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Individual differences, autism spectrum disorder, pathological demand avoidance; impulsivity, emotional stability and delinquency

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Individual differences, autism spectrum disorder, pathological demand avoidance; impulsivity, emotional stability and delinquency

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Topic Overview

EDA

Extreme Demand Avoidance (EDA), has prompted interest in researchers, due to the increasing number of children presenting with the profile of EDA (Newson, Le Maréchal & David, 2003). However, EDA has not been recognised as a distinct diagnostic category (Egan, Linenberg & O'Nions, submitted). EDA was first defied as Pathological Demand Avoidance by Newson et al. (2003), but for the purpose of this research the term EDA will be used to avoid any judgmental terminology. EDA is a behavioural phenotype characterised by an intense drive to avoid demands and expectations, which is motivated by a range of emotional symptoms such as anxiety (Newson et al., 2003). Individuals with EDA have the urge to control the demands placed upon them which creates restriction and avoidance. Subsequently, the traits of EDA impact on an EDA individual's everyday quality of life and impedes their ability to complete tasks. Anxiety is an important characteristic of EDA since it is thought to maintain the maladaptive behaviour of avoiding demands, which can often result in individuals with EDA resorting to violent and emotional outbursts in an attempt to obtain control. Newson et al. (2003) found that in a cohort of 150 children diagnosed with EDA between 1997 and 2000, 60% of individuals with EDA suffered from extreme panic attacks or outbursts, with 86% displaying aggression to others.

Research has demonstrated that individuals with EDA also score highly on characteristics of social communication disorder; anxiety and sudden behavioural changes (O'Nions et al., 2015). Characteristics of EDA such as aggression, emotional instability and anxiety could predispose EDA individuals to delinquency, as they inappropriately act out.

ASD

Autism Spectrum Disorder (ASD) is a life-long developmental disorder which falls under a singular diagnostic framework in the most recent Diagnostic Statistic Manual (DSM-5). Diagnosis includes two symptom dimensions and a classification based upon the severity of the symptoms (Zwaigenbaum, 2012). Individuals with ASD are characterised by a range of perceived impairments identified by Wing in 1981 as the 'triad of impairments'. This includes difficulties in socialisation, communication and imaginative thinking. There is conflicting evidence as to whether ASD is overrepresented in the Criminal Justice System (CJS), however, it is acknowledged that those with ASD have predisposing characteristics and deficits that make them potentially more vulnerable to commit crime (King & Murphy, 2014). As a result, it remains unclear if individuals with ASD are more likely to commit delinquent acts or score highly on measures of delinquency.

It is important to establish if ASD has predictive power of delinquency in order to inform and educate professionals in the CJS. If individuals with ASD are more likely to act delinquently then there are implications regarding how to handle ASD offenders appropriately, as well as to inform rehabilitation programmes and offending interventions. Research from the National Autistic Society (NAS, 2008) identified that 90% of police and solicitors who have first

point of contact with ASD offenders have no specific training and lack awareness of the traits and difficulties of ASD. Therefore, police may judge ASD individuals behaviour as inappropriate or misinterpret their behaviour as criminal (Debbaudt, 2004).

Co-morbidity

EDA has been associated with ASD due to the shared characteristics of the disorders such as language delays, and impaired social communication (Newson et al., 2003). The association between the two disorders has arguably hindered EDA becoming a diagnosis in its own right. EDA and ASD appear to be highly co-morbid; O'Nions et al. (2015) found that all but one of the EDA individuals in the sample met the criteria for ASD, demonstrating the high co-morbidity of ASD and EDA. Individuals with ASD and EDA struggle socially in regards to understanding and relating to peers, yet, unlike many individuals with ASD, individuals with EDA often resort to socially manipulative behaviour in order to avoid demand requests and gain control (O'Nions, Viding, Greven, Ronald & Happe, 2013). This suggests that individuals with EDA may be more likely to carry out anti-social behaviours to gain control, or manipulate others in a deviant way. This has been demonstrated, with scores on an adult screening tool for EDA characteristics (EDA-QA) predicting self-reported delinquency (Egan et al., submitted). However, a characteristic like social manipulation is uncommon in individuals with ASD due to their deficit in ToM (Baron-Cohen, Leslie & Frith, 1985). This leads to ASD individuals experiencing difficulties inferring the mental states of others, a skill needed for social manipulation. In addition, the gender balanced distribution of EDA (Newson et al., 2003) contrasts the gender bias

profile of ASD, which exhibits a strong male bias (Werling & Geschwind, 2013). EDA is therefore not synonymous with ASD.

EDA is also similar to other disorders; behavioural characteristics of EDA are comparable to characteristics of conduct disorder, unlike ASD itself. This has led to confusion around the specific behavioural profile of EDA and questions how closely EDA is related to conduct disorder and ASD (O'Nions et al., 2013). It remains unknown if EDA is simply a commodification of multiple other disorders. For example, O'Nions et al. (2013), used a method of systematic comparison and found that the behavioural profile of an EDA group displayed comparable traits with an ASD group in terms of peer problems. However, the EDA group also had comparable anti-social traits with a group with conduct problems. Additionally, using a method of functional analysis of 150 cases of individuals diagnosed with EDA or ASD, EDA was found to be significantly different to ASD in its presentation (Newson et al., 2003). The results highlight that individuals with EDA could be more vulnerable to delinquent behaviour, due to their anti-social and manipulative traits, combined with their lack of social understanding and language delays. While some people with ASD may present with EDA, the syndrome might be seen in other populations.

Impulsivity

Impulsivity is a fundamental trait predicting risk and offending. Personality traits associated with impulsivity such as Neuroticism (N) have been linked to antisocial behaviour (Egan, 2011). Impulsivity is linked to N and is characterised by an inability to disinhibit behaviour and desires; therefore, individuals high in N are vulnerable to delinquency. Impulsivity is hereditable (Bezdjian, Baker & Tuvblad, 2011), suggesting that individuals who are

impulsive have limited control over their behaviour, and may need more assistance to acquire self-management. A study which investigated the hereditability of Delayed Discounting (DD) in mono-zygotic and diygo-zygotic twins, found a significant hereditability of DD (Anokhin, Grant, Mulligan & Heath, 2015), inferring the hereditability of impulsive behaviour.

Individuals with EDA often have difficulties in emotional regulation and emotional control which can be presented as violent outburst or aggressive and impulsive behaviour. Impulsivity poses a major risk for individuals with EDA becoming delinquent because of the relationship between impulsivity and delinquency (Luengo, Carrillo-de-la-Peña, Otero & Romero, 1994). It is suggested by Newson et al. (2003) that impulsivity in EDA may have a neurological underpinning, since not every child with EDA in the sample presented traits of impulsivity. Longitudinal data found that earlier behavioural impulsivity was related to serious subsequent delinquency, which remained stable over time (White et al., 1994); impulsivity was overrepresented in delinquent populations. A strong link between impulsivity and delinquency infers that individuals with EDA could be more vulnerable to delinquency simply due to their impulsive traits. The current study will investigate if scores on a measure of EDA can significantly predict delinquency alone, or if EDA individuals only score highly in measures of delinquency when also scoring highly on measures of impulsivity.

Emotional Stability

Another characteristic of EDA which could predispose individuals to delinquency is high levels of emotional instability (Newson et al., 2003). A study

examining the distinction between EDA and ASD, found individuals with EDA were more liable to mood swings that resulted in violent behaviour, in comparison to a sample of individuals with ASD (Newson et al, 2003). Moreover, in comparing a group of individuals with EDA and ASD, individuals with EDA displayed more emotional symptoms (O'Nions et al., 2013), indicating more emotional instability in the EDA sample. Neuroticism is a personality trait with facets of anxiety and emotional instability and is part of the Five Factor Model (FFM, McCrae & Costa, 1987). Individuals from a population-based community sample who scored more highly on measures of neuroticism were more likely to have depressive and anxiety disorders (Weinstock & Whisman, 2006). A meta-analysis of Eysenck's personality questionnaire found a direct relationship between neuroticism and anti-social behaviour (Cale, 2006). Another meta-analysis of impulsivity which focused on the FFM of personality found that N was significantly related to antisocial behaviour (Jones, Miller and Lynam, 2011). The results suggest individuals high in N may be more likely to carry out antisocial, aggressive and delinquent behaviour (Jones et al, 2011).

Studies have revealed that individuals who score higher on measure of N are more likely to score highly on self-reported delinquency in crimes that involve violence (Heaven, 1996). Samuels et al. (2004) discovered that individuals who score highly on N are more likely to commit crime and more likely to score highly on facets of anger and impulsivity, further linking N to delinquency. Likewise, Ljubin-Golub, Vrselja and Pandžić (2017) found that a lower score of emotional stability correlated with higher scores of delinquency for adolescent boys and a lower score of emotional stability predicted violent delinquency in adolescent girls. The link between levels of emotional stability and subsequent delinquency infers that a personality characterised by poor

emotional regulation can be a predisposing factor for delinquency in both sexes. In relation to EDA specifically, scores on the EDA-QA were predicted by greater emotional instability (Egan et al., submitted), implying that individuals with EDA are more likely to be emotionally insecure. Therefore, the current study aims to look at how individuals who score highly on measures of EDA and ASD score on measures of impulsivity and emotional stability, and if these scores are predictive of delinquency scores.

Delinquency

It is crucial to identify if individuals with characteristics of EDA are more likely to engage in delinquent behaviour and if this is driven by emotional or antisocial traits. If individuals with EDA are more likely to act delinquently, then this could have important implications in the treatment of EDA offenders within the CJS. It is vital to establish treatment programmes specifically for EDA offenders because management strategies developed for individuals with EDA are different to management strategies for individuals with ASD (O'Nions et al, 2015). For example, the successful use of variety and flexibility to manage individuals with EDA (Newson et al, 2003) are strategies that directly contrast approaches utilised to handle individuals with ASD (O'Nions et al., 2015). A key difference between EDA and ASD is that individuals with ASD struggle with ambiguity and prefer routine and repetition, whereas, individuals with EDA do not appear to benefit from such strategies (O'Nions, et al, 2013). Moreover, there are issues regarding how individuals within the CJS could identify someone with EDA, due to the lack of understanding about the condition.

The Current Study

Despite previous research investigating relationships between EDA, ASD, impulsivity, emotional stability and delinquency, no studies have investigated their predictive relationship simultaneously. The current study will investigate how scores on measures of EDA, ASD, impulsivity and emotional stability predict scores of self-reported delinquency. The study will also examine whether impulsivity moderates the relationship between EDA and delinquency.

Research Questions and Hypotheses

The current study seeks to establish if the presence of EDA and ASD traits in the general population predict scores of self-reported delinquency and how measures of impulsivity and emotional stability moderate their predictive power.

Research Question 1: Do higher scores on measures of EDA or ASD predict higher a score on a measures of self-reported delinquency?

Hypotheses 1: Higher scores on measures of EDA and ASD will predict a higher score on a measure of self-reported delinquency.

Research Question 2: Do higher scores of measures of EDA and impulsivity predict a higher score on a measure of self-reported delinquency?

Hypothesis 2: Higher scores on measures of EDA and impulsivity will predict a higher score on a measure of self-reported delinquency.

Research Question 3: Do higher scores of measures of EDA and lower scores of emotional stability predict a higher score on a measure of self-reported delinquency?

Hypotheses 3: Higher scores on measures of EDA and lower scores of emotional stability will predict a higher score on a measure of self-reported delinquency.

Research question 4: Does impulsivity moderate the relationship between EDA and delinquency?

Hypotheses 4: A moderation analysis of the relationship between EDA and delinquency will show if the effects are due to impulsivity's influence.

Methods

Participants

Participants will be recruited online from the general population. However, to ensure that participants are representative of the target sample, participants will be recruited from EDA and ASD support groups/forums online. These online domains aim to include individuals who have received a diagnosis, or believe they fit the criteria for a diagnosis of EDA or ASD. By targeting individuals to take part in the study who are interested in the diagnosis of EDA and ASD, attrition rates of participants should be reduced, because of their own perceived state. To reduce bias in the selection procedure, participants will complete the study on a voluntary basis and will remain anonymous. Inclusion criteria for participants will be that they are over 18 years old and have significant English comprehension to ensure they can complete the psychometric measures. A power analysis using the G*power computer program indicated that with 23 moderators, a total sample of 109 participants will be needed to detect small effects (d=.15), with a power of 0.95, using a multiple linear regression with alpha at $p<0.05$.

Procedure

The design is a predictor outcome study, with the outcome variable being the measure of self-reported delinquency and the predictor variables being measures of

ASD, EDA, impulsivity and emotional stability. It will be a between-participants design; participants will complete a questionnaire and multiple psychometric measures. The study will be conducted on the Bristol Online Survey (BOS) website which will be made accessible to participants online via a link advertised (Appendix A). The study will be advertised online in ASD and EDA support groups/forums. Participants will be given background information on the study from the participant information sheet (Appendix B). Participants will then give fully informed consent (Appendix C) before completing the psychometric measures. The psychometric measures completed will be self-reported so the participants will complete the study alone without a researcher present, there will be an instructions form for participants (Appendix D). The study should take an average time of 40 minutes to complete. Once the participant has completed the survey online they will be given access to a debrief form (Appendix E) and information regarding the researchers to contact regarding any queries relating to the study. Throughout the study the participant will be made aware of their right to withdraw, this can be difficult to display in internet mediated research (BPS, 2013). Therefore, a visible "withdraw" button will be present on every page of the study. A button at the end of the study will confirm if the participant is willing for their data to be used by the researchers by pressing "submit". Participant's data will remain anonymous so participants will be identified via a participant number and no personal details that could identify the participant will be recorded or stored (BPS, 2013). The data collected from the study will be stored securely, with only the researcher(s) and supervisors having access to the data.

Materials

1. AQ-10 (Appendix F) adult screening tool for ASD (Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001; Booth et al., 2013. The measure consists of

10 items, with 1 dimension and has been established as an appropriate alternative to longer AQ measures. The AQ-10 was found to perform well when discriminating between individuals with and without a clinical diagnosis of ASD (Booth et al., 2013). The measure has also been found to have high internal consistency and high-test accuracy in its short form (Allison, Auyeung & Baron-Cohen, 2012).

2. EDA-QA (Appendix G) measure of EDA (Egan et al., submitted). This is a self-report psychometric measure of EDA traits in adults, consisting of 26 items. The measure is highly reliable (α=0.9) and presented acceptable inter-rater agreement between participants and observer ratings (Egan et al., submitted).
3. IPIP-50 (Appendix H) - measure of the five major personality factors (Goldberg et al., 2006), with the construct of interest being emotional stability. This is a self-report psychometric measure of personality consisting of 50 items, with 5 dimensions; Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Intellect. The measures scales have been found to have good internal consistency and relate strongly to the major dimensions of personality (Gow, Whiteman, Pattie & Deary, 2005).
4. RAADS-14 (Appendix I) adult screening tool for Autism (Eriksson, Andersen, Bejerot, 2013). The measure consists of 14 items and 3 dimensions, so the measure will indicate the specific deficits of ASD; mentalising deficits, social anxiety and sensory reactivity (Eriksson et al., 2013).The RAADS screening tool is recommended by NICE guidelines and the psychometric properties have been shown to be satisfactory (Eriksson et al., 2013).
5. SRED UK (Appendix J) (Moffitt & Silva, 1988). This is a self-report delinquency measure which consists of 25 items. It is suggested that self-reported measures of delinquency are more accurate in estimating the distribution and frequency of

delinquency than official measures since many individuals who have committed delinquent acts are not detected or convicted (Moffitt & Silva 1988). Studies have further found that self-report measures are appropriate for multiple methods of analysis, inferring self-reported measures of delinquency are more reliable (Thornberry & Krohn, 2000).

6. SUPPS-P (Appendix K) - measure of Impulsivity (Lynam, 2013). This is a self-report psychometric measure of trait impulsivity and consists of 20 items. The SUPPS-P measures 5 dimensions of impulsivity; negative urgency, lack of perseverance, lack of premeditation, sensation seeking and positive urgency. The SUPPS-P has been found to have high internal consistency (0.74-0.88) and inter-scale correlations with the original UPPS-P (Cyders, Littlefield, Coffey & Karyadi, 2014). The UPPS-P has been established as a valid measure to use for both sexes as mean differences on the scale were found to reflect trait-level differences, meaning comparisons of men and women on the UPPS-P can be considered valid (Cyders, 2013). The UPPS-P is a theoretically valid and optimal measure of impulsivity that supersedes more available measures of the construct. Moreover, the scale has been validated in adolescent and clinical samples (Cyders, 2013). The SUUPS-P will be used for the study since it has high (66%) time-savings, in relation to the original version (Cyders et al., 2014).
7. Questionnaire (Appendix L) - This will be a simple questionnaire administered before the psychometric measures to collect demographic information regarding the participant e.g. age, gender, pervious diagnoses etc.

Analytical methods

Once validity and reliability of the measures have been established, the results will be analysed using the software programme SPSS using a multiple linear regression analysis. Multiple linear regression assumes multi-variate normality so the residuals must be normally distributed. The relationship between the predictor variables and outcome variable is assumed to be linear. Multiple linear regression assumes no multi-collinearity, so the predictor variables should not be highly correlated with one another (Chatterjeee & Simonoff, 2013). This assumption can be tested using variance inflator factor values to ensure the strength of regression is not misleading and is valid. Errors between observed and predicted values should be normally distributed (Chatterjeee & Simonoff, 2013). Normality can be checked using a kolomogrov-smirnov test on the residuals to ensure the data is normally distributed and a parametric test can be carried out if the data meets the assumptions. The dependent variable (DV) of the regression will be self-reported delinquency, and the independent variables (IV/predictors) will be scores on EDA, ASD, impulsivity and emotional stability. The possible mediating effects of impulsivity will be tested using the PROCESS macro for SPSS (Hayes, 2012).

Estimated Time Scale

24th November 2017	Research proposal and ethics draft due in
18th December 2017	Feedback of proposal and ethics draft
18th December 2017 - January 2018	Finalise and complete research proposal, develop BOS etc. Finalise ethics application and apply for ethics
Late February 2018	Receive ethical approval
Start of March 2018	Send out BOS to participants

March - May 2018	Complete research paper up to results section, complete other components of research portfolio
Start of June 2018	Collect and analyse results
Early July 2018	Submit draft portfolio
1st of August 2018	Submit final draft portfolio

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Appendices

Appendix A

Advert to be posted on online forums and Facebook pages:

PARTICPANTS WANTED!

As part of a postgraduate course at the University of Nottingham, a research study into the adult expression of features associated with Extreme/Pathological Demand Avoidance (EDA) is being conducted. We are looking for volunteers to take part in this research!

The purpose of this study is to investigate the relationship between Autism Spectrum Disorders, ADHD and Personality Disorder (PD) to EDA, as well as to look at the relationship between EDA and law breaking, impulsivity and emotionality.

The results will help clinical researchers to understand EDA. This will also allow for better allocation of supportive resources and improve clinical care.

The study comprises several questionnaires looking at behaviour, experiences and characteristics, which will take 40 minutes to an hour to complete, but most probably rather less. If would like to take part in this study, you will be asked to sign a consent form allowing the researchers to access and use your anonymous data. Your participation is voluntary, and you are free to withdraw from the study. No personal data will be collected, and your answers to the questionnaires will be completely anonymous. Only the named researchers and the supervisor will have access to the data.

If you are interested in taking part in this study, please click the link below which will take you to research page: (*insert link)*

If you have any questions about this research, please contact any of the following individuals:

Grace Trundle - msxgt4@nottingham.ac.uk

Elinor Bull - msxeb8@nottingham.ac.uk

Dr Vincent Egan - mczve@exmail.nottingham.ac.uk

Thank you for your time and consideration!

Appendix B

PARTICIPANT INFORMATION

School of Medicine, Faculty of Medicine & Health Sciences

Project Title: Individual Differences, Autism Spectrum Disorder and Pathological Demand Avoidance

Researcher: Elinor Bull (msxeb8@nottingham.ac.uk)

Grace Trundle (msxgt4@nottingham.ac.uk)

Supervisor: Vincent Egan (mczve@exmail.nottingham.ac.uk)

Ethics Reference Number: 238-1802

You are being invited to participate in a research study titled **Individual Differences, Autism Spectrum Disorder and Pathological Demand Avoidance.** This is because of your expressed interest in Pathological Demand Avoidance (PDA) and Autism Spectrum Disorder (ASD). The research will be conducted by Elinor Bull and Grace Trundle behalf of the University of Nottingham's School of Medicine. The information collected from this study aims to further develop an understanding of PDA and its possible relationship to personality, behaviour, ASD, Attention Deficit Hyperactivity Disorder (ADHD), and conflict with the law.

If you have any questions or concerns, please don't hesitate to contact us at the above email addresses.

What is the study about?

The purpose of this study is to investigate the relative contributions of ASD, ADHD and Personality to PDA, as well as to examine correlations between PDA and delinquency, impulsivity and emotionality as not specific to diagnosis. PDA has been scrutinized for several years as researchers attempt to define, characterize the condition – a behavioural syndrome than can involve distressed, acting-out behaviour People who behave like this may be labelled as anti-social. Examination of variables and contributing factors could influence the development of PDA treatment and management programs.

The study consists of several questionnaires examining participant's behaviour, experiences and characteristics. It will take approximately 40 minutes to complete. If you agree to take part in this study, you will be asked to sign a consent form allowing the researchers to access and use your anonymous data. Your participation is voluntary. You are encouraged to answer all questions;

however, you do not have to answer any questions you do not wish to. You are free to withdraw from the study (i.e. not complete the questionnaires, exit the study and remove your data) at any point during the study by closing the browser window. This will not have any negative implications for you. The data will only be uploaded on completion of the questionnaire when you click the SUBMIT button. After submitting your data, you will no longer be able to withdraw from the study as the anonymized information will have been entered into the online database. Nonetheless, this information will be completely anonymous, and only the named researchers and the supervisor will have access to the data which will be stored in a secure online database.

If you do not wish to participate in the study, the researchers remain grateful for your time and consideration, and hope you continue to have an interest in PDA and ASD.

Will the research be of any personal benefit to me?

This research will not have any immediate benefit to you. However, the results will help others to understand PDA. This will eventually allow for better allocation of supportive resources and improve clinical care for persons who show this behaviour.

Once the research has been completed and reported, the researchers will contact the online community from which you have found this study and share a summary of the results of the study for you to access.

What will happen to the information I provide?

All the information that you provide during the research will be kept anonymous; the researchers will not collect any personal or identifiable information. Each participant will have a unique participant number to accumulate the data, but we will not know who these people are. You will not be asked for you name or any other information which may link you to your data. The data collected will only be used for the purposes outlined above. Your data from the questionnaire will be used collectively when reporting the research findings. The UK Data Protection Act 1998 will apply to all information gathered within the questionnaires. All information collected will be stored on a password-locked computer file which can only be accessed by the researchers and the supervisor. It may be viewed by official adjudicating bodies to ensure that the research is being conducted correctly. We have a duty of confidentiality to you as a research participant. The University of Nottingham ensures the highest level of cyber-security on their computer systems, which will protect the stored data.

There are no known physical risks linked with this research study. However, completion of the questionnaire may cause some concern in some participants, as some questions concern negative emotions and behaviour regarding conflict with the law. If you begin to feel distressed by the study, please take a break

and consider whether it is appropriate to continue. In the event of significantly distressed, please contact Dr Vincent Egan (mczve@exmail.nottingham.ac.uk) who will review your concerns and provide you with information about appropriate support.

What will you do with the data?

The data collected by the study will be used as two MSc level research projects – one completed by Elinor Bull and the other by Grace Trundle. It may also be used as a chapter is Grace Trundle's doctoral level thesis. These reports may be published in scientific journals and presented at scientific conferences. All data included in these reports will be anonymous. The raw data will be stored securely at the University of Nottingham and will be stored for 5 years before being destroyed.

If you have any questions or concerns, please don't hesitate to contact the researchers or research supervisor. We can be contacted before and after your participation at the above address.

THANK YOU FOR YOUR PARTICIPATION

Appendix C

PARTICIPANT CONSENT FORM

School of Medicine, Faculty of Medicine & Health Sciences

Project Title: Individual Differences, Autism Spectrum Disorder and Pathological Demand Avoidance

Researchers: Elinor Bull (msxeb8@nottingham.ac.uk)
Grace Trundle (msxgt4@nottingham.ac.uk)
Supervisor: Vince Egan (mczve@exmail.nottingham.ac.uk)

I have read and understood the Participant Information	YES/NO
I know how to contact the researchers if I have questions about this study	YES/NO
I understand that my participation is voluntary I am free to withdraw at any time	YES/NO
I understand that for this study, once I have submitted my data, this data cannot be withdrawn	YES/NO
I understand the overall anonymized data from this study may be used by other researchers in the future for research and teaching purposes	YES/NO
I understand that non-identifiable data from this study might be used in academic research reports or publications	YES/NO
I can confirm that I am 18 years old or over	YES/NO
I indicate my willingness to take part in the study voluntarily	YES/NO

Ethics Reference Number: 238-1802

By clicking the above/below button, I indicate that I understand what is involved in the study and that my data will be anonymous. I agree to take part in the study, and I understand that once I click submit at the end of the study, I will not be able to withdraw my data.

YES/NO

Appendix D

INSTRUCTIONS

You will be presented with a series of questionnaires. Each questionnaire will be displayed on a separate page. Instructions for each questionnaire will be displayed at the top of each page.

Please take your time in answering questions. You do not have to answer any questions you do not wish you, but we encourage you to answer as many as you can.

If at any point, you no longer want to take part in your study, simply press the withdraw button at the top of the screen. All information provided by you will be deleted.

Once you have finished the study, please click **submit**. Once you have clicked submit, your answers will be saved, and you will no longer be able to withdraw your data. Your data will remain anonymous and confidential.

If you have any questions, please contact Dr Vincent Egan at mczve@exmail.nottingham.ac.uk

To start, please press **continue**.

Appendix E

PARTICIPANT DEBRIEF

THANK YOU FOR YOUR PARTICIPATION

Thank you for completing this study investigating individual differences contributing to Extreme Demand Avoidance.

If you have any queries, concerns of complaints, please contact the research supervisor Dr Vincent Egan (mczve@exmail.nottingham.ac.uk). Please also contact Dr Egan if you experienced any negative emotions or distress during the study, and Dr Egan will provide you with information about appropriate support. If this does not resolve your issues, please contact the Administrator to the Division of Psychiatry and Applied Psychology's Research Ethics Sub-Committee (MS-DPAPEthics@nottingham.ac.uk, 0115 8232214) who will pass on your concerns to the Chair of the committee.

If you would like further support relating to EDA or ASD, the following organization can provide valuable information:

www.autism.org.uk

www.pdasociety.org.uk

www.assupportgrouponline.org

www.facebook.com/groups/autismuksupport

www.memyselfandpda.com

www.teenagestressesblog.wordpress.com

www.dragonriko.wordpress.com

www.help4$psychology.blogspot.co.uk

www.facebook.com/groups/pdauk

www.facebook.com/groups/pdasupport

Appendix F

AQ10

Please tick one option per question:

1: definitely agree 2: slightly agree 3: slightly disagree

4: definitely disagree

1	I often notice small sounds when others do not	1	2	3	4
2	I usually concentrate more on the whole picture, rather than the small details	1	2	3	4
3	I find it easy to do more than one thing at once	1	2	3	4
4	If there is an interruption, I can switch back to what I was doing very quickly	1	2	3	4
5	I find it easy to 'read between the lines' when someone is talking to me	1	2	3	4
6	I know how to tell if someone listening to me is getting bored	1	2	3	4
7	When I am reading a story, I find it difficult to work out the characters intentions	1	2	3	4
8	I like to collect information about categories of things (e.g. types of car, types of bird, types of train, types of plant, etc)	1	2	3	4
9	I find it easy to work out what someone is thinking or feeling just by looking at their face	1	2	3	4
10	I find it difficult to work out people's intentions	1	2	3	4

Appendix G

EDA-QA

Instructions: Below are a series of phrases describing people's behaviours. Please use the rating scale above to describe how well each statement describes you. Describe yourself as you generally are, not as you wish to be in the future being honest about yourself. Please read each statement carefully, and then circle the number that corresponds to how you see yourself.

1: not true 2: somewhat true 3: mostly true 4: very true

1	I obsessively resist and avoid ordinary demands and requests.	1	2	3	4
2	I complain about illness or physical incapacity to avoid a request or demand.	1	2	3	4
3	I am driven by the need to be in charge.	1	2	3	4
4	I find everyday pressures (e.g. having to go on a routine trip/ visit dentist) intolerably stressful.	1	2	3	4
5	I tell other people how they should behave, but do not feel these rules apply to me.	1	2	3	4
6	I mimic other people's mannerisms and styles (e.g., use phrases adopted from other people to express myself to others).	1	2	3	4
7	I have difficulty complying with demands and requests from others unless they are carefully presented.	1	2	3	4
8	I take on roles or characters (from TV/real life) and 'act them out'.	1	2	3	4
9	I show little shame or embarrassment (e.g., I might throw a tantrum in public and not be embarrassed).	1	2	3	4
10	I invent fantasy worlds or games and act them out.	1	2	3	4
11	I am good at getting round others and making them do as I want.	1	2	3	4
12	I am unaware or indifferent to the differences between myself and figures of authority (e.g. parents, teachers, and police).	1	2	3	4

13	I will still sometimes have a ‘meltdown’ (e.g. scream, tantrum, hit, or kick) if I feel pressurised to do something.	1	2	3	4
14	I like to be told I have done a good job.	1	2	3	4
15	I have a very rapidly changing mood (e.g., I can switch from affectionate to angry in an instant).	1	2	3	4
16	I know what to do or say to upset particular people.	1	2	3	4
17	I blame or target a particular person/persons.	1	2	3	4
18	I deny things I have done, even if I am caught "red handed".	1	2	3	4
19	I can be distracted (preoccupied) 'from within' (i.e., absorbed in my own world).	1	2	3	4
20	I make an effort to maintain my reputation with other people.	1	2	3	4
21	I sometimes use outrageous or shocking behaviour to get out of doing something.	1	2	3	4
22	I have periods when I have extremely emotional responses (e.g. crying/giggling, becoming furious) to what others would think small events.	1	2	3	4
23	I ensure any social interaction is on my own terms.	1	2	3	4
24	I prefer to interact with others in an adopted role, or communicate through props or objects.	1	2	3	4
25	I seek to quibble and change rules set by others.	1	2	3	4
26	I can be passive and difficult to engage,	1	2	3	4

Appendix H

IPIP-50

Instructions: Below are a series of phrases describing people's behaviours. Please use the rating scale above to describe how well each statement describes you. Describe yourself as you generally are, not as you wish to be in the future being honest about yourself. Please read each statement carefully, and then circle the number that corresponds to how you see yourself.

1: Nothing like me 2: Not much like me 3: Unsure 4: A bit like me

5: Very much like me

1.	I am the life of the party.	1	2	3	4	5
2.	I feel little concern for others.	1	2	3	4	5
3.	I am always prepared.	1	2	3	4	5
4.	I get stressed out easily.	1	2	3	4	5
5.	I have a rich vocabulary.	1	2	3	4	5
6.	I don't talk a lot.	1	2	3	4	5
7.	I am interested in people.	1	2	3	4	5
8.	I leave my belongings around.	1	2	3	4	5
9.	I am relaxed most of the time.	1	2	3	4	5
10.	I have difficulty understanding abstract ideas.	1	2	3	4	5
11.	I feel comfortable around people.	1	2	3	4	5
12.	I insult people.	1	2	3	4	5
13.	I pay attention to details.	1	2	3	4	5
14.	I worry about things.	1	2	3	4	5
15.	I have a vivid imagination.	1	2	3	4	5
16.	I keep in the background.	1	2	3	4	5
17.	I sympathise with others' feelings.	1	2	3	4	5
18.	I make a mess of things.	1	2	3	4	5
19.	I seldom feel moody and blue.	1	2	3	4	5
20.	I am not interested in abstract ideas.	1	2	3	4	5

21.	I start conversations.	1	2	3	4	5
22.	I am not interested in other people's problems.	1	2	3	4	5
23.	I get tasks done right away.	1	2	3	4	5
24.	I am easily disturbed.	1	2	3	4	5
25.	I have excellent ideas.	1	2	3	4	5
26.	I have little to say.	1	2	3	4	5
27.	I am soft hearted.	1	2	3	4	5
28.	I often forget to put things back in their place.	1	2	3	4	5
29.	I get upset easily.	1	2	3	4	5
30.	I do not have a good imagination.	1	2	3	4	5
31.	I talk to a lot of different people at parties.	1	2	3	4	5
32.	I am not really interested in other people.	1	2	3	4	5
33.	I like order.	1	2	3	4	5
34.	I change my mood a lot.	1	2	3	4	5
35.	I am quick to understand things.	1	2	3	4	5
36.	I don't like to draw attention to myself.	1	2	3	4	5
37.	I take time out for others.	1	2	3	4	5
38.	I avoid my duties.	1	2	3	4	5
39.	I have frequent mood swings.	1	2	3	4	5
40.	I use difficult words.	1	2	3	4	5
41.	I don't mind being the centre of attention.	1	2	3	4	5
42.	I feel others' emotions.	1	2	3	4	5
43.	I follow a plan in my life.	1	2	3	4	5
44.	I get irritated easily.	1	2	3	4	5
45.	I spend time reflecting on things.	1	2	3	4	5
46.	I am quiet around strangers.	1	2	3	4	5
47.	I make people feel at ease.	1	2	3	4	5
48.	I am precise and exacting in my work.	1	2	3	4	5
49.	I often feel moody.	1	2	3	4	5
50.	I am full of ideas.	1	2	3	4	5

Appendix I

RAADS-14

Please choose one of the following alternatives:

This is true or describes me now and when I was young.

This was true or describes me only now (refers to skills acquired).

This was true only when I was young (16 years or younger).

This was never true and never described me.

Please answer the questions according to what is true for *you*. Check only one column per statement!

	Some life experiences and personality characteristics that may apply to you	**True now and when I was young**	**True only now**	**True only when I was younger than 16**	**Never True**
1	It is difficult for me to understand how other people are feeling when we are talking				
2	Some ordinary textures that do not bother others feel very offensive when they touch my skin				
3	It is very difficult for me to work and function in groups				
4	It is difficult to figure out what other people expect of me				
5	I often don't know how to act in social situations				
6	I can chat and make small talk with people				
7	When I feel overwhelmed by my senses, I have to isolate myself to shut them down				
8	How to make friends and socialise is a mystery to me				
9	When talking to someone, I have a hard time telling when it is my turn to talk or to listen				
10	Sometimes I have to cover my ears to block out painful noises (like vacuum cleaners or people talking too much or too loudly)				
11	It can be very hard to read someone's face, hand, and body movements when we are talking				
12	I focus on details rather than the overall idea				
13	I take things too literally, so I often miss what people are trying to say				
14	I get extremely upset when they way I like to do things is suddenly changed				

Appendix J

SRED-UK

From the following list, would you please state as HONESTLY AS POSSIBLE how many of the things you have EVER done. Almost everyone does a lot of the things listed below at some point in their life. NOBODY else will know how you answered the questions. Please answer as many questions as you can.

0 Never **1** Once **2** More than once

1	Carrying a weapon in case it is needed in a fight (e.g. a knife, chain, or piece of wood)	0	1	2
2	Going around with a group of three or more damaging property or getting into fights	0	1	2
3	Damaging something in a public place (e.g. streets, movie theatres, buses, toilets)	0	1	2
4	Starting a fire where you should not burn anything	0	1	2
5	Damaging a parked car (e.g. breaking an aerial, slashing tyres, scratching paint)	0	1	2
6	Stealing something from an open shop or store (shoplifting)	0	1	2
7	Taking a car or motorcycle for a drive without permission	0	1	2
8	Smoking cannabis (pot, marijuana, hashish)	0	1	2
9	Buying or drinking alcoholic drinks in hotels or any other public place	0	1	2
10	Drinking alcoholic drinks during school hours or at lunchtime on a school day	0	1	2
11	Getting suspended or expelled from school	0	1	2
12	Playing truant from school	0	1	2
13	Fighting in the street or other place (not fighting at school)	0	1	2
14	Struggling to get away from a police officer	0	1	2

15	Using any kind of weapon in a fight (e.g. knife, chain, broken bottle, rock)	0	1	2
16	Swearing loudly in a public place	0	1	2
17	Purposely littering the street or footpath by smashing bottles or tipping rubbish bins over	0	1	2
18	Purposely damaging property that belongs to a school	0	1	2
19	Painting or writing graffiti words on a wall in a public place	0	1	2
20	Damaging something in a park or public garden	0	1	2
21	Breaking the windows of an empty building	0	1	2
22	Getting drunk	0	1	2
23	Stealing alcoholic drinks from a shop, your parent's home, or other place	0	1	2
24	Getting into trouble with your friends, family or school because you were drinking alcohol	0	1	2
25	Hitting another young person in a serious effort to hurt them (not a brother or sister)	0	1	2

Appendix K

SUPPS-S

Instructions: Below are a series of phrases describing people's behaviours. Please use the rating scale above to describe how well each statement describes you. Describe yourself as you generally are, not as you wish to be in the future being honest about yourself. Please read each statement carefully, and then circle the number that corresponds to how you see yourself.

1: strongly agree 2: somewhat agree 3: somewhat disagree
4: strongly disagree

1	When I feel bad, I will often do things I later regret in order to make myself feel better now	1	2	3	4
2	Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse	1	2	3	4
3	When I am upset I often act without thinking	1	2	3	4
4	When I feel rejected, I will often say things I later regret	1	2	3	4
5	I generally like to see things through to the end	1	2	3	4
6	Unfinished tasks really bother me	1	2	3	4
7	Once I get going on something I hate to stop	1	2	3	4
8	I finish what I start	1	2	3	4
9	My thinking is usually careful and purposeful	1	2	3	4
10	I like to stop and think things over before I do them	1	2	3	4
11	I tend to value and follow a rational "sensible" approach to things	1	2	3	4
12	I usually think carefully before doing anything	1	2	3	4
13	I quite enjoy taking risks	1	2	3	4
14	I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional	1	2	3	4
15	I would like to learn to fly an airplane	1	2	3	4
16	I would enjoy the sensation of skiing very fast down a high mountain slope	1	2	3	4

17	When I am in a great mood, I tend to get into situations that could cause me problems	1	2	3	4
18	I tend to lose control when I am in a great mood	1	2	3	4
19	Others are shocked or worried about the things I do when I am feeling very excited	1	2	3	4
20	I tend to act without thinking when I am really excited	1	2	3	4

Appendix L

PRELIMINARY QUESTIONS

Please answer the following questions:

How old are you? ☐

Are you:

Male	Female	Other
☐	☐	☐

How would you rate your basic reading and writing abilities?

Very Poor	Poor	Average	Good	Very Good
☐	☐	☐	☐	☐

How many years were you in education? ☐

Do you have a formal diagnosis of any of the following: tick all that apply

Autism Spectrum Disorder (including Aspergers) ☐

Personality Disorder ☐

Extreme/Pathological Demand Avoidance ☐

Attention Deficit Hyperactivity Disorder ☐

Oppositional Defiance Disorder ☐

Conduct Disorder ☐

Intellectual Disability ☐

Dyslexia ☐

Dyspraxia ☐

Other – please provide information ☐

Ethics Approval Letter

University of Nottingham
UK | CHINA | MALAYSIA

Email: FMHS-ResearchEthics@nottingham.ac.uk

Faculty of Medicine & Health Sciences
Research Ethics Committee
c/o Faculty PVC Office
School of Medicine Education Centre
B Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH

16 March 2018

Elinor Bull
Msc in Forensic and Criminological Psychology Student
c/o Dr Vincent Egan

Associate Professor, Director of Forensic Psychology Programmes
Room B23, Yang Fujia
University of Nottingham -Jubilee Campus
Wollaton Road
Nottingham
NG8 1BB

Dear Ms Bull

Ethics Reference No: 238-1802 **– please always quote**	
Study Title: Individual Differences, Autism Spectrum Disorder and Extreme Demand Avoidance: a) Impulsivity, Emotional Stability and Delinquency b) The Contribution of Personality Disorder	
Chief Investigator/Supervisor: Dr Vincent Egan, Associate Professor, Director, Forensic Psychology Programmes, Professor Kevin Browne, Director Centre for Forensic and Family Psychology, Division of Psychiatry and Applied Psychology, School of Medicine.	
Lead Investigators/student: Ms Elinor Bull MSc in Forensic and Criminological Psychology	
Other Key Investigators: Grace Trundle, Doctorate in Forensic and Criminological Psychology	
Type of Study: PGT project, internet mediated.	
Proposed Start Date: 01/03/2018	**Proposed End Date:** 01/08/2018 4 mths
No of Subjects: 109	**Age:** 18+years

Thank you for submitting the above application and the following documents were received:

- FMHS REC Application form and supporting documents version 1.0: 29.01.2018

These have been reviewed and are satisfactory and the study has been given a favourable opinion.

A favourable opinion has been given on the understanding that:

1. Evidence of permission from the participating organisations are submitted for the records.
2. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
3. The Chair is informed of any serious or unexpected event.
4. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely



Professor Ravi Mahajan
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Journal of Autism and Developmental Disorders (2018)

Individual differences, autism spectrum disorder, pathological demand avoidance; impulsivity, emotional stability and delinquency.

Elinor Bull[1]

Abstract Pathological Demand Avoidance (PDA) is a behavioural phenotype proposed by Newson in the 1980's. PDA is characterised by an intense drive to avoid demands and expectations which can result in emotional outbursts, aggressive and impulsive behaviour. The emotional and impulsive profile of PDA indicates individuals with PDA may be vulnerable to minor offences and consequently encounter the Criminal Justice System (CJS). The current study sought to investigate the relationship between PDA, Autism Spectrum Disorder (ASD) and delinquency and whether measures of impulsivity, emotional stability, ASD and PDA predict delinquency. A significant positive relationship was found between PDA and delinquency, compared to a significant negative relationship between ASD and delinquency. Results found that measures of PDA, ASD, impulsivity and emotional stability do not significantly predict scores of delinquency. However, lower conscientiousness was found to significantly predict both delinquency and PDA, indicating specific characteristics of the PDA profile may make such individuals vulnerable to delinquency. Consequences of the findings are discussed in terms of their application to the CJS and the development of PDA becoming a separate diagnostic category.

Keywords Pathological Demand Avoidance (PDA); Autism Spectrum Disorder (ASD); Emotional Stability; Impulsivity; Delinquency; Offending.

[1]Centre for Family and Forensic Psychology, University of Nottingham, Yang Fujia Building, Jubilee Campus, Wollaton Road, Nottingham, NG8 1BB, UK. (Elinor Bull, email: msxeb8@nottingham.ac.uk)

Introduction

Pathological Demand Avoidance (PDA)

PDA was first defined by Elizabeth Newson in the 1980s and was originally proposed as a distinct clinical disorder (Newson, 1988). Since then, although it has not been recognised as a distinct diagnostic category, an increasing number of children have been found to present with the profile of PDA and there is a growing evidence base on the topic (O'Nions, E., Viding, E., Greven, C. U., Ronald, A., & Happé, 2014). Current evidence suggests that PDA is not an independent disorder, but part of ASD (Green et al., 2018). However, it is plausible that there is not enough research surrounding PDA to conclude that PDA is not solely a distinctive diagnostic category, particularly as demand avoidance is shared by many other mental disorders.

PDA is a behavioural phenotype characterised by an intense drive to avoid demands and expectations, which is motivated by a range of emotional symptoms such as anxiety (Newson, Marechal & David, 2003). Individuals who display PDA characteristics have a desire to control demands which results in challenging behaviour and emotional distress (Egan, O'Nions & Linenberg, submitted). Anxiety is an important characteristic of PDA; it potentially maintains the maladaptive behaviour of avoiding demands, often resulting in individuals with PDA resorting to violent and emotional outbursts to obtain control. For example, Newson et al. (2003) found that amongst a cohort of 150 children diagnosed with PDA between 1997 and 2000, 60% of individuals with PDA suffered from extreme panic attacks or outbursts, with 86% displaying aggression to others.

PDA has been linked to other clinical disorders such as oppositional defiance disorder (Green et al., 2018), with PDA individuals scoring highly on characteristics of social communication disorder including anxiety and sudden behavioural changes (O'Nions et al., 2015). Therefore, it is arguable that characteristics of PDA such as social manipulation

(O'Nions et al., 2014), socially inappropriate behaviour (O'Nions et al., 2014), aggression (Newson et al., 2003) and personality traits associated with anxiety such as emotional instability, could predispose PDA individuals to delinquency, as they inappropriately act out.

Autism Spectrum Disorder (ASD)

ASD is defined in the Diagnostic Statistic Manual (DSM-5, 2013; APA 2013) as a life-long developmental disorder which falls under a singular diagnostic framework. Individuals with ASD are characterised by a 'triad of impairments' comprising difficulties in socialisation, poor communication, and a lack of imaginative thinking (Wing, 1981). Diagnosis now includes two symptom dimensions; deficits in social communication and restrictive patterns of behaviour. Classification is based upon the severity of the symptoms (Zwaigenbaum, 2012).

There is conflicting evidence as to whether ASD is overrepresented in the Criminal Justice System (CJS, Hippler, Viding, Klicpera & Happé, 2010; Allen et al., 2008). However, it is acknowledged that those with ASD have predisposing characteristics and deficits that potentially make them more vulnerable to commit crime, and to be victims of crime, perhaps due to misjudging the social dimension of offender groups who offer apparent friendship (King & Murphy, 2014). Consequently, it remains unclear if individuals with ASD are more likely to commit delinquent acts.

It is important to establish if ASD or PDA is associated with delinquent acts to inform and educate professionals within the CJS. If individuals with ASD and/or PDA are more likely to act delinquently, then there are implications regarding how to detain and treat such offenders appropriately. Research from the National Autistic Society (NAS, 2008) identified that 90% of police and solicitors who have a first point of contact with ASD offenders have no specific training on the condition, and therefore lack awareness of the traits and difficulties of ASD. Consequently, ASD individuals may have traumatic experiences within

the CJS (Huges, 2016) due to the inconsistency and lack of specific policies in the CJS relating to the care of persons with ASD (Myers, 2004; Ashworth & Tully, 2016); this would readily extend to PDA.

Co-morbidity

PDA has been associated with ASD; the disorders share characteristics such as language delays and impaired social communication (Newson et al., 2003). Furthermore, there are multiple anxiety disorders associated with ASD (Green et al., 2018). Such anxiety results in avoidant and controlling behaviour (Cai, Richdale, Dissanayake & Uljarević, 2018), which are characteristics of PDA. The association between the two disorders has arguably hindered PDA becoming a diagnosis, such that it has been proposed that PDA is simply a symptom of ASD (Green et al., 2018). However, PDA and ASD appear to be highly co-morbid; O'Nions et al. (2015) found that all but one of the PDA participants in the sample met the criteria for ASD, demonstrating the high co-morbidity of ASD and PDA. Individuals with ASD and PDA struggle socially regarding understanding and relating to peers. Yet, unlike many individuals with ASD, individuals with PDA often resort to socially manipulative behaviour to avoid demand requests and gain control (O'Nions et al., 2014).

Thus, individuals with PDA may be more likely to carry out anti-social behaviours to gain control or manipulate others in a deviant way, or simply to fit in. This has been demonstrated, with scores on an adult screening tool for PDA characteristics predicting self-reported delinquency (Egan et al., submitted). Moreover, a sample of twenty-five children identified with PDA had comparable characteristics to children with ASD who had callous and unemotional traits (O'Nions et al., 2014). This infers there may be an overlap of more potentially antisocial and detached characteristics in some ASD and PDA individuals (Green et al., 2018). Despite this, socially manipulative tactics used by individuals with PDA are uncommon in individuals with ASD due to their deficit in Theory of Mind (ToM, Baron-

Cohen, Leslie & Frith, 1985). Impaired ToM leads to ASD individuals experiencing difficulties inferring the mental states of others, a skill needed for social manipulation or anticipating the outcome of an action in the social domain. In addition, the balanced gender distribution of PDA (Newson et al., 2003), contrasts the gender bias profile of ASD, which exhibits a strong male bias (Werling & Geschwind, 2013). Current research therefore indicates that PDA is not entirely synonymous with ASD.

PDA is in some ways comparable to other disorders; behavioural characteristics of PDA are akin to characteristics of conduct disorder whereas ASD is not (O'Nions et al., 2014). This has led to confusion around the specific behavioural profile of PDA, and questions how closely PDA is related to conduct disorder and ASD (O'Nions et al., 2014). Furthermore, reward-based techniques which have been effective in reducing callous and unemotional traits in children with conduct problems (O'Brien & Frick, 1996), were ineffective for PDA individuals (O'Nions et al., 2014). Likewise, individuals with ASD have diminished neural responses to rewards, especially social rewards (Zeeland et al., 2010).

For example, O'Nions et al. (2014), used a method of systematic comparison and found that the behavioural profile of a PDA group displayed comparable traits with an ASD group in terms of peer problems. However, the PDA group also had comparable anti-social traits to a group with conduct problems. Additionally, using a method of functional analysis of 150 cases of individuals diagnosed with PDA or ASD, PDA was found to be significantly different to ASD in its presentation (Newson et al., 2003). The results highlight that individuals with PDA could be more vulnerable to delinquent behaviour, due to their anti-social and manipulative traits, combined with their lack of social understanding and language delays. While some people with ASD may present with PDA, the syndrome may also be seen in other populations.

Impulsivity

Impulsivity is a fundamental trait predicting offending (Aguilar-Cárceles & Farrington, 2017). Personality traits associated with impulsivity such as neuroticism have been linked to antisocial behaviour (Egan, 2011) and behavioural impulsivity has been found to be overrepresented in delinquent populations (White et al., 1994). Impulsivity is characterised by an inability to disinhibit behaviour and desires, suggesting impulsive individuals could be pre-disposed to impetuous delinquent behaviour. Impulsivity is shown to be hereditary (Bezdjian, Baker & Tuvblad, 2011), inferring that individuals who are impulsive have limited control over their behaviour, and may need more assistance to acquire self-management. For example, a study which investigated the hereditability of Delayed Discounting (DD) in mono-zygotic and diygo-zygotic twins, found a significant hereditability of DD (Anokhin, Grant, Mulligan & Heath, 2015).

In relation to PDA, individuals with PDA often have difficulties in emotional regulation and emotional control (O'Nions et al., 2014), which can be presented as emotional outbursts if demands are increased and are a form of impulsivity (Newson et al., 2003). The impulsive profile of PDA consequently poses a major risk for individuals with PDA due to the relationship between impulsivity and delinquency (Luengo, Carrillo-de-la-Peña, Otero & Romero, 1994). Longitudinal studies have further found that high levels of impulsivity in childhood are related to high levels of offending (Higgins, Kirchner, Ricketts & Marcum, 2013). It is proposed by Newson et al. (2003) that impulsivity in PDA may have a neurological underpinning, since not every child with PDA in the sample presented traits of impulsivity. Longitudinal data found that early behavioural impulsivity was related to serious subsequent delinquency, which remained stable over time (White et al., 1994). The strong link between impulsivity and delinquency infers that individuals with PDA could be more vulnerable to delinquency, due to their impulsive traits. The current study will investigate

whether scores on a measure of PDA can significantly predict delinquency alone, or whether PDA individuals only score highly in measures of delinquency when also scoring highly on measures of impulsivity.

Emotional Stability

Emotional Stability (akin to Neuroticism), is a personality trait with facets of anxiety, hostility and impulsivity, and a component of personality in the Five Factor Model (FFM, McCrae & Costa, 1987). Lower Emotional Stability is another characteristic of PDA (Newson et al., 2003), which could potentially predispose individuals to delinquency. For example, a study which examined the distinction between PDA and ASD found that participants with PDA were more liable to mood swings that resulted in violent behaviour, compared to individuals with ASD (Newson et al., 2003). Moreover, in comparing a group of individuals with PDA and ASD, individuals with PDA displayed more emotional symptoms (O'Nions et al., 2014), indicating more emotional instability in the PDA sample.

Emotional instability had been liked to antisocial behaviour; a meta-analysis of Eysenck's personality questionnaire found a direct relationship between emotional stability (neuroticism) and anti-social behaviour (Cale, 2006). Another meta-analysis of impulsivity which focused on the FFM of personality found that emotional instability was significantly related to antisocial behaviour (Jones, Miller & Lynam, 2011). The results suggest individuals high in neuroticism may be more likely to carry out antisocial, aggressive and delinquent behaviour (Jones et al., 2011).

Studies have revealed that individuals who score higher on measures of emotional instability are more likely to score highly on self-reported delinquency in crimes that involve violence (Heaven, 1996). Samuels et al. (2004) discovered that individuals who score highly on emotional instability are more likely to commit crime and score highly on facets of anger and impulsivity, further linking emotional instability to delinquency. Likewise, Ljubin-

Golub, Vrselja and Pandžić (2017) found that a lower score of emotional stability correlated with higher scores of delinquency for adolescent boys and a lower score of emotional stability predicted violent delinquency in adolescent girls. The link between levels of emotional stability and subsequent delinquency infers that poor emotional regulation can be a predisposing factor for delinquency in both sexes. In relation to PDA specifically, scores on the EDA-QA were predicted by greater emotional instability (Egan et al., submitted), implying that individuals with PDA are more likely to be emotionally instable. Therefore, the current study aims to look in more detail at how measures of impulsivity and emotional stability predict PDA, and if PDA is predictive of delinquency scores.

The Current Study

Despite previous research investigating relationships between PDA, ASD, impulsivity, emotional stability and delinquency, no studies have investigated their predictive relationship simultaneously. The current study aimed to investigate the relationships between PDA, ASD and delinquency. The study also aimed to investigate how scores on measures of PDA, ASD, impulsivity and emotional stability predict scores of self-reported delinquency. Therefore, it is hypothesised that higher scores on measures of PDA, ASD and impulsivity will predict a higher score on a measure of self-reported delinquency. The study will further investigate potential predictors of PDA to discover more about the behavioural profile of PDA.

Methods

Participants

Participants were recruited online from the general population. To ensure that participants were representative of the target sample, participants were recruited from PDA and ASD support groups and forums online. In all cases used, hosts of Facebook and Twitter pages were contacted prior to the advertisement being posted. These online domains aimed to

include individuals who had received a diagnosis, or believed they fit the criteria for a diagnosis of PDA or ASD. To reduce bias in the selection procedure, participants completed the study on a voluntary basis and their participation and data remained anonymous. There were specific inclusion criteria for participants; being over 18-years-old and having adequate English language comprehension to ensure they could complete the psychometric measures.

Description of the cohort

A power analysis using the G*power computer program indicated that with 23 predictors (the maximum if all measures were used for prediction), a total sample of 109 participants would be needed to detect a small effect (d=.15), with a power of 0.95, using a multiple linear regression with alpha at $p<0.05$. A total of 132 participants were recruited, of whom 122 (29 male, 84 female and 8 other) participants responses were analysed. Participants were excluded due to a lack of responses to specific psychometrics, or reporting 'poor' English language abilities. The mean age of participants was 34.57 years (SD=10.94, range 18 to 68), with a mean age of 16.1 years in education. Out of the sample, 75 reported a diagnosis of ASD (61.5%), 12 of PDA (9.8%), 59 of depression (48.4%), 7 of dyspraxia (5.7%), 8 of dyslexia (6.6%), 1 of an Intellectual Disability (1.2%), 1 of Oppositional Defiance Disorder (1.2%) and 33 of 'other' (27.1%; mostly physical conditions).

Design

The design was a predictor outcome study, with the outcome variable being the measure of self-reported delinquency and the predictor variables being measures of ASD, PDA, impulsivity and emotional stability. It was a between-participants design; participants completed a questionnaire and multiple psychometric measures. The study was conducted on the Bristol Online Survey website (BOS, www.survey.bris.ac.uk) which was made accessible to participants online via a link advertised.

Procedure

The study was advertised online in ASD and PDA support groups/forums. Participants were given background information on the study from the participant information sheet. Participants had to give fully informed consent before completing the psychometric measures and indicate they had fully understood the aims and procedure of the study.

The psychometric measures were completed on a self-report basis, so the participants completed the study alone without a researcher present. The study took an average time of fourty minutes to complete. Once the participants had completed the survey online they were given access to a debrief form and information to contact the researchers regarding any queries relating to the study. Throughout the study the participants were made aware of their right to withdraw; as this can be difficult to display in internet mediated research (BPS, 2013), participants were reminded they could simply exit the browser at any time and their data would not be stored. A button at the end of the study confirmed if the participant was willing for their data to be used by the researchers by pressing "Finish". The time limit within which participants could reasonably request for their data to be withdrawn was stated clearly in the participant information form (BPS, 2013). Participant's data remained anonymous, so participants were identified via a participant number and no personal details that could identify the participant were recorded or stored (BPS, 2013). The data collected from the study was stored securely, with only the researcher(s) and supervisor having access to the data.

Materials

The study utilised 7 self-report materials which were selected due to their validity, reliability, and appropriateness for the target participants. The scales utilised were;

1. *The Autism Spectrum Quotient (AQ-10, Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001; Booth et al., 2013).*

The AQ-10 is an adult screening tool for ASD and the measure consists of 10 items with 1 dimension. The AQ-10 has been established as an appropriate alternative to longer AQ measures and was found to

perform well when discriminating between individuals with and without a clinical diagnosis of ASD (Booth et al., 2013). The measure has also been found to have high internal consistency and high-test accuracy in its short form (Allison, Auyeung & Baron-Cohen, 2012).

2. *Extreme Demand Avoidance Questionnaire (EDA-QA, Egan et al., submitted).*

The EDA-QA is a self-report psychometric measure of PDA traits in adults, consisting of 26 items. The measure is highly reliable (α=0.9) and presented acceptable inter-rater agreement between participants and observer ratings (Egan et al, submitted).

3. *International Personality Item Pool (IPIP-50, Goldberg et al.., 2006)*

The IPIP-50-50 is a measure of the five major personality factors. This is a self-report psychometric measure of personality consisting of 50 items, with 5 dimensions; extraversion, agreeableness, conscientiousness, emotional stability and intellect. The measures scales have been found to have good internal consistency and relate strongly to the major dimensions of personality (Gow, Whiteman, Pattie & Deary, 2005).

4. *Ritvo Autism and Asperger Diagnosis (RAADS-14, Eriksson, Andersen & Bejerot, 2013).*

The RAADS-14 is an adult screening tool for ASD. The measure consists of 14 items and 3 dimensions. The measure will indicate the specific deficits of ASD; mentalising deficits, social anxiety and sensory reactivity (Eriksson et al., 2013). The RAADS screening tool is recommended by NICE guidelines and the psychometric properties have been shown to be satisfactory (Eriksson et al., 2013).

5. *SRED-UK (Appendix I, Moffitt & Silva, 1988).*
6. The SRED-UK is a self-report delinquency measure which consists of 25 items. It is suggested that self-reported measures of delinquency are more accurate in estimating the distribution and frequency of delinquency than official measures (Moffitt & Silva, 1988). Self-report measures are appropriate for multiple methods of analysis, inferring self-

reported measures of delinquency are more reliable (Thornberry & Krohn, 2000).

Short Urgency, Premeditation, Perseverance, Sensation Seeking, Positive Urgency, Impulsive Behaviour Scale (SUPPS-P Lynam, 2013).

The SUPPS-P is a self-report psychometric measure of trait impulsivity and consists of 20 items. The SUPPS-P measures 5 dimensions of impulsivity; negative urgency, lack of perseverance, lack of premeditation, sensation seeking and positive urgency. The SUPPS-P has been found to have high internal consistency (0.74-0.88) and inter-scale correlations with the original UPPS-P (Cyders, Littlefield, Coffey, Karyadi, 2014). The UPPS-P has been established as a valid measure to use for both sexes as mean differences on the scale were found to reflect trait-level differences, meaning comparisons of men and women on the UPPS-P can be considered valid (Cyders, 2013). The SUPPS-P is a theoretically valid and optimal measure of impulsivity that supersedes more available measures of the construct. Moreover, the scale has been validated in clinical samples (Cyders, 2013). The SUUPS-P was used for the study since it has high (66%) time-saving in relation to the original version (Cyders et al., 2014).

7. *Preliminary Questionnaire*

This was a simple questionnaire developed by the researchers and administered before the psychometric measures to collect demographic information regarding the participant e.g. age, gender, pervious diagnoses etc.

Results

Analytical methods

Once validity and reliability of the measures had been established, results were analysed using the software programme SPSS using a multiple correlation and multiple linear regression analysis. Multiple linear regression assumes multi-variate normality, so the residuals were tested for normal distribution and met this assumption. The relationship between the predictor variables

and outcome variable is assumed to be linear, which was confirmed by the assumption of homoscedasticity and normality being met. Multiple linear regression assumes no multi-collinearity, so the predictor variables should not be highly correlated with one another (Chatterjee & Simonoff, 2013), this was confirmed as correlation coefficients between variables were no higher than .70. This assumption was also tested using variance inflator factor values to ensure the strength of regression was not misleading and is valid, all the VIF values were below five so considered normal. Errors between observed and predicted values had to be normally distributed (Chatterjeee & Simonoff, 2013). Normality was assessed using a Kolomogrov-Smirov (KS) test on the residuals to ensure the data was normally distributed (see Table 1). Most of the variables met the assumptions; the only measures which were not normally distributed came from clinical measures and a clinical sample, therefore the use of a parametric test was justified as non-normal distributions are commonly found when using psychometric measures (Bono, Blanca, Arnau & Gómez-Benito, 2017; Blanca, Arnau, López-Montiel, Bono & Bendayan, 2013). The dependent variable (DV) of the two key regressions were self-reported delinquency and the EDA-QA score. The independent variables (IV/predictors) were scores on PDA, ASD, impulsivity and emotional stability. All measures were tested for reliability and were considered to have adequate internal consistency (see table 1).

Findings

Correlations with Delinquency (see table 2)

Correlation and multiple regression analyses were conducted to examine the relationship between scores on self-reported delinquency and various potential predictors Table 2 summarises the correlations results. As shown, intellect (p=01), extraversion (p=<.001), PDA (p=<.001) and impulsivity (p=.002) all positively and significantly correlated with delinquency. This indicated that participants who scored highly on these measures, tend to

have higher scores on the measure of self-reported delinquency. Conscientiousness (p=.003), and measures of ASD using the RAADS-14 (p=.02) and the AQ-10 (p=.003) all negatively and significantly correlated with delinquency. This indicates that participants who scored higher on these measures, tended to have a lower score of delinquency.

Predictors of Delinquency (see table 3)

The multiple regression model with all nine predictors indicated that the model explained 29.4% of variance and that the model was a significant predictor of delinquency, $F(9, 110) = 5.078$, $p<.001$. Table 3 summarises the descriptive statistics and analyses results. As presented in table 3, conscientiousness had a significant negative regression weight (p=03), indicating participants who scored low on measures of conscientiousness had higher scores on self-reported delinquency when other variables were controlled for in this model. However, scores on the other measures of PDA, ASD, impulsivity and the personality subscales of the IPIP-50 did not contribute to the multiple regression model.

Correlations with PDA (see table 2)

A correlation and multiple regression analyses were also conducted to examine the relationship between scores on PDA and potential impulsivity and emotional instability predictors (see table 2). Table 2 summarises the correlations results. As shown, agreeableness (p=<.001), conscientiousness (p=<.001), emotional stability (p=.001) and delinquency (p=.003) were all negatively and significantly correlated with PDA. This indicates that participants who scored low on these measures, tend to have higher scores of PDA. Scores on the RAADS-14 were positively and significantly correlated with PDA (P=<.001), indicating participants who scored highly on the RAADS-14, tend to have higher scores of PDA.

Predictors of PDA (see table 4)

The multiple regression model with all nine predictors indicated that the model explained 49.5% of the variance and that the model was a significant predictor of PDA $F(9, 110) = 11.956$, $p<.001$. Table 4 summarises the descriptive statistics and analyses results. As presented in table 4, agreeableness had a significant negative regression weight (p=.001), indicating participants with lower agreeableness in the IPIP-50 had higher scores on the EDA-QA, our measure of PDA. Conscientiousness had a significant negative regression weight (p=<.001), indicating participants with lower conscientiousness. in the IPIP-50 had higher scores of PDA. Emotional stability had a significant negative regression weight (p=<.001), indicating participants who scored low on Emotional Stability had higher scores of PDA. Extraversion had a significant positive regression weight (p<.001), indicating more outgoing participants had higher PDA indicator scores. The RAADS-14 (ASD) had a significant positive regression weight (p=001), indicating participants who scored higher on the RAADS-14 had higher scores of PDA. These findings were significant when other variables were controlled for in this model. Scores on measures of impulsivity, delinquency, and ASD as measured using the AQ-10 did not contribute to the final model.

Discussion

Results found that measures of PDA, ASD, impulsivity and emotional stability do not significantly predict scores of delinquency, rejecting the research hypothesis. Conversely, the study found lower conscientiousness significantly predicted delinquency. Although PDA has a positive, significant relationship with delinquency, it was insufficiently strong to be used for prediction. Further analyses were conducted to examine variables that predict PDA, with lower agreeableness, lower conscientiousness, lower emotional stability, higher extraversion

and higher scores on the RAADS-14 (ASD) all significantly predicting PDA. Further analyses were conducted to establish if any of the associated measures used in the study were good enough for predicting PDA.

The finding that PDA has a positive significant correlation with delinquency is of interest as it suggests that individuals who scored highly on the measure of PDA, were more likely to have potentially encountered the law due to their behaviour. In contrast, the RAADS-14's negative correlation with delinquency suggests that individuals with higher scores on measures of ASD were less likely to encounter the law, as based on the measure of self-reported delinquency. This is interesting as it implies that there may be behavioural characteristics of PDA that influence delinquent behaviours which are not evident in individuals with ASD. Furthermore, the study found that lower conscientiousness predicted PDA, and that lower conscientiousness also predicted delinquency. It could therefore be proposed that individuals with PDA are more likely to be lower in conscientiousness and have less remorse and awareness of potential delinquent behaviours, consequently predisposing them to delinquent behaviour. Lower Conscientiousness is also associated with negative urgency (Cyders & Smith, 2007), implying that individuals with PDA may be prone to act rashly and impulsively when distressed. In relation, negative urgency has been found to predict risky behaviours such as alcohol consumption and drug use (Cyders & Smith, 2008), with alcohol being a predictor of violent crime (Lennings, Copelnand & Howard, 2003). However, the finding that PDA alone does not predict delinquency implies that further behavioural elements and characteristics would need to be consistently present in individuals with PDA for them to act delinquently; though perhaps sometimes challenging, not all PDA individuals are likely to be delinquent.

A potential reason why PDA was not found to predict delinquency, despite the positive relationship, could be due to the self-reported delinquency questionnaire utilised in

the study. The current measure used (SRED-UK), which consists primarily of acts of delinquency requiring pre-planning and social elements, such as substance misuse within a social setting and theft from public settings. It could be suggested that due to the nature of PDA, individuals with PDA are more likely to commit domestic offences such as abuse in the home due to deficits in social communication and tendencies for emotional outbursts (Newson et al., 2003), that could result in aggression towards family members or property. ASD individuals are arguably less likely to participate in social crimes due to their deficits in social understanding and communication, which may make them uninterested in many peers in the first place (APA, 2013). Therefore, in hindsight, the current measurement of delinquency utilised for the target population may not accurately reflect the likelihood of delinquent acts carried out by individuals with ASD or PDA. It would be recommended for future studies investigating PDA, ASD and delinquency to utilise more comprehensive measures, which include a variety of crimes, or perhaps focus on potential offences in the domestic context.

The current study's findings suggest that traits of personality such as lower emotional stability, lower conscientiousness, and higher extraversion predict PDA, implying more than just ASD predicts PDA; there are behavioural elements of PDA that are not evident in ASD individuals. Moreover, only one measure of ASD (RAADS-14) predicted PDA out of the two examined, and some subscales on the IPIP-50 had a comparable strength of prediction with the RAADS-14. The AQ-10's poor predictivity for PDA suggests that it may be an insensitive tool if utilised to diagnose PDA individuals with ASD. This further implies that that PDA may be also linked to personality, rather than developmental disorders such as ASD alone. Thus, PDA may have a separate behavioural profile from ASD, questioning the assumed comorbidity and relatedness of the two conditions. Given lower emotional stability and delinquency predicting PDA, it could be suggested that PDA individuals may get into trouble due to their emotionally unstable behavioural profile (Ljubin-Golub et al., 2017)

Findings indicating PDA individual's vulnerability to delinquency places challenges for the way in which PDA individuals are incarcerated and treated within the CJS. If individuals with PDA are more likely to act delinquently, then this could have important implications in the treatment of PDA offenders within the CJS. It is vital to establish treatment programmes specifically for PDA offenders because management strategies developed for individuals with PDA are different to management strategies for individuals with ASD (O'Nions et al., 2015). For example, the successful use of variety and flexibility to manage individuals with PDA (Newson et al., 2003) is a strategy that directly contrast approaches utilised to handle individuals with ASD (O'Nions et al., 2015). The CJS is not focussed on individual and flexible work. Furthermore, as PDA is not recognised as a separate clinical diagnosis, the management of PDA offenders will fall under guidelines for ASD offenders. A key difference between PDA and ASD is that individuals with ASD struggle with ambiguity and prefer routine and repetition, whereas, individuals with PDA do not appear to benefit from such strategies (O'Nions et al., 2014): a person with ASD in a highly structured and prescribed CJS process would be more successful than a person with PDA.

Furthermore, there are issues regarding how individuals within the CJS could identify someone with PDA, due to the lack of understanding about the condition. The distinct method of social manipulation to gain control used by individuals with PDA is a behaviour not observed in individuals with ASD (Newson et al., 2003), which could arguably make PDA offenders subject to accusations of being "manipulative", triggering more controlling systemic responses in the CJS that are counter-productive and compound the problem. Regardless of the terminology of PDA or its diagnostic status, due to PDA's behavioural profile, there is a clear need for interventions and treatments aimed specifically at individuals with PDA who may pose a behavioural challenge, rather than modifying ASD interventions and applying them to individuals who present with different characteristics. Despite evidence indicating that behavioural treatment

approaches such as Applied Behaviour Analysis (ABA; Vismara & Rogers, 2010) are effective in reducing challenging behaviours such as aggression and non-compliance (Rodriguez, et al., 2017), there is no evidence that such methods would work with PDA individuals. Similarly, although there are improvements in policies being developed such as Think Autism (GOV, 2014) to ensure the effective treatment and understanding of ASD in the CJS (Lewis, Pritchett, Huges & Turner, 2015), none of these mention PDA or recognise PDA specifically.

In the face of the findings that PDA is closely linked to personality and behavioural traits beyond ASD, it is important to note the consequences both clinically and at an individual service-user level of changing PDA to a discrete diagnostic entirety. Recognition of the disorder may play a part in the validation of PDA becoming another condition informing the possible pathways into the CJS for some persons. Individuals and parents of individuals with PDA may support the validation of PDA as a separate diagnosis (Newson et al., 2003), yet this support could be distorted by confirmation biases (Lord et al., 2012; Green et al., 2018). The difficulties faced in participant recruitment in the current study further highlights the struggle of collecting meaningful data from self-reported measures when studying PDA individuals who resist having demands placed upon them.

As a result, rather than PDA being considered as a separate diagnostic category, it may be more helpful to recognise PDA as a personality issue which may require support from personality disorder services. This is to ensure the appropriate resources and support can be applied and available to individuals who suffer from PDA characteristics. It may be more productive to think about the terminology of PDA; pathological implies that individuals intrinsically avoid demands and have no say in the matter. Arguably, there is a difficulty determining if avoidance in such individuals is pathological (Gillberg, 2014).

Furthermore, positive correlations between PDA and impulsivity which indicate that individuals with PDA are more impulsive than individuals with ASD, highlights the impulsive profile of PDA and indicates PDA individuals may be more impulsive and lack premeditation and planning of their actions.

However, due to the personality constructs ultimately predicting PDA in the regression analysis, it implies that PDA is more strongly related to extremes of personality rather than impulsivity related; impulsivity may be a characteristic of the personality profile of PDA. Future research therefore needs to focus on developing evidence behind PDA's behavioural and personality profile to inform professionals working with PDA individuals in both forensic and community settings.

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Appendices

1. **Table 1** – Assumptions of normality

2. Variable	K-S Test	Cronbach Alpha Reliability
(IPIP-50) - Agreeableness	.20	.79
(IPIP-50) – Intellect	.00	.79
(IPIP-50) - Conscientiousness	.00	.79
(IPIP-50) - Emotional Stability	.05	.79
(IPIP-50) - Extraversion	.06	.79
(RAADS-14)- ASD	.00	.84
(AQ-10) – ASD	.00	.71
(EDA-QA) – PDA	.00	.93
(SRED-UK) - Delinquency	.20	.89
(SUPPS-P) - Impulsivity	.20	.78*

** The original SUPPS-P reliability was below .70 (.399), so the subscales reliabilities were too low to justify exploring the subscales. Therefore, a valid scale was developed from the information available which consisted of 11 items. Items that measured a lack of perseverance were fully removed, as well as most items which measured a lack of premeditation. All the items measuring negative urgency were included, along with most of the items measuring sensation seeking and positive urgency.*

2. **Table 2** - Correlations

	AQ-10	RAADS-14	(SRED-UK) – Delinquency	(EDA-QA) - PDA
(IPIP-50) - Agreeableness	-.26**	-.31***	-.029	-.36***
(IPIP-50) – Conscientiousness	-.01	.01	-.28**	-.36***
(IPIP-50) – Intellect	-.25**	-.23**	.22*	-.01
(IPIP-50) – Emotional Stability	-.15	-.31***	-.09	-.46***
(IPIP-50) - Extraversion	-.33***	-.42***	.35***	.15
(SUPPS-P) - Impulsivity	.10	-.00	.28**	.24**

**p=.05 **p =.01 ***p=<.001*

3. **Table 3 -** Summary statistics and results from the regression analyses predicting delinquency

Variable	Mean	Std	Multiple regression weights	
			B	B
(IPIP-50) – Agreeableness	30.70	6.01	-.00	-.05
(IPIP-50) – Intellect	1.56	.80	.21	.16
(IPIP-50) – Conscientiousness	1.45	.12	-.17**	-.20
(IPIP- 50) - Emotional Stability	1.38	.83	-.04	-.03
(IPIP-50) – Extraversion	1.32	.16	.09	.15
(RAADS-14) – ASD	1.45	.19	-.02	-.04
(AQ-10) – ASD	.81	.20	-.09	-.17
(EDA-QA) – PDA	1.77	.12	.13	.15
(SUPPS-P) – Impulsivity	1.52	.10	.16	.16

**p=.05 **p =.01 ***p=<.001*

4. **Table 4** - Summary statistics, correlations and results from the regression analyses predicting PDA

Variable	Mean	Std	Multiple regression weights	
			B	β
(IPIP-50) - Agreeableness	30.86	6.09	-.01***	-.25
(IPIP-50) - Intellect	1.56	0.80	.06	.04
(IPIP-50) - Conscientiousness	1.45	.12	-.29***	-.28
(IPIP-50) - Emotional Stability	1.37	0.85	-.44***	-.30
(IPIP-50) - Extraversion	1.32	.17	.21***	.29
(RAADS-14) - ASD	1.44	.20	.27***	.41
(AQ-10) – ASD	.81	.20	-.09	-.15
(SRED-UK) - Delinquency	1.56	.10	.13	.11
(SUPPS-P) - Impulsivity	1.52	.10	.04	.03

**p=.05 **p =.01 ***p=<.001*

Executive Summary

Audience

This executive summary is aimed at professionals in community settings who provide services for Autism Spectrum Disorder (ASD) and Pathological Demand Avoidance (PDA) individuals who may have previously offended or be at risk of future offending.

Rationale

PDA is a behavioural profile within ASD, which is characterised by an intense drive to avoid demands and expectations with symptoms of emotional outbursts and anxiety (Newson, Le Maréchal & David, 2003). Characteristics of PDA could arguably predispose them to commit crime such as emotional outbursts, suggesting PDA's emotionally unstable profile. Emotional instability is linked to impulsivity, hostility and aggression according to the Five Factor Model of personality (McCrae & Costa, 1987). In addition, PDA individuals can manipulate and avoid demand requests to gain control, suggesting they hold the capacity for social manipulation (O'Nions, Viding, Greven, Ronald & Happe, 2014). It was further found in a study by Egan, Linenberg & O'Nions (submitted) that scores on the EDA-QA (a measure of PDA) predicted self-reported delinquency, inferring the relationship. Moreover, PDA individuals present as impulsive, due to their emotional instability; a trait associated with antisocial behaviour (Egan, 2011). However, PDA is not yet recognised as a distinct diagnostic category (Egan et al., submitted), with some suggesting PDA is simply a commodification of other disorders. PDA has a high comorbidity with ASD (O'Nions et al., 2015), yet it remains questionable whether the disorders

are part of the same condition, or simply share similar characteristics, such as impaired social communication (Newson et al., 2003).

ASD is a life-long developmental disorder which causes individual deficit in areas of communication, socialisation and imaginative thinking. Therefore, despite there being conflicting evidence as to whether ASD is overrepresented in forensic settings, it is arguable that ASD deficits make these individuals vulnerable to encounter the law (King & Murphy, 2014). Moreover, issues regarding effective diagnosis for individuals with ASD within the Criminal Justice System (CJS) due to insensitive screening tools (Robinson et al., 2015) and a lack of understanding (McAdams, 200), ASD individuals may go unrecognised within the CJS.

Research aims

The research aimed to investigate the relationship between PDA, ASD and delinquency. The research further aimed to establish if scores on measures of PDA, ASD, impulsivity and emotional stability significantly predicted scores on a measure of self-reported delinquency. It was hypothesised that higher scores on measures of PDA, ASD and impulsivity will predict a higher score on a measure of self-reported delinquency.

Data collection and analysis

Data was collected online from PDA and ASD support groups/forums via advertising on websites, blogs and social media. Participants were therefore expected to be individuals who had received a diagnosis of/believed themselves to have PDA or ASD. The study was conducted on the Bristol Online Survey (BOS, https://www.onlinesurveys.ac.uk/) and consisted of participant information, a preliminary questionnaire and psychometrics to measure the

constructs of interest. The results were analysed using a multiple correlation analysis and a multi-linear regression analysis, so that the predictability of the constructs could be assessed.

Key findings

PDA had a positive, significant correlation with delinquency and ASD had a negative significant correlation with delinquency. PDA, ASD, emotional instability and impulsivity did not predict delinquency. Lower contentiousness was found to significantly predict delinquency and lower contentiousness significantly predicted PDA. Results therefore suggest that although PDA does not predict delinquency, participants who scored highly on measures of PDA, were more likely to score highly on measures of self-reported delinquency. In contrast, ASD had a negative significant relationship with delinquency, so participants who score high on measures of the RAADS-14 (Eriksson, Andersen & Bejerot, 2013), a measure of ASD, were less likely to score highly on measures of self-reported delinquency. Furthermore, Lower agreeableness, lower contentiousness, lower emotional stability, higher extraversion and higher scores on the RAADS-14 significantly predicted PDA.

Implications of findings

The finding that participants who scored higher on measures of PDA were more likely to score highly on the measure of delinquency suggests that PDA individuals may be more prone to act delinquently and therefore encounter the law. However, the strength of the relationship between PDA and delinquency was not strong enough to predict delinquency. The finding that PDA alone does not predict delinquency implies that further behavioural elements and characteristics would need to be present in individuals with PDA for them to act

delinquently; not all PDA individuals are likely to be delinquent. The current study's findings that lower contentiousness predicts both PDA and delinquency imply that PDA individuals may only be likely to act delinquently when they have low contentiousness. Findings indicating PDA individual's vulnerability to delinquency have important implications for the CJS and policies regarding PDA offenders. The use of strategies identified to work effectively with ASD offenders are likely to be ineffective with PDA offenders; PDA individuals benefit from flexibility (Newson et al., 2003), which ASD individuals do not (O'Nions et al., 2015).

Findings further suggest that traits of personality predict PDA; there are behavioural elements of PDA that are not evident in ASD individuals. Moreover, only one measure of ASD, the RAADS-14, predicted PDA and measures on the IPIP-50 (Goldberg et al., 2006) had a comparable strength of prediction with the RAADS-14. Likewise, the AQ-10's (Baron-Cohen, Wheelwright, Skinner, Martin & Clubley, 2001) poor predictivity of PDA suggests that it may be an insensitive tool if utilised to diagnose PDA individuals with ASD.

Consequently, PDA may have a separate behavioural profile to ASD, questioning the comorbidity and relatedness of the two conditions. Furthermore, due to emotional instability and delinquency predicting PDA, it could be suggested that PDA individuals are increasingly vulnerable to delinquency due to their emotionally unstable behavioural profile (Ljubin-Golub, Vrselja & Pandžić, 2017). Consequently, there is a need for interventions and treatments aimed for individuals with PDA, rather than modifying ASD interventions and applying them to individuals who present with different characteristics. Due to personality constructs predicting PDA, it may be more helpful to recognise PDA as a personality issue which may require support from personality disorder services.

Word count: 995

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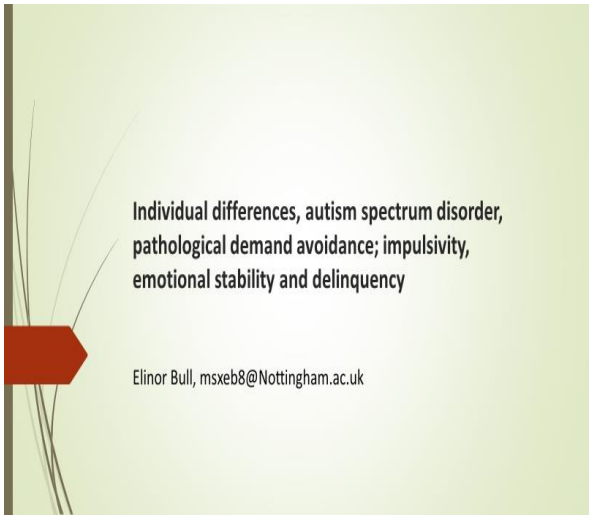
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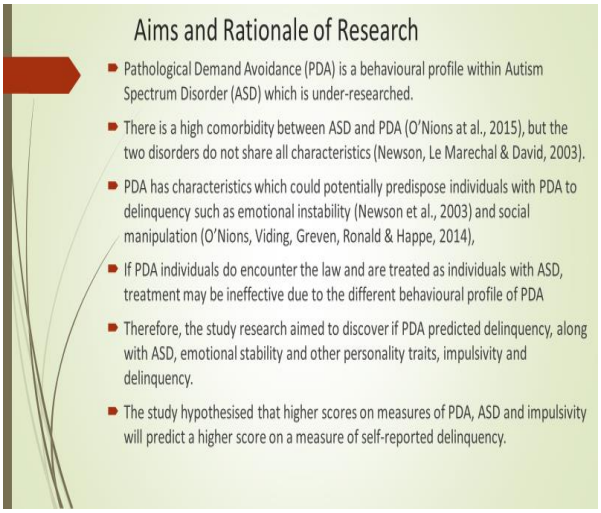
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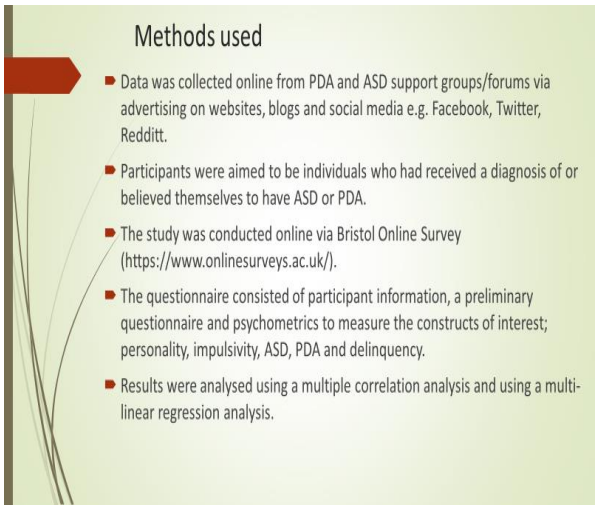
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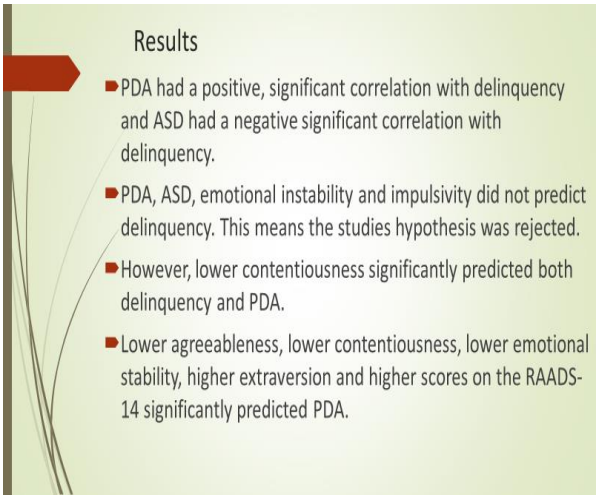
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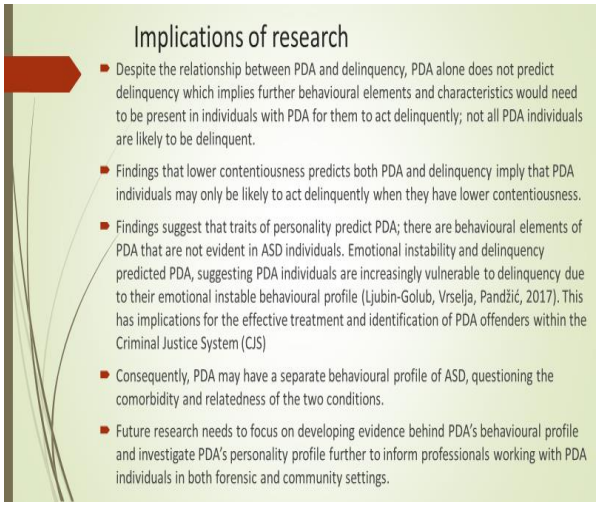
PowerPoint Presentation Slides













Reflective Report

Conceptualisation of the project

The decision to conduct research into Pathological Demand Avoidance (PDA) was not my initial plan, yet from previously researching Autism Spectrum Disorder (ASD) and crime, investigating PDA seemed interesting. From further investigation, I recognised the lack of current literature on PDA despite the strength of the literature available. My initial idea was discussed with Professor Vincent Egan on the 29th of September 2017 to compare ASD and PDA individual's likelihood of delinquency. However, it became clear that PDA is complex and other characteristics needed to be accounted for in the study. I remember my first meeting with Professor Egan; it was great to see how enthusiastic he was about researching PDA and I felt supported in the decision to research PDA and eager to start designing the project.

I was confident in my decision to apply for Professor Egan as my supervisor. The prospect of using various psychometric measures to explore such traits was new to me, since I had not previously used psychometrics myself, only observed their use. Therefore, it seemed slightly daunting to have the responsibility of choosing and conceptualising the appropriate psychometrics to use. After more research into PDA, ASD and the various other traits I was measuring, I submitted my final research project outline on the 5th of October 2017 (Appendix A). On the 13th of October 2017 I received the news I was allocated Professor Egan as my supervisor and I was very enthusiastic to start working on the project.

Preparation and Designing the Project

My first supervisor meeting with Professor Egan was on the 24th of October 2017, where we discussed the project and the appropriate measures that could be used. I was advised to research different psychometrics which I was motivated to do as I enjoyed discovering new measures. I was also slightly nervous in case I had difficulty doing this. Thankfully, I had previous knowledge of psychometrics used to measure ASD and various personality traits. I was lucky that Professor Egan had just conducted research on a reliable measure of PDA which could be utilised in the study. During my supervision with Professor Egan on the 7th of November 2017, he noted I needed to link the theory to my research to develop a meaningful rationale for the project which I felt confident in doing; I had already explored the literature around PDA and ASD. I had not explored PDA and personality traits such as emotional stability, so I was keen to do this so that my project had a strong rationale. Professor Egan was supportive throughout the process; he shared chapters he had written on personality which I utilised alongside other resources.

While I was developing a rationale for my project and investigating the most appropriate psychometrics to use I spoke to a peer, Grace Trundle who was also researching PDA and it came to light she was measuring some variables identical to mine; ASD, PDA and delinquency. Following further discussion, we realised it may be possible to combine our data collection to ensure we gained the maximum number of participants needed. This seemed a good idea since we were targeting the same participant population of individuals with PDA and/or ASD. On the 11th of November 2017 Grace and I met with Professor Egan alongside a doctorate student who was researching PDA. This was helpful as it provided us with valuable opinions on the best measures to use to ensure we

gained meaningful information from our target population. It was this session where Grace and I decided to combine our data collection; we believed this would ensure we recruited enough participants. However, we both had other measures we needed to include, alongside our combined measures, meaning the study was initially looking like it would take a long time to complete. This worried me slightly as I did not want participants to be put of the study or drop out of the study due to effects of fatigue.

Therefore, during the meeting on the 11th of November 2017, Grace, Professor Egan and I thought about psychometrics that could potentially be used to measure our variables. During this meeting we added up how long each psychometric would take and how long the study would take to complete. It was apparent that to ensure the study was not too long, short versions of current psychometrics may have to be utilised, without compromising their reliability. During this meeting it was great to see the knowledge that Professor Egan had on psychometrics and it was motivating to start working as a team. Eventually, we decided upon psychometrics that would be appropriate to use which was a great feeling and a relief to know we could now work on completing our project protocol and ethics application.

Following this meeting Grace and I worked independently on our research protocol and together on our ethics application. Upon reflection, I believe Grace and I worked effectively as a team, while maintaining the appropriate level of independent work. On the 24th of November 2017 I handed in a draft of the research protocol and ethics application forms to Professor Egan. I received prompt feedback on this and I felt supported in the process of developing a final research proposal and ethics application. On the 29th of January 2018 I handed in my formal research proposal and ethics application. This felt like a milestone

in my research project and I felt proud of myself for completing these. I appreciated Professor Egan and Grace's contribution and we communicated effectively throughout this process. On the 16th of March the study received ethical approval which was a great relief, I was eager to launch the study and start participant recruitment.

Data Collection

On the 20th of March 2018 the study was launched online, with the study being posted on social media platforms that intended to attract individuals believed to have or have ASD and/or PDA. The initial process was timely for Grace and I; we made social media accounts on platforms such as Facebook, Twitter, Redditt and emailed various bloggers who had an interest in PDA. Many individuals from these communities of whom we had contact with were polite and we received support from organisations such as the National Autistic Society (Appendix B).

However, some of the Facebook groups and individual bloggers started to raise concerns regarding the motives behind our study and the terminology being used. Despite Grace and I ensuring that sites were not being contacted more than once and being non-invasive and polite in our requests to advertise on group platforms, we received some messages questioning our professionalism. This was a little disheartening as we felt we had done everything possible, as outlined in our ethics application, to ensure that communities and groups did not feel threatened or rudely approached. Grace and I soon realised we were entering an incredibly sensitive field of research where individuals with PDA felt their diagnosis strongly identified them, understandably making them feel threatened and apprehensive of the research being conducted. Unfortunately,

this escalated further, and Grace and I started to receive informal complaints via emails from the 21st of March 2018 questioning the nature of our research, suggesting we were attempting to criminalise and misdiagnose PDA (Appendix C).

Therefore, Grace and I met with Professor Egan on the 21st of March 2018 to discuss this issue and were informed he too was receiving apprehensive emails regarding the study. Professor Egan reassured Grace and I that this was the nature of sensitive research and that to conduct meaningful research in the field of Forensic Psychology you're likely to face an element of resistance. In hindsight, this was a very realistic and insightful point to be made and it reminded me that the research we were conducting has never been done before, so is likely to cause an element of controversy. On reflection, the process of having to deal with informal complaints has strengthened my confidence in dealing with any ethical issues I may face in the future with research. Professor Egan advised that any complaints made should be directed to him.

Despite the team's best efforts to deal with informal complaints, these got increasingly aggressive and a formal complaint was made on the 22nd of March 2018 to the head of the Faculty of Medicine (Appendix D), which I was notified about on the 24th of March 2018. This complaint outlined the issue the individual had with the terminology used and suggested that the researchers were attempting to criminalise PDA. This formal complaint initially panicked me and having never dealt with such a situation before I feared the worse. Furthermore, my peer Grace was away at the time of the complaint, so I could not contact her regarding the next steps to take. However, despite being on leave, Professor Egan was available for correspondence and supported me throughout the process of dealing with the complaint. Dealing with the complaint also proved to

me that I can be effective and professional in dealing with ethical issues as I ensured all documents were provided to the correspondents and all steps to resolve the issue were in place. On the 25th of March 2018 the study was paused for the complaint to be dealt with and responded to. This decision troubled me as I worried that all our hard work would be lost, and we may have to start data collection or even the study design all over again. Despite this, I was reassured in my communication throughout with my supervisor. On the 29th of March 2018 Grace and I met with Professor Kevin Browne and Professor Shihning Chou, who informed us of the changes to the study which needed to be made; these were relatively minor. The revised documents were submitted for ethical review again on the 29th of March 2018 and approved by the ethics committee on the 5th of May 2018 (Appendix E).

Although data collection was eventful and turbulent at times, it has enabled me with the confidence to handle ethical complaints in a professional manner in the future. It also highlighted the need for potential participants, especially when investigating a clinical population, to possibly be involved in the process of designing studies to ensure issues such as terminology do not compromise the progress of data collection. The process gave me insight into the importance of effective communication when collecting data as a team to ensure ethical standards are maintained and issues can be dealt with efficiently. Professor Chou also praised Grace and I for handling the complaint 'professionally' which increased my self-efficacy in managing resistance in research.

Data Analysis

On the 23rd of May 2018 data analysis began. Despite initially feeling confident regarding my SPSS abilities, I soon realised I needed to refresh myself on how to conduct various analyses and tests. In reflection, I remembered most of my SPSS knowledge from my previous degree in Psychology and I began to enjoy the process of finding out the results of my data. I did encounter an issue of reliability in one of my measures, where I could not figure out how or why the measure was not reliable. I met with Professor Egan for supervision on the 30th of May 2018, where Professor Egan showed me how to transform measures so that they can be reliable through eliminating the unreliable components. This was helpful and a skill which I will use in future projects and analyses. By the of 21st of June 2018 I had completed my results.

Write up

The write up of my results and research project seemed like a daunting prospect at first, however, when I started it my ideas seemed to flow and make sense. I enjoyed the process of exploring my findings and coming up with meaningful discussion points regarding future directions for research and the practical implications of my study's findings.

Word count: 1978

Appendices

Appendix A – Final Research Proposal

Name Course	Elinor Bull MSc in Forensic and Criminal Psychology
Project Title	Do scores on measures of PDA, ASD and Impulsivity predict individual's scores of Delinquency?
Rationale	It has come to recent attention due to increasing research into Autistic Spectrum Disorder (ASD) that many individuals with ASD are overrepresented in the Criminal Justice System (CJS). Recently, a profile of ASD; Pathological Demand Avoidance (PDA) has been recognised. PDA is characterised by the need to control the environment and avoid everyday requests, which is driven by high levels of anxiety. Moreover, individuals with PDA have difficulties understanding boundaries, are impulsive and prone to physical outburst and attacks, arguably predisposing them to criminality. Furthermore, research has found that PDA and Antisocial Personality Disorder (ASPD) have similar characteristics, making the two disorders hard to differentiate. This has resulted in many offenders being misdiagnosed when they may be suffering from PDA. Consequently, the prevalence of PDA among offenders or delinquent individuals could be considerably higher than originally observed. This could have important implications as to how offenders should be handled and treated in the CJS. Additionally, the suggested treatment for PDA is different for the treatment and handling of individuals with just ASD, highlighting the need for delinquent individuals to receive the correct diagnoses to ensure the successful treatment of these individuals in the CJS. Therefore, it would be interesting to see if individuals who score highly on measures of ASD traits and PDA are more likely to attain high scores on a measure of delinquency. Also, since PDA is associated with impulsivity, it would be intriguing to see if a measure of impulsivity predicts delinquency alone or in a combination with PDA and ASD.
Research Question(s)	1. Does PDA predispose individuals with characteristics of ASD to delinquency? 2. Are people with PDA and ASD more likely to score highly on delinquency? 3. Are individuals with PDA and ASD more likely to score higher on delinquency if they have a high score on impulsivity? 4. Are individuals with ASD or PDA alone more likely to score highly on measures of delinquency?
Proposed Method	**Procedures** 1. Questionnaire on previous diagnosis e.g. already diagnosed with PDA or Autism and basic questions of age gender etc. All questionnaires will collect quantitative data. 2. Measure PDA, ASD, impulsivity and delinquency. 3. Carry out regression analyses to see how measures of PDA, ASD and impulsivity predict score of delinquency.

	Materials • PDA assessment tool – Vince's most recent measure for adults. • Delinquency measure – EDA. • Impulsivity measure – UPPS. • ASD symptom measure – SRS-2 (65-item questionnaire with each item being coded on a Likert scale)
Proposed Sample	Adults in the general public recruited on a voluntary basis.
Proposed Supervisor	Vincent Egan

Appendix B – Correspondence with the National Autistic Society

Bernard Fleming <Bernard.Fleming@nas.org.uk>

Tue 3/20, 11:11 PM
Elinor Bull
Inbox

Dear Ms. Bull,

Thank you for your email re your project.

Unfortunately, we are no longer able to help promote external research projects via the National Autistic Society or Research Autism websites.

However we are happy for you to promote your project via the Research Autism Twitter channel at https://twitter.com/ResearchAutism and the Research Autism Facebook channel at https://www.facebook.com/ResearchAutism which have a combined reach of more than 10,000 followers.

Please note: You will need to post your own message on our channels and we will then comment on it. You will also need to show that you have obtained ethical approval and use a university email for anyone wishing to contact you.

With best wishes

Bernard Fleming
Information Manager
Research Autism

External Number: 0207 923 5731 Internal Extension: 840
Address: The National Autistic Society, 393 City Road, London EC1V 1NG

Research Autism website www.researchautism.net
NAS website www.autism.org.uk

This message is from The National Autistic Society (NAS). The NAS randomly monitors the content of e-mail messages sent and received.

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The NAS is a company limited by guarantee (No. 1205298) registered in England and also a charity registered in England and Wales (CR269425) and in Scotland (SC039427), its registered office being 393 City Road, London, EC1V 1NG. www.autism.org.uk

Appendix C – Example of an Informal Complaint

Katie and Marcus <katieandmarcus@ymail.com>

Wed 3/21, 12:13 AM

Dear Grace and Elinor,

Thanks for getting in touch. I'm always interested in any research which can help improve understanding and awareness of Pathological Demand Avoidance but I must admit to being a little confused and uncomfortable with the nature of this research and wondered if you could elaborate on some areas please?

All of the literature and research I've read or listened to about PDA has already established the relationship to ASD and the picture is clear that it is an ASD/C. Individuals with PDA experience the difficulties with social communication and interaction and with restrictive and repetitive patterns of behaviour associated with autism. The National Autistic Society recognises this as do experts in the field and an individual cannot receive a PDA diagnosis without an ASD diagnosis. Why is there a need to investigate the relative contributions and relationship to Personality Disorder and how will this provide further insight into the aetiology of EDA in PDA? I'm also concerned that many adults with PDA have been misdiagnosed with a personality disorder and that this will confuse matters and interfere with the accuracy of the research findings.

Why are you repeatedly using the term EDA in relation to PDA? PDA as a condition is well established and has a distinct set of features which have been clearly identified over the course of 30 years, one of which is extreme demand avoidance of everyday demands but it is not the only feature of PDA.

I've looked at the piolet study site and, given both of my earlier points, I am confused and concerned by the title of the project, "Individual Differences, Autism Spectrum Disorder and Extreme Demand Avoidance". As you are referring to PDA as EDA, this suggest that you are looking at PDA and ASD as separate conditions which contradicts the current direction of the clinical findings and research around PDA. Can you explain more to me around this thinking?

Kind regards,
Katie
Notes on PDA

Appendix D – Formal Ethical Complaint

From: Catharine McNally <mindsablank@hotmail.com>
Sent: Thursday, March 22, 2018 8:51:44 PM
To: Lydia Johnson
Subject: Complaint re current unethical and harmful Nottingham uni research

I wish to make a complaint about a current Nottingham university research project and it's researchers.
I would be grateful if you could direct this to the relevant person, as I am outside the world of academia it is not easy to track down the most appropriate or responsible member of staff.

The project and research is as follows:

Project Title: Individual Differences, Autism Spectrum Disorder and Extreme Demand Avoidance
Researchers: Elinor Bull (msxeb8@nottingham.ac.uk)
Grace Trundle (msxgt4@nottingham.ac.uk)
Supervisor: Vince Egan (mczve@exmail.nottingham.ac.uk)
Kevin Browne (kevin.browne@nottingham.ac.uk)

This research has caused significant harm to those of us that have a Pathological Demand Avoidant (PDA) diagnosis and the families.

The research is unethical and how it has been allowed past an ethics committee can only indicate the ignorance and disrespect of those on the committee as well as those conducting this 'research'.

This research is clearly being carried out with a preconceived agenda which has shown a total and absolute disregard and disrespect to those of us with the condition PDA.

The researchers who are not familiar with PDA or Autism but hold qualifications in 'forensic' and 'criminal' psychology have decided prior to conducting their 'research' that the official title 'Pathological' should be replaced with 'Extreme'. Demonstrating a preconception. Lack of understanding and an arrogance beyond belief. They were asked top remedy this but refused/.

The term 'Pathological' conveys the inherent and intractable nature of the demand avoidance, the autism aspect. It is the recognised clinical title of the condition. The demand could be anything, it conveys that it is beyond control and not a choice or a behaviour'. They have chosen to replace this medically recognised term with the word 'extreme' which does not represent the condition or the reality. 'Extreme'? the implication is about severity of reaction or behaviour. Most Avoidance for most people, most of the time is not 'extreme' at all. It is subtle, unrecognisable to others and perpetuates the difficulty in others understanding the problems it brings. 'Extreme' has a completely different meaning, different implication and has removed the autistic aspect. It radically changes the concept of the condition and the understanding of it and cannot but unfairly influence the outcome of any research,

Of course, if you already have a hypothesis because you are based in forensic psychology, that PDA is in fact a behaviour or personality, then pathological does not fit your purpose, so that appears to be the rationale.

No one with PDA has been consulted about this change and the high-handed attitude of the researchers to think they can change a medical title to fit their own purpose.

Pathological Demand Avoidance is recognised as an Autistic spectrum condition by the National Autistic society. It has been recognised since the 1980's and huge work has been undertaken to ensure that PDA'ers start to get the understanding and recognition they need to progress through life.

Most of us are not in prison, have not committed crime, are not known to police and have families and lives that we have had to work extra hard to manage because of PDA, but with one fail swoop these academics have seen fit to insult, offend and harm each of us and our families with their insensitive and disrespectful change in our diagnosis, before the research ever started.

People like this should not be allowed or enabled to be around any person that has any type of vulnerability. This bullish arrogance has caused significant and genuine harm to many of us.

I ask that this project be stopped immediately before further damage is done to the PDA'ers, their families and the perceptions of the wider community.

Researchers need to remember and heed that they are in a very privileged position but their high-handed actions have significant effects on the very real people that have to live with both the condition and the consequences of their judgemental arrogance which only serve to meet their own ends, harming not helping the community effected.

For obvious reasons I will not put my name to the email, but I would welcome a reply anyway.

Regards,

Appendix E – Ethics Approval Letter

University of Nottingham
UK | CHINA | MALAYSIA

Email: FMHS-ResearchEthics@nottingham.ac.uk

Faculty of Medicine & Health Sciences
Research Ethics Committee
c/o Faculty PVC Office
School of Medicine Education Centre
B Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH

16 March 2018

Grace Trundle and Elinor Bull

Doctorate in Forensic and Criminological Psychology Students
c/o Dr Vincent Egan
Associate Professor, Director of Forensic Psychology Programmes
Room B23, Yang Fujia
University of Nottingham -Jubilee Campus
Wollaton Road
Nottingham
NG8 1BB

Dear Ms Trundle and Ms Bull

Ethics Reference No: 238-1802 **– please always quote**	
Study Title: Individual Differences, Autism Spectrum Disorder and Extreme Demand Avoidance: a) Impulsivity, Emotional Stability and Delinquency b) The Contribution of Personality Disorder	
Chief Investigator/Supervisor: Dr Vincent Egan, Associate Professor, Director, Forensic Psychology Programmes, Division of Psychiatry and Applied Psychology, School of Medicine.	
Lead Investigators/student: Ms Grace Trundle, Doctorate in Forensic and Criminological Psychology	
Other Key Investigators: Elinor Bull, MSc in Forensic and Criminological Psychology	
Type of Study: PGT project, internet mediated	
Proposed Start Date: 01/03/2018	**Proposed End Date:** 01/08/2018 4 mths
No of Subjects: 109	**Age:** 18+years

Thank you for notifying the Committee of amendment no 1: 03.04.2018 regarding changes to the recruitment and participant documents as detailed. The following revised documents were received:

- Participant Advertisement dated 03.04.2018
- Participant Consent Form dated 03.04.2018
- Participant Information Sheet dated 03.04.2018

These have been reviewed and the changes are noted.

Approval is given on the understanding that:

1. Evidence of permission from the participating organisations are submitted for the records where applicable.
2. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
3. The Chair is informed of any serious or unexpected event.
4. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Professor Ravi Mahajan
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee