



An evaluation of factors relating to students' fear of crime in Greater Manchester

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ABSTRACT

The aim of this study was to evaluate factors that relate to fear of crime amongst students in Greater Manchester. Although research suggests that students are at high risk of victimisation, student fear of crime is under researched. A quantitative survey incorporating questionnaires, measured student participants fear of crime and precautionary actions and vignettes measured gang perception ($N = 168$). Data was analysed using correlations, regressions, t -tests and ANOVAs. Results revealed gang perception, precautionary actions, gender and age related to students' fear of crime and relationships between the variables were found, however, district was not related to students' fear of crime. Furthermore, results established that gang perception differed depending on the location that the youth groups were observed in and the gender of the youth groups in the scenario. Limitations suggest that the districts may have been too restricted, future research should use a range of districts across Greater Manchester. In order to improve the result's validity, future researchers should utilise lie scales to test for socially desirable responding. This study extends the knowledge on students' fear of crime and contributes findings to the under researched literature on gang perception.

KEY WORDS:	FEAR OF CRIME	PRECAUTIONARY ACTIONS	GANG PERCEPTION	STUDENTS	GREATER MANCHESTER
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Introduction

Fear of crime (FoC) is a larger problem than crime itself (Hale, 1992) although a universal definition of the concept has not been established, FoC is referred to as a 'negative emotional reaction, generated by crime or clues that one associates with crime' (Chockalingam & Srinivasan, 2009, p.90), which suggests recognition of potential danger is necessary to evoke fear. Taylor (1995) argues that FoC is a metaphor for changes in society, which implies that FoC has no literal meaning, questioning the validity of the term. Warr (2000) explained that fear is an immediate response to a current threat, whereas FoC can occur in the absence of an actual threat, therefore, Warr (2000) argued that FoC is an inaccurate description of what researchers intend to measure. FoC has gained many contradictory meanings, resulting in its value to become virtually insignificant (Ferraro & LaGrange, 1986), thus, in conclusion, FoC is not a clearly defined concept (Gabriel & Greve, 2003).

There has been extensive methodological confusion over how to measure FoC (Lee, 2007), arguably, society's understanding of FoC is inaccurate due to the apparent limitations (Farrall, Bannister, Ditton & Gilchrist, 1997). FoC research relies almost exclusively on quantitative surveys. Nevertheless, Farrall and Gadd (2003) criticise the wording of FoC survey questions, claiming that they exaggerate FoC and therefore, evoke a threatening atmosphere, which can lead respondents to presume that they should be fearful. Furthermore, FoC surveys fail to take account of the situations in which FoC occurs, its frequency and its intensity (Farrall & Gadd, 2004), therefore, caution is required when interpreting results, as validity depends on respondents accurately reporting and acknowledging their FoC (O'Gorman, 2009). Despite these criticisms, surveys are the core FoC measurement (Ferraro, 1995).

Research has established that many factors relate to FoC, an extensively researched factor is age, although the relationship is not consistent. There is a widespread belief that the elderly are most fearful of crime, arguably, this could be due to researcher's exaggeration and the stereotyping of the elderly as irrational in assessing crime risk (Birnstock, 1983). On the contrary, Chadee and Ditton (2003) found that young people were most fearful of crime, in support Ferraro (1995) concluded that those aged under 25 have the highest FoC levels, nevertheless, the inconsistency across studies could be accounted for by the methodological limitations (Ferraro & Lagrange, 1987; Yin, 1982).

Gender is a consistent predictor of FoC (Cops & Pleysier, 2011), almost universally, studies show that females are more fearful. Stanko (1992) found that women consistently report FoC levels three times higher than males, in support, O'Gorman (2009) revealed that females were two and a half times more likely to be fearful of crime. Furthermore, Smith and Torstensson (1997) proposed that men are less accurate at risk assessing, thus, experience lower FoC levels, however, recent evidence revealed that males are likely to underreport their FoC (O'Gorman, 2009). Consequently, the inconsistency between males and females FoC levels could have been overestimated in studies that have not considered this possibility (Sutton & Farrall, 2005).

FoC has the potential to motivate individuals to take precautionary actions (PA) (Krahn & Kennedy, 1985), which 'attempt to increase resistance to victimisation'

(O’Gorman, 2009, p.15). Sanderson (2006) established that PA decrease the likelihood of crime victimisation, however, research revealed that PA significantly increase FoC, because the precautions serve as persistent reminders of victimisation (Rosenbaum, 1986). In contrast, research has established that FoC can be a source of vigilance and precaution, Jackson and Gray (2010) found that 25 per cent of participants who feared crime took PA, resulting in feelings of reassurance, which challenges research that focuses on the negative aspects of PA. This contradicts Ranzijn, Howells and Wagstaff (2002), who found no relationship between FoC and PA. Furthermore, results revealed that females took greater PA than males, although no age differences were found, nevertheless, this research shows some limitations as only a 30 per cent response rate was achieved, therefore, the extent to which the results can be generalised to a wider population is questionable. Evidently, the findings on PA and FoC are inconsistent and further research is required.

Lemaire (2000) found a significant relationship between FoC and PA amongst students and reported that only one in five feel safe after dark in Greater Manchester, conversely, Bouwens (2004) revealed that students in South Manchester did not fear crime. Furthermore, research has established that one in three students become a victim of crime, arguably, the urban environments that students populate and their relaxed attitude towards PA, results in them being ideal targets to criminals (NUS Social Policy Briefing, 2009). Nonetheless, research has revealed that two thirds of a student sample took PA (Barberet, Fisher, Farrell & Taylor, 2003), however, it has been suggested that students are not concerned with PA until after victimisation (NUS Social Policy Briefing, 2009). Although students are at high risk of victimisation, there is little research into student FoC and PA in the UK (Fisher, 1998). Awareness of students’ FoC can assist universities in developing strategies that could result in more students taking PA (Bedenbaugh, 2003). Much literature focuses on FoC amongst students living in university campuses, thus, future research should establish which areas in cities students are most fearful of crime (Lemaire, 2000).

Geographical factors are associated with FoC (Grabosky, 1995). Individuals living in urban locations as opposed to rural, consistently report higher FoC levels (Clemente & Kleiman, 1976; Kennedy & Browne, 2007; Mirrlees-Black & Allen, 1998). Morton (1998) reported that within Greater Manchester, the districts Rusholme, Fallowfield and Withington were hotspots for crime. Furthermore, Kealey (1998) proposed that 60 per cent of students feel intimidated in the city of Manchester at night.

Research suggests that FoC increases due to social incivilities including gangs of youth groups, Covington and Taylor (1991) concluded that perceived incivilities including youth groups have the strongest impact on FoC. Furthermore, Tulloch (2000) established that the presence of youth groups increases males FoC significantly higher than females. Arguably, this suggests that males are more likely to perceive youth groups as gangs and therefore, a threat, however, reasons for this finding are not reported and thus, there is a gap in the literature for research on gang perception (GP).

Recently, the emergence of youth gangs in the UK has increased; a report by Manchester City Council estimated that over 1,000 young citizens in Greater

Manchester were involved in a gang (Shropshire & McFarquhar, 2002). In the USA, youth groups are commonly perceived as 'armed, dangerous and prepared to kill' (Hallsworth & Young, 2008, p.176), this has resulted in the fear of youth groups within communities, however, not all youth groups are delinquent and fit with the US explanation. Therefore, it is important that the UK develops its own definition, to prevent the risk of stereotyping non-delinquent groups (Cox, 2011). Scott (2002) suggests that youth groups congregating in public are perceived as gangs and therefore, dangerous, however, this is not always the reality, 'the congregation of young people in public is both inevitable and socially necessary' (Scott, 2002, p.4). Youth group's behaviours such as fighting, playing music loudly and blocking pavements are intimidating, therefore, often they are perceived as a gang, which significantly increases FoC (Tulloch, 2000). Furthermore, gangs are stereotypically male orientated, although three quarters of a gang in Wythenshawe were female (Mares, 2001).

A recent report revealed that 64 per cent of participants identified groups of youths on the streets as problematic and perceived them as a gang, therefore, it was concluded that GP could predict FoC (Young NCB Priority: Youth, Crime & Prevention, 2010), however, the relationship between GP and FoC was not tested. This report represents under 14-year-olds, thus, results cannot be generalised to a wider population. Nevertheless, it is acknowledged that much of the literature on youth groups and gangs has been collected in the USA, therefore, there are limitations with applications in the UK and further research is necessary. In conclusion, it is evident that the presence of youth groups can lead to an increase in FoC and therefore, are essential in a FoC study (Evans & Fletcher, 2000).

Research has revealed that many factors relate to FoC. The current study aims to evaluate the factors that relate to FoC amongst a student population in Greater Manchester, which is an under researched area within the literature. Student's age, gender, PA, GP and district in Greater Manchester nearest to where they live, will be the factors evaluated in this study.

Hypotheses

The following hypotheses (H) will be tested:

- 1 There will be a positive relationship between GP and FoC.
- 2 There will be a positive relationship between PA and GP.
- 3 There will be a positive relationship between FoC and age.
- 4 There will be a positive relationship between GP and age.
- 5 There will be a significant relationship between PA and age.
- 6 There will be a significant relationship between FoC and PA.
- 7 Female participants will have a higher PA score than males.

- 8 Female participants will have a higher FoC score than males.
- 9 Female participants will have a higher GP score than males.
- 10 There will be a significant effect in FoC between districts.
- 11 There will be a significant effect in PA between districts.
- 12 There will be a significant effect in GP between districts.
- 13 There will be a significant main effect in GP between home-based and street-based vignettes.
- 14 There will be a significant main effect in GP between all male youths and mixed sex youths in the vignettes.
- 15 There will be an interaction effect between participant's location and the gender of the youth groups in the vignettes.

Methodology

Design

A quantitative approach was taken using a survey method, including questionnaires and vignettes. The dependent variables (DVs) are FoC, PA and GP. The independent variables (IVs) are participants' age, gender, the district in Greater Manchester that they live nearest to, the location that participants observe the youth groups in, in the vignettes (home-based or street-based) and the gender of the youth group in the vignettes (all male or mixed sex). Dependent on the data produced, analysis will incorporate correlations, regressions, *t*-tests and analysis of variances' (ANOVA), respectively.

Rationale

Large samples are achievable within survey methods, thus, results can be representative of a wider population, they are easily distributed, cost effective and provide comparative data. The present study uses pre-existing reliable questionnaires (see Appendix V for reliability coefficients from previous study). Vignettes offer a less threatening way to explore sensitive topics, such as GP, because they describe hypothetical situations (Finch, 1987), they also offer advantages for exploring how respondents arrive at complex judgments, which are influenced by social context (Martin, 2006).

Participants

This study utilised opportunistic sampling to recruit 200 participants, being a student in Greater Manchester was the only requirement for this study. A total of 168 participants ($N = 168$) were recruited, thus, a response rate of 84% was achieved. In

total, 25% of participants were males ($N = 42$) and 75% were females ($N = 126$), ages ranged from 18 to 46 years illustrated in Figure 1 ($M = 20.95$, $SD = 2.90$, shown in Table 1). 24% lived nearest to the district Rusholme ($N = 41$), 25% Fallowfield ($N = 42$), 32% Manchester City Centre ($N = 54$), 10% Didsbury ($N = 16$) and 9% Withington ($N = 15$) illustrated in Figure 2.

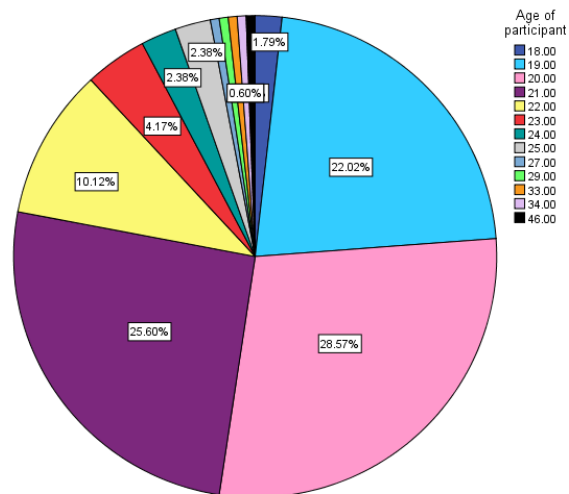


Figure 1: A pie chart illustrating the age of participants

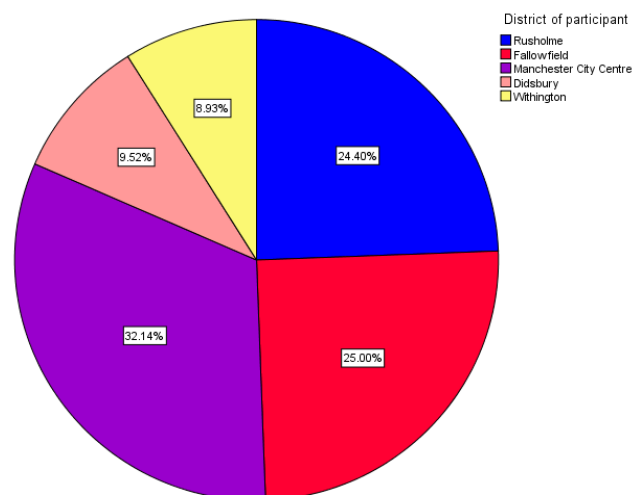


Figure 2: A pie chart illustrating the districts participants live nearest to

Materials

A consent form (Appendix VIII) informed participants of the aims of the study, verified consent, provided standardised instructions, outlined ethical considerations and collected participant information. Following the consent form, were FoC and PA questionnaires (Appendix VI), obtained from a previous study by Karafylli (2006), for the original questionnaires, see Appendix III and for details on the original formulation, see Appendix IV. The questionnaires were revised and standardised for the current study, for details on modifications, see Appendix XI. Each questionnaire

contains nine items and was scored on a six-point (1-6) Likert-type scale, ranging from 'agree strongly' to 'disagree strongly'.

Four GP vignettes generated by the researcher followed the questionnaires (Appendix VII). Each vignette described scenarios involving youth groups who may be perceived as gangs, the scenarios differed between the location that participants observed the youth groups in (at home or in the street) and the gender of the youth groups (all male or mixed sex). Participants were asked to rate on a six-point (1-6) Likert-type scale, ranging from 'agree strongly' to 'disagree strongly', the extent to which they perceived the youth group to be a gang. The researcher is aware that the vignettes will measure a single judgement, not a trait and that one item is relied on to produce a GP score. Finally, a debrief form was produced that thanked participants and provided information regarding the research and the researchers contact details (Appendix IX).

Procedure

Before data collection, a pilot study was initiated to test clarity, reliability and discover any problems with the survey that could be refined, 20 participants were recruited from a student population (Males = 9, Females = 11). Participants were provided with questions (Appendix X) inviting them to provide feedback on the survey and to identify any areas which they considered problematic. Feedback suggested that a neutral response should be used throughout, however, this modification was not made, as it was preferred that participants made a choice and received a score, several participants noticed a grammatical error, which was corrected before the main investigation commenced. Other feedback suggested that the survey was informative and clear.

For the main investigation, participants were recruited from a student population in the Manchester Metropolitan University Elizabeth Gaskell campus. Surveys were distributed in lecture theatres and other secure university settings. Willing participants were invited to read the consent form, confirm that they were a student and provide their age, gender and closest district. Participants were instructed to complete the survey at their preferred speed, circling the appropriate responses to each item. Participants were then informed to read the attached debrief sheet, before returning the survey to the researcher. In order to eliminate demand characteristics, the researcher was not present during completion of the survey.

Ethics

In conducting this study, the British Psychological Society's ethical guidelines have been complied with. A project supervisor approved of two ethics forms before data collection commenced, which can be found in Appendix I and II respectively. Additional ethical considerations included gaining participants' informed consent. Participants were informed that by completing the survey they were giving their consent to participate, furthermore, before completion, the consent form outlined participants' right to withdraw and details of their anonymity. The implementation of a personal identification number ensured that each participant's data could be identified and contact details of the researcher were provided, if participants wished to withdraw from the study.

Results

Preparation of data

The collected data was scored, coded and entered into SPSS (version 19) to be analysed. The relevant items were reverse-scored according to the researcher's modifications (Appendix XI). All graphs and tables were derived from SPSS outputs (see Appendix XII for raw data and Appendix XIII for all SPSS outputs).

Descriptive statistics

To test assumptions of normality, variables with continuous data were tested for skewness. The means, standard deviations and skewness (statistic and standard error) for the variables age, FoC, PA and GP, are shown in Table 1.

Table 1
Means, standard deviations and skewness for age, FoC, PA and GP

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	
				Skewness Statistic	Standard Error
Age	168	20.95	2.90	5.09	.19
FoC score	168	27.05	7.74	.07	.19
PA score	168	26.65	7.35	.08	.19
GP score	168	14.74	4.40	.02	.19

Table 1 shows that FoC, PA and GP are drawn from a normally distributed population, however, age has a skewness statistic of 5.09, which is more than twice its standard error (standard error = .19). Tabachnick and Fidell (1996) specify that skewness values greater than two times the standard error are significantly skewed, therefore, it is recognised that age is a non-normally distributed variable, however, Coolican (1994, p.280) argues that parametric statistics can be applied to data even when all the assumptions are not perfectly met. Parametric statistics are preferred due to their greater statistical power, thus, parametric statistics are justified and are performed on the IV age in the current study.

Psychometric properties

The internal consistency reliabilities were calculated for each of the measures used in this study, using Cronbach's alpha, shown in Table 2.

Table 2
Cronbach's alpha coefficient (α) and standard error confidence intervals (95%)
for the measurements FoC, PA and GP

Measures	Number of items	α	95% Confidence Interval	
			Lower	Upper
FoC	9	.86	.82	.89
PA	9	.73	.66	.79
GP	4	.91	.89	.93

Table 2 reveals reliability for the FoC and PA questionnaires and the GP vignettes. For each measure, Cronbach's alpha coefficients were above 0.7, which is accepted as satisfactory internal reliability (Nunnally, 1978; Pallant, 2007), therefore, all measurements meet the necessary reliability criteria.

Inferential statistics

It is acknowledged that for each of the GP vignettes, data is recorded at the ordinal level, therefore, a non-parametric statistical test is required, however, parametric tests are considered superior to non-parametric analyses, thus, Conover (1981) suggested that parametric tests are robust enough to withstand violation of the inferential data assumption. Based on the justification by Labovitz (1970), who argued that ordinal data can be treated as interval and analysed using parametric statistical tests, the data generated by the vignettes will be analysed using the appropriate parametric statistical tests.

Regression analysis

Regression analysis has been performed on H1, H2, H3, H4, H5 and H6 using the enter method, to test for relationships between variables and determine if any of the predictor variables could predict the criterion variable. Regression analysis is justified as all data can be treated at the interval level and with parametric statistics (based on the previous justification by Labovitz, 1970 and Coolican, 1994) and therefore, meets the assumptions to be treated using regression analysis.

H1 There will be a positive relationship between GP and FoC.

A significant positive correlation was found between GP and FoC, $R = .405$, $p = 5.016E^{-8}$ ($p < .01$). A significant model emerged from the regression analysis, $F(1,166) = 32.64$, $p = 5.016E^{-8}$ ($p < .01$), there is a moderate positive association between FoC and GP, illustrated in Figure 3. $R^2 = .164$, which would suggest that in the sample, 16.4% of the variance in FoC is predicted by GP. Adjusted $R^2 = .159$, which suggests that 15.9% of FoC in the population is being predicted by GP, if the sample is representative. It is understood by the unstandardized regression coefficient that the GP total was .712, which would suggest that for each single unit

change in GP, there is a .712 unit change in FoC. The constant (intercept) is 16.55, which when consulting the associated t -test is significant, $t = 8.63$, $p = 4.749E^{-15}$ ($p < .01$).

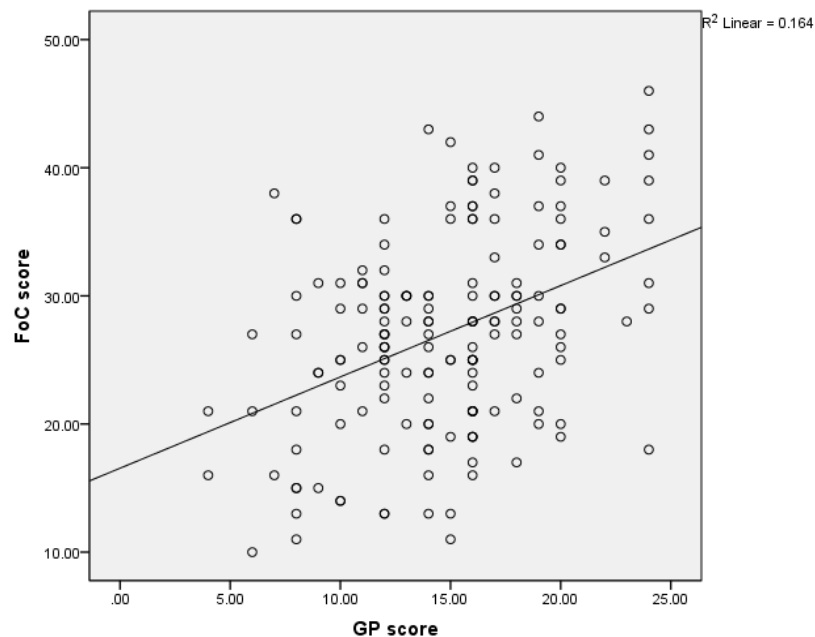


Figure 3: A scatter plot illustrating the positive relationship between GP and FoC

H2 There will be a positive relationship between PA and GP.

A significant positive correlation was found between PA and GP, $R = .276$, $p = 2.913E^{-4}$ ($p < .01$). A significant model emerged from the regression analysis, $F(1,166) = 13.70$, $p = 2.913E^{-4}$ ($p < .01$), there is a weak positive association between PA and GP, illustrated in Figure 4. $R^2 = .076$, which would suggest that in the sample, 7.6% of the variance in PA is predicted by GP. Adjusted $R^2 = .071$, which suggests that 7.1% of PA in the population is being predicted by GP, if the sample is representative. It is understood by the unstandardized regression coefficient that the GP total was .461, which would suggest that for each single unit change in GP, there is a .461 unit change in PA. The constant (intercept) is 19.86, which when consulting the associated t -test is significant, $t = 10.37$, $p = 9.694E^{-20}$ ($p < .01$).

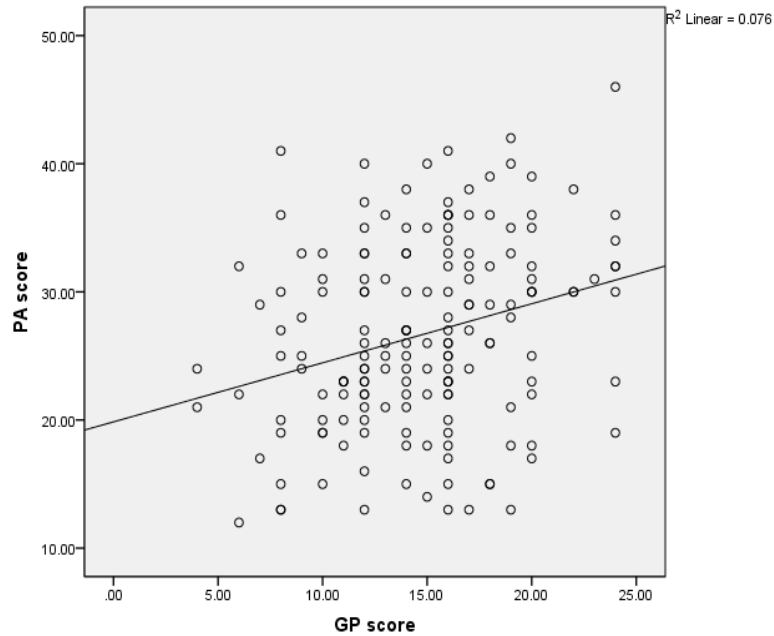


Figure 4: A scatter plot illustrating the positive relationship between PA and GP

H3 There will be a positive relationship between FoC and age.

A non-significant weak negative correlation was found between FoC and age, $R = .148$, $p = .056$ ($p > .05$), illustrated in Figure 5. Therefore, this hypothesis is rejected as a positive one-tailed prediction was made.

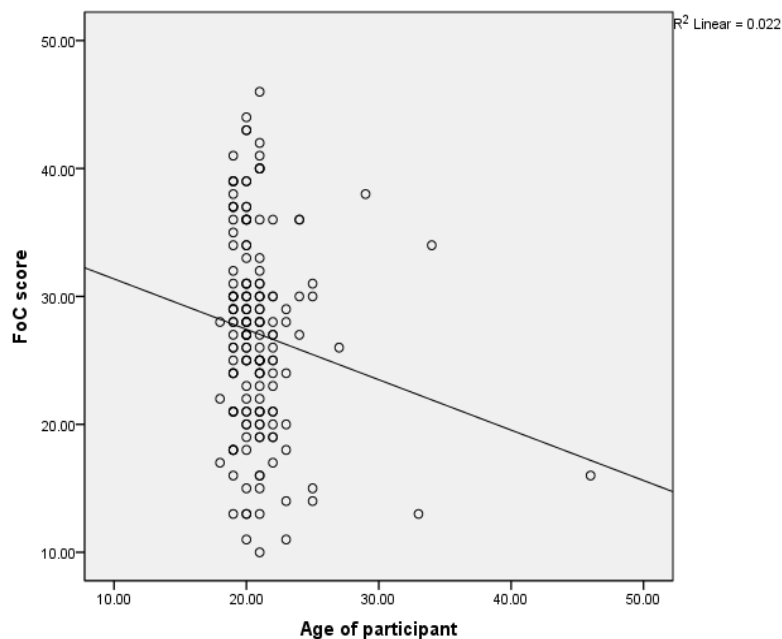


Figure 5: A scatter plot illustrating the negative relationship between FoC and age

H4 There will be a positive relationship between GP and age.

A significant weak negative correlation was found between GP and age, $R = .220$, $p = .004$ ($p < .01$). A significant model emerged from the regression analysis, $F(1,166) = 8.43$, $p = .004$ ($p < .01$), illustrated in Figure 6. However, this hypothesis is rejected as a positive one-tailed prediction was made. Nevertheless, this surprising statistically significant finding needs to be taken into account for the outcomes of this study and future research.

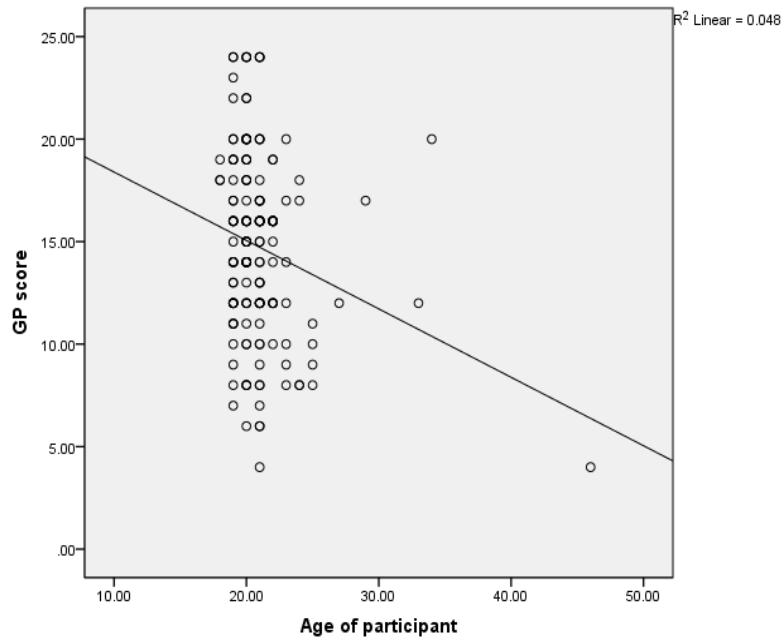


Figure 6: A scatter plot illustrating the negative relationship between GP and age

H5 There will be a significant relationship between PA and age.

No relationship was found between PA and age, $R = .020$, $p = .798$ ($p > .05$). Therefore, the hypothesis is rejected as a significant relationship between the two variables was hypothesised.

H6 There will be a significant relationship between FoC and PA.

A significant positive correlation was found between FoC and PA, $R = .593$, $p = 2.598E^{-17}$ ($p < .01$). A significant model emerged from the regression analysis, $F(1,166) = 89.9$, $p = 2.598E^{-17}$ ($p < .01$), there is a moderate positive association between FoC and PA, illustrated in Figure 7. $R^2 = .351$, which would suggest that in the sample, 35.1% of the variance in PA is predicted by FoC. Adjusted $R^2 = .347$, which suggests that 34.7% of PA in the population is being predicted by FoC, if the sample is representative. It is understood by the unstandardized regression coefficient that the FoC total was .563, which would suggest that for each single unit change in FoC there is a .563 unit change in PA. The constant (intercept) is 11.42, which when consulting the associated t -test is significant, $t = 6.84$, $p = 1.458E^{-10}$ ($p < .01$).

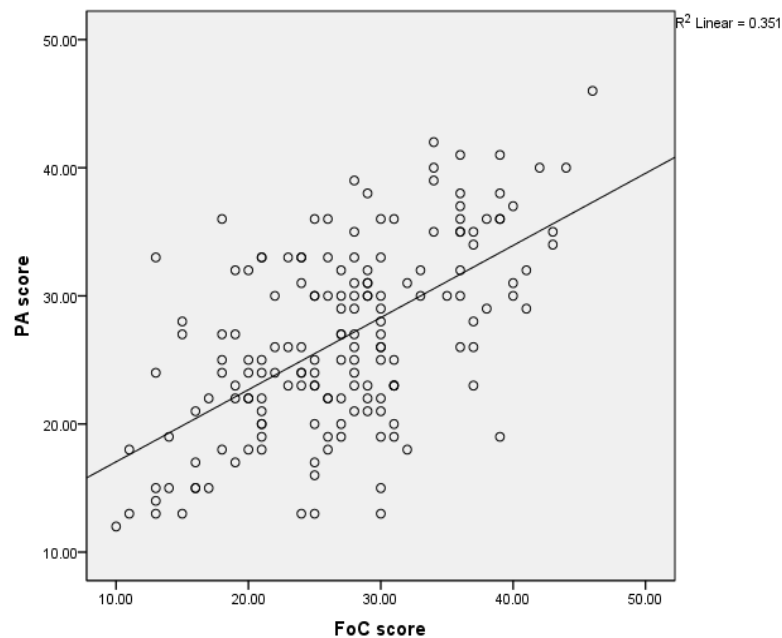


Figure 7: A scatter plot illustrating the positive relationship between FoC and PA

T-tests

Independent-samples *t*-tests have been performed on H7, H8 and H9, to compare males and females scores on the DVs, PA, FoC and GP¹. This statistical test is justified as all data has met the assumptions for a parametric test (GP data has been previously justified by Labovitz, 1970) and has been obtained using an independent groups design.

H7 Female participants will have a higher PA score than males.

Females scored higher on the PA questionnaire ($M = 28.1$, $SD = 7$) than males ($M = 22.3$, $SD = 6.6$), illustrated in Figure 8. The mean difference between conditions was 5.75 and the 95% confidence interval for the estimated population mean difference was between 3.3 and 8.2. The independent *t*-test showed that the difference between males and females was significant, $t = 4.66$, $df = 166$, $p = 6.516E^{-6}$ ($p < .01$). However, this represents a two-tailed hypothesis and a one-tailed prediction was made, thus, half of this value is appropriate but both results in a statistically significant finding.

¹ For H7, H8 and H9, Levene's test for equal variances was not significant ($p > .05$) so equal variances were assumed.

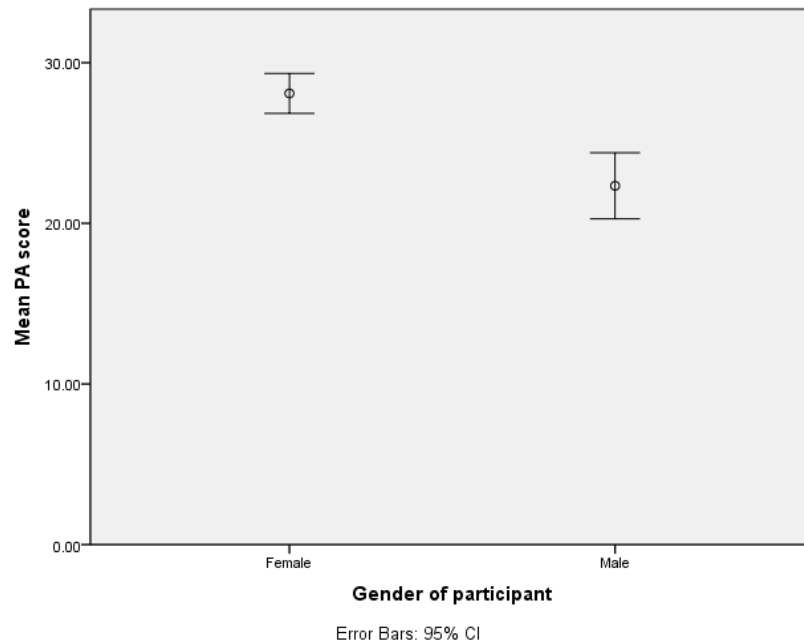


Figure 8: An error bar chart illustrating the mean PA scores for males and females

Figure 8 reveals no overlap between error bars for male and female participants, indicating a significant difference between PA scores.

H8 Female participants will have a higher FoC score than males.

Females scored higher on the FoC questionnaire ($M = 28.6$, $SD = 7.4$) than males ($M = 22.3$, $SD = 6.9$), illustrated in Figure 9. The mean difference between conditions was 6.35 and the 95% confidence interval for the estimated population mean difference was between 3.8 and 8.9. The independent t -test showed that the difference between males and females was significant $t = 4.92$, $df = 166$, $p = 2.073E^{-6}$ ($p < .01$). However, this represents a two-tailed hypothesis and a one-tailed prediction was made, thus, half of this value is appropriate but both results in a statistically significant finding.

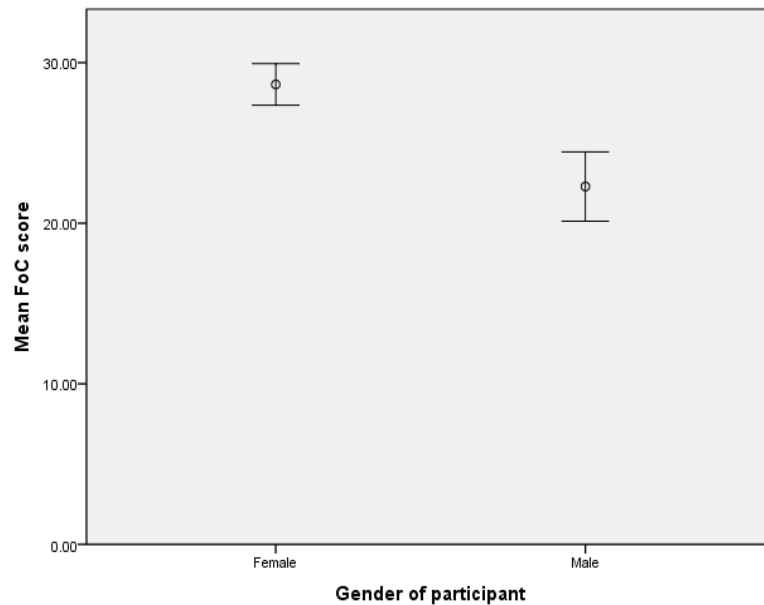


Figure 9: An error bar chart illustrating the mean FoC scores for males and females

Figure 9 reveals no overlap between error bars for male and female participants, indicating a significant difference between FoC scores.

H9 Female participants will have a higher GP score than males.

Females had a higher GP score ($M = 15.1$, $SD = 4.4$) than males ($M = 13.6$, $SD = 4.2$), illustrated in Figure 10. The mean difference between conditions was 1.5 and the 95% confidence interval for the estimated population mean difference was between $-.01$ and 3.06 . The independent t -test showed that the difference between males and females was not significant $t = 1.96$, $df = 166$, $p = .052$ ($p > .05$).

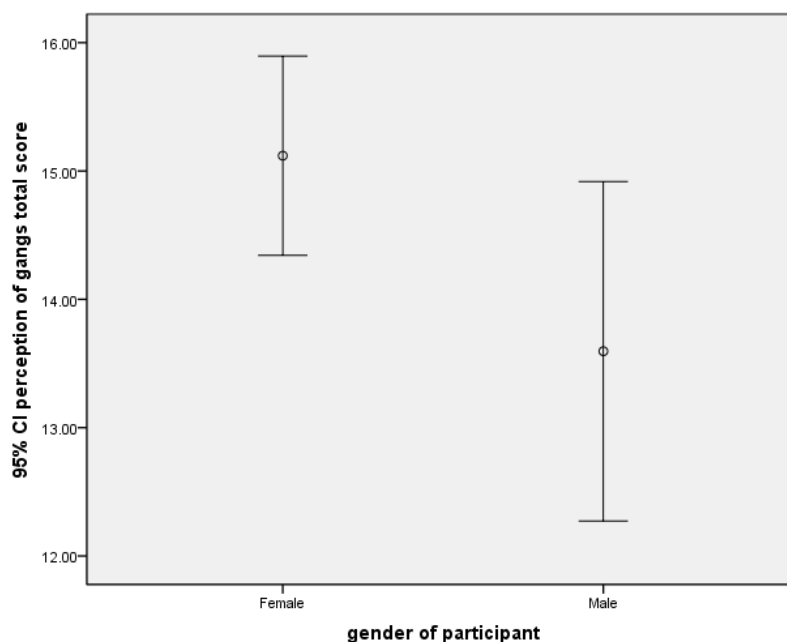


Figure 10: An error bar chart illustrating the mean GP scores for males and females

Figure 10 reveals an overlap between error bars for male and female participants, indicating a non-significant difference between GP scores. However, as the hypothesis is one-tailed, arguably, the significance level can be divided by two, giving a p value of .026, which is significant at the $p < .05$ level, therefore, the hypothesis is upheld.

Analysis of variance

One-way between-subjects ANOVA's were performed on H10, H11 and H12, to investigate the effects of FoC, PA and GP between districts, this statistical test is justified as the IV district has more than two levels. Post hoc² were computed but given that the one-way ANOVAs are not significant, are not reported.

H10 There will be a significant effect in FoC between districts.

There was no significant effect found in FoC between districts, $F(4, 163) = 1.98$, $p = .099$ ($p > .05$), partial $\eta^2 = .046$. Therefore, this hypothesis is rejected.

H11 There will be a significant effect in PA between districts.

There was no significant effect found in PA between districts, $F(4, 163) = 2.39$, $p = .053$ ($p > .05$), partial $\eta^2 = .055$. Therefore, this hypothesis is rejected.

H12 There will be a significant effect in GP between districts.

There was no significant effect found in GP between districts, $F(4, 163) = 1.79$, $p = .133$ ($p > .05$), partial $\eta^2 = .042$. Therefore, this hypothesis is rejected.

A 2x2 within-subjects repeated measures ANOVA was performed on H13, H14 and H15, to identify any main effects of the IVs within the GP vignettes and any interactions between them. This statistical test is justified as the GP data is drawn from a normally distributed population and as previously justified, can be analysed using parametric statistics.

H13 There will be a significant main effect in GP between home-based and street-based vignettes.

There was a significant main effect for the location of vignettes $F(1, 167) = 22.76$, $p = 3.985E^{-6}$ ($p < .01$), partial $\eta^2 = .120$. Participant's GP score was significantly higher when the youth groups in the vignettes were observed when the participant was home-based ($M = 3.82$) as oppose to street-based ($M = 3.55$).

H14 There will be a significant main effect in GP between all male youths and mixed sex youths in the vignettes.

There was a significant main effect for the gender of the youth groups in the vignettes $F(1, 167) = 25.36$, $p = 1.223E^{-6}$ ($p < .01$), partial $\eta^2 = .132$. Participants' GP

² Bonferroni was the post hoc test computed.

score was significantly higher when the youth groups in the vignettes were all male ($M = 3.84$) as oppose to when females were incorporated ($M = 3.54$).

H15 There will be an interaction effect between the participant's location and the gender of the youth groups in the vignettes.

No significant interaction was revealed between location and the gender of the youth groups in the vignettes, $F(1, 167) = .65$, $p = .421$ ($p > .05$), partial $\eta^2 = .004$.

Discussion

The aim of this study was to evaluate the factors that relate to FoC levels amongst students in Greater Manchester. A positive relationship between FoC and GP was revealed, supporting H1, thus, this study has established that GP is a factor relating to students FoC. This finding is consistent with research which suggests that youth groups strongly influence FoC (Tulloch, 2000). Additionally, previous research revealed that youth groups are perceived as problematic (Young NCB Priority: Youth, Crime & Prevention, 2010) and it was concluded that GP could be a predictor of FoC; nevertheless, researchers did not explore this likelihood. The present study confirmed that GP was a predictor of FoC amongst students, thus, extends research on the relationship between GP and FoC. Furthermore, in support of H2, the current study found a positive relationship between PA and GP and results suggested that GP was a predictor of PA. There is limited past research on the relationship between PA and GP, however, a plausible explanation for this finding is that perceiving a youth group as a gang is threatening and thus, PA are taken. Nevertheless, further research is necessary to investigate whether this finding is consistent and can be generalised to a wider population.

The higher FoC scores were amongst female students, which supported H8, this finding is parallel with previous literature, which almost universally shows that females are more fearful of crime than males (O'Gorman, 2009). In support of H9, the higher GP scores amongst the student sample were also found amongst females. Research on GP is limited, thus, there is no consistent finding on GP and gender, however, past research has established that GP increases males' FoC higher than females' (Tulloch, 2000). Nevertheless, Tulloch's (2000) finding is surprising, as research suggests that females are more fearful of crime and since the current study has revealed that females have higher GP, Tulloch's (2000) results are somewhat unanticipated, therefore, upcoming research should investigate GP, gender and the relationship with FoC. Furthermore, consistent with H7, female students scored higher on the PA questionnaire, such findings support those of Ranzijin *et al.* (2002), who found that females took greater PA than males. However, the present study recruited three times more females than males; thus, the validity of the findings are questionable and future studies should employ selective sampling to recruit an equal gender sample.

Interestingly, H4 revealed a negative relationship between GP and age, suggesting that younger participants had a higher GP score, thus, the hypothesis was rejected. A plausible justification for this finding may be due to the sample selection being

entirely from a student population, resulting in a narrow, skewed, age sample. Due to limited GP research, future studies should use a wider age sample to investigate the relationship between GP and age and establish whether results are consistent, or similarly to research on FoC and age, appear to be inconsistent.

A negative relationship between FoC and age was revealed (H3), which is in line with previous research that has found young people to be most fearful of crime (Chadee & Ditton, 2003), nevertheless, H3 was rejected as a positive relationship was predicted. The relationship between FoC and age has not been consistent within the literature, researchers (Ferraro & Lagrange, 1987; Yin, 1982) suggest that the inconsistency could be due to the methodological limitations. Nevertheless, although the age range in this study was limited, which is a probable explanation for this finding, the FoC measure was established reliable, thus, there is a great need for future research to attempt to establish a consistent relationship between FoC and age. Furthermore, no relationship was found between PA and age, thus, H5 was rejected. Nonetheless, this finding supports those of Ranzjin *et al.* (2002), who used a broader age sample and yet, still revealed no age differences in PA scores, thus, future research is required to attempt and establish a relationship between PA and age.

A positive relationship between PA and FoC was revealed, which upheld H6, this contradicts findings by Ranzjin *et al.* (2002) who found no relationship between PA and FoC. Consistent with Rosenbaum (1986), who revealed that PA increases FoC, PA was a predictor of FoC in the current study, a plausible explanation for this finding is that the precautions are persistent reminders of victimisation risks (Rosenbaum, 1986), however, this challenges research which found that FoC predicts PA (Jackson & Gray, 2010). Future research should investigate the reasons for PA increasing FoC amongst students, given that PA should induce feelings of reassurance (Jackson & Gray, 2010). Additionally, research is parallel to findings by Lemaire (2000), who established a relationship between FoC and PA amongst a student population. This suggests that there is a consistent relationship between students FoC and PA. Nevertheless, previous research has proposed that students are not concerned with PA until after they have been a victim of crime (NUS Social Policy Briefing, 2009), thus, future researchers should compare PA levels between students who have been a victim of crime and those who have not.

According to Grabosky (1995), geographical factors relate to FoC, conversely, the current study found that students FoC, PA and GP scores did not differ between the districts of Manchester City Centre, Rusholme, Fallowfield, Withington and Didsbury, thus, H10, 11 and 12 were rejected. It was concluded that geographical factors did not relate to students FoC. Past research has established that higher FoC levels are reported in urban settings (Clemente & Kleiman, 1976; Kennedy & Browne, 2007; Mirrlees-Black & Allen, 1998), thus, a probable explanation for the findings of this study is that all districts are within an urban setting. Nevertheless, the current study found that FoC was apparent amongst the students living in Greater Manchester; however, Bouwens (2004) revealed that FoC was not evident amongst students living in South Manchester. Therefore, future research would benefit from recruiting a larger sample of students from a wider range of districts across Greater Manchester, as arguably, the sample and districts selected in the present study may have been too narrow.

This study established that participants' GP score was higher when they observed youth groups in the vignettes home-based, as oppose to street-based (H13). This finding contradicts previous research, which revealed that youth groups observed in the streets are considered more problematic due to the immediate confrontation (Young NCB Priority: Youth, Crime & Prevention, 2010), thus, the findings of the current study are relatively unanticipated and future research should clarify this finding. Furthermore, participants' GP score was higher when the youth groups portrayed in the vignettes were all male, as oppose to mixed sex (H14). A plausible explanation for this finding is that youth gangs are stereotypically male orientated, thus, encountering all male youth groups increases the propensity to perceive the youth group as a gang. The current study found that there was no interaction between the location of participant and the gender of the youth groups in the vignettes (H15). Nevertheless, results are interpreted with caution, as participants are not reacting to a real situation when they are presented with a hypothetical scenario conveyed in vignettes, how participants act and their likelihood to perceive the youth groups as a gang in a real situation, may differ.

Limitations and future research

When interpreting the findings of the research, limitations have been considered to enable recommendations for future research. A main limitation is the use of a student sample, as findings cannot be generalised to a wider population, however, findings can be generalised to other university students living in Greater Manchester. Nevertheless, the student sample is justified, as students FoC is an under researched area and awareness of student FoC levels is beneficial, as appropriate programmes and interventions can be implemented by universities and student unions to promote student safety. Furthermore, researchers should focus on the causes of student fear, to enable specific strategies to be implemented to reduce student's FoC levels.

A further limitation is that the sample was restricted to students of Greater Manchester, thus, results cannot be generalised to students living in other parts of the UK and therefore, it is necessary to investigate FoC amongst student populations in other cities. Nonetheless, results are relevant and may be of interest to local Police Officers who can improve and increase their patrols and target youth groups that relate to student FoC levels within Greater Manchester.

As the current study revealed that taking PA predicts FoC, strategies should be implemented that inform students of the benefits of PA, as taking crime precautions has the potential to reduce the risk of victimisation (Sanderson, 2006), thus, increased knowledge on the benefits of PA will possibly reduce FoC. Nevertheless, although the measures used to collect data in this study are accepted as internally reliable, statistics revealed that if item two on the PA questionnaire was deleted, reliability would increase (see Appendix XIII), thus, in the future, researchers should revise this item to improve reliability of the measure.

Furthermore, it has been reported that survey results may not correlate with actual behaviours and it is difficult to ascertain the truthfulness of findings, thus, distortions may have occurred due to socially desirable responding. If this study were to be

replicated, lie scales should be utilised to test for socially desirable responding between genders, as they have been found to be reliable and improve the validity of survey results. With the use of lie scales, Sutton and Farrall (2005) concluded that males suppress their FoC, which questions the validity of the current study's findings and previous research that has not used lie scales.

As GP research is limited, upcoming research should make use of the vignettes generated for the present study, to establish whether results are consistent amongst other populations. The vignettes should be further developed to explore different contexts to gain a more in depth understanding of GP. A further recommendation is the use of video vignettes, arguably, the written scenarios will be visualised differently for each participant, however, video vignettes show a more detailed accurate portrayal of the scenario, thus, the accuracy of the judgements would increase, as all participants would be faced with exactly the same situation.

Conclusion

This study has revealed that students FoC levels within Greater Manchester relate to the factors GP, PA, gender and age, however, district did not relate to FoC. Furthermore, relationships between the factors were established and findings suggest that GP differs depending on the gender of the youth groups and the location that they are observed. This study has and has extended the limited research on students FoC and provided beneficial findings, emphasising the need for universities to continue to implement strategies, in order to reduce student FoC.

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