the other she ends up doing it anyway, thus creating a cognitive dissonance (i.e. a situation involving conflicting attitudes, beliefs or behaviors, McLeod, 2018). In this case, as empathetic viewers, participants may have to rely on additional mechanisms when interpreting the scene witnessed. For instance, in order to make sense of the events depicted they experience a recency bias. This way, the female viewer will judge the last interactions portrayed in the clip will make judgments accordingly and forego judgments on the initial events depicted (i.e. those of aggression) since these are less salient (Murdock, 1962; Routh & Frosdick, 1978). Therefore, an adaptation to the EVT is propose. That is that in cases where competing messages are presented to the viewer, she will rely on other mechanisms (maybe the recency bias) to effectuate her judgments.

In the case of Condition 4 there were no mixed messages with regards to the females' distress and non-consent of the sexual act. In line of the EVT, the depiction of female distress may have led to a negative conception of the scene (Boynton, 1999), which transferred into their judgments of the female party. This framework offers an alternative explanation to findings by Krafka, where females exposed to a rape scene exhibited attitudes of victim blaming. That is, their negative view of what they had just seen influenced their view of the female party in the scene (Zillman & Cantor, 1977).

RQ3.

For the AMI, only a significant difference in changes for the BM were found between conditions 2-3, where participants had significantly higher changes in scores for Condition 2, than they did for Condition 3. In addition to findings from the previous research question, this suggests that, even though females who are exposed to sexually explicit material with

instances of aggression experience a significant increase in BM, it is in fact depictions of more traditional sexual encounters between a male and a female (where the male takes a dominant role, albeit not through aggression) that elicit the biggest change in attitudes towards males. This contradicts findings from male samples, which show that it is the aggression *and* the sex, but not only the sex, which precipitate the biggest attitude changes and anti-women beliefs (Linz, Donnerstein, and Penrod,1988). This further highlights the importance of using female samples and the lack of ecological validity of male-centric samples in the analysis of pornography effects.

RQ4.

In terms of females, no significant difference in scores differences was observed between groups. That is, female attitudes towards other females will not significantly improve (or deteriorate) as they do with males, when exposed the different conditions. Perhaps their engagement with pornography as empathetic viewers, and their subsequent judgements, do not allow for females to show differences between groups because in instances of sexual interaction that show the women willingly engaging elicit a positive attitude toward the scene and, subsequently, the groups depicted in them, and instances of sexual aggression portray the women as a victim of sexual male-dominance which (as empathetic viewers) causes participants to sympathise with them, and thus experience higher benevolent feelings towards females.

Limitations

The present study was not without limitations. Firstly, the design of this study only allows for inferences on short-term attitude change. Future research should investigate whether long-term exposure to pornography causes long-term attitude changes similar to those observed here, through a longitudinal design. Moreover, the use of the AWS did not allow for comparison between benevolent and hostile beliefs towards females. However, no scale exists, to my knowledge, that contemplates these two constructs. Future research should aim to develop and validate such a scale in order to further clarify how female attitudes change following exposure to pornography. Lastly, since this is the first paper to explicitly look at attitudes towards other females and males pre- and post-exposure, future research should address these limitations and attempt to replicate these findings.

Conclusions and Implications

Being the first of its kind, this study provides an exploratory analysis and informative results on attitude changes in females following exposure to sexually charged, aggressive, clips. Some of the findings could be explained by existing theoretical frameworks while others highlighted the fact that using a single theory to conceptualise a multifaceted attitude change is reductionist.

The implications of this paper are two-fold. Firstly, it highlights the different ways in which females and males engage with (soft-core) pornographic material, and that results and theories available do not generalize to a female audience. Secondly, following findings of the sexually aggressive clips, it could be suggested that the objectification of females and the female sexual experience across different types of media (including pornography) in the Western society could help explain instances of repeated interpersonal, male-perpetrated, partner violence, where the target of such aggression chooses to stay with the perpetrator. It may be the case that, depictions in society of male-dominance are absorbed and used as a way to "make some sense" of the reasons behind the aggression experienced. That is, females increase their benevolent attitudes towards males who exert aggression in an effort to justify staying in such a relationship, thus normalising and perpetuating the cycle of violence. Studies investigating this relation should be carried out in future research.

Further studies should replicate these findings aim to overcome the above-mentioned limitations to further explore this fascinating topic.

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Appendices

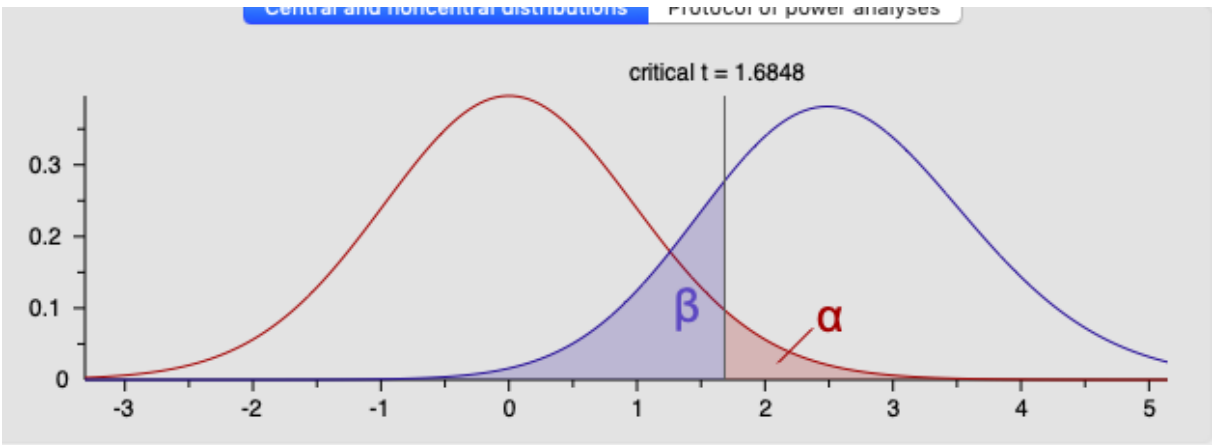
Appendix A

Across the social psychology literature, aggression has been conceptualised as "behavior carried out with the proximal (immediate) intention to inflict harm on another person who is motivated to avoid the harm" (pp. 28, Anderson & Bushman, 2002). In the study of pornography the use of this definition complicates matters for a number of reasons. Firstly, this definition requires insight into the perpetrator's intentions and the target's motivations, which make codification of these behaviours difficult and thus reduces reliability of findings (Bridges et al., 2010). This is because what one might perceive as aggression from one point of view, may not be seen as such from another (Kelley, 1985; Jhangiani, Tarry & Stangor, 2014).

Secondly, according to social psychology principles (Bandura, 1994, 2001), whether an act is perceived as aggressive is concerned with the response with which the act is met (Bridges et al., 2010). Favourable responses may include instances where the perpetrator is not punished for their behaviour or is even are rewarded for it. This portrayal of aggression sends the message that aggression is tolerable and inconsequential (Jhangiani et al., 2014). The contrary can be said for instances where perpetrators *are* punished. In this case, the audience receives a "prohibitive message" about aggression. In the context of sexually explicit material, it has been found that 95% of the times videos depicting male aggression to females had the target responding in a non-responsive way or in pleasure (Bridges et al., 2010). This perpetuates the image of women as "passive, yet […] eager to please" the male perpetrator of such aggression (pp. 702, Gossett & Byrne, 2002).

Lastly, it is possible that some of the items listed as 'aggressive', such as "biting", could be included in consensual, non-pornographic sex (Jefferson, 2013); yet, when portrayed in pornography, they are perceived as aggressive and a demonstration of male dominance over females (in accordance to feminist anti-pornography literature, see Dworkin, 1985; MacKinnon, 1984).

Appendix B



Test family

t tests

Statistical test

Means: Wilcoxon signed-rank test (matched pairs)

Type of power analysis

A priori: Compute required sample size - given α, power, and effect size

Input parameters

Determine

Tail(s)	One
Parent distribution	Normal
Effect size dz	0.4
α err prob	0.05
Power (1-β err prob)	0.8

Output parameters

Noncentrality parameter δ	2.5332049
Critical t	1.6847629
Df	39.1070457
Total sample size	42
Actual power	0.8007016

Appendix C

Age

Clip			Frequency	Percent	Valid Percent	Cumulative Percent
Clip 1	Valid	18-20	12	20.3	20.3	20.3
		21-29	38	64.4	64.4	84.7
		30-39	6	10.2	10.2	94.9
		40-49	2	3.4	3.4	98.3
		50-59	1	1.7	1.7	100.0
		Total	59	100.0	100.0	
Clip 2		18-20	8	12.7	12.7	12.7
		21-29	44	69.8	69.8	82.5
		30-39	10	15.9	15.9	98.4
		40-49	1	1.6	1.6	100.0
		50-59	0	0	0	0
		Total	63	100.0	100.0	
Clip 3		18-20	9	16.4	16.4	16.4
		21-29	38	69.1	69.1	85.5
		30-39	6	10.9	10.9	96.4
		40-49	2	3.6	3.6	100.0
		50-59	0	0	0	0
		Total	55	100.0	100.0	
Clip 4		18-20	4	6.2	6.2	6.2

	21-29	55	84.6	84.6	90.8
	30-39	5	7.7	7.7	98.5
	40-49	0	0	0	0
	50-59	1	1.5	1.5	100.0
	Total	65	100.0	100.0	

Ethnicity

Clip			Frequency	Percent	Valid Percent	Cumulative Percent
Clip 1	Valid	White or White British	45	76.3	76.3	76.3
		Gypsy/Traveler/Irish Traveler	0	0	0	0
		Asian or Asian British	9	15.3	15.3	91.5
		Black or Black British	2	3.4	3.4	94.9
		Mixed or Multiple	1	1.7	1.7	96.6
		Other	2	3.4	3.4	100.0
		Total	59	100.0	100.0	
Clip 2	Valid	White or White British	54	85.7	85.7	85.7
		Gypsy/Traveler/Irish Traveler	0	0	0	0
		Asian or Asian British	5	7.9	7.9	93.7
		Black or Black British	1	1.6	1.6	95.2
		Mixed or Multiple	3	4.8	4.8	100.0
		Other	63	100.0	100.0	
		Total	47	85.5	85.5	85.5
Clip 3	Valid	White or White British	47	85.5	85.5	85.5
		Gypsy/Traveler/Irish Traveler	1	1.8	1.8	87.3

		Asian or Asian British	4	7.3	7.3	94.5
		Black or Black British	1	1.8	1.8	96.4
		Mixed or Multiple	2	3.6	3.6	100.0
		Other	0	0	0	
		Total	55	100.0	100.0	
Clip 4	Valid	White or White British	55	84.6	84.6	84.6
		Gypsy/Traveler/Irish Traveler	0	0	0	0
		Asian or Asian British	2	3.1	3.1	87.7
		Black or Black British	1	1.5	1.5	89.2
		Mixed or Multiple	6	9.2	9.2	98.5
		Other	1	1.5	1.5	100.0
		Total	65	100.0	100.0	

Highest Levels of Education

Clip			Frequency	Percent	Valid Percent	Cumulative Percent
Clip 1	Valid	High school degree or equivalent (e.g. GED)	5	8.5	8.5	8.5
		College, no degree	4	6.8	6.8	15.3
		Associate degree (e.g. AA, AS)	2	3.4	3.4	18.6
		Bachelor’s degree (e.g. BA, BS)	30	50.8	50.8	69.5
		Master’s degree (e.g. MA, MS, MEd)	15	25.4	25.4	94.9

		Professional degree (e.g. MD, DDS, DVM)	0	0	0	0
		Doctorate (e.g. PhD, EdD)	3	5.1	5.1	100.0
		Total	59	100.0	100.0	
Clip 2	Valid	High school degree or equivalent (e.g. GED)	7	11.1	11.1	11.1
		College, no degree	9	14.3	14.3	25.4
		Associate degree (e.g. AA, AS)	1	1.6	1.6	27.0
		Bachelor's degree (e.g. BA, BS)	24	38.1	38.1	65.1
		Master's degree (e.g. MA, MS, MEd)	18	28.6	28.6	93.7
		Professional degree (e.g. MD, DDS, DVM)	1	1.6	1.6	95.2
		Doctorate (e.g. PhD, EdD)	3	4.8	4.8	100.0
		Total	63	100.0	100.0	
Clip 3	Valid	High school degree or equivalent (e.g. GED)	6	10.9	10.9	10.9
		College, no degree	8	14.5	14.5	25.5
		Associate degree (e.g. AA, AS)	4	7.3	7.3	32.7
		Bachelor's degree (e.g. BA, BS)	20	36.4	36.4	69.1

		Master's degree (e.g. MA, MS, MEd)	15	27.3	27.3	96.4
		Professional degree (e.g. MD, DDS, DVM)	0	0	0	0
		Doctorate (e.g. PhD, EdD)	2	3.6	3.6	100.0
		Total	55	100.0	100.0	
Clip 4	Valid	High school degree or equivalent (e.g. GED)	4	6.2	6.2	6.2
		College, no degree	5	7.7	7.7	13.8
		Associate degree (e.g. AA, AS)	3	4.6	4.6	18.5
		Bachelor's degree (e.g. BA, BS)	30	46.2	46.2	64.6
		Master's degree (e.g. MA, MS, MEd)	19	29.2	29.2	93.8
		Professional degree (e.g. MD, DDS, DVM)	1	1.5	1.5	95.4
		Doctorate (e.g. PhD, EdD)	3	4.6	4.6	100.0
		Total	65	100.0	100.0	

Current Relationship Status

Clip			Frequency	Percent	Valid Percent	Cumulative Percent
Clip 1	Valid	Single	25	42.4	42.4	42.4

	In a (non-domestic) relationship	21	35.6	35.6	78.0
	Married, or in a domestic relationship	12	20.3	20.3	98.3
	Widowed	0	0	0	0
	Divorced	1	1.7	1.7	100.0
	Separated	0	0	0	0
	Total	59	100.0	100.0	
Clip 2	Single	30	47.6	47.6	47.6
	In a (non-domestic) relationship	18	28.6	28.6	76.2
	Married, or in a domestic relationship	15	23.8	23.8	100.0
	Widowed	0	0	0	0
	Divorced	0	0	0	0
	Separated	0	0	0	0
	Total	63	100.0	100.0	
Clip 3	Single	22	40.0	40.0	40.0
	In a (non-domestic) relationship	17	30.9	30.9	70.9
	Married, or in a domestic relationship	16	29.1	29.1	100.0
	Widowed	0	0	0	0
	Divorced	0	0	0	0
	Separated	0	0	0	0

	Total	55	100.0	100.0	
Clip 4	Single	26	40.0	40.0	40.0
	In a (non-domestic) relationship	23	35.4	35.4	75.4
	Married, or in a domestic relationship	15	23.1	23.1	98.5
	Widowed	0	0	0	0
	Divorced	1	1.5	1.5	100.0
	Separated	0	0	0	0
	Total	65	100.0	100.0	

Frequency with which Participant watches Pornography

			Frequency	Percent	Valid Percent	Cumulative Percent
Clip 1	Valid	Never	20	33.9	33.9	33.9
		Very rarely (less than once a week, but do watch at some point during the month)	25	42.4	42.4	76.3
		Rarely (1 day a week)	6	10.2	10.2	86.4
		Occasionally (2 days a week)	2	3.4	3.4	89.8
		Sometimes (3 days a week)	3	5.1	5.1	94.9
		Often (4 days a week)	1	1.7	1.7	96.6
		Usually (5 days a week)	1	1.7	1.7	98.3

		Frequently (6 days a week)	0	0	0	0
		Always (7 days a week)	1	1.7	1.7	100.0
		Total	59	100.0	100.0	
Clip 2	Valid	Never	19	30.2	30.2	30.2
		Very rarely (less than once a week, but do watch at some point during the month)	25	39.7	39.7	69.8
		Rarely (1 day a week)	5	7.9	7.9	77.8
		Occasionally (2 days a week)	8	12.7	12.7	90.5
		Sometimes (3 days a week)	4	6.3	6.3	96.8
		Often (4 days a week)	0	0	0	0
		Usually (5 days a week)	0	0	0	0
		Frequently (6 days a week)	0	0	0	0
		Always (7 days a week)	2	3.2	3.2	100.0
		Total	63	100.0	100.0	
Clip 3	Valid	Never	14	25.5	25.5	25.5
		Very rarely (less than once a week, but do watch at some point during the month)	22	40.0	40.0	65.5
		Rarely (1 day a week)	6	10.9	10.9	76.4

		Occasionally (2 days a week)	4	7.3	7.3	83.6
		Sometimes (3 days a week)	4	7.3	7.3	90.9
		Often (4 days a week)	4	7.3	7.3	98.2
		Usually (5 days a week)	1	1.8	1.8	100.0
		Frequently (6 days a week)	0	0	0	0
		Always (7 days a week)	0	0	0	0
		Total	55	100.0	100.0	
Clip 4	Valid	Never	13	20.0	20.0	20.0
		Very rarely (less than once a week, but do watch at some point during the month)	30	46.2	46.2	66.2
		Rarely (1 day a week)	7	10.8	10.8	76.9
		Occasionally (2 days a week)	7	10.8	10.8	87.7
		Sometimes (3 days a week)	3	4.6	4.6	92.3
		Often (4 days a week)	4	6.2	6.2	98.5
		Usually (5 days a week)	0	0	0	0
		Frequently (6 days a week)	1	1.5	1.5	100.0
		Always (7 days a week)	0	0	0	0
		Total	65	100.0	100.0	

Appendix D

Pre-Exposure Questionnaire:

The statements listed below describe attitudes toward the role of women in society that different people have. There are no right or wrong answers. only opinions. You are asked to express your feelings about each statement by indicating whether you (1) agree, (2) neither agree nor disagree. (3) disagree. Please indicate your opinion by ticking either 1, 2, or 3 on the answer sheet for each item.

	Agree	Neither	Disagree
Women should take increasing responsibility for leadership in solving the intellectual and social problems of the day.	1	2	3
Telling dirty jokes should be mostly a masculine prerogative.	1	2	3
Under modern economic conditions with women being active outside the home. men should share in household tasks such as washing dishes and doing the laundry.	1	2	3
A woman should be as free as a man to propose marriage.	1	2	3
Women earning as much as their dates should bear equally the expense when they go out together.	1	2	3
A woman should not expect to go to exactly the same places or to have quite the same freedom of action as a man.	1	2	3

It is ridiculous for a woman to drive a train and for a man to do the laundry.	1	2	3
Women should be encouraged not to become sexually intimate with anyone before marriage, even their fiancés.	1	2	3
Women should be concerned with their duties of childbearing and house tending. rather than with desires for professional and business careers.	1	2	3
Economic and social freedom is worth far more to women than acceptance of the ideal of femininity which has been set up by men.	1	2	3
There are many jobs in which men should be given preference over women in being hired or promoted.	1	2	3
The modern girl is entitled to the same freedom from regulation and control that is given to the modern boy.	1	2	3

Below are a series of statements concerning men and women and their relationships in society. Please mark the degree to which you agree or disagree with each statement, where your answers fall in the following spectrum 1= Strongly Disagree, 2= Somewhat Disagree, 3=Disagree slightly, 4= Agree slightly, 5= Agree Somewhat, and 6= Strongly Agree.

	Strongly Disagree	Disagree somewhat	Disagree slightly	Agree slightly	Agree somewhat	Strongly Agree

Men are less likely to fall apart in emergencies than women are	1	2	3	4	5	6
When men act to “help” women, they are often trying to prove they are better than women	1	2	3	4	5	6
A woman will never truly be fulfilled in life if she doesn’t have a committed, long term relationship with a man.	1	2	3	4	5	6
Men act like babies when they are ill.	1	2	3	4	5	6
Even men who claim to be sensitive to women’s rights really want a traditional	1	2	3	4	5	6
Every woman ought to have a man she adores.	1	2	3	4	5	6
Most men pay lip service to equality for women but can’t handle having a woman as an equal.	1	2	3	4	5	6

Women are incomplete without men.	1	2	3	4	5	6
Most men sexually harass women, even if only in subtle ways, once they are in position of power over them.	1	2	3	4	5	6
Women ought to take care of their men at home, because men would fall apart if they had to fend for themselves.	1	2	3	4	5	6

Appendix E

Post Exposure Questionnaire:

The statements listed below describe attitudes toward the role of women in society that different people have. There are no right or wrong answers. only opinions. You are asked to express your feelings about each statement by indicating whether you (1) agree, (2) neither agree nor disagree. (3) disagree. Please indicate your opinion by circling either 1, 2, or 3 on the answer sheet for each item.

	Agree	Neither	Disagree
Swearing and obscenity are more repulsive in the speech of a woman than of a man.	1	2	3
Both husband and wife should be allowed the same grounds for divorce.	1	2	3

Intoxication among women is worse than intoxication among men.	1	2	3
There should be a strict merit system in job appointment and promotion without regard to sex.	1	2	3
Women should worry less about their rights and more about becoming good wives and mothers.	1	2	3
Women should assume their rightful place in business and all the professions along with men.	1	2	3
Sons in a family should be given more encouragement to go to college than daughters.	1	2	3
In general. the father should have greater authority than the mother in the bringing up of children.	1	2	3
The husband should not be favored by law over the wife in the disposal of family property or income.	1	2	3
The intellectual leadership of a community should be largely in the hands of men.	1	2	3
On the average. women should be regarded as less capable of contributing to economic production than are men.	1	2	3

Women should be given equal opportunity with men for apprenticeship in the various trades.	1	2	3

Below are a series of statements concerning men and women and their relationships in society. Please indicate the degree to which you agree or disagree with each statement, where your answers fall in the following spectrum 1= Strongly Disagree, 2= Somewhat Disagree, 3=Disagree slightly, 4= Agree slightly, 5= Agree Somewhat, and 6= Strongly Agree.

	Strongly Disagree	Disagree somewhat	Disagree slightly	Agree slightly	Agree somewhat	Strongly Agree
Even if both members of a couple work, the woman ought to be more attentive to taking care of her man at home.	1	2	3	4	5	6
A man who is sexually attracted to a woman typically has no morals about doing whatever it takes to get her in bed.	1	2	3	4	5	6
Every woman needs a male partner who will cherish her.	1	2	3	4	5	6
Men would be lost in this world if women	1	2	3	4	5	6

weren't there to guide them.						
Men always fight to have greater control in society than women.	1	2	3	4	5	6
Men are mainly useful to provide financial security for women.	1	2	3	4	5	6
Men are more willing to put themselves in danger to protect others.	1	2	3	4	5	6
Men usually try to dominate conversations when talking to women.	1	2	3	4	5	6
When it comes down to it, most men are really like children.	1	2	3	4	5	6
Men are more willing to take risks than women.	1	2	3	4	5	6

Appendix F:

PARTICIPANT INFORMATION SHEET

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Faculty of M

Dr Simon Duff, Deputy Director of Forensic Programmes
Simon.Duff@nottingham.ac.uk
Africa Gil Socorro, MSc Student
Africa.gilsocorro@nottingham.ac.uk

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The influence of soft-core pornography on women: Examining attitudes and bystander behaviours across different groups, following exposure to sexually explicit material varying in levels of aggression.

Research Ethics Ref: 242-1902

School & Division:

Yang Fujia Building, Jubilee Campus
Centre for Forensic and Family Psychology,
Division of Psychiatry and Applied Psychology,
School of Medicine

1. General Information

Thank you for your interest in taking part in this questionnaire/online survey. You have been invited to participate as you are an 18+ female, with no history of trauma. Please read through this information before agreeing to participate by ticking the 'yes' box below.
This study is being done by Africa Gil Socorro, Forensic and Criminological Psychology MSc student, the University of Nottingham. This study aims to explore the link between pornography exposure, female attitudes towards males and female, and whether these show a correlation with bystander behaviours. In particular, the study will look at whether soft-core pornography varying in levels of aggression has an influence on female attitudes and whether these attitudes translate into differing bystander behaviours.

For the purpose of this study, soft-core pornography has been defined any material that imitates sexual activity but where no explicit penetration is shown. It still aims to be sexually arousing, but always through simulation of the act (no intercourse will take part between the actors, although nudity is often part of the scenes) (Schouppe, 2016)

Most of the research on the effects of pornography have come from male samples. Not many studies look at female participants and the effect of pornography on this sample. Our study aims to fill this knowledge gap by looking at female attitudes and behaviours towards pornography.

You will be given and asked to complete all questions from Questionnaire A, then you will be directed to a Google Drive folder (accessed through a hyperlink) containing one of four scenes and a short vignette giving the scene some context. It is advised that you read the vignette prior to viewing the scene. Once you have watched the scene you will be asked to return to the questionnaire page and complete Questionnaire B. A debrief screen will be presented at the end of questionnaire. There you can find contact details for the researcher, supervisor, and some organisations that address (sexual) aggression in case any of the material witnessed, or questions answered continue to cause you distress post-debrief. Depending on your reading speed, it should take no longer than 30-45 minutes to complete the entire experiment. No background knowledge is required.

2. How will your data be used?

Your answers will be completely anonymous, and we will use all reasonable endeavours to keep them confidential. Your participation in this study is entirely voluntary. Please note that once you have submitted your answers at the end of the questionnaire that they cannot then be subtracted as all data are anonymized. Your data will be stored in a password-protected file on a password protected system. Data aggregated into statistical results may be used in academic publications. Your IP address will not be stored.

3. Who will have access to your data?

For the purposes of the Data Protection the University of Nottingham is the data controller (legally responsible for the data security). Responsible individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure

we are complying with guidelines. You can find out more about how we use your information and to read our privacy notice at:
https://www.nottingham.ac.uk/utilities/privacy.aspx/

4. Are there any risks associated to participation in this study?

We believe there are no known risks associated with this research study; however, the scene you will be shown may contain material which depicts sexual aggression. Due to the nature of these scenes, it is possible that some viewers may feel distressed or uncomfortable.

Researchers will guarantee that all images have been obtained from R-Rated commercial films (ie. It is legal, age-appropriate and accessible material for the sample we have selected). Furthermore, the title of the entire film will be provided so you can watch it at your own leisure if you have been affected and further context can be gained from this. In the event that you continue to feel distressed after been debriefed, contact details for some organisations which support individuals with regards to (sexual) aggression will be provided. You will also be provided with the contact details of the project researcher and supervisor, in the case you wanted to discuss any further issues.
As with any online related activity the risk of a breach is always possible. We will do everything possible to ensure your answers in this study will remain anonymous. We will minimize any risks by all data being encrypted and stored in a password protected laptop. All raw data will be erased upon analysis.

The results of the study may be published in scientific journals and presented at scientific conferences. The data will be reported anonymously, with any identifying information removed.

If you have any questions about this project, you may contact the Lead Researcher Africa Gil Socorro or if you have any concerns about any aspect of this study please contact the Research Supervisor: Dr Simon Duff .

If you remain unhappy and wish to complain formally, you should then contact the FMHS Research Ethics Committee Administrator, Faculty Hub, Medicine and Health Sciences, E41, E Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH or via E-mail: FMHS-ResearchEthics@nottingham.ac.uk

5. Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

Africa Gil Socorro
Department of Forensic & Criminological Psychology
Yang Fujia Building; Jubilee Campus, 6 Triumph Road
Nottingham, NG7 2GA
Email: Africa.gilsocorro@nottingham.ac.uk

Appendix G:

I have read and understood the above information and consent form, I confirm that I am 18 years old or older, and a female and by clicking the NEXT button to begin the online questionnaire, I indicate my willingness to voluntarily take part in the study. I also acknowledge that I am able to withdraw from this study at any point.

NEXT – I consent to take part EXIT - I do not give consent

Appendix H:

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Dr Simon Duff, Deputy Director of Forensic Programmes
Simon.Duff@nottingham.ac.uk
Africa Gil Socorro, MSc Student
Africa.gilsocorro@nottingham.ac.uk

Faculty of Medicine & Health Sciences
School of Medicine
Queen's Medical Centre Campus,
Nottingham University Hospitals
Nottingham, NG7 2UH

Socio-demographic Questionnaire:

Please tick the statement that most accurately represents you for each of the questions below:

Age:

- 18-20
- 21-29
- 30-39
- 40-49
- 50-59
- 60 or older

Ethnicity:

- White or White British
- Gypsy/Traveller/Irish Traveller
- Asian or Asian British: Indian
- Asian or Asian British: Pakistani
- Asian or Asian British: Bangladeshi
- Asian or Asian British: Chinese
- Asian or Asian British: Other Asian
- Asian or Asian British
- Black or Black British
- Mixed or Multiple
- Other Ethnic Group

Highest degree of Education:

- High school degree or equivalent (e.g. GED)
- College, no degree
- Associate degree (e.g. AA, AS)
- Bachelor's degree (e.g. BA, BS)
- Master's degree (e.g. MA, MS, MEd)
- Professional degree (e.g. MD, DDS, DVM)
- Doctorate (e.g. PhD, EdD)

Relationship Status:

- Single (never married)

- In a (non-domestic) relationship
- Married, or in a domestic partnership
- Widowed
- Divorced
- Separated

Household income:

- £0 – £9,999
- £10,000 – £19,999
- £20,000 – £29,999
- £30,000 – £39,999
- £40,000 – £49,999
- £50,000 – £59,999
- £60,000 – £69,999
- £70,000 – £79,999
- £80,000 – £89,999
- £90,000 – £99,999

Mother Employment Status:

- Employed, working 1-39 hours per week (Part-Time)
- Employed, working 40 or more hours per week (Full-Time)
- Not employed, looking for work
- Not employed, NOT looking for work
- Retired
- Disabled, not able to work

Father Employment Status:

- Employed, working 1-39 hours per week (Part-Time)
- Employed, working 40 or more hours per week (Full-Time)
- Not employed, looking for work
- Not employed, NOT looking for work
- Retired
- Disabled, not able to work

Appendix I:

Scene 1:

Collin and Madelyn meet in an elevator ride when they are on their way to their respective works. He is instantly smitten with her. This scene shows their first interaction.

Scene 2:

Dean is a young, hopeless romantic, high school dropout, working for a moving company in Brooklyn. Cindy is an aspiring doctor studying pre-med. Upon meeting they begin a sexual affair where they both develop feelings for each other. This scene depicts one of their sexual encounters.

Scene 3:

Tom and Eddie have been happily married for years until she discovers a he has been hiding a big secret from her and becomes highly disillusioned and angry with her husband. This scene depicts their interaction moments after Eddie finds out what her husband has been hiding.

Scene 4:

Lisbeth is a brilliant but antisocial investigator and hacker. She has been placed under legal guardianship of Holger, but upon suffering a stroke he is replaced Nils. His position of power over her allows him to start extorting her financially and sexually. This scene depicts one of the instances where he abuses his position of power.

Appendix J:

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Dr Simon Duff, Deputy Director of Forensic Programmes
Simon.Duff@nottingham.ac.uk
Africa Gil Socorro, MSc Student
Africa.gilsocorro@nottingham.ac.uk

Faculty of Medicine & Health Sciences
School of Medicine
Queen's Medical Centre Campus,
Nottingham University Hospitals
Nottingham, NG7 2UH

Debrief Form:

The influence of soft-core pornography on women: Examining attitudes and bystander behaviours across different groups, following exposure to sexually explicit material varying in levels of aggression.

Thank you for taking part in this experiment.

This study aimed to explore the link between pornography use, female attitudes towards males, females and sex, and whether these show a relation with their bystander behaviours. In particular, the study looked at whether pornography varying in levels of aggression has an influence on female attitudes and whether these attitudes translate into differing bystander behaviours.

The potentially harmful effects of pornography exposure have been a topic of research since the 1980s, yet little research has concentrated on identifying how pornography viewing may impact female attitudes. It has been established that, for male populations, pornography viewing contributes to the support of anti-women thoughts (Zillmann and Bryan, 1984), and acceptance and perpetration of aggression to women (Malamuth and Check, 1981; Donnerstein and Berkowitz, 1981). In terms of bystander behaviours, research has found that the use of pornography, particularly pornography with instances of aggression, is associated with decreased bystander intervention intentions and efficacy (Brosi et al., 2011; Foubert et al., 2017), yet no study has looked at both attitudes and behaviours in conjunction.

In order to explore the literature gaps mentioned, you have been randomly allocated into one of four groups which depict scenes of soft-core pornography and varying in levels of aggression. Your results will be compared to those of the other groups. The groups were

namely Neutral (no sex or aggression), Erotic (no aggression, just sex), positive outcome (aggression and sex), and negative outcome (more aggression than sex). Disclosure of group membership was omitted so that you did not have any preconceived ideas as to what you were about to witness, and you answered all questionnaires as honestly as possible.

Before and after viewing your allocated scene, you were asked to fill in a questionnaire with various subscales. Although you were given information on the scales, the underlying concepts being measured by each scale were not disclosed to you as to not influence your response.

Having completed the study we can reveal that "The Attitudes towards Woman Scale" addressed concepts such as the rights and roles of women vocational educational areas, and intellectual activities; dating behaviour and etiquette; sexual behaviour; and marital relationships.

The "Ambivalence toward Men Inventory" contained items expressing benevolent or hostility attitudes toward men. Each subscale explored your constructs addressing men's power, heterosexuality and gender differentiation.
The Sexual Attitudes scales was composed of five different sub-scales which measured Adversarial Sexual Beliefs (assess the degree to which an individual has expectations that sexual interactions between males and females are inherently exploitative, and that neither men or women should be trusted); Acceptance of Interpersonal Violence (looks at the extent to which individuals deem force and coercion are acceptable ways to gain compliance and whether they are legitimate behaviours in intimate and sexual encounters); Rape Myth Acceptance (measures an individual's acceptance of false beliefs in relation to rape, its victims and perpetrators); and finally Sexual Conservatism (measures the appropriateness of sexual partners, sexual acts, and contexts where sexual interactions should occur).

The final scale you completed was the Modified Bystander-Attitude Scale- Revised and the Bystander Behaviour Scale- Revised. These scales looked at both bystander attitudes and behaviours, such that information could be gained about how you perceive becoming involved as a bystander, and whether you will actually engage in such bystander behaviours.

Please be aware that all data recorded is anonymous and confidential.

If you wish to withdraw from the experiment, please inform the researcher. No reason needs to be provided.

If you are interested in this topic, please refer to the following journals for further information:

- Fisher, W. A., & Grenier, G. (1994). Violent pornography, antiwoman thoughts, and antiwoman acts: In search of reliable effects. *Journal of Sex research*, *31*(1), 23-38.
- Foubert, J. D., Brosi, M. W., & Bannon, R. S. (2011). Pornography viewing among fraternity men: Effects on bystander intervention, rape myth acceptance and behavioural intent to commit sexual assault. *Sexual Addiction & Compulsivity*, *18*(4), 212-231.

If you have seen something today that has caused you distress or you would wish to speak with someone about this study, please refer to the following:

Project Supervisors:

Dr Simon Duff
Room B05, Yang Fujia Building
Jubilee Campus
Wollaton Road, Nottingham
NG8 1BB
Email: simon.duff@nottinghama.ac.uk

Organisations:

If you are a University of Nottingham student:
University Counselling Service
The Orchards
University Park
Nottingham, NG7 2RD
telephone: +44 (0)115 951 3695
email: counselling.service@nottingham.ac.uk

Notts SVS Services: Nottinghamshire Sexual Violence Support Services

If you, or anyone you know has experienced rape or sexual assault, please contact:

Email: dutysupervisor@nottssvss.org.uk (service enquiries only)

Phone: 0115 941 0440

Equation

If you or anyone you know has experienced domestic abuse, please contact:

Email: info@equation.org.uk

Phone**:** 0115 9623 237

Nottingham Nightline

For General Support:

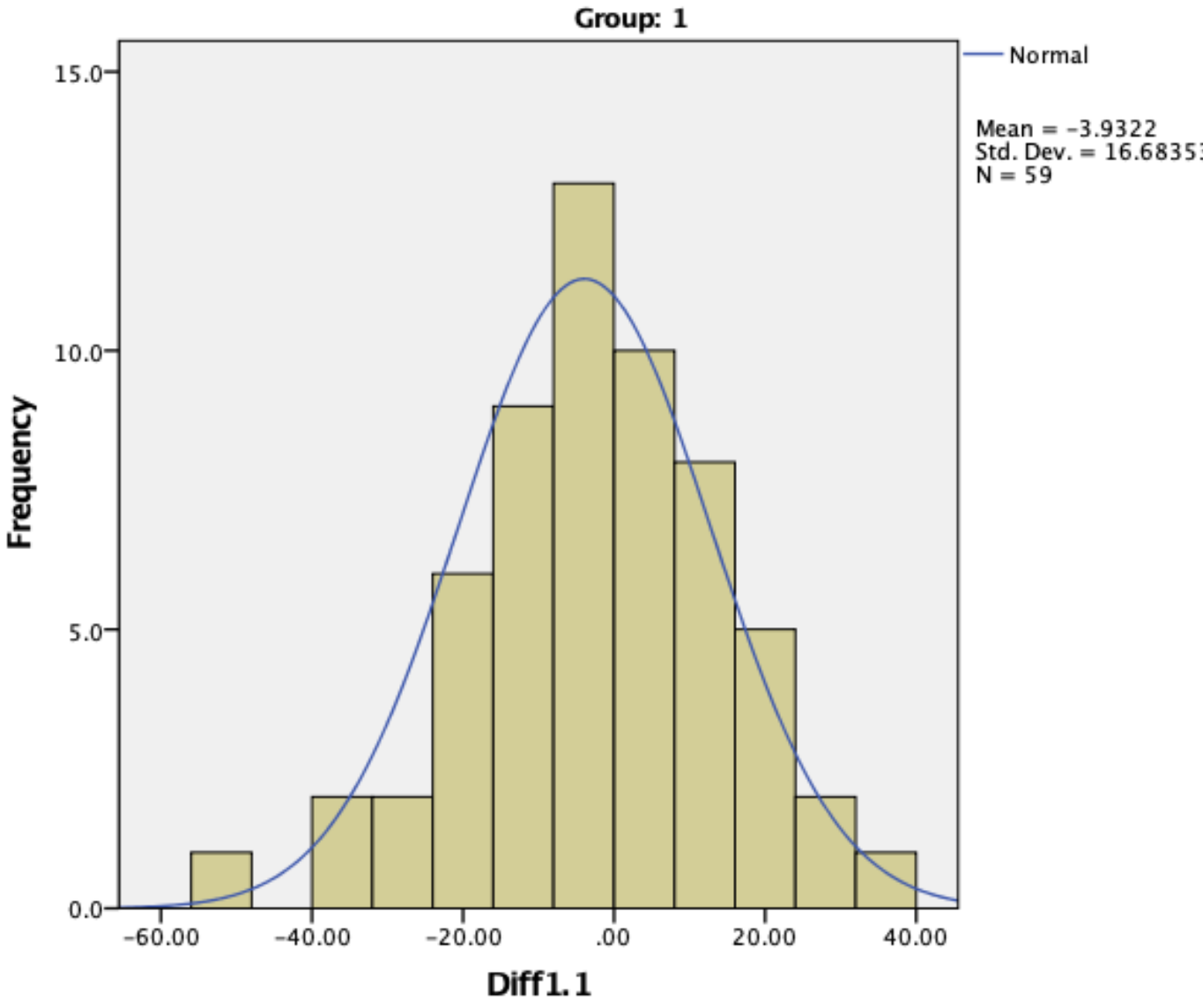
Anonymous Email: nightlineanon@nottingham.ac.uk

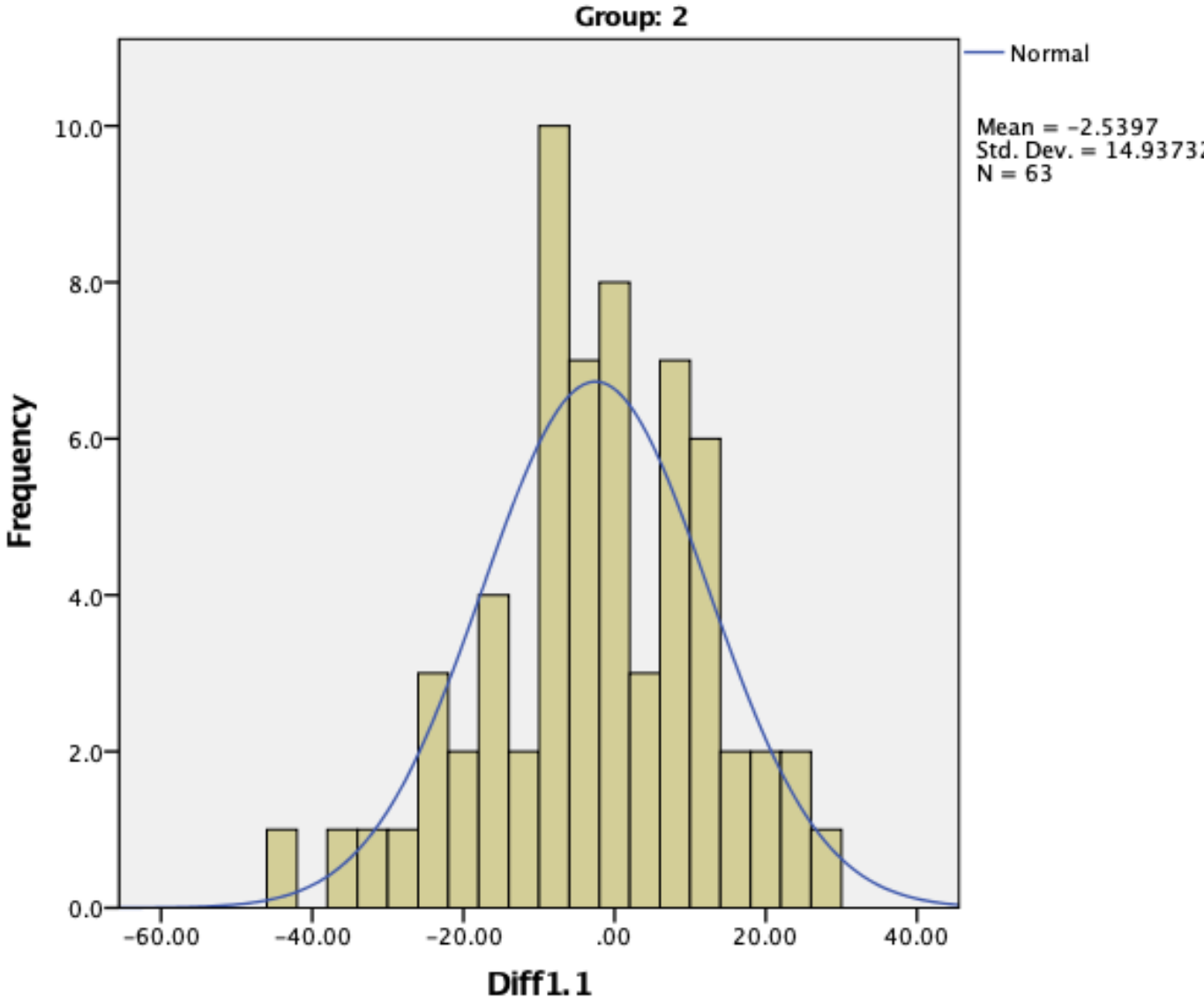
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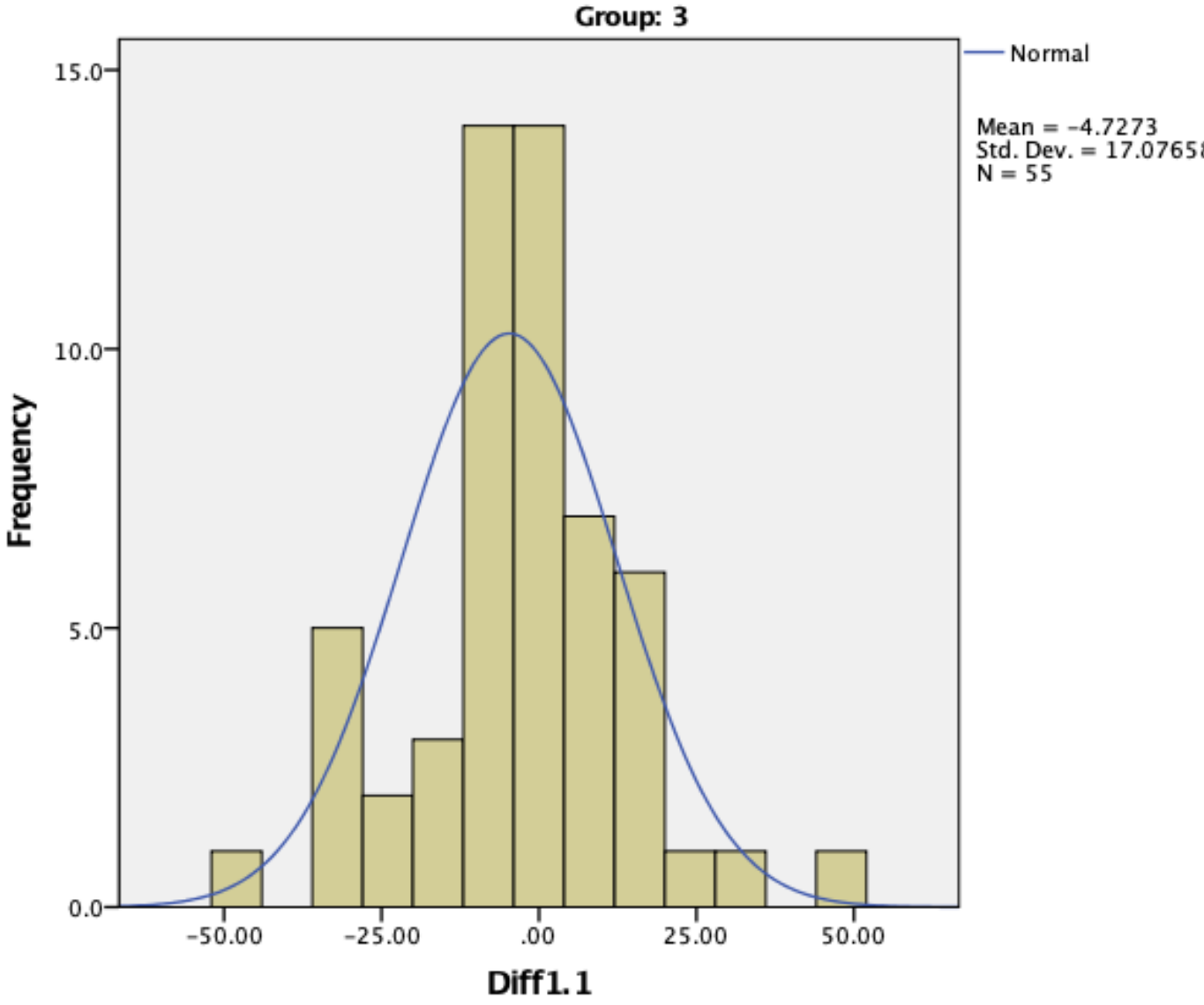
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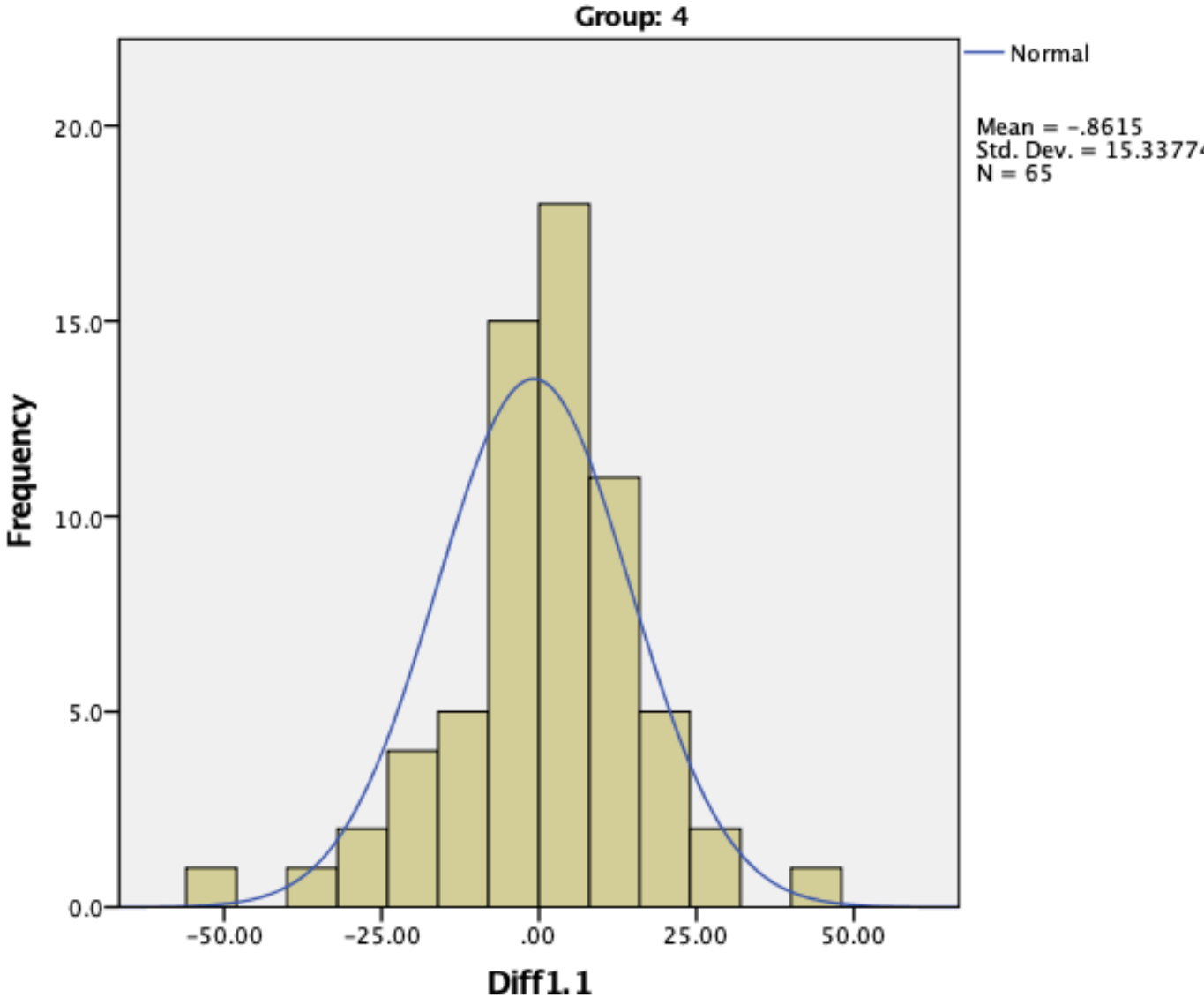
Appendix K:

AMI % Difference HM in Scores Graph (Diff 1.1: HM Scores; Diff 1.2: BM Scores)

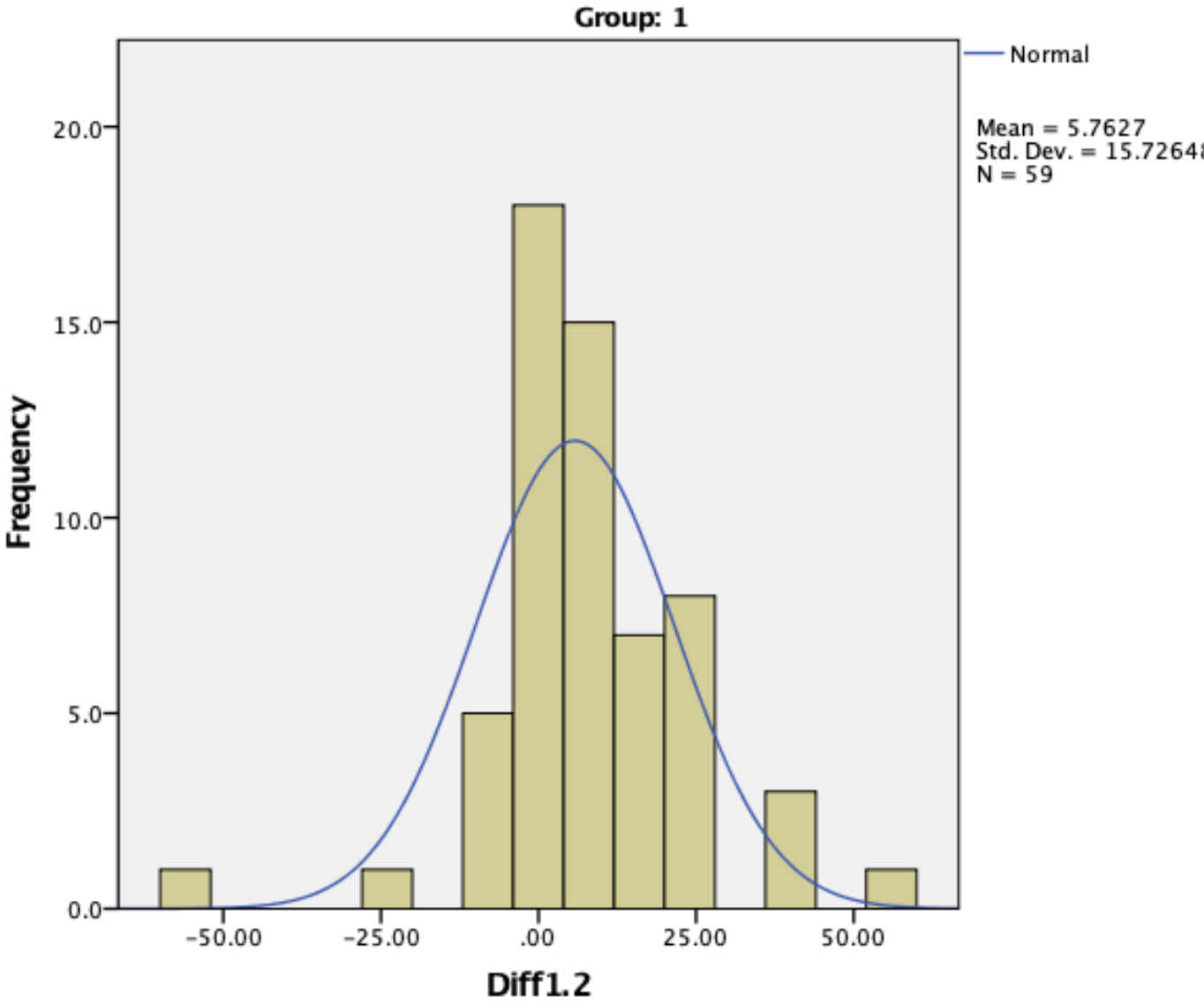


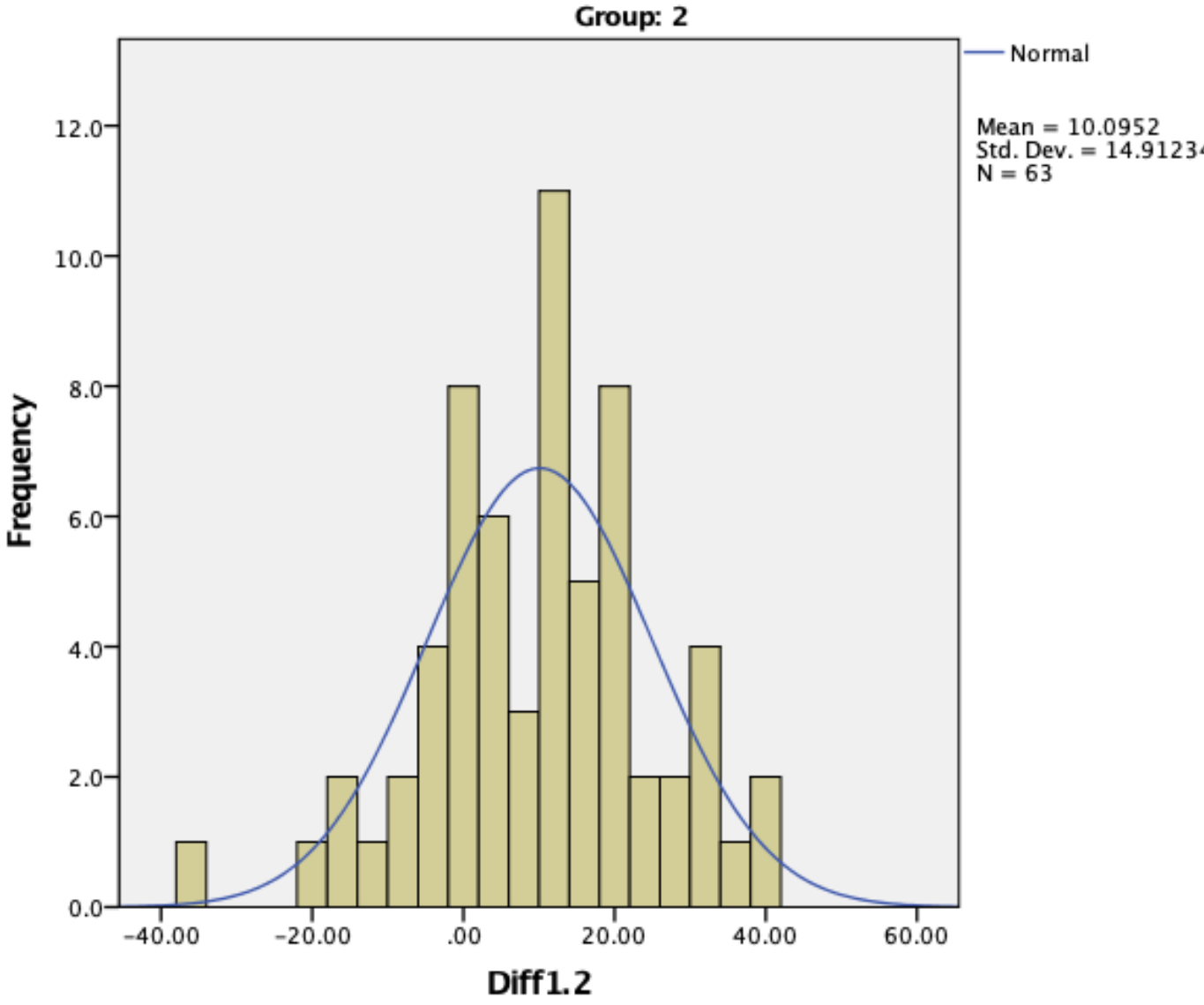

Group: 2
Normal
Mean = -2.5397
Std. Dev. = 14.9373
N = 63
Frequency
10.0
8.0
6.0
4.0
2.0
0.0
-60.00
-40.00
-20.00
.00
20.00
40.00
Diff1.1

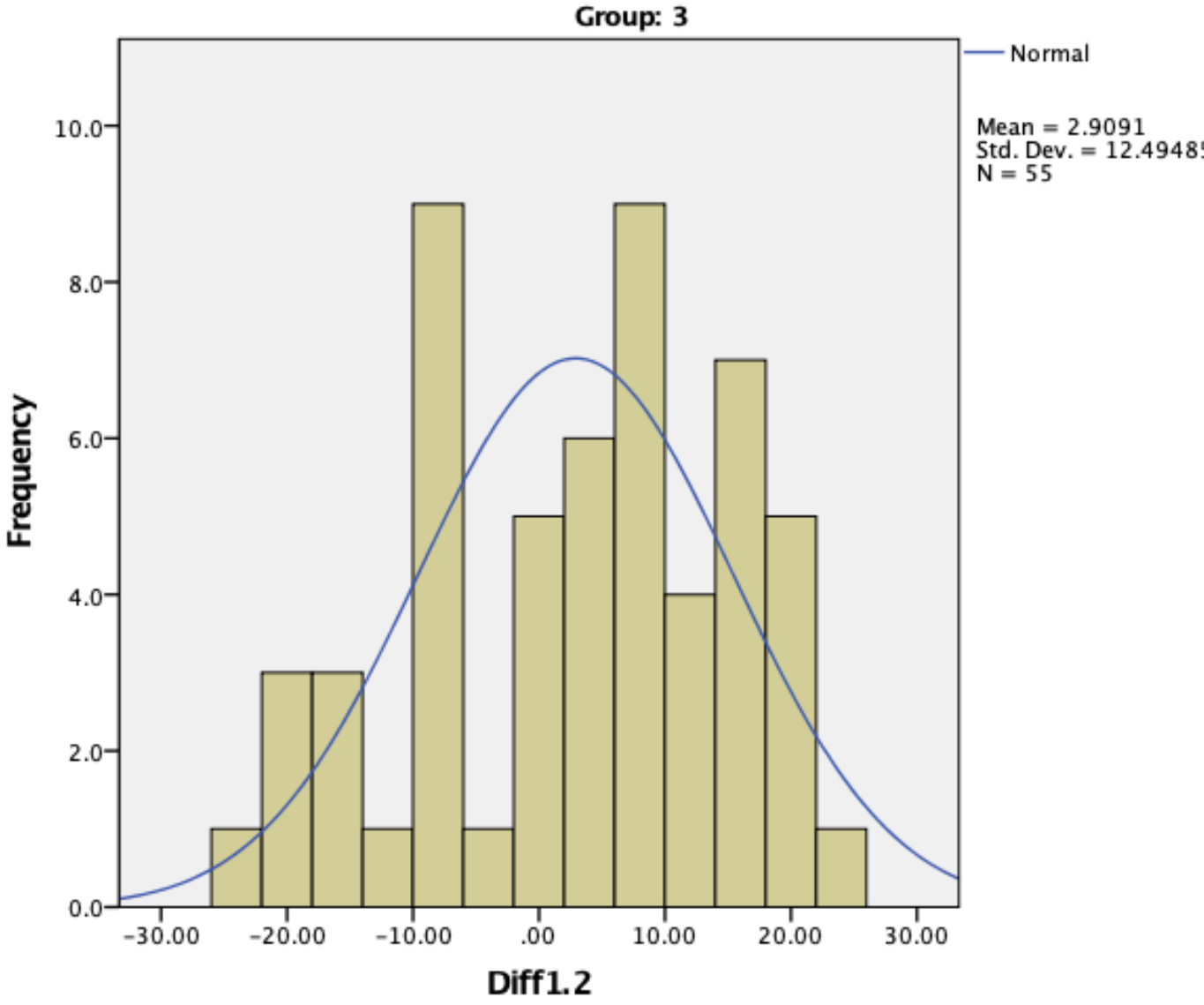

Group: 3
Normal
Mean = -4.7273
Std. Dev. = 17.07658
N = 55
Frequency
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10.0
5.0
0.0
-50.00
-25.00
.00
25.00
50.00
Diff1.1

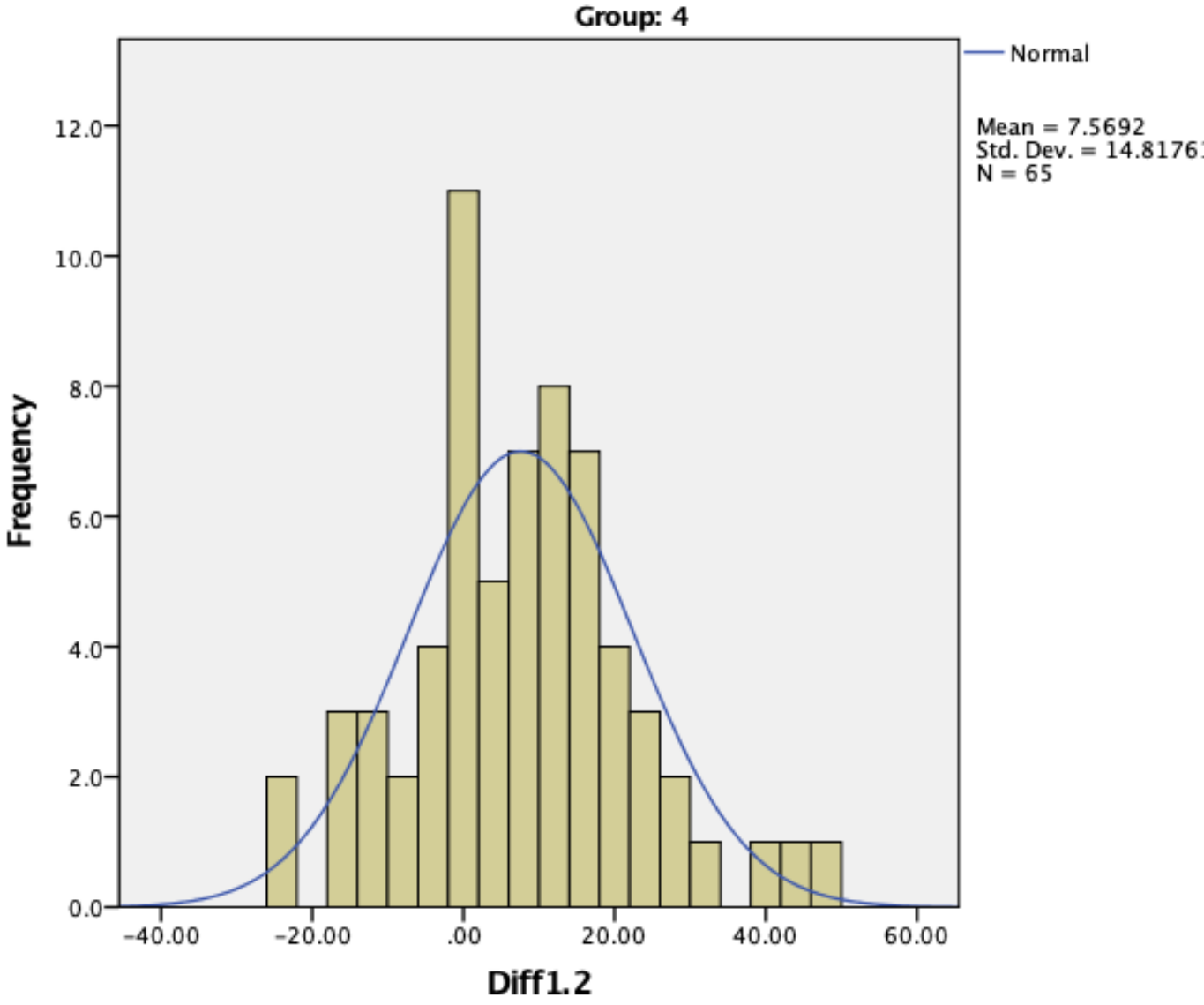

Group: 4
Normal
Mean = -.8615
Std. Dev. = 15.3377
N = 65
Frequency
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15.0
10.0
5.0
0.0
-50.00
-25.00
.00
25.00
50.00
Diff1.1

AMI % Difference BM in Scores Graph

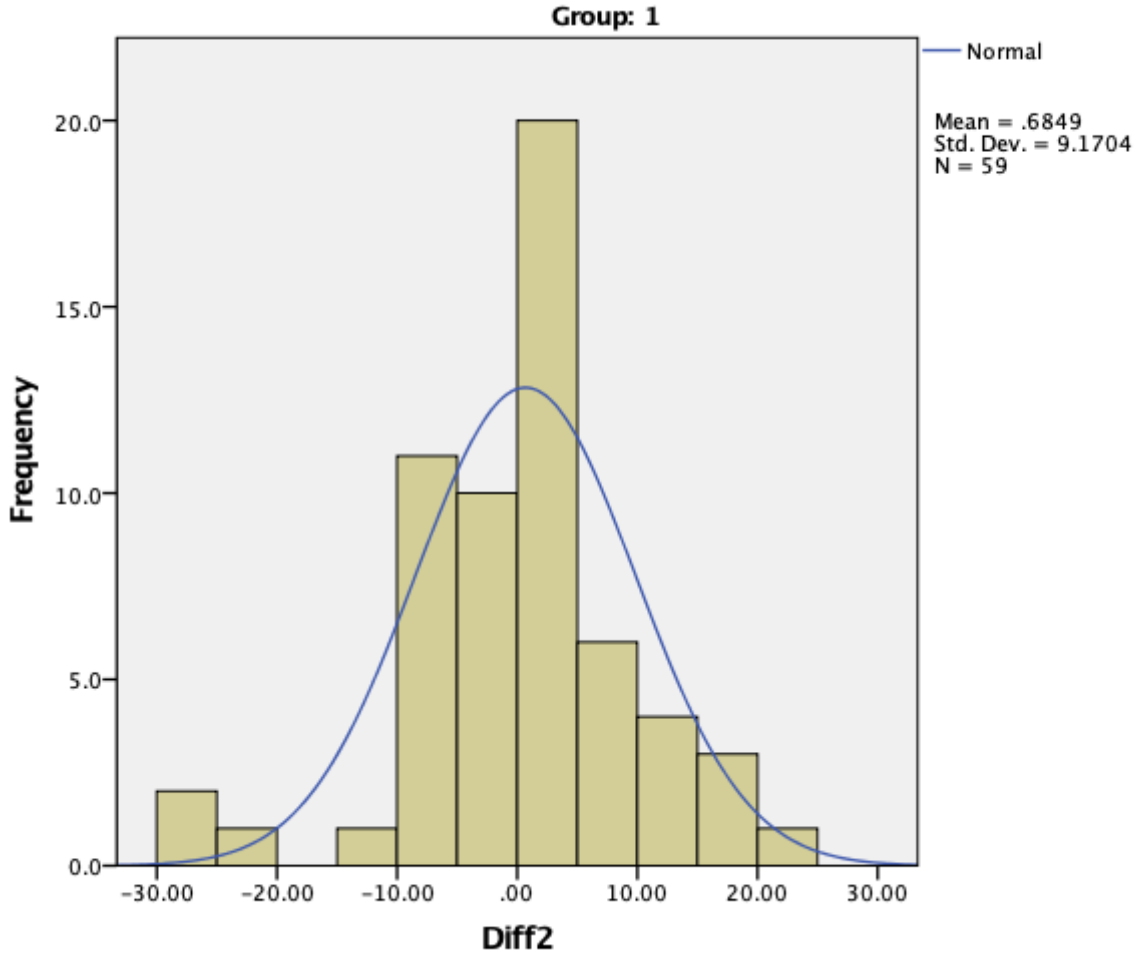


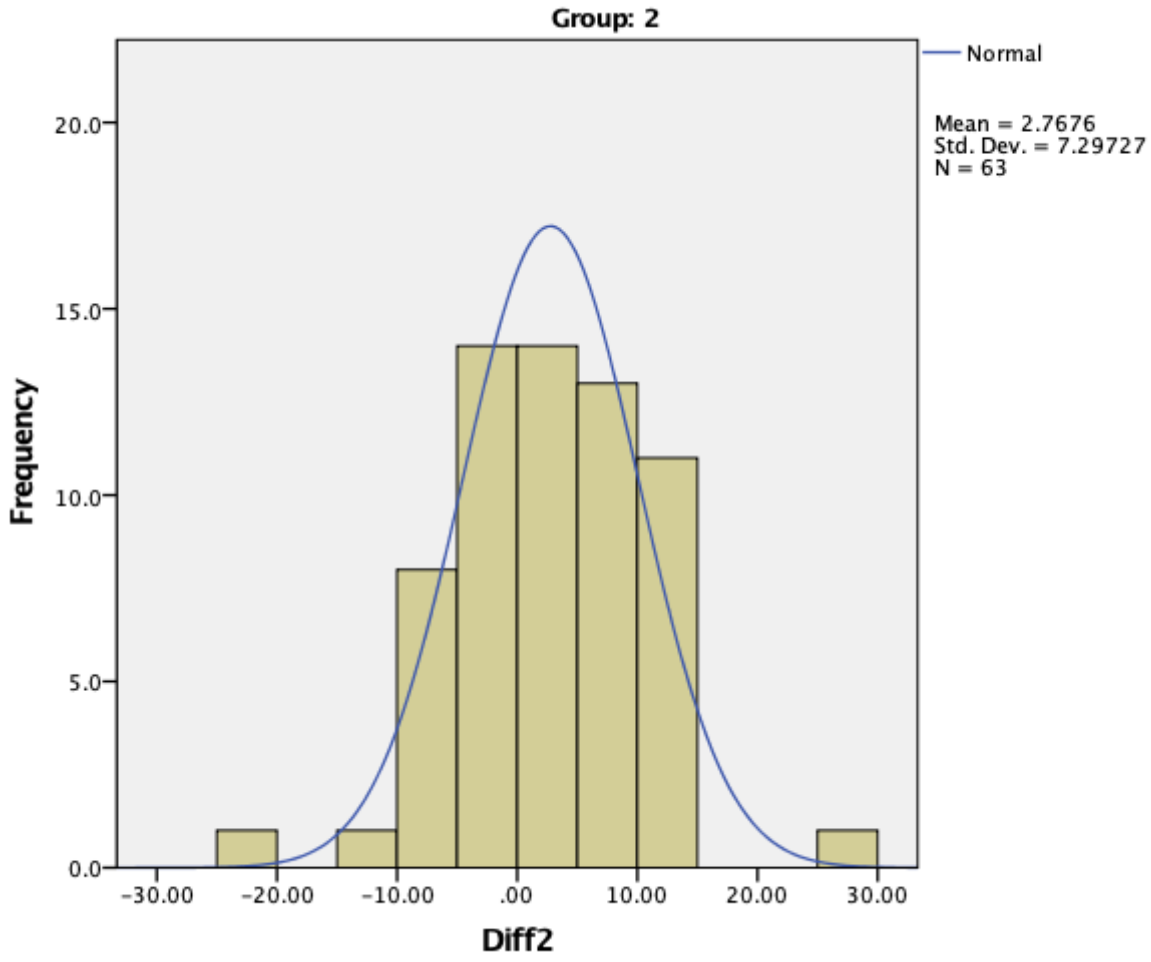

Group: 2
Normal
Mean = 10.0952
Std. Dev. = 14.9123
N = 63
Frequency
12.0
10.0
8.0
6.0
4.0
2.0
0.0
-40.00
-20.00
.00
20.00
40.00
60.00
Diff1.2

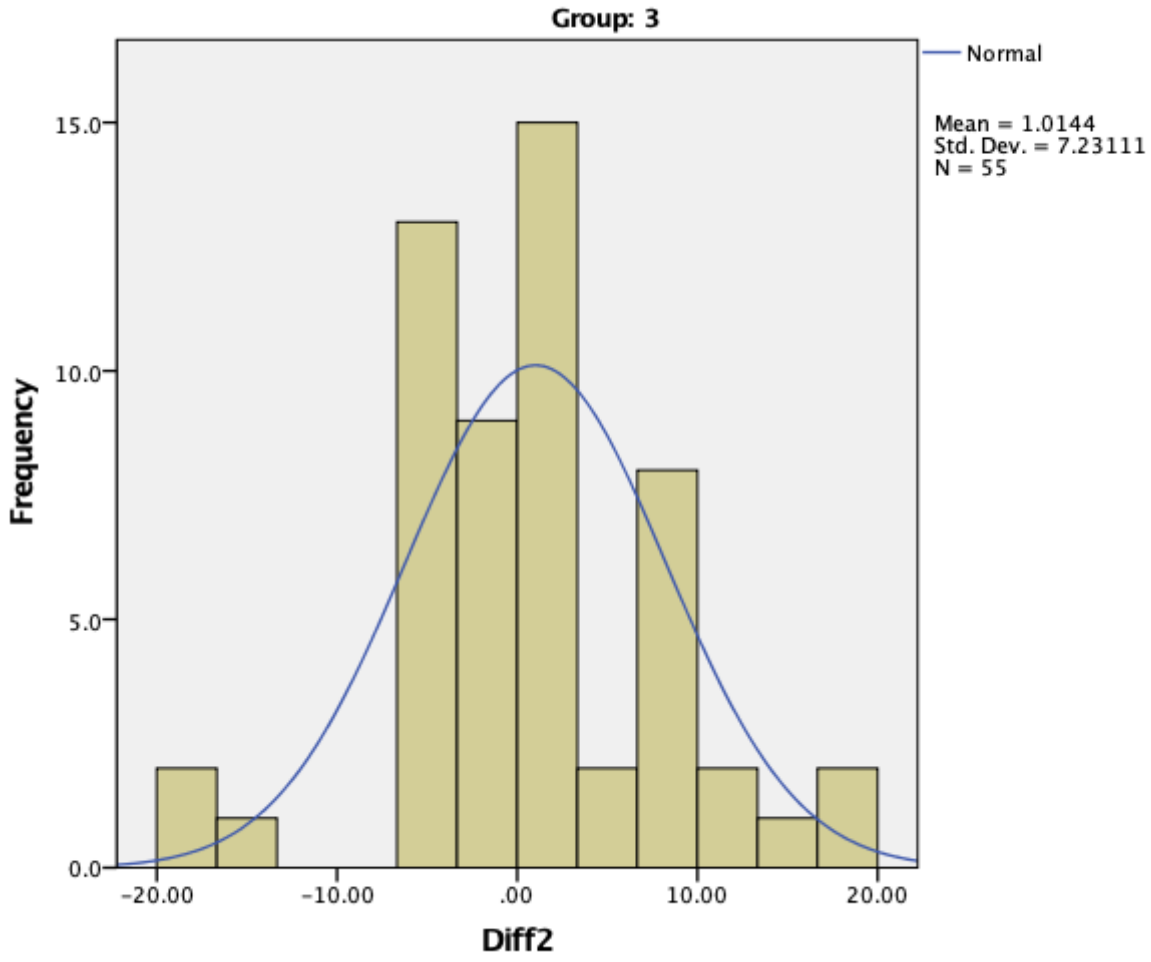

Group: 3
Normal
Mean = 2.9091
Std. Dev. = 12.4948
N = 55
Frequency
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8.0
6.0
4.0
2.0
0.0
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-20.00
-10.00
.00
10.00
20.00
30.00
Diff1.2

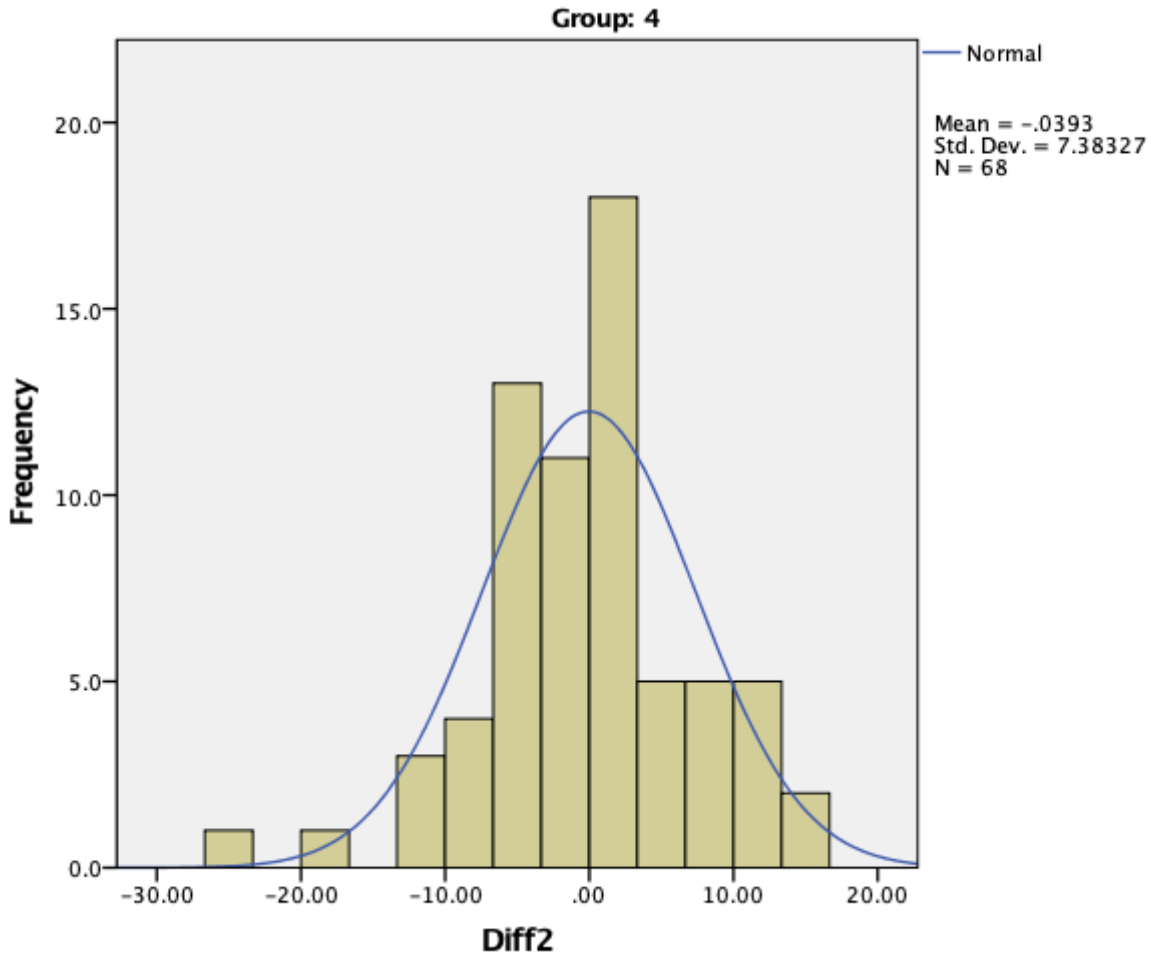

Group: 4
Normal
Mean = 7.5692
Std. Dev. = 14.8176
N = 65
Frequency
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8.0
6.0
4.0
2.0
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-20.00
.00
20.00
40.00
60.00
Diff1.2

AWS % Difference in Scores Graph



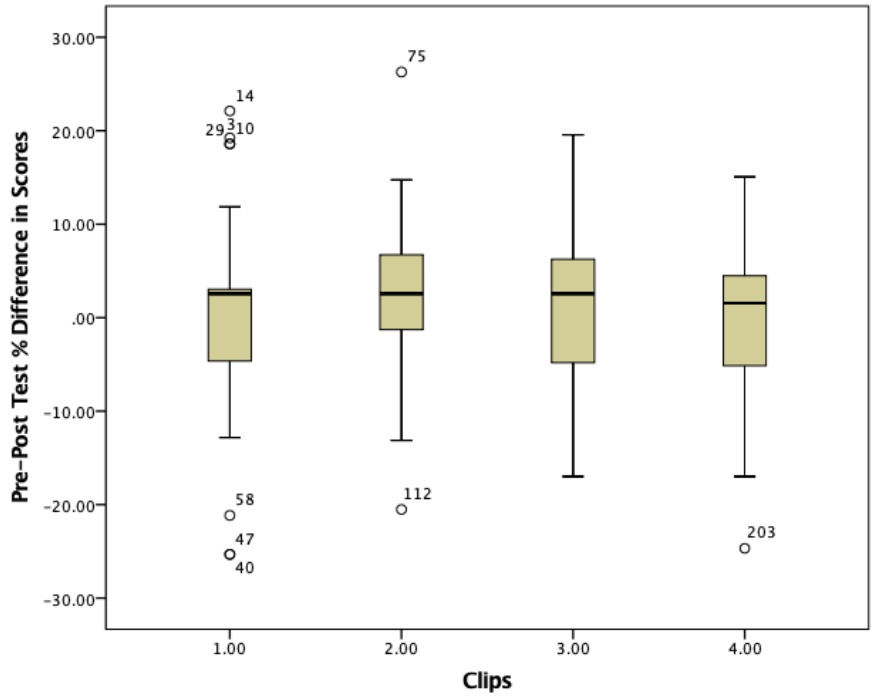

Group: 2
Normal
Mean = 2.7676
Std. Dev. = 7.29727
N = 63
Frequency
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15.0
10.0
5.0
0.0
-30.00
-20.00
-10.00
.00
10.00
20.00
30.00
Diff2


Group: 3
Normal
Mean = 1.0144
Std. Dev. = 7.23111
N = 55
Frequency
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-20.00
-10.00
.00
10.00
20.00
Diff2

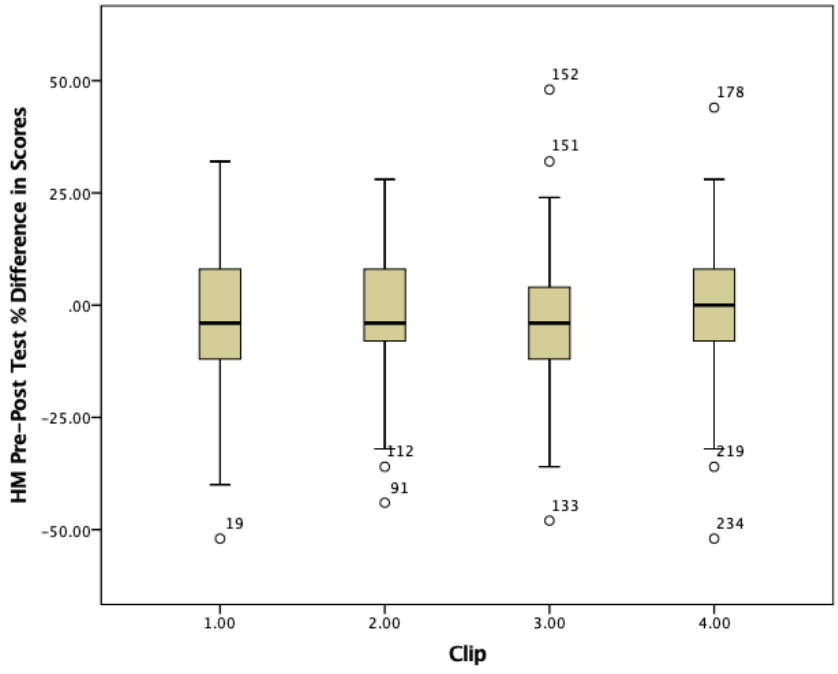


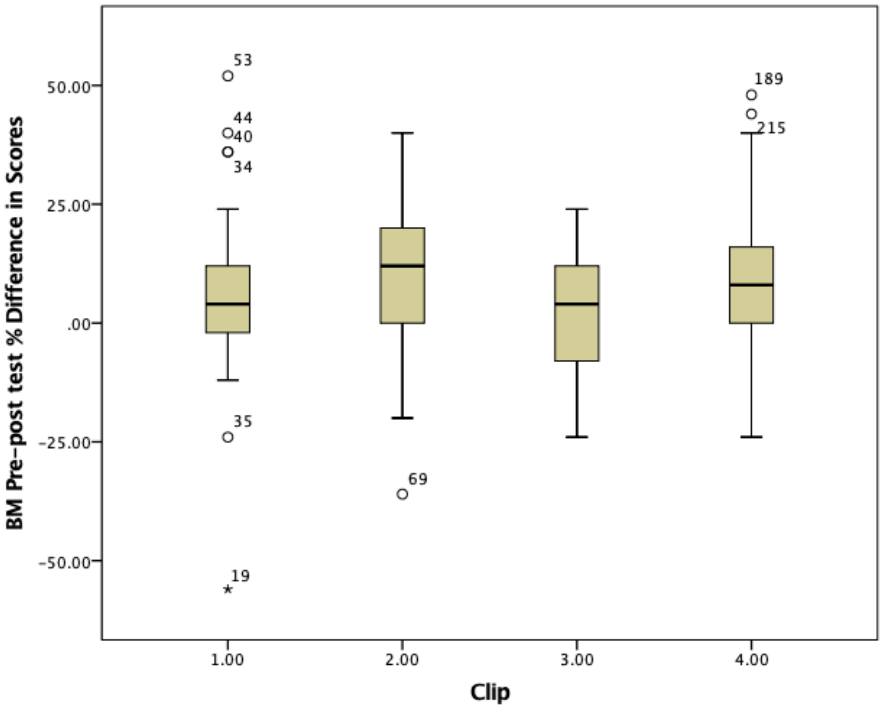
Outliers

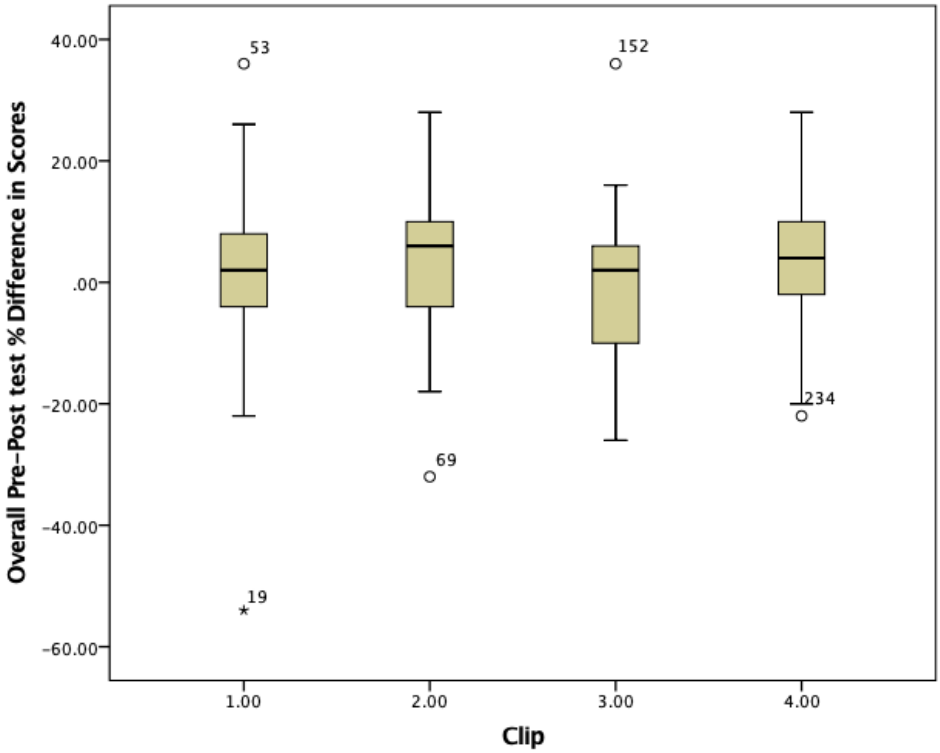
AWS


Pre-Post Test % Difference in Scores
30.00
20.00
10.00
.00
-10.00
-20.00
-30.00
75
14
29
3
10
58
112
47
40
203
1.00
2.00
3.00
4.00
Clips

AMI


HM Pre-Post Test % Difference in Scores
50.00
25.00
.00
-25.00
-50.00
152
178
151
112
219
91
133
19
234
1.00
2.00
3.00
4.00
Clip


BM Pre-post test % Difference in Scores
50.00
25.00
.00
-25.00
-50.00
53
44
40
34
35
19
69
189
215
1.00
2.00
3.00
4.00
Clip


Overall Pre-Post test % Difference in Scores
40.00
20.00
.00
-20.00
-40.00
-60.00
53
19
69
152
234
1.00
2.00
3.00
4.00
Clip