

UNIVERSITY OF BIRMINGHAM

Research at Birmingham

Heterogeneity in multiple perpetrator rapes

Da Silva, Teresa; Woodhams, Jessica; Harkins, Leigh

DOI:

[10.1177/1079063213497805](https://doi.org/10.1177/1079063213497805)

License:

Other (please specify with Rights Statement)

Document Version

Peer reviewed version

Citation for published version (Harvard):

Da Silva, T, Woodhams, J & Harkins, L 2014, 'Heterogeneity in multiple perpetrator rapes: a national comparison of lone, duo and 3+ perpetrator rapes', *Sexual Abuse: A Journal of Research and Treatment*, vol. 26, no. 6, pp. 503-522. <https://doi.org/10.1177/1079063213497805>

[Link to publication on Research at Birmingham portal](#)

Publisher Rights Statement:

The final publication is available at Springer via <http://dx.doi.org/10.1177/1079063213497805>

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

**Heterogeneity within Multiple Perpetrator Rapes: A National Comparison of
Lone, Duo and 3+ Perpetrator Rapes.**

Teresa da Silva, Jessica Woodhams and Leigh Harkins
University of Birmingham UK

This is an Accepted Manuscript of an article published by Sage in *Sexual Abuse: A
Journal of Research and Treatment* on 3rd September 2013, available online at:
<http://sax.sagepub.com/content/early/2013/08/30/1079063213497805.abstract>.

Abstract

The effect of number of perpetrators involved in multiple perpetrator rapes on offense characteristics is under-researched despite beliefs that duos/dyads will differ in their interactions and dynamics to groups of 3+ members. We analyzed a national sample of 336 allegations of completed and attempted rape of female victims from the United Kingdom. Rapes committed by multiple (duos and groups of 3+ perpetrators) and lone offenders were compared on offense characteristics (incorporating the approach, maintenance and closure phases of each rape) and victim and offender socio-demographic characteristics. Significant differences between rapes committed by lone, duo and 3+ group offenders were found for the age and ethnicity of the offenders; the type of approach used; the locations of the initial contact, assault and release of the victims; the use of a vehicle; the precautions utilized; the verbal themes present; and the sex acts performed. These results have implications for educational prevention programs and interventions with offenders.

Keywords

Multiple perpetrator rape, Group rape, Gang rape, Duos, Dyads

Heterogeneity within Multiple Perpetrator Rapes: A National Comparison of Lone, Duo and 3+ Perpetrator Rapes

Multiple perpetrator rape (MPR) refers to any sexual assault which involves two or more perpetrators (Horvath & Kelly, 2009). Horvath and Kelly have argued for the adoption of this term in preference to the existing terms of “group rape” or “gang rape” for a number of reasons, including a lack of consensus about what constitutes a gang, because most MPRs are not committed by gangs, and due to the substantial debate within social psychology as to what constitutes a group. For these reasons the term “multiple perpetrator rape” is used throughout this paper¹.

Research on sexual offending in general has demonstrated that sex offenders are a heterogeneous group. Various subgroups have been identified which include juvenile offenders, female offenders, offenders with learning difficulties and offenders with mental health problems (Beech, Craig & Brown, 2009). Furthermore, sex offenders differ according to offense type, ranging from child abusers, rapists, sexual murderers and internet offenders to exhibitionists (Lockmuller, Beech & Fisher, 2008). Additionally, these subgroups can be further divided. For instance, in research from the Netherlands, juvenile sex offenders are classified as specialists (who commit only sex crimes) or generalists (who commit other crimes besides sex crimes); hands off-offenders or hands-on offenders; and child molesters or peer offenders (Hendriks & Bijleveld, 2004). Furthermore, a distinction is made between group offences and solo offences (Bijleveld & Hendriks, 2003; Hööing, Jonker, & van Berlo, 2007; Hööing, Jonker & van Berlo, 2010). Similarly, in Switzerland and Sweden differences between diverse subgroups of juvenile sex offenders were examined, namely, child vs. peer

¹ The term “rape” is used throughout the paper for simplicity, however it should be noted that some studies have included a broader range of sexual offenses in their samples.

offenders and group vs. single offenders (Aebi, Vogt, Plattner, Steinhausen, Bessler, & Cornelia, 2012; Kjellgren, Wassberg, Carlberg, Langstrom, & Svedin, 2006).

The necessity of classification of sex offenders is highlighted by Hööing, Jonker and van Berlo (2010). They state that the specification of offender characteristics, their needs and risks allow the judicial system and practitioners to make well-grounded decisions regarding sentencing and treatment needs. Likewise, it is pertinent for the development of adequate evidence-based prevention programs. This classification also interests the theory orientated researchers, as literature in this area shows that there are diverse pathways that lead to sexual offending. For all these reasons it is relevant and necessary to analyse MPR and the specific characteristics of those who commit such offenses.

MPR is a significant social problem in many countries. In the United Kingdom, between 11% and 19% of sexual assaults are perpetrated by multiple assailants (Curran & Millie, 2003; Kelly, Lovett & Regan, 2005; Wright & West, 1981). In the United States, the rate of MPR is estimated to lie between 10% and 33% (Franklin, 2004). Similar figures of 8.9% (Jewkes, Sikweyiya, Morrell & Dunkle, 2009) to 27% (Swart, Gilchrist, Butchart, Seedat & Martin, 2000) are reported for South Africa. The National Crime and Safety Survey (2002) in Australia found that 23% of adult female and male victims of sexual assault were assaulted by two or more offenders (Australian Bureau of Statistics, 2004).

Despite MPR being prevalent internationally, it is an under-researched form of sexual assault (Harkins & Dixon, 2010). The limited research that has been conducted has investigated the nature of MPR and the characteristics of victims and offenders to an extent. However, it has failed to consider differences *within* MPRs. For example, the theoretical literature from social psychology suggests that there are differences in the

way duos and larger groups interact. This is an important limitation in light of repeated findings that whilst group size can range from 2-14, duos are the most common “group” (Hauffe & Porter, 2009; Horvath & Kelly, 2009; Porter & Alison, 2004, 2006; Woodhams, 2008). The potential effect of differences in group size has yet to be considered by most researchers of MPR with the exception of one published study by Amir (1971) which is now more than 40 years old. This article reports the first current study of its kind investigating the offense, offender and victim characteristics of rapes committed by lone perpetrators, duos and groups of 3+ offenders.

Sexual offenses committed by lone versus multiple perpetrators

Despite there being only one existing study comparing rapes by duos and larger groups of offenders (i.e., Amir, 1971), there are some studies that have contrasted rapes committed by lone and multiple perpetrators. Before summarizing these findings, it should be noted that these studies are small in number and some are dated (e.g., Amir, 1971; Gidycz & Koss, 1990; Wright & West, 1981). The samples utilized in these studies are also diverse. For example, studies have sampled college students (Gidycz & Koss, 1990), community dwelling females (Ullman, 2007), adjudicated sex offenders (Bijleveld & Hendriks, 2003), law reports (Hauffe & Porter, 2009), and, most commonly, reports of rape made to the police (Amir, 1971; Woodhams, 2004; Woodhams, Gillett & Grant, 2007; Wright & West, 1981).

Offender and victim characteristics

For both Lone Perpetrator Rapes (LPRs) and MPRs, research has found the majority of offenders to be male and almost all victims to be female, however, the perpetrators and victims of MPR are usually reported to be significantly younger (Amir,

1971; Bijleveld & Hendriks, 2003; Hauffe & Porter, 2009; Wright & West, 1981), and are typically aged in their teens and early twenties (Bijleveld, Weerman, Looije & Hendriks, 2007; Horvath & Kelly, 2009; Porter & Alison, 2004, 2006; Woodhams, 2008). Some studies report MPR offenders to more often be of an ethnic minority (Bijleveld & Hendriks, 2003; Bijleveld et al., 2007; De Wree, 2004; Horvath & Kelly, 2009; Woodhams, 2008), however, this is not found consistently (Gidycz & Koss, 1990; Ullman, 2007). As regards the relationship between perpetrators and victims, some studies report that MPR perpetrators are most often strangers to their victim (Porter & Alison, 2006; Horvath & Kelly, 2009, Ullman, 2007; Woodhams, 2008), however, other studies report that the majority of MPR victims knew their attackers (Bijleveld, et al, 2007; De Wree, 2004; Gidycz & Koss, 1990; Wright & West, 1981).

Most studies have been unable to examine the criminal histories of the offenders due to the nature of the data sources used. However, Bijleveld and Hendriks (2003) established that lone perpetrators had committed more sexual offenses than MPR offenders, whereas there was no difference in their histories in terms of the quantity or type of previous non-sexual offenses.

Offense characteristics

The characteristics of offenses committed by lone versus multiple perpetrators have also been compared. Despite some studies suggesting that MPRs more often involve substance use than LPRs (Hauffe & Porter, 2009; Ullman, 2007), Gidycz and Koss (1990) found no such difference. In relation to the approach and assault location, some studies suggest that victims of MPR are more likely to be approached by the offenders outdoors or at entertainment venues, following which they are taken to an

indoors location where they are assaulted (Porter & Alison, 2006; Woodhams, 2008; Wright & West, 1981).

The use of physical and sexual violence by the perpetrators has received particular research attention. Multiple acts of physical violence and incidences of completed vaginal rape are more often reported for MPRs (Gidycz & Koss, 1990; Hauffe & Porter, 2009; Porter & Alison, 2006; Woodhams, 2004, 2008; Woodhams, et al., 2007; Wright & West, 1981). Although, Bijleveld, et al. (2007) and De Wree (2004) reported that multiple sexual acts (including completed rape) were more common in MPRs, they found physical violence to be rare. A number of studies have also investigated victim resistance. Most have found victims of LPR to offer greater resistance than victims of MPR (Amir, 1971; Hauffe & Porter, 2009; Woodhams, 2008; Wright & West, 1981).

As concluded by Harkins and Dixon (2010), there are inconsistencies and even contradictions in the body of research that has amassed comparing LPRs and MPRs. This is unsurprising considering the different study designs utilized. As these studies do not all examine the same variables, there is also more known about some offender, victim and offense characteristics (e.g., gender, age, ethnicity, and physical and sexual violence) than others. Furthermore, these characteristics may differ *within* MPRs. As noted above, a substantial proportion of MPRs are committed by duos rather than groups of 3+ perpetrators. Several researchers have emphasized the importance of distinguishing between rapes committed by duos and those involving three or more perpetrators (Groth & Birnbaum, 1979; Horvath & Kelly, 2009; O'Sullivan, 1991). Differences might be expected since victims assaulted by smaller groups could be argued to have greater opportunity to resist more vigorously, or differing group dynamics may be observed.

Duos and groups

With regards to the latter point, it is debated within the social science literature as to whether “dyads” or “duos” should be included in group research and theory. The sociologist, George Simmel, was the first to argue that there were fundamental differences between dyads and triads due to the quality, dynamics and stability of the relationships in each (Krackhardt, 1999). For example, there is no majority in a dyad and the individuality of both elements is maintained: “Neither of the two members can hide what he has done behind the group, nor hold the group responsible for what he has failed to do” (Wolff, 1950, p.134). Simmel also argues that the addition of a third element has a profound impact on a dyad, however, the addition of a fourth or more elements to a triad does not significantly alter the group any further.

More recently, Moreland (2010) argued that dyads form and dissolve more quickly than groups, within dyads people feel stronger and experience different emotions, and that some phenomena, such as relational demography, socialization, coalition formation and majority/minority influence, that are typical of groups, cannot occur in dyads.

Such propositions mean that a number of theories of group behavior thought to be applicable to MPR (Harkins & Dixon, 2010), such as social comparison theory, social dominance theory, deindividuation, conformity and group think, may not be as applicable to duos. For example, dyads are thought to be characterized by individualization which would be incompatible with deindividuation.

However, not all social psychologists believe that dyads and groups should be considered as different (Williams, 2010). Even in the literature related to MPR there is not a consensus on this issue. While most authors consider duos to be groups and include them in their group samples (e.g., Hauffe & Porter, 2009; Porter & Alison,

2004, 2006; Ullman, 2007) others do not (e.g., Amir, 1971; Metropolitan Police Authority, 2009; O'Sullivan, 1991).

As noted above, Amir (1971) conducted the only study that explicitly compared rapes by duos and those by 3+ perpetrator groups. He found duos to have some characteristics similar to those of lone offenders, while other factors they shared with groups of three or more perpetrators (e.g., the use of alcohol by both the offenders and the victims, the initial interaction and meeting place between offenders and victims, the planning of the rape and the use of multiple sexual acts). These factors were not shared with LPRs. There were other characteristics where rapes by duos seemed to be in the middle of a continuum with LPRs at one end and rapes by 3+ groups at the other. For example, in the scene of the rape the rapes by duos were almost evenly distributed between outdoors and indoors, whereas the LPRs occurred more indoors and the 3+ group rapes occurred more outdoors. Additionally, in the use of physical force the rapes by duos were spread almost equally between the use of force and the absence of force, whereas physical force was significantly associated with 3+ groups and not lone perpetrators.

Rationale

MPR is an under-researched form of sexual assault, with the work conducted thus far comparing LPRs and MPRs being characterized by inconsistencies and contradictions. This highlights the need for more research to be carried out where similar samples and variables are used in order to reach more concrete conclusions. This is important for the field of sexual aggression as differences in the offence and offender characteristics between lone and multiple perpetrators would indicate that it is likely that there are also differences in risk levels and treatment needs. As noted above, the

differences in the studies conducted so far might, in part, be explained by variations in study methodology. However, these differences could also result from studies pooling both duos and groups within their MPR samples. Whether duos should be considered as groups is debatable. The study reported here therefore represents a first step in responding to the calls of other MPR researchers (Groth & Birnbaum, 1979; Harkins & Dixon, 2010; Horvath & Kelly, 2009) to investigate whether there are indeed differences between duos and groups that commit MPR. The focus of our study was offender, victim and offense characteristics since they have not previously been compared in terms of duo and groups of 3+ perpetrators, and because of the inconsistencies between the existing studies comparing LPRs and MPRs on these variables. Since there are also few studies that directly compare LPRs to MPRs, we also sampled LPRs for comparison. We addressed the following research question: Is it possible to differentiate between lone, duo and 3+ group offending for female rape based on offense and victim and offender socio-demographic characteristics? Considering results from previous studies, we hypothesize that it will be possible to differentiate between LPRs and MPRs based on the above characteristics. We believe these differences could be due to group processes and dynamics present in the MPRs. Simultaneously, we also expect to find differences between the duo and 3+ group rapes as research in social psychology suggests that there are differences between duos and 3+ groups (e.g., Moreland, 2010). Equally, the only, now dated, MPR study that compared these two groups (Amir, 1971) found differences between them.

Method

Sample

The data were obtained from the Serious Crime Analysis Section (SCAS) of the Serious Organised Crime Agency. SCAS is a UK agency which receives case files of crimes related to stranger rape, serious sexual assaults and motiveless or sexually motivated murder from police forces throughout the UK. The information received regarding the rape and sexual assault crimes represents the victim's account of each offense and this is coded by SCAS employees according to standardized and established protocols onto a single database known as ViCLAS (Violent Crime Linkage Analysis System).

A national sample of 336 allegations of completed and attempted rape made to the police by 336 female victims who were alone at the time of the assault was provided for analysis. The majority of the offenses were rapes (88% of the lone, 99% of the duo, 98% of the 3+ group offenses) with the remainder being attempted rapes. This overall sample was divided equally into three sets of 112 rapes/attempted rapes committed by lone, duos, and 3+ perpetrators. Since, there were only 112 cases of 3+ group offenders, the matching number of lone and duo cases were selected at random to make the samples a comparable size. These offenses were allegedly committed by 702 male offenders. This sample of male offenders was composed of 112 lone, 210 duo and 380 3+ group offenders. The number of the offender descriptions did not match the number of offenders described by the victims as in some cases the victims could not recall information regarding all the offenders. In the case of the duo offenses descriptions of 14 offenders were missing, while descriptions of three of the offenders were missing from the 3+ perpetrator offenses. In total information regarding the description of 17 offenders was missing.

Victims

All victims were lone females. Their ages ranged from 3 to 65 years (Median = 20). The majority (68.5%) were aged 18 years and older, while a minority (4.5%) was younger than 13 years. Most victims (75.9%) were of White European ethnicity followed by African Caribbean (6.3%), Asian (3.6%), mixed race (1.5%), Dark European (.3%), and Arabic (.3%).

Offenders

All offenders were male and most were strangers² to the victims (99% of the lone, 73% of the duo and 81% of the 3+ group perpetrators). The composition of the 3+ groups ranged from groups of three to six offenders. The most common group size was three offenders (78 offenses). While the majority of the lone (99.1%) and duo (83.9%) offenders had been convicted of the rape, this was only the case for 42.5% of the 3+ group perpetrators.

The offenders ages, estimated by the victims, were between 13 and 65 years (Median = 24.50). For 22.2% of the cases the victims did not know the ethnicity of the offenders. Of the remainder, 31.1% were White European, 21.1% were African Caribbean, 17.1% Asian, 3.8% mixed race, 2.6% Dark European, 1.6% Arabic, and 0.3% Oriental.

Procedure

The data were provided by SCAS to the researchers in an anonymized state in a Microsoft Excel spreadsheet which was password protected. Information regarding the following variables was supplied: age, gender and ethnicity of offenders and victims; group size; relationship between offender(s) and victim; the victim's and offenders' use

² The preponderance of stranger sex offenders in the sample is an artifact of the criteria according to which SCAS receives case files from the UK police, namely stranger rapes, serious sexual assaults and motiveless or sexually motivated murders

of alcohol or drugs, and the offense behaviors of the offenders covering the three phases of a rape: the approach phase (how the offender(s) approach the victim and gain control), the maintenance phase (how the offender(s) maintained control of the victim); and the closure phase (what happened when the rape was completed) (Dale, Davies & Wei, 1997). The offense variables included: the time the offense started (when a victim and offender/s first came into contact) and ended; if a vehicle was involved; the scene of the initial contact, assault and victim release (indoors or outdoors); the approach style; the level of force used by the offenders and injury inflicted on the victims; the sex acts performed; the precautions used; the verbal themes present; the type of violence used; the property stolen, and weapon use. In general, the data were relatively complete except for the following variables which had a high percentage of missing data and for that reason were excluded from the analysis: victim and offender drug and alcohol use (missing for 31% of victims and 67.4% of offenders); the degree of influence of these substances (31% of victims and 67.4% of offenders); when violence was used (53.3% of the cases) and of what type (53.6% of the cases). The reason for this volume of missing data is because when there is no evidence or suggestion in the case file as to whether a variable was present or absent from an offence it is coded by SCAS as missing. These variables could be missing for a number of cases for several reasons, such as the victim being unable to determine if the offenders were under the influence of drugs or alcohol, or being reluctant to disclose if they themselves had used substances.

The data were provided in a pre-existing coded state direct from the ViCLAS database therefore inter-rater reliability assessment on the part of the researchers was not possible. However, the data are entered onto the ViCLAS database by trained SCAS employees and each entry is subject to quality assurance procedures to ensure the

accuracy of the information on the system. Significant efforts are made within SCAS to ensure standardized input and quality assurance of data. All data is input within the unit following very strict and specific guidance. All inputs are peer reviewed prior to analysis taking place, and consistency exercises are undertaken to ensure consistent coding of information.

Results

Offender and victim characteristics of the whole sample

Comparisons were initially made between the lone, duo and 3+ groups in terms of offender, victim and offense characteristics³. Where variable distributions were significantly skewed (as established by Kolmogorov-Smirnov tests), Mann Whitney U tests were used. Chi-square tests were utilized with the categorical data and since various comparisons were carried out a Bonferroni correction was applied (adjusted alpha value = 0.017).

As can be seen in Table 1, the lone offenders were significantly older than the duos, who were in turn significantly older than the 3+ group offenders. The duration of each rape (the time the victim and offender/s first came into contact until the end of the offense) was calculated in hours. The lone offenses were significantly shorter in duration than the duo and the 3+ group offenses and the duo offenses were significantly shorter in duration than the 3+ group offenses.

Table 2 shows that compared to the duo and 3+ group offenders, there were significantly more lone offenders of White European ethnicity and significantly more duo and 3+ group offenders of African Caribbean ethnicity than lone offenders.

³ Only the significant associations are reported in the article for brevity, however interested parties should contact the authors if they would like details of all findings.

Regarding the offense variables, a vehicle was used significantly more often in the duo and 3+ group offenses. A “con” approach has previously been defined as an approach where the offender(s) speak to the victim before the assault and use deceit, for example, asking for assistance, trying to befriend her or pretending to be someone else (Dale, et al., 1997). This approach was used significantly more often by duo and 3+ group offenders. Even though lone offenders used a con approach in half of the offenses they used a surprise approach significantly more often than the multiple perpetrators. A surprise approach “occurs without warning and involves no conversation before the attack. The amount of force used is sufficient to control the victim and could include a victim being grabbed around the throat from behind” (Woodhams, 2004, p. 247).

In the majority of the cases the initial contact between the offenders and victims occurred outdoors, however, this was the case significantly more often in the lone offenses. The lone and duo offenders assaulted their victims more often outdoors while the 3+ groups did so significantly more often indoors. The 3+ groups released half of their victims indoors and the other half outdoors, while the lone and duo offenders released the majority of their victims outdoors.

In relation to the sex acts performed during the offenses, as can be seen in Table 2, the lone offenders kissed their victims in more than half of the cases, which was significantly more than the 3+ groups. The lone offenders also masturbated themselves significantly more often than the members of the 3+ groups. The 3+ group offenders made their victims perform fellatio in more than half of the cases which was significantly more often than the lone and duo offenders.

Regarding the precautions utilized during the assault, the lone and duo offenders covered the mouth of the victim significantly more often than the 3+ groups. The duos and 3+ groups blocked an entry/exit to prevent the victim escaping more often than the

lone offenders. Both the duo and the 3+ groups used a condom significantly more often than the lone offenders. The 3+ group offenders also used a condom more often than the duos but this difference was no longer significant when the Bonferroni correction was applied. In more than half of the duo and 3+ group offenses no precautions were used, which was significantly more than in the lone offenders.

When looking at the verbal themes (what was said to the victims), Table 2 shows that the theme related to preoccupation with the offender's safe departure (for example, telling their victims to remain a certain time in the location while the offenders depart in safety) was significantly more frequent for the lone and the duo offenses than the 3+ group offenses. The lone offenders also used verbal threats significantly more often than the duos and 3+ groups. The theme related to the victim reporting the assault to the police was significantly more frequent in the lone offenses compared to the duo offenses. The theme of verbalizations related to sex acts was more frequent in the duo and 3+ group offenses than in the lone offenses. Taking into account the Bonferroni correction this association was only significant for the 3+ groups.

Following chi-square analyses and tests of difference, the variables that had the largest effect sizes were entered into two Multinomial Logistic Regression analyses (one for offense characteristics and one for offender characteristics) to determine which were significant predictors of rape type (lone, duo or 3+ groups). The assumptions of logistic regression (Peduzzi et al., 1996) require 10 cases in the smallest reference category per predictor entered. Ten offense variables with the largest effect sizes were therefore chosen for inclusion (vehicle use; precaution covered mouth; no precautions used; precaution condom use; victim forced to perform fellatio; verbal theme related to safe departure of offenders; verbal theme related to victim reporting; con approach; surprise approach and scene of the assault indoors). Additionally, two variables related

to the offenders were selected (age and ethnicity). Although two separate analyses were run, for ease of comparison the results are presented together in the tables below.

Seven predictors contributed significantly to the models for duo vs. lone rapes (see Table 3). Duo offenders were more likely to be younger than lone offenders and less likely to be of White European ethnicity. During the assault they were less likely to speak to the victims about her reporting the offense to the police and more likely to not take any kind of precaution against apprehension, although they were actually more likely to use a condom. They were more likely than the lone offenders to use a vehicle in the assault, and assault the victim indoors.

Nine predictors contributed significantly to the prediction of being a 3+ group offense vs. a lone offense (see Table 3). The 3+ group offenders were more likely than the lone offenders to be younger and less likely to be of White European ethnicity. They were also more likely to use a vehicle in the assault and assault the victim indoors compared to the lone offenders. In relation to the use of precautions against apprehension, they were more likely not to take any kind of precaution compared to the lone offenders, however, they were more likely to use a condom. The 3+ group offenders were less likely than the lone offenders to speak to their victims about getting away safely. The 3+ offenders were less likely than the lone offenders to use a surprise approach and were more likely to force the victim to perform fellatio on them.

In contrast to the two previous analyses, there were fewer variables that significantly predicted the likelihood of being a 3+ group offense vs. a duo offense (see Table 3). It was more likely for the 3+ group offenders to be younger than the duos. It was also more likely in the 3+ group offenses than the duo offenses for the victim to be forced to perform fellatio and for the assault to take place indoors. On the other hand, it

was less likely for the 3+ group offenders than the duo offenders to speak to the victims about their own safe departure.

Discussion

The aim of this study was to analyze if there were differences in victim and offender socio-demographic characteristics and offense characteristics between rapes of females committed by lone offenders, duos and groups of three or more perpetrators. Some of our findings support previous studies while others relate to areas that have received little, if any, prior investigation (for example, comparisons of duos and 3+ groups).

With regards to the socio-demographic characteristics, in accordance with a number of studies (Amir, 1971; Bijleveld & Hendriks, 2003; Hauffe & Porter, 2009; Wright & West, 1981) lone offenders were older than the duo and 3+ group offenders. Duos were also older than the 3+ group offenders. In the only previous study comparing duos and 3+ group rapes, Amir (1971) found a similar relationship between increasing age and likelihood of engaging in a rape with fewer/no co-offenders. He found that the ages where group rapes mostly occurs are from 10 to 19 which he states are also the peak ages for gang delinquency. Like previous studies (Bijleveld & Hendriks, 2003; Bijleveld et al., 2007; De Wree, 2004; Horvath & Kelly, 2009; Woodhams, 2008), MPR offenders in the current article were more often ethnic minorities.

In terms of the offense characteristics, there were various significant differences between the lone, duo and 3+ group offenses. The greater the number of offenders involved, the longer the duration of the offense, which included the time the victim and offender/s first came into contact until the end of the offense. This finding was not surprising because a rape involving more perpetrators would likely last longer. These

extended times could also be due to the multiple perpetrators utilizing more often a “con” style of approach, which would take longer than a surprise approach. This finding is also likely to be associated with the finding of a vehicle more frequently being used by duos and 3+ groups than lone offenders. Porter and Alison (2006) and Amir (1971) also found multiple perpetrators to use a vehicle significantly more often than the lone perpetrators in the approach of the victim. They also more often transported their victims between the approach and rape locations (Porter & Alison, 2006). They argued this was due to the multiple perpetrators approaching the victims in more risky locations (usually outdoors), whereby a group of people would be noticed by witnesses. By using a vehicle they could transport the victim to a more secluded indoor location. Porter and Alison (2006) also found that by taking the victim to a safer location, the victim could be kept for a longer period of time allowing the perpetrators to commit multiple rapes.

Previous studies (Porter & Alison, 2006; Woodhams, 2008; Wright & West, 1981) have reported that MPR offenders tend to approach their victims outdoors or at entertainment venues, but assault them indoors. In the current study, lone, duo and 3 + groups were all most likely to approach their victims outdoors. However, only the 3+ groups assaulted them more frequently indoors, whereas, the lone and duos assaulted them more frequently outdoors. Nevertheless, the duo offenders did attack their victims more often indoors than the lone offenders. As described above, the greater the number of perpetrators the longer the offense duration, which increases the risk of being seen by witnesses and apprehended. By moving the victim to a safer indoor location the 3+ group perpetrators can avoid detection (Porter & Alison, 2006). The victims were also released more often outdoors by the lone and duo offenders than by the 3+ group offenders which would be expected as they were assaulted outdoors. On the other hand, the 3+ groups released their victims equally indoors and outdoors which suggests that in

some of the cases the victims were moved from the locations where they were attacked. This indicates that the 3+ groups in the current sample were quite mobile, which was likely facilitated by their use of vehicles.

In accordance with Bijleveld, et al. (2007) and De Wree (2004), who reported that multiple sexual acts (including completed rape) were more common in MPRs, in the 3+ group rapes the victims were more often forced to perform fellatio and there was a higher frequency of verbal themes related to different sex acts. On the other hand, the lone offenders kissed the victim and masturbated themselves more often than the 3+ group offenders. Canter et al (2003) identify four behavioral themes in their model of rape. One of them is defined as “involvement with the victim” which is characterized by behaviors that show the offender’s attempt at some intimacy with the victim, for example, kissing the victim. Additionally, Marshall (1989) suggests that the desire for social and intimate contact with women can be a motivation for rape. Hauffe and Porter (2009) found in their study that the lone rapes exhibited more pseudo-submissive offender behaviors, while the group rapes were more hostile and the offender behaviors more violent. According to Hauffe and Porter (2009) behaviors such as kissing the victim may serve as “self-justification in terms of normality of the behavior indicating a consenting relationship” (p. 448). Various authors (Bijleveld et al., 2007; Brownmiller, 1975; Franklin, 2004; Hauffe & Porter, 2009; Wright & West, 1981) have suggested that MPRs are driven by group processes and dynamics and not by sexual or relationship elements, which is more common with some lone rapes. Therefore, behaviors such as kissing the victim would be expected to emerge more often in lone rapes than MPRs, as was found in this study.

A “con” approach was used significantly more often by the multiple perpetrators whereas a surprise approach was a more common feature of the LPRs. As the offenders

were alone perhaps they had to rely more often on a surprise element than the multiple perpetrators, to ensure that they secured their victim. With more perpetrators present it is likely more difficult for the victim to escape meaning that larger groups could rely on intimidation rather than physical restraint.

In more than half of the duo and 3+ group offenses no precautions were used which contrasts with the lone offenders who seemed more preoccupied with precautions. Lone offenders covered the mouth of the victim more often than the 3+ groups and in terms of what they said to the victim they showed more concern with their own safe departure, the victim reporting the assault to the police and used verbal threats more frequently. In relation to the duo offenders they did not seem as preoccupied as the lone offenders but they did cover the mouth of the victim more often and showed more concern about their own safe departure than the 3+ groups. The risk taking of the 3+ group perpetrators could be due to the group process of deindividuation which can lead to a failure to consider consequences, as well as increased arousal (Goldstein, 2002). It is important to note that even though the duos resemble the 3+ groups to a certain extent they do show more signs of taking precautions than the larger groups. Although it has been argued that deindividuation may not occur in duos, it is possible that it does but that its effect is less pronounced or is different.

The only precautions that were more frequently used by both the duo and the 3+ groups compared to the lone offenders were condoms and more often blocking the victim's exit and containing her in an enclosed space. It is easier for the victim's entry/exit to be blocked when there are more people present to place themselves in different positions. Even though the use of a condom is generally viewed as a precaution to avoid apprehension, it is not clear that the multiple perpetrators did this to avoid leaving DNA evidence, as in general they showed little concern about the use of precautions. As

stated above in more than half of the multiple perpetrator rapes no precautions were used. It could be that the offenders were motivated to avoid a situation whereby, without the use of condoms, there would be contact with semen already within the victim's body.

The results of the multinomial logistic regression indicate that it is possible to predict the likelihood of an offense being committed by a lone offender, duo or 3+ group offenders based on several socio-demographic and offense variables. In the socio-demographic variables, age and the offenders being of White European ethnicity were significant predictors. In terms of the offense variables, using a vehicle, using a surprise approach, assaulting the victim indoors, not using precautions, speaking to the victim about reporting to the police and safe departure, using a condom and forcing the victim to perform fellatio were significant predictors.

Implications

The findings of this study have a number of implications as well as suggesting lines of enquiry for future research. As a great number of MPRs compared to LPRs are committed by young people, early prevention educational programs at schools could incorporate the issues of group behaviors and peer pressure. These programs could help prevent young people from becoming involved in such behaviors. Although the nature of the sample does not allow for the identification of any explicit motivations for the sexual assaults between lone, duo and 3+ group perpetrators, some of the differences identified suggest that such differences might exist and therefore warrant further research. For example, the 3+ group offenders were less concerned with taking precautions during the offence and this could be a result of group processes such as deindividuation. A treatment target for such individuals would be to address their

susceptibility to peer influence. Group processes are an explicit target for treatment in some programs for MPR offenders (Etgar & Prager, 2009). Etgar (2013) highlights that when working therapeutically with MPR offenders it is vital to address "...the importance of the peer group, group process and group dynamics (both in the assault and in therapy), and the crucial importance of subgroups (p. 248). In contrast, the lone perpetrators more often displayed behaviors indicative of seeking intimacy (e.g., kissing the victim). Problems related to lack of emotionally intimate relationships with adults are a common treatment target in sexual offender treatment, which for the most part is designed for those presumed to be lone offenders (Mann, Hanson, & Thornton, 2010). To more clearly identify whether lone, duo or 3+ group perpetrators differ in their motivations further research is necessary and the authors of the present study are currently conducting interviews with convicted MPR offenders to address this knowledge gap.

Although group dynamics might be an appropriate target for some MPR offenders the debate in social psychology as to whether duos and larger groups can be considered equivalent could suggest they may not be for all. This study showed that while rapes committed by duos and 3+ groups share some characteristics, there are also differences, and, in fact, there were some similarities between the rapes committed by duos and lone offenders. This indicates a need to better understand the differences between offenders who commit rape alone, as a pair or as a larger group. This study has taken an important first step in this direction. However, future research needs to specifically investigate whether these subtypes differ also in treatment needs. For example, it is unclear whether duos share more in common with lone rapists or 3+ group rapists or whether they fall on a continuum between the two. Uncovering answers to such questions may well have implications for intervention and treatment programs.

There are also potential implications for assessment of risk levels. An offender who commits a sex offence in a group context where various group processes are involved, including peer pressure, is likely to have a different risk level than a lone sex offender. It has been argued that some multiple perpetrators would not commit a sex offence by themselves, without the presence of the necessary group dynamics (Blanchard, 1959). However, what is not clear is whether such claims would apply to all group members equally. For example, some studies have identified the presence of leaders in MPR groups and future research needs to determine if these individuals have different characteristics to followers which impact their risk of re-offending ('t Hart-Kerkhoffs, Vermeiren, Jansen & Doreleijers, 2011; Woodhams, Cooke, Harkins & da Silva, 2011).

Additionally, this study provides relevant information for rape victim support. For example, our study shows that not only are MPRs longer in duration than LPRs, but the victims are also subjected to multiple sexual acts. This most certainly will have an extremely negative impact on and consequences for the victims, thus counseling or therapeutic work with victims may benefit from taking this into consideration. Ullman (2007) also found more severe sexual outcomes for victims of MPRs than of LPRs. Due to the serious mental and physical health consequences of MPR, she highlights the importance of the development of specific policies and protocols for police, medical health and medical providers who have contact with victims of MPR (Ullman, 2013).

Limitations

This study has some limitations, the first being that the sample is made up of reports of victim allegations made to the police. In general, rape is an under-reported

crime (Walby & Allen, 2004) and there are studies (Andersson, Mhatre, Mqotsi, & Penderis, 1998) that report that MPR victims were less likely to report their assault to the police than LPR victims. This makes it difficult to generalize the results obtained as the majority of sexual offenses are not reported to the police. Additionally, due to memory loss and the trauma of a rape, victim accounts may have omissions and distortions (Alison, Snook & Stein, 2001). Furthermore, 4.5% of the victims were younger than 13 years which limits the amount of information that can be collected from them.

The current sample was composed largely of stranger rapes because this is one of the criteria that apply to SCAS's receipt of cases from UK police forces for analysis. This also contributes to the difficulty in generalizing the findings to samples of MPR committed by acquaintances and intimate partners. Nevertheless, various studies (Greenfeld, 1997; Horvath & Kelly, 2009, Porter & Alison, 2006; Ullman, 2007; Woodhams, 2008) report that in MPRs more than half of victims are strangers to the offenders therefore this study still has much to contribute to our understanding of MPRs.

In future research, in order to address some of these limitations, various sources of information could be used in a single study to collect more information about multiple perpetrator offenders and their offenses. This could include interviewing offenders which would provide information from a different viewpoint (the offenders' rather than the victims') and, importantly, information about what pre-empted the offense and decision-making. There is only one published study where this has been done and it is dated (Blanchard, 1959).

Conclusions

Significant differences were found between lone, duo and 3+ group offenses and it was possible to predict the likelihood of an offense being committed by a lone offender, duo or 3+ perpetrator group based on certain socio-demographic and offense characteristics. The biggest differences were found between the lone and 3+ group offenders. Regarding the duo offenses, in line with Amir (1971), they possessed some characteristics that were similar to the lone offenses and others that were similar to the 3+ group offenses. Nevertheless, it was possible to differentiate them from the lone and the 3+ group offenses. This supports the idea that it is necessary to distinguish between these different types of rape. Further research is required to better understand these differences as they could have various implications for prevention programs and treatment.

References

- Aebi, M., Vogt, G., Plattner, B., Steinhausen, H-C., & Bessler, C. (2012). Offender types and criminality dimensions in male juveniles convicted of sexual offences. *Sexual Abuse: A Journal of Research and Treatment*, 24, 265-288.
- Alison, L. J., Snook, B., & Stein, K. L. (2001). Unobtrusive measurement: Using police information for forensic research. *Qualitative Research*, 1, 241-254.
- Amir, M. (1971). *Patterns in forcible rape*. Chicago, IL: University of Chicago Press.
- Andersson, N., Mhatre, S., Mqotsi, N., & Penderis, M. (1998). *Prevention of sexual violence: a social audit of the role of the police in the jurisdiction of Johannesburg's Southern Metropolitan Local Council*, CIETAfrica in collaboration with the Southern Metropolitan Local Council.
- Australian Bureau of Statistics, (2004). *Sexual assault in Australia: A statistical overview.4523.0*. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4523.02004>
- Beech, A. R., Craig, L. A., & Browne, K. D., (2009). Overview. In A. R., Beech, L. A. Craig, & K. D. Browne, (Eds.), *Assessment and treatment of sex offenders: A handbook* (pp. 1-12). Chichester, United Kingdom: John Wiley & Sons Ltd.
- Bijleveld, C., & Hendriks, J. (2003). Juvenile sex offenders: Differences between group and solo offenders. *Psychology, Crime and Law*, 9, 237-245.
- Bijleveld, C. C. J. H., Weerman, F. M., Looije, D., & Hendriks, J. (2007). Group sex offending by juveniles: Coercive sex as group activity. *European Journal of Criminology*, 4, 5-31.
- Blanchard, W.H. (1959). The group process in gang rape. *The Journal of Social Psychology*, 49, 259-266.

- Brownmiller, S. (1975). *Against our will: Men, women and rape*. Bowie, MD: Robert Brady.
- Canter, D. V., Bennell, C., Alison L. J., & Reddy, S. (2003). Differentiating sex offences: A behaviorally based thematic classification of stranger rapes. *Behavioral Sciences and the Law*, 21, 157-174.
- Curran, K., & Millie, A. (2003). *Rape and indecent assault: Incidence and service provision in Southwark*. Project Report. Safer Southwark Partnership, London.
- Dale, A., Davies, A., & Wei, L. (1997). Developing a typology of rapists' speech. *Journal of Pragmatics*, 27, 653 - 669.
- De Wree, E. (2004). *Perpetrators of group rape*. Ghent: Ghent University.
- Etgar, T. (2013). Multiple perpetrator rape offenders: treatment issues. In M. Horvath, & J. Woodhams (Eds.), *Handbook on the Study of Multiple Perpetrator Rape* (pp. 235-254). London: Routledge.
- Etgar T., & Prager, K. G. (2009). Advantages of group therapy for adolescent participants in the same gang rape. *Journal of Child Sexual Abuse*, 18, 302-319.
- Forsyth, D. R. (1983). *An introduction to group dynamics*. Pacific Grove, Ca: Brooks/Cole.
- Franklin, K. (2004). Enacting masculinity: Antigay violence and group rape as participatory theater. *Sexuality Research and Social Policy: Journal of NSRC*, 1, 25-40.
- Gidycz, C. A., & Koss, M. P. (1990). A comparison of group and individual sexual assault victims. *Psychology of Women Quarterly*, 14, 325-342.
- Goldstein, A.P. (2002). *The psychology of group aggression*. Chichester, UK: John Wiley & Sons.

- Greenfeld, L.A. (1997). *Sex offenses and offenders: An analysis of data on rape and sexual assault*. Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.
- Groth, A. N., & Birnbaum, H. J. (1979). *Men who rape: The psychology of the offender*. New York: Plenum.
- Harkins, L., & Dixon, L. (2010). Sexual offending in groups: An evaluation. *Aggression and Violent Behavior, 15*, 87-99.
- Hauffe, S., & Porter, L. (2009). An interpersonal comparison of lone and group rape offences. *Psychology, Crime and Law, 15*, 469-491.
- Hööing, M., Jonker M., & van Berlo, W. (2010): Juvenile sex offenders in a Dutch mandatory educational programme: Subtypes and characteristics, *Journal of Sexual Aggression, 16*, 332-346.
- Horvath, M. A. H., & Kelly, L. (2009). Multiple perpetrator rape: Naming an offence and initial research findings. *Journal of Sexual Aggression, 15*, 83-96.
- Jewkes, R., Sikweyiya, Y., Morrell, R., & Dunkle, K. (2009). *Understanding men's health and use of violence: Interface of rape and HIV in South Africa*. Medical Research Council Policy Brief: Pretoria. Retrieved from <http://www.mrc.ac.za/gender/interfaceofrape&hivsarpt.pdf>
- Kelly, L., Lovett, J., & Regan, L. (2005). *A gap or a chasm? Attrition in reported rape cases*, Home Office Research Study, No. 293. London: Home Office.
- Kjellgren, C., Wassberg, A., Carlberg, M., Langstrom, N., & Svedin, C. G. (2006). Adolescent sexual offenders: A total survey of referrals to Social Services in Sweden and subgroup characteristics. *Sexual Abuse: A Journal of Research and Treatment, 18*, 357-372.

- Krackhardt, D. (1999). Simmelian tie analysis in organizations. *Research in the Sociology of Organizations*, 16, 183-210.
- Lockmuller, M., Fisher, D. & Beech, A. R. (2008). Sexual offenders with mental health problems: epidemiology, assessment and treatment. In K. Soothill, M. Dolan & P. Rogers (Eds), *Handbook of forensic mental health* (pp. 442-475). Uffculme, Devon: Willan.
- Mann, R. E., Hanson, R. K. & Thornton, D. (2010). Assessing risk for sexual recidivism: some proposals on the nature of psychologically meaningful risk factors. *Sexual Abuse: A Journal of Research and Treatment*, 22(2), 191-217.
- Marshall, W. L. (1989). Intimacy, loneliness and sexual offenders. *Behavioral Research in Therapy*, 27, 491-503.
- Metropolitan Police Service (2009). *Multiple Perpetrator Rape and Youth Violence Report* 7. Retrieved from <http://www.mpa.gov.uk/committees/sop/2009/091105/07/>
- Moreland, R. L. (2010). Are dyads really groups? *Small Group Research*, 41, 251-267.
- O'Sullivan, C. S. (1991). Acquaintance gang rape on campus. In A. Parrot & L. Bechhofer (Eds.), *Acquaintance rape: The hidden crime*. New York: Wiley.
- Peduzzi, P., Concato, J., Kemper, E., Holford, T. R., & Feinstein, A. R. (1996). A simulation study of the number of events per variable in logistic regression analysis. *Journal of Clinical Epidemiology*, 49, 1373-1379.
- Porter, L. E., & Alison, L. J. (2004). Behavioural coherence in violent group activity: An interpersonal model of sexually violent gang behaviour. *Aggressive Behavior*, 30, 449-468.
- Porter, L. E., & Alison, L. J. (2006). Examining group rape: A descriptive analysis of offender and victim behaviour. *European Journal of Criminology*, 3, 357-381.

- Swart, L., Gilchrist, A., Butchart, A., Seedat, M., & Martin, M. (2000). Rape surveillance through district surgeon offices in Johannesburg, 1996-1998: Evaluation and prevention implications. *South African Journal of Psychology*, 30, 1-10.
- 't Hart-Kerkhoffs, L.A., Vermeiren, R.R.J.M., Jansen, L.M.C., & Doreleijers, T.A.H. (2011). Juvenile group sex offenders: A comparison of group leaders and followers. *Journal of Interpersonal Violence*, 26, 3-20.
- Ullman, S.E. (2007). Comparing gang and individual rapes in a community sample of urban women. *Violence and Victims*, 22, 43-51.
- Ullman, S.E. (2013). Multiple perpetrator rape victimization: how it differs and why it matters. In M. Horvath, & J. Woodhams (Eds.), *Handbook on the Study of Multiple Perpetrator Rape* (pp. 198-213). London: Routledge.
- Walby, S., & Allen, J. (2004). *Domestic violence, sexual assault and stalking: Findings from the British Crime Survey*. Home Office Research Study 276. London: Home Office.
- Williams, K. D. (2010). Dyads can be groups (and often are). *Small Group Research*, 41, 268-274.
- Wolff, K. H. (Ed.), (1950). *The sociology of Georg Simmel*. Glencoe, Illinois: The Free Press.
- Woodhams, J. (2004). Characteristics of juvenile sex offending against strangers: Findings from a non-clinical study. *Aggressive Behavior*, 30, 243-253.
- Woodhams, J. (2008). *Juvenile sex offending: An investigative perspective*. (Doctoral dissertation). Retrieved from <http://ethos.bl.uk/SearchResults.do>
- Woodhams, J., Cooke, C., Harkins, L., & da Silva, T. (2011). Leadership in multiple perpetrator stranger rape. *Journal of Interpersonal Violence*, 27, 728-752.

Woodhams, J., Gillett, R., & Grant, T. (2007). Understanding the factors that affect the severity of juvenile stranger sex offences: The effect of victim characteristics and number of suspects. *Journal of Interpersonal Violence*, 22, 218-237.

Wright, R., & West, D. J. (1981). Rape – a comparison of group offences and lone assaults. *Medicine, Science and the Law*, 21, 25-30.

Table 1: Mann-Whitney U Test results of differences between lone, duo and 3+ group offenders for estimated age of offender and rape duration.

Variable	Lone offenses (n = 112)	Duo offenses (n = 112)	3 + group offenses (n = 112)	<i>p</i>	<i>r</i>
Estimated age of offender	29.47	26.85	24.37	a) .006	a) .175
				b) <.001	b) .276
				c) .005	c) .132
Rape duration in hours	2.5	3.5	5.5	a) .008	a) .186
				b) <.001	b) .417
				c) <.001	c) .275

a) Comparison between lone and duo offenses

b) Comparison between lone and 3+ groups offenses

c) Comparison between duo and 3+ groups offenses

Table 2: Chi-square results of comparisons between lone, duo and 3+ group offenders

Variable	Lone offenses (n = 112)	Duo offenses (n = 112)	3 + group offenses (n = 112)	p	Φ
Offender ethnicity – White European	59.5%	26.3%	25.5%	a) <.001 b) <.001	a) -.325 b) -.301
Offender ethnicity – African Caribbean	9.0%	20.6%	25.0%	a) .011 b) <.001	a) .148 b) .163
Vehicle use	22.7%	40.5%	41.1%	a) .006 b) .004	a) .191 b) .197
Con approach	50.0%	77.4%	80.8%	a) <.001 b) <.001	a) .285 b) .324
Surprise approach	52.0%	22.6%	15.4%	a) <.001 b) <.001	a) -.304 b) -.387
Initial contact – Indoors	20.6%	37.3%	38.5%	a) .007 b) .005	a) .184 b) .197
Scene – Assault indoors	32.4%	45.9%	66.1%	b) <.001 c) .004	b) .336 c) .203
Scene – Assault Living Quarters	31.3%	41.4%	60.9%	b) <.001 c) .005	b) .298 c) .195
Scene – Victim release indoors	26.6%	40.7%	50.0%	b) <.001	b) .259
Sex acts performed by offender - Kisses	57.8%	47.7%	38.7%	b) .007	b) -.191
Sex acts performed by offender – Masturbates self or other	17.4%	11.9%	6.3%	b) .012	b) -.172
Sex acts performed by victim - Fellatio	34.9%	37.6%	58.6%	b) <.001 c) .002	b) .237 c) .210
Precautions – Covered mouth	29.5%	21.4%	8.0%	b) <.001 c) .008	b) -.275 c) -.189
Precautions – Blocked entry/exit	4.5%	13.4%	25.0%	a) .033 b) <.001	a) .157 b) .290
Precautions - Condom	5.4%	19.6%	32.1%	a) .002 b) <.001 c) .047	a) .216 b) .343 c) .143
Precautions - None	39.3%	60.7%	58.9%	a) .002 b) .004	a) .214 b) .196
Verbal themes – Safe Departure	17.0%	11.6%	2.7%	b) <.001 c) .017	b) -.250 c) -.173
Verbal themes – Sex acts	38.4%	53.6%	60.7%	a) .032 b) .001	a) .152 b) .223
Verbal themes – Verbal threat	50.9%	34.8%	31.3%	b) .004	b) -.200
Verbal themes – Victim reporting	23.2%	9.8%	15.2%	a) .011	a) -.180

a) Comparison between lone and duo offenses

b) Comparison between lone and 3+ groups offenses

c) Comparison between duo and 3+ groups offenses

Table 3: Multinomial Regression Predicting the Likelihood of being a Lone, Duo or 3+ Group Offense

Variable	<i>B</i>	<i>SE</i>	Wald	<i>p</i>	Odds Ratio	95% C. I for Lower	Odds Ratio Upper
Likelihood of being a duo vs. a lone offense							
Offender white	-1.297	.279	21.678	<.001	.273	.158	.472
European ethnicity							
Age	-.034	.015	4.979	.026	.967	.938	.996
Vehicle Use	.857	.357	5.763	.016	2.356	1.170	4.742
Condom Use	1.609	.536	9.010	.003	4.997	1.748	14.285
No precautions	.978	.360	7.356	.007	2.658	1.311	5.387
Assault Indoors	.825	.336	6.012	.014	2.281	1.180	4.411
Verbal theme victim reporting	-1.252	.498	6.322	.012	.286	.108	.759
Likelihood of being a 3+ group vs. a Lone Offense							
Offender white	-1.397	.261	28.757	<.001	.247	.148	.412
European ethnicity							
Age	-.081	.016	26.507	<.001	.922	.894	.951
Vehicle Use	1.230	.389	9.980	.002	3.423	1.595	7.344
Victim forced to perform fellatio	.993	.363	7.496	.006	2.700	1.326	5.498
Condom Use	2.228	.554	16.150	<.001	9.284	3.131	27.522
No precautions	.927	.387	5.745	.017	2.527	1.184	5.394
Surprise approach	-2.226	.865	6.624	.010	.108	.020	.588
Assault indoors	1.820	.374	23.714	<.001	6.174	2.968	12.846
Verbal theme safe departure	-1.875	.779	5.795	.016	.153	.033	.706
Likelihood of being a 3+ group vs. a Duo Offense							
Age	-.045	.014	10.549	.001	.956	.930	.982
Victim forced to perform fellatio	.902	.314	8.247	.004	2.466	1.332	4.565
Assault Indoors	.996	.323	9.478	.002	2.706	1.436	5.101
Verbal theme safe departure	-2.062	.774	7.091	.008	.127	.028	.590

Note: $R^2 = .11$ (Cox & Shell), .13 (Nagelkerke). Model $\chi^2(4) = 62.64$ (Offender variables)

$R^2 = .36$ (Cox & Shell), .41 (Nagelkerke). Model $\chi^2(22) = 133.74$ (Offence variables)