

Women's Risk Needs Assessment Validation Series



UNIVERSITY OF
BIRMINGHAM

Women, Crime & Justice
Research Group

Examining the Relationship Between Severity & Complexity of Needs Among Women Involved in the Criminal Justice System

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WRNA: Exploring Complex Needs

1.1 Executive Summary

Academics and policymakers frequently use the term ‘Complex Needs’ to refer to the severity and inter-related nature of problems faced by Criminal Justice-Involved (CJI) women. The term typically acts as a shorthand for the inter-connected experiences of trauma/abuse, mental health issues, substance misuse, homelessness, and social exclusion that bring women into contact with the Criminal Justice System (CJS). However, whilst the term is used frequently within the academic and policy literature, it is rarely defined or meaningfully measured beyond the production of lists of multiple needs observed within this population group. Lacking a clear definition of complex needs mean that the link between severity and complexity can be overlooked and therefore policy does not go far enough to support women holistically with complex needs. This research seeks to address this gap in understanding. Specifically, we explore the prevalence and severity of needs and the interconnections between needs to present an empirical picture of complex needs for CJI women.

In the current research, N=506 women who accessed one of three Women’s Centres (Anawim, Together Women, Nelson Trust) between June 2021 and March 2023 undertook a Women’s Risk Needs Assessment (WRNA). The WRNA identifies needs, adverse life events, vulnerabilities and strengths across 13 subscales. Descriptive counts of scales within the WRNA assessments demonstrated the prevalence of multiple needs, and a high prevalence of adverse life events. The interconnections between WRNA subscales were investigated with a network analysis. The women were stratified into severity tertiles, and networks were used to

compare the interrelations of need within each group. Finally, structural equation modelling (PLS-SEM) was utilised to explore the causal relationships between the needs to further understand contextual factors.

The network analysis showed that many of the needs identified by the WRNA are correlated, and that the number of interconnections between the needs increases in line with the severity. The SEM shows causal relationships between trauma and cycles of mental ill-health and substance abuse and links into forms of social exclusion, which lead to antisocial friends, imprisonment, and housing problems.

1.1.1 *Defining Complex Needs*

Over the last 30 years, there has been a growing interest in understanding the experiences of deeply marginalised groups who are simultaneously facing significant personal issues and intense forms of socio-economic deprivation and who habitually fall between the cracks of service provision. Numerous terms have been used in various academic disciplines and policy domains to describe this process, such as ‘severe and multiple disadvantage’, ‘comorbidities’, ‘high support needs’, ‘complex health needs’, and ‘multiple and complex needs’ (Rosengard et al., 2007). As Rosengard et al. (2007) note, there is little consensus over these terms, which tend to be used interchangeably. Moreover, they also identify a prevalent assumption within the literature: what constitutes ‘complex and/or multiple needs’ is self-evident and can be understood with little definitional explanation.

The latter point is evident in numerous policy documents in this field. ‘Complex needs’ entered the policy lexicon in the early 2000s and featured heavily in the Corston Report (Corston, 2007). It has remained to the present day, and has been used repeatedly in the Female Offenders Strategy (Ministry of Justice, 2018), which is a key policy document. It is often unclear which needs and experiences ‘complex needs’ incorporate, as this term often used in conjunction with notions such as ‘vulnerability’ and ‘chaotic lives’. The term tends to be used indiscriminately to describe the backgrounds of a range of CJI women: those in custody, high-risk offenders, as well as those on short-term sentences.

Rankin and Regan (2004) define complex needs, focusing on social care and attempting to understand how service users who present with multiple and related needs are subsequently excluded from service provision. Rankin and Regan (2004) suggest that ‘complex needs’ are a ‘shorthand to describe multiple interlocking problems where the total represents more than the sum of the individual parts’. To further elaborate, Rankin and Regan (2004) suggest that individuals who present with complex needs demonstrate either multiple needs

(breadth) and/or severe needs (depth). Multiple needs are interconnected (more than one need is experienced simultaneously), and severe needs are viewed as being profound, serious or intense in nature. According to Rankin and Regan (2004) 'complex needs' requires us to produce holistic analysis that captures the 'complete aggregate' or totality of unmet needs rather than partial accounts of 'comorbidities' or 'co-treatment' needs.

As discussed above, 'complex needs' is a term used frequently in relation to CJI populations; Rankin and Regan's work has been particularly influential in framing this work (Dowse et al., 2014). 'Complex needs' are used in the literature in stark contrast to 'criminogenic needs'. The latter narrowly frames need as predictive factors in offending behaviour, whereas the former enables investigation of the contexts that shape CJI individuals' lives. Within this context, 'complex needs', as Hamilton (2010, p. 307) suggests, refers to individuals:

'...who experience various combinations of mental illness, intellectual disability, acquired brain injury, physical disability, behavioural difficulties, homelessness, social isolation, family dysfunction, and drug and/or alcohol misuse.'

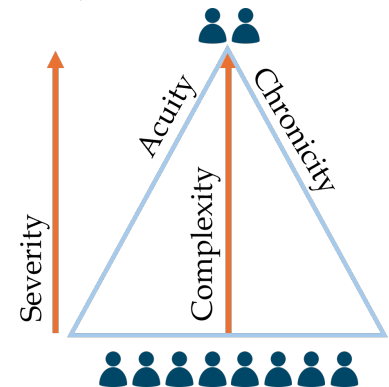
According to Hamilton (2010), this population is likely to have had early engagement with child services and the youth justice system, as well as requiring levels of service provision that are not readily available. Yet typically, according to Hamilton (2010), services fail individuals with complex needs for several reasons: i) based on service users often prior negative experiences of institutions, they tend to have suspicions of services and prove difficult to engage; ii) service users can be difficult to work with when exhibiting disruptive and aggressive behaviours; and iii) service eligibility criteria acts to exclude those who are considered 'too complex' or 'too risky' to work with. For Hamilton (2010), the fact that many people with complex needs are excluded from statutory service provision explains their eventual involvement with the CJS.

The theoretical construct of complex needs presented by Rankin and Regan (2004) offer an insight into access to services for people living

with complex needs, but offer no operationalisation. Rush et al. (2014) offer an alternative definition but conceptualise the severity of need as a tri-factor function of acuity, chronicity and complexity (see figure 1.1). In this model, acuity refers to the immediate threat, risk or adverse consequences of the ‘index problem’. For example, accidents or criminal charges may result from substance abuse. Chronicity refers to the development or worsening of long-term conditions (e.g. complex PTSD). Finally, complexity defines the extent to which acute or chronic issues occur simultaneously. The concept of complexity has been increasingly utilised in several aspects of psychosomatic medicine for a number of years. This includes individual assessment and treatment planning (Huysse et al., 2006), integrating mental health and substance use services with overall healthcare systems (Kathol et al., 2009), and adjusting for risks in monitoring outcomes and determining costs (Hermann et al., 2007).

Chronicity, as a key component of the severity of need is also important for consideration, and particularly how enduring and historic needs might impact individuals. Figure 1.2 (below) visualises the severity of need as it unfolds over time for 5 individuals (person A-E). Person A has the lowest needs profile, highlighting the ‘normal’ ups and downs experienced in a relatively stable life; these needs may not be complex and may be the kinds of needs experienced by an average person in the general population. Person B has a low acuity and recurrent chronic need. Person C had no complex needs throughout their life course until experiencing an adverse life event (*), after which the acuity of the need sharply increased, but the need is not chronic. Person D also has a highly recurrent, highly acute set of needs. The need may decrease with a positive life experience (*), such as therapy, and increase again after a negative life event (**), such as developing antisocial friends or being arrested for a crime.

Figure 1.1: Model of Complexity of Need, adapted from Rush et al. (2014)



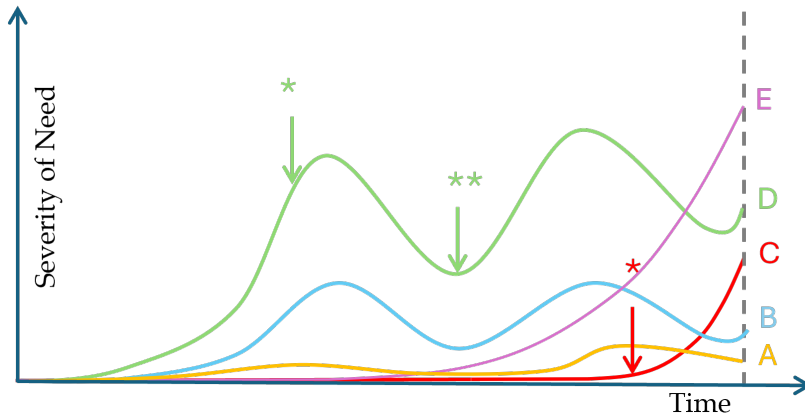


Figure 1.2: These are example timelines for 5 people (A-E), giving examples of how the severity of the need may unfold over time.

The work of Rankin and Regan (2004) offers an obvious starting point for our analysis. Whilst the term is used frequently in relation to criminal justice involved women, we are unaware of quantitative analyses that demonstrate the specific manifestation of the breadth and depth of needs for this group. Consequently we are unable to speak with any certainty on which needs present for which sub groups of justice involved women, how needs are inter-related and the specific needs that drive others. We also seek to address some omissions from Regan and Rankin's initial conceptualisation of complex needs within this context.

First, terms are used interchangeably to describe complex needs. Descriptions of complex needs vary within Regan and Rankin's work with terms such as 'problems' and 'issues' used to describe needs. Therefore, included within the lists of issues that constitute definitions of complex needs, generated by authors such as Regan and Rankin and Hamilton, are a range of physical and mental health injuries/-conditions (i.e. brain injury, mental illness, physical disability), life events (i.e. trauma), relationships (i.e. family dysfunction, isolation), behaviours (i.e. behavioural difficulties), socio economic deprivations (i.e homelessness, poverty). Some of these issues might be typically viewed as needs, others are not, and this demands subtlety in our analysis that needs are not conflated with behaviours and events for

instance.

Second, Rankin and Regan characterise the severity dimension of complex needs as ‘profound, serious or intense’ needs. Little detail is given in terms of how these labels might be measured and how they might coalesce to measure ‘severity’. Here, we draw on Rush et al’s model of complex substance use treatment needs and their notion of severe needs. Rush et al. (2014) suggest that severe needs are defined by acuity and chronicity. ‘Acuity’ can be considered here, to be the harmful consequences that result from specific unmet needs. Thus unmet needs should be ordered according to the harm they can potentially cause to the individual. In terms of chronicity, we understand to be recurring and persistent unmet needs. This enables us to consider the temporal nature of needs and how enduring and historic needs might impact individuals.

In the current study, needs were measured by using subscales from the WRNA, meaning that latent some constructs represent each individual need presented in the results. The WRNA also contains items indicating immediate and historical/ongoing needs, representing both acuity and chronicity. These elements were collapsed into the WRNA scoring and summed according to the scales. Currently, the severity of need is indicated by the sum of a series of events that vary in acuity and chronicity. Currently, the complexity of need is not taken into account, which is what this study aims to investigate further.

A latent construct is a concept that is unobservable and, therefore, cannot be directly measured. For example, ‘mental health’ cannot be directly measured or observed, so the WRNA contains a list of questions were generated that reflect the underlying concept of ‘mental health’. As the WRNA has been validated previously, these have been shown to be accurate indicators for the subscales (i.e. they measure what they’re supposed to).

1.1.2 CJI women and Needs: The evidence base to date

The existing literature points towards many aspects of CJI women’s multiple and interrelated needs (Salisbury & Van Voorhis, 2009; Solinas-Saunders & Stacer, 2017). Whilst this section presents distinct themes with regard to the needs profiles of CJI women, it is important to note that these often overlap and compound one another; in other words, they are not experienced in isolation. To underline this point, Bloom and Covington (2008) found that substance abuse, trauma, post-traumatic stress, and mental health problems were highly significant

factors for CJI women, and are often treated separately even though they are therapeutically linked (see also Adams and Forsythe (2009)). Reading studies in isolation can fragment and skew the powerful and recurring empirical picture an overview of the evidence base provides. Here, we seek to detail how the literature suggests these needs may relate to one another, enabling us to model these inter-relationships later in the report.

TRAUMA AND ABUSE: Many women in the CJS have experienced trauma, including physical, sexual, or emotional abuse, at some point in their lives. These rates are disproportionate compared to those observed within the general population (Wanamaker et al., 2022). It is well documented that there is a high prevalence of adverse childhood experiences and lifelong trauma exposure amongst CJI women (Messina & Grella, 2006a; Saxena et al., 2016; Tripodi & Pettus-Davis, 2013). Even when compared to the victimisation rates of men in the CJS, women and girls present with higher rates of physical abuse (43.8% vs 34.3%), sexual abuse (35.4% vs 13.1%), emotional abuse (44.6% vs. 29.0%), child neglect (35.3% vs. 27.3%) and any childhood victimisation (59.9% vs. 46.4%) (Wanamaker et al., 2022). CJI women who report Adverse Childhood Events (i.e. abuse and neglect) are likely to have experienced domestic violence in later life and greater severity of chronic mental and physical health outcomes (Saxena & Messina, 2021; Wyrick & Atkinson, 2021)

MENTAL HEALTH ISSUES: Generally, CJI women demonstrate higher prevalence rates of mental health conditions compared to the general population, such as schizophrenia, depression, and antisocial personality disorder (Wanamaker et al., 2022). Given the rates of victimisation for women in the CJS, it is unsurprising that many CJI women present with the symptoms of Post Traumatic Stress Disorder when compared to community samples (Lynch et al., 2012). Experiences of childhood abuse, for instance, are related to several mental health comorbidities in adulthood, such as depression, PTSD, panic, and eating disorders (Messina & Grella, 2006a). Similarly, several stud-

ies report clear links for CJI women between poor mental health and substance dependence (James & Glaze, 2006). Moreover, CJI women with substance use histories are more likely to experience co-occurring mental health disorders, such as depression, dissociation, eating disorders, and personality disorders (Bloom & Covington, 2008).

SUBSTANCE ABUSE: Studies have demonstrated the prevalence of alcohol and drug dependency issues amongst CJI women. A systematic review undertaken by Fazel et al. (2017) established a pooled rate of drug disorders for 30% of male prisoners and 51% of female prisoners. These findings appear to be replicated across a range of studies. Matheson et al. (2011) demonstrated that among female prisoners: 80% had drug problems (58.9% cocaine) (44.3% crack cocaine) while 40% had an alcohol problem and 28% had both alcohol and drug problems.

The high prevalence rates of ACEs and PTSD in the personal histories of CJI women have been linked to their increased rates of substance use (Covington, 1999). Some research suggests that childhood trauma is strongly associated with substance use as a maladaptive coping mechanism in women (Blanchette & Brown, 2006). Given the trauma, violence and harm experienced by many CJI women, it is unsurprising that research has uncovered that substances may be used to cope with psychiatric distress utilised to numb depression, hypomania or distress (Fazel et al., 2017; Jackson et al., 2011). Stalans (2009) concluded that women are more likely than men to start using drugs because of life crises and trauma and that women differ from men in their primary contributory factors for substance abuse despite similar frequency of use and severity of substance abuse.

ECONOMIC DISADVANTAGE & HOUSING INSTABILITY: Women in the CJS often face economic challenges, including poverty, housing issues and lack of stable employment. As Berry et al. (2018) reveal, CJI women (particularly from ethnic minorities) exhibit a greater level of exclusion when compared to men: they are less likely to

have completed education, have lower rates of employment (past and present), are less likely to be financially independent, and are more likely to have had a history of drug addiction.

Women's offences are more likely to begin earlier in life, often as an escape from trauma and victimisation, then later to be property or financial crimes and non-violent serious crimes, when compared to their male counterparts. This may be partially explained by women being more likely to live in poverty and less likely to have access to financial independence, thus committing crimes such as shoplifting and selling sex for financial necessity (Byrne & Trew, 2008; Elonheimo et al., 2014) and as single parents, having primary responsibility for meeting the care needs of children. In an in-depth small-scale study (n=18) of men and women attending offending behaviour programmes, Byrne and Trew (2008) highlighted the importance of economic necessity/survival crimes to explain female offending. They suggested that men's accounts perceive offending as a social action through which men 'achieve' valued aspects of masculinity, such as economic independence, control, aggressiveness and capacity for violence. On the other hand, women described crime as a pragmatic activity, often carried out due to financial need (e.g. after becoming a single mother), emotional/mental health problems and alcohol abuse (Byrne & Trew, 2008).

Compared to men, criminal justice women disproportionately experience housing issues, with many lacking stable accommodation pre and post-prison. Freudenberg et al. (2007) found that women were significantly more likely than men to be on the streets (11.2% vs. 3.2%) and had an increased likelihood of having spent time in a homeless shelter in the last twelve months (35.7% vs. 25.7%). Similarly, a study by Mayock et al. (2015) found that women were reported to be more likely to be hidden homeless, staying with friends, trading sex with men for accommodation and cycling through several institutions, being less visible on the streets than men.

1.1.3 *Research Questions and Aims*

To recapitulate the aims and questions of this research:

1. The second research aim is to explore the general patterns of need across the whole cohort in terms of correlation.
 - (a) What is the prevalence of different needs in this cohort of women?
 - (b) How are these interlinked generally across the cohort of women?
2. The third aim is to demonstrate the link between complexity and severity of need statistically.
 - (a) Are needs more interconnected for those with a higher incidence of severe scores on the WRNA?
3. The final aim is to explore the causal relationships between needs and attempt to untangle them statistically using Structural Equation Modelling.
 - (a) What are the directions of the relationships between the needs?

1.2 *Method*

1.2.1 *Design*

Upon joining the service, women who consented to participate in the study completed an initial assessment with their caseworker. The analyses discussed in this research are based on this baseline data for each participant.

1.2.2 *Participants*

The study included N=506 women with a mean age = 37.3 years (SD=10.7 years) accessing services from three Women's Organisations (Anawim, Together Women, Nelson Trust) across seven sites. Participants entered the women's centres through one of several pathways: Through-the-gate support following prison (TTG); Release on temporary license (ROTL) services; or through Liaison and Diversion (L&D) from Police

custody, street triage or community (probation) referrals.

The inclusion criteria were that the participants speak English, are over 18, and who have been involved in the CJS (police custody/-triage/probation/prison or at risk of justice involvement). The participants also needed to have the capacity to consent. The exclusion criteria therefore included men, those under age 18, those with no CJS involvement, and those who lack capacity to consent.

Table 1.1 (below), shows the demographics of the cohort and items relating to their current and previous offences.

Table 1.1: A Table displaying the demographics of the cohort

	Frequency	Percent
Current Violent Offence	215	42.5%
Prior Convictions		
0	248	49%
1-2	107	21.1%
≥ 3	151	29.8%
Prior Violent Offences	154	30.4%
Prior probation/parole	187	37%
Previously Recalled/Breached/Revoked	77	15.2%
Prior Prison Sentences		
0	398	78.7%
1	47	9.3%
≥ 3	61	12.1%
Gender		
Female / Woman	500	98.8%
Non-binary / Gender Variant	1	0.2%
Prefer not to say	1	0.2%
Trans	3	0.6%
Trans Woman	1	0.2%
Relationship Status		
Divorced / CP dissolved	15	3.0%
Living with a partner	52	10.3%
Married / Civil Partnership (CP)	21	4.2%
Separate but still legally married/CP*	12	2.4%
Single	401	79.2%
Unknown	4	0.8%
Widowed /surviving civil partner	1	0.2%
Disability		
Hearing	12	2.4%
Visual	6	1.2%
Learning	76	15%
Mental Health	341	67.4%
Autism	15	3%
ADHD	36	7.1%
Neurological	3	0.6%
Mobility	44	8.7%
Ethnicity		
Asian or Asian British	14	2.8%

Table 1.1: A Table displaying the demographics of the cohort

	Frequency	Percent
Black/Black British/Caribbean/African	23	4.5%
Mixed or multiple ethnic groups	26	5.1%
Other Dual	5	1.0%
Unknown	9	1.8%
White	429	84.8%
Religion		
Buddhist	5	1.0%
Christian	155	30.6%
Hindu	1	0.2%
Jewish	1	0.2%
Muslim	27	5.3%
No religion	288	56.9%
Spiritual	16	3.2%
Unknown	13	2.6%
Sexual Orientation		
Asexual	3	0.6%
Don't know	10	2.0%
Gay	8	1.6%
Heterosexual	429	84.8%
Lesbian	25	4.9%
Not Disclosed	12	2.4%
Queer	19	3.8%
Currently Employed		
Full Time	55	10.9%
Part-time/unable	254	50.2%
Unemployed/able	197	38.9%
Single Parent		
No	112	22.1%
Yes	133	26.3%
N/A	261	51.6%
Free School Meals		
No	71	14%
Yes	129	25.5%
N/A	306	60.5%
Registered with GP		
No	59	11.7%
Yes	445	87.9%

Table 1.1: A Table displaying the demographics of the cohort

	Frequency	Percent
Currently in Supported Living	75	14.8%
Renting Private Landlord	75	14.8%
Receiving Food Bank Vouchers	19	3.8%

1.2.3 *Materials*

THE WOMEN'S RISK NEEDS ASSESSMENT (WRNA)

The WRNA process is a comprehensive tool designed to assess various factors related to women entering different stages of the CJS. It involves multiple components such as case file review, semi-structured interviews, written surveys, and case management treatment plans. The assessments are tailored to address the specific needs and risks faced by women in probation, institutional (prison), and pre-release stages.

One of the key strengths of the WRNA is its effectiveness in predicting women's recidivism and other re-offending behaviours. This indicates that the tool is valid for classifying adult women offenders in both institutional and community corrections settings. The items included in the assessment, such as housing safety, employment/financial situation, educational needs, mental health history, substance abuse, trauma history, family dynamics, and parenting stress, are all factors that have shown statistically significant correlations with measures of return to prison, technical violations, new arrests, and new convictions.

The WRNA was initially developed through a partnership between the National Institute of Corrections and the University of Cincinnati. Before project deployment, Dr Emily Salisbury and the Trauma, Social Harm and Health Research Team (based at the University of Birmingham) collaborated to anglicise the WRNA to ensure its suitability to the UK setting.

1.2.4 *Procedure*

Before commencement, this project was approved by several ethical/regulatory bodies: the University of Birmingham Research Ethics Committee (Reference 18-0263, June 2018), the NHS Research Ethics Committee (Reference 20/NE/0093, June 2020) and HMPPS National Re-

WRNA Subscales

- Attitude Scale
- Anger Hostility
- Relationship Stability Scale
- Adult Abuse
- Child Abuse
- Family Conflict
- Family Support
- Educational Strengths
- Educational Weaknesses
- Employment Financial
- Substance Abuse (historical)
- Substance Abuse (recent)
- Housing Safety
- PTSD
- Mental Health History
- Psychosis
- Current Depression/Anxiety
- Self Efficacy
- Gambling
- Parental Stress
- Parental Involvement

search Committee (Reference 2020-148, April 2021). In addition, the National Statistician's Data Ethics Advisory Committee.

SITE SET UP

While the WRNA is in the public domain, it is also proprietary and comes with specific usage conditions, a license agreement, and associated training costs for its implementation. Before recruitment, all of the Women's Centre sites were visited by the research team, or, if this was not possible due to lockdown restrictions, a series of Zoom meetings were conducted to ensure that there was a thorough understanding by all staff of what the study entailed and how the study would be implemented as smoothly as possible into business as usual. Caseworkers and research assistants were also trained online to identify and consent eligible participants and informed on what to do with data if a participant chose to withdraw.

As a multi-site study, this meant that consistency was achieved through training for each caseworker, placing a researcher from the Trauma, Social Harm and Health Research Team at each centre during the data collection phase, and also developing a handbook that each member of staff could access. The handbook was updated through weekly meetings, where the Trauma, Social Harm and Health Research Team discussed case-by-case complexities and how simple questions should reflect complex situations.

DATA COLLECTION

Once participants had attended the Women's Centre, they were assessed for eligibility to take part in the research study. Participants were invited to their initial routine appointment with their assigned caseworker, during which they were invited to participate in the research study. They could consent at that appointment or a later appointment (but within one month) with their caseworker or research assistant, if they required further time to consider their participation. Participants were also offered a copy of the participant information sheet.

It was agreed that consent took place at their local Women's Centre but could also be completed at another outreach location or partner organisation premises. Both participant and caseworker completed the WRNA consent form together; a small number of participants completed their consent form before the assessment, but consent was checked upon commencement of the session. Depending on the client and their needs, some caseworkers completed the front page of the WRNA before the appointment and confirmed the details with the client during the appointment, while others completed it all with the client.

Some participants opted to complete the assessment over multiple sessions. This may have been due to the length of time it took to undertake, or because it was deemed suitable by the caseworker and participant due to the traumatic content of the WRNA.

The caseworker worked through each section of the WRNA with the client, reading each question and closely adhering to the wording of the questions. The WRNA structure allowed each caseworker to collect both structured and free-text case management notes during the WRNA. All structured case management notes were completed, but the free-text quantity varied case by case. The free text was used for casework but not used in this analysis. Some caseworkers undertook some support planning during the session while others did not, and at the end of the session, the caseworker completed centre-specific forms, e.g. client agreement and outreach agreement. The case workers undertook the WRNA on a paper-based survey, which was then uploaded to the participant's case plan. The data were then checked and entered into a secure database for further analysis. A weekly quality-control check was also undertaken to ensure no missing data and other errors.

STATISTICAL ANALYSIS

Data was extracted directly from the database using Python, where it was prepared and cleaned for further analysis. For example, test and incomplete WRNAs were removed, and scores were calculated in line with the WRNA scoring system. Additional statistical analyses were undertaken using R, utilising base R and packages such as the ones listed in each respective section below. The associated git page for the

analyses can be found here: [WRNA Exploratory Data Analysis](#) and [WRNA Complex Needs](#).

STRATIFYING SEVERITY OF NEED

A tertile decomposition is a statistical method to divide a dataset into three equal parts based on the values of a variable. The process involves sorting the data from lowest to highest on the variable of interest and splitting it into three groups. Each tertile contains approximately one-third of the total number of observations. Therefore, A tertile decomposition was applied to each WRNA subscale such that each participant was categorised as low, medium or high group for each WRNA sub-scale. The frequency of low, medium and high scores were then calculated. These overall scores were also broken down by tertiles, in which the women were classified as low, moderate and high need as indicated in figure 1.3.

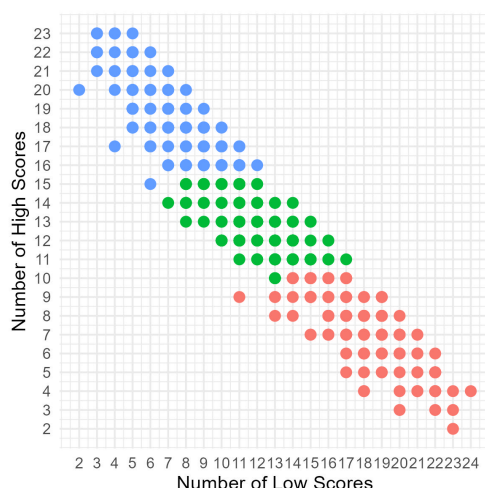


Figure 1.3: This figure (side) illustrates the breadth and depth of needs, measured by how often individuals score in the top versus bottom thirds. The red group represents the lowest overall need level. Individuals in the red group tend to have more lower scores and fewer higher scores. Conversely, the blue group (T3) exhibits the most severe needs, with a higher frequency of high scores compared to other groups.

DESCRIPTIVE STATISTICS

Descriptive statistics can help describe the cohort in more detail and contextualise the further inferential statistics. Firstly, descriptive statistics were used to describe the cohort (section 1.2.2), such as age groups, prior offences and prison sentences, gender, relationship status, disability, ethnicity, religion, and sexual orientation. Descriptive statistics were also used to highlight the prevalence of different needs that the cohort has endured and present these accordingly (section 1.3.1). In

addition to the basic counts, each subscale in the WRNA was min-max scaled and plotted to allow for comparison and visualisation of prevalence within the cohort (Figure 1.4). A full table can be found in Appendix B.

CORRELATIONS & NETWORK ANALYSIS

A correlation matrix employing Pearson's R was used to examine the WRNA subscales' interactions. This matrix is an essential tool for understanding the relationships between variables within a dataset, facilitating data interpretation and guiding further analyses and modelling efforts (see Section 1.3.2).

All WRNA subscales were incorporated into the correlation matrix, meaning many correlations were undertaken as part of the correlation matrix. A Bonferroni correction was applied to prevent the potential overestimation of these correlations.

A network analysis is an ideal approach for this analysis. It is a computational approach used to study complex systems composed of interconnected variables. In a network, these variables are represented as nodes (the circles in the figures below), and the connections between them are represented as edges or links. The main objective of network analysis is to uncover and understand the structural patterns, properties, and dynamics of these interconnected systems. It is a suitable way to visualise the 'network' of needs measured by the WRNA.

The network analysis generated a graphical representation of a correlation matrix using a Graphical Least Absolute Shrinkage and Selection Operator (GLASSO). The layout is determined by a 'spring' layout algorithm, which arranges variables such that those with more robust connections are closer together. The thickness of the line also indicates the strength of the relationship.

To complement the correlation matrix, a network analysis was used to visualise further the connectedness of needs and how this varies with increasing severity (section 1.3.3). The manifestation of needs likely has a cumulative impact, meaning that their effect on an individual is more significant than the sum of their individual parts. If this holds, it suggests that as needs become more severe, they also become more intertwined with other needs, providing the basis for the hypothesis.

A network analysis was done with the whole cohort and those with the lowest, moderate and highest acuity of need. This allows for the easy visualisation of the relationships between the variables and how these structures may differ depending on the complexity/acuity of the need. Because of the limited sample size, the network analysis was undertaken with the sum of the subscales rather than the individual items. The network analysis was also undertaken using base R, *{tidyverse}* and *{qgraph}* packages.

STRUCTURAL EQUATION MODELLING

Finally, Structural Equation Modelling (SEM) was utilised to assess and estimate causal relationships among the needs. Unlike network analysis (which focuses on networks' overall structure and characteristics), SEM aims to estimate the strength and direction of causal relationships within a specified model. It allows for including latent variables and accounts for measurement errors, making it a versatile tool for testing complex theoretical models across disciplines, including psychology, sociology, economics, and epidemiology.

Partial Least Squares Structural Equation Modelling (PLS-SEM) was used because it handles complex models with multiple constructs and indicators, especially when data are not normally distributed. This method estimates latent variable scores as exact linear combinations of their observed indicators using a component-based approach to estimation. This maximises the explained variance of the dependent variables, thus enhancing the model's predictive accuracy. PLS-SEM can provide robust insights even with small sample sizes and complex models, makes it an invaluable tool for exploring the dynamics of multivariate interactions.

Base R and the *{lavaan}* packages were used to undertake the SEM. The models were initially developed from a theoretical perspective, mapping out potential interactions, forming the parameters for an algorithmic approach to choosing the model that best fit the data. This ensured that the causal relationships made sense, for example, it wouldn't make sense to test if current mental health issues cause previous mental health problems. Therefore, the model was constrained in this way.

The algorithm was written in R, and started with the model with the least assumptions and variables, variables added and removed at random to identify the optimal model. For each model, two versions were generated, the first included all of the items (questions) for each latent variable (subscale), and the second version only contained the

items that were significantly contributing to the latent variable. PLS-SEM does not provide an overall fit for the data, so metrics such as the consistency (alpha), average variance extracted, reliability (rhoA, rhoC) as well as the mean AIC/BIC. The best model was the one that met the thresholds, with the lowest mean AIC/BIC.

1.3 Results

This analysis included the data of 506 women attending one of 7 women's centres in England.

1.3.1 Descriptive Statistics

Figure 1.4 compares the relative scores of each WRNA subscale. As can be seen, physical abuse as an adult is the most highly-scored, followed by mental health, employment and financial problems with trauma close behind. This is an overall picture of needs profiles in the whole cohort, for further detail, a list of needs can be found in Appendix B.

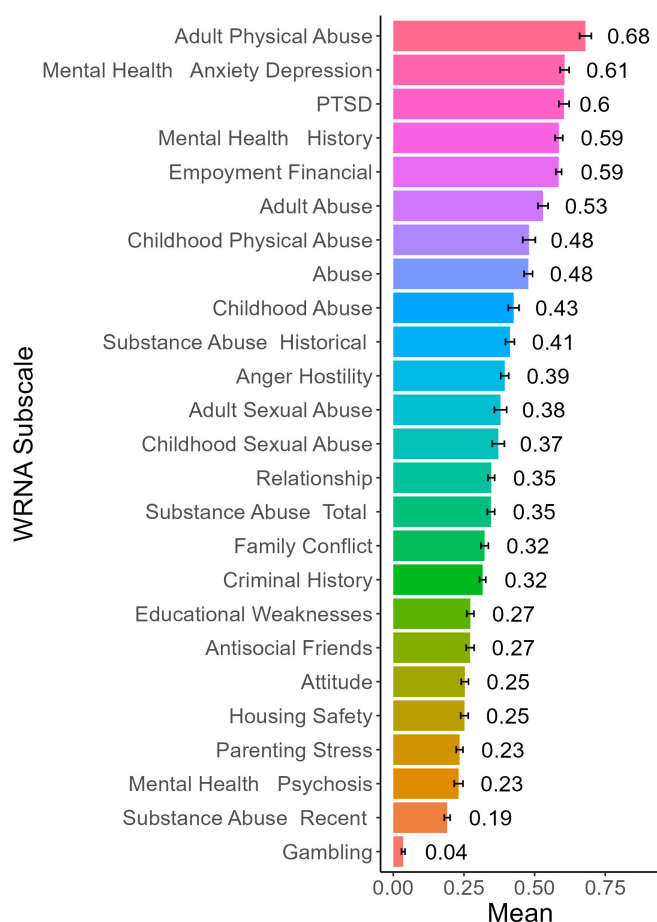
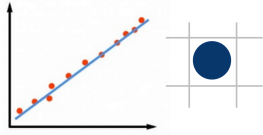


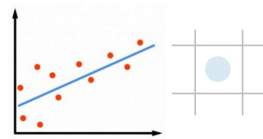
Figure 1.4: This chart shows the mean scores for each of the WRNA subscales. In this chart, 'Abuse' is a combination of adult and childhood, physical and sexual abuse scales. The Substance Abuse Total is a combination of the historical and current substance abuse scales.

Below is an example of what correlations may look like if they were plotted out. To the right of each plot, there is a circle indicating how this correlation might in the correlation matrix (Figure 1.10)

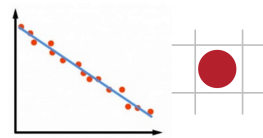
1.5: Strong Positive Correlation



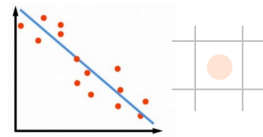
1.6: Weak Positive Correlation



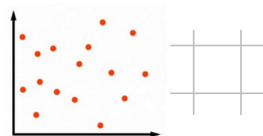
1.7: Strong Negative Correlation



1.8: Weak Negative Correlation



1.9: No Correlation

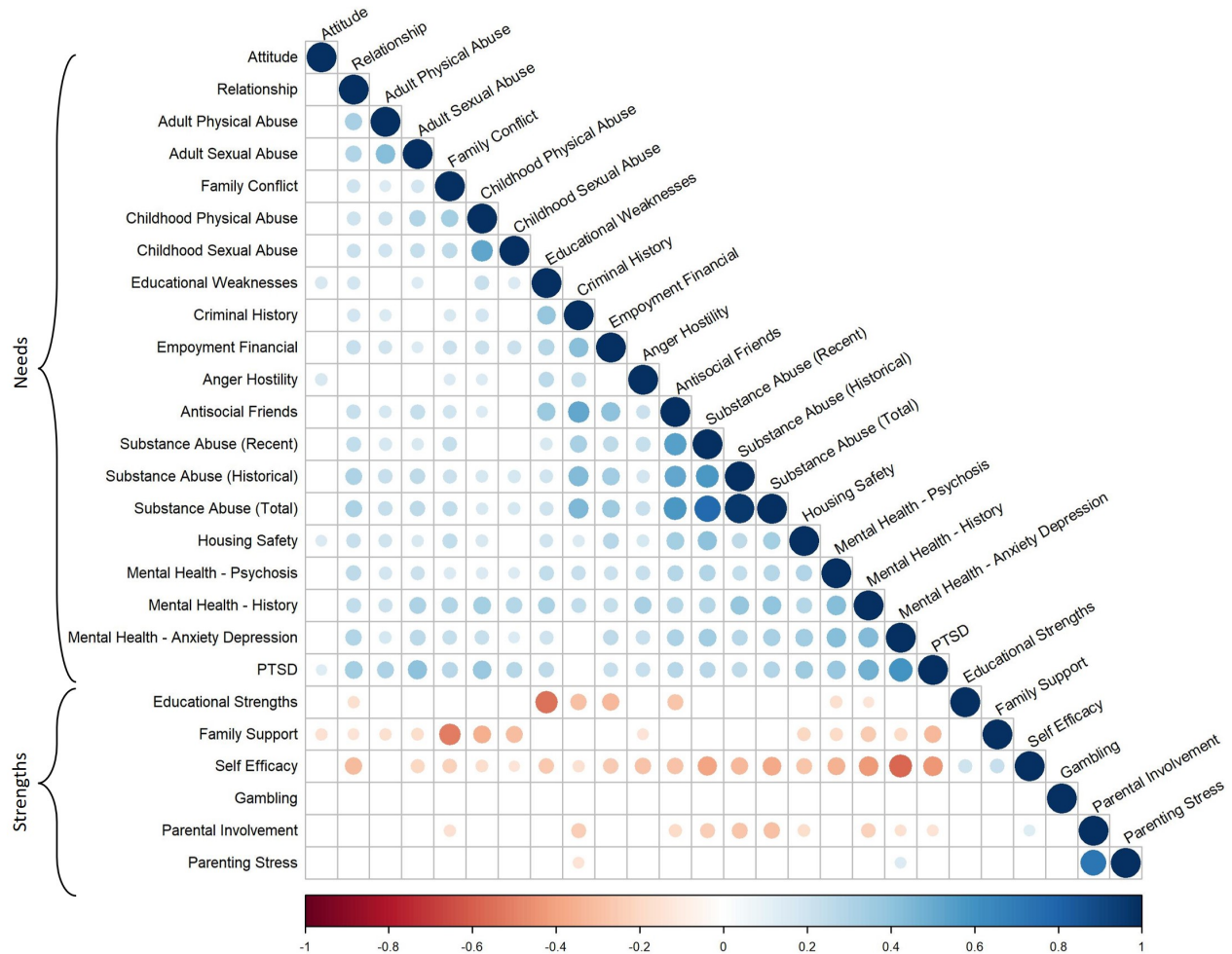


1.3.2 Correlations of Needs

This section demonstrates that women involved with the CJS face multiple, interconnected needs, including needs that are particularly severe. A correlation matrix was used to explore the relationships among the Women's Risk/Needs Assessment subscales. This matrix illustrates the correlation between each pair of subscales. Each cell in the matrix indicates the strength and direction of the relationship between two variables. A positive correlation indicates that as the score for one variable increases, so does the other. A negative correlation means that as one variable increases, the other decreases.

The correlation matrix (figure 1.10) shows the nature and strength of the correlations. As illustrated in the figures 1.6-1.9, red shows a negative correlation, and blue shows a positive correlation. The darker the colours and the larger the circle, the stronger the association between the two variables. A positive correlation is where one variable increases, so does the other (e.g. the higher the mental health history score, the higher the abuse, family conflicts, and substance abuse). A negative correlation is where one variable decreases as the other increases (e.g. where self-efficacy score increases, anxiety/depression and substance abuse scores decrease). The empty cells indicate a non-significant correlation ($p > .00019$).

A cursory glance at the matrix shows many pairwise correlations; the needs scales (as indicated) broadly positively correlate with one another. This means that, generally, the higher the score of one needs scale, the higher the scores tend to be on the other needs subscales, which means that the needs do not occur in isolation for a significant proportion of the cohort. In the same way, the strengths scales broadly negatively correlate with the needs, meaning that generally, higher scores on the strengths subscales correspond to a lower score on the needs subscales.



Correlations of Needs: Summary of Findings

1. Each need correlates with many of the others, except for the attitude, gambling and parenting stress scales.
2. Substance abuse (historical, present and total) is positively correlated all of the needs subscales except for attitude scale.
3. Mental health is also positively correlated with all other needs subscales except for attitude scale.
4. Abuse, both sexual and physical, adult and child are positively correlated with most other needs scales.

Figure 1.10: Correlation matrix of the WRNA subscales. In this figure, blue shows positive correlations and red show negative correlations. The size and darkness of the circles reflect the strength of the relationship.

5. The relationship stability scale is positively correlated with most other needs scales, including abuse, anger hostility, substance abuse, mental health, housing safety.
6. The employment/financial scale is positively correlated with most of the needs scales.
7. The antisocial friends scale is positively correlated to most of the needs subscales apart from gambling, parental stress, parental involvement and PTSD.
8. Gambling is not correlated with any other scale, this may be because only a small number of women have been affected by gambling issues. Of the 506 women, only 7.6% had experienced gambling issues at some point in their life.
9. Self-efficacy and family support (strengths scales) are negatively associated with most of the needs scales.
10. Educational strengths are negatively correlated with certain needs scales such as the relationship stability, educational weakness, criminal history scale, employment/financial, antisocial friends and mental health.

These observations are important to understanding clusters of needs, and how they interact with the strengths. The network analysis builds on these observations, and explores what the interrelations may look like in the most severe group compared to the least severe.

1.3.3 Network Analysis: Exploring Interactions Between Complexity and Severity of Need

As mentioned, it is likely that the manifestation of these needs has a cumulative impact, meaning that their effect on an individual is more significant than the sum of their individual incidence. If this holds true, it suggests that as needs become more severe, they also become more intertwined with other needs providing the basis for the hypothesis. Once the women were ranked in terms of their severity

and grouped accordingly, a network analysis was undertaken to explore how the connectivity of needs change in the top/middle/bottom groups.

This shows how needs are linked in each of those groups, these networks are shown in figure 1.11. The top panel shows the network of those with the lowest severity of need, the middle panel shows those with the 'average' need and the bottom network shows how needs are related for those with the most severe needs.

In these networks, the lines represent a relationship between the variables, the thickness of that line depicts how strong that link is, and the colour depicts the direction of that relationship. As with the correlation matrix, blue is a positive correlation, red is a negative correlation.

Network Analysis: Summary of Findings

1. The analysis depicted in Figure 1.11 reveals a clear trend, the complexity of the networks increases with the severity of needs. The group labelled T2 shows more connections than T1, and T3 displays even more interconnections compared to T2. This suggests that as the severity of needs escalates, the connections among them also become more intricate. Network D, which represents the connectivity across the entire cohort, exhibits a pattern akin to that seen in the correlation matrix (Figure 1.10), with numerous links among different variables.
2. Figure 1.11 Panel A shows the T1 network (lowest need) in which there appears to be 5 distinct clusters. The first being PTSD, previous and current mental health and self-efficacy, where mental health issues negatively impact self esteem. The second cluster is more employment/financial and educational, where the higher the criminal history scale, the more educational needs. The greater the educational need, the greater the employment financial need and by the same token, the higher the educational strengths, the less the employment-financial need. There is also a cluster of parental involvement relating strongly with parental stress, the greater the involvement, the greater the stress. The third cluster is where previous substance abuse is highly linked with current usage. The final cluster is family, the greater the family conflict, the less support there is. These patterns make sense intuitively.

The networks shown in figure 1.11 uses some abbreviations. Below is the Network Diagram Key:

ATT: Attitude Scale

AH: Anger Hostility

RSS: Relationship Stability Scale

AA: Adult Abuse

CA: Child Abuse

FC: Family Conflict

FS: Family Support

ES: Educational Strengths

EW: Educational Weaknesses

EF: Employment Financial

SAH: Substance Abuse (historical)

SAR: Substance Abuse (recent)

HOU: Housing Safety

PTS: PTSD

MHH: Mental Health History

PSY: Psychosis

MHC: Current Depression/Anxiety

SE: Self Efficacy

GAM: Gambling

PS: Parental Stress

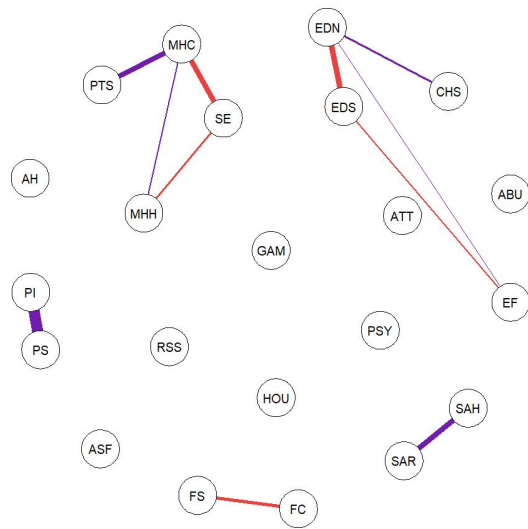
PI: Parental Involvement

3. In figure 1.11 Panel B, there is also the same, strong links between the parental, family and educational clusters. This time, however, with the increased severity, the drug use now linked strongly with mental health, employment/financial, abuse and antisocial friends.
4. Figure 1.11 panel C, these clusters are further extended in which the mental health, substance abuse, educational needs and strengths are now all linked together with more severe mental health problems and housing safety problems. There is the same pattern here as in the SEM (described a later section), where antisocial friends are linked strongly with drug use, housing safety and Employment/financial problems. This complexity may indicate severe interplay and negative feedback effects from drug use and mental health problems. This means that the more severe the need, the more correlated the needs become.

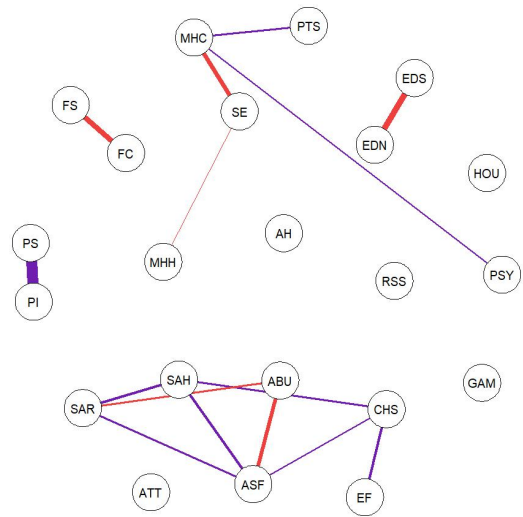
Figure 1.11 Panel D shows the overall patterns in the data, which is just another way of visualising the correlation matrix. There are far more connections here because the larger sample size and the diversity of the women are captured. Note that there are many thin lines, indicating that these are weaker relationships compared to the thicker, short lines.

Network Analysis: Link Between Severity and Complexity of Need

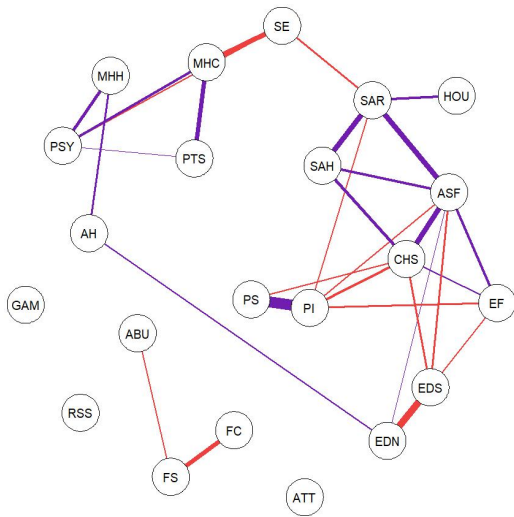
Panel A: T1 Network (Lowest Need)



Panel B: T2 Network ('Middle' Need)



Panel C: T3 Network (Most Severe Need)



Panel D: All-participants Network

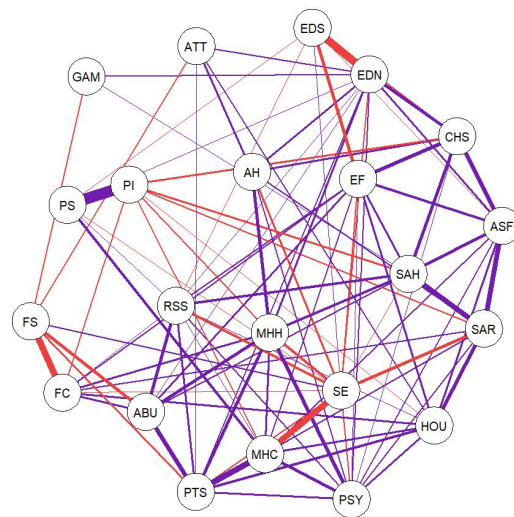
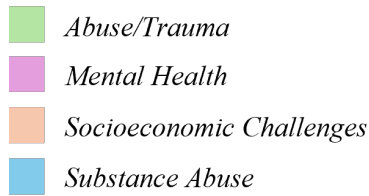


Figure 1.11: Network analyses of each of the levels of need.



1.3.4 Complex Needs: Structural Equation Model

The final part of this analysis was to use an SEM to explore the direction of the relationships between the needs and strengths.

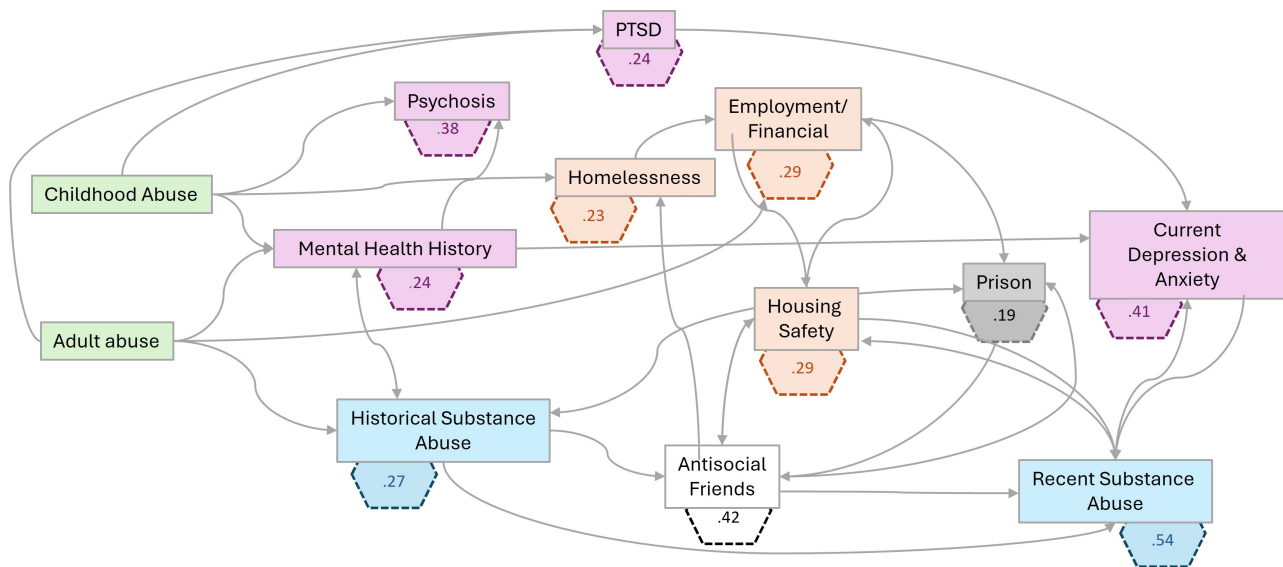


Figure 1.12: This is the structural Equation Model. The groupings of variables are coloured together and the arrows indicate the direction of the relationship. The full SEM (Appendix A) shows the weights of the items and the strengths of the relationships.

As can be seen in the SEM model (figure 1.12), each subscale has an associated number presented in the hexagonal tag, this is the R^2 value. This can be considered as a percentage variance explained in this model, i.e. the extent to which each subscale is being explained by the model. For example, PTSD=.24, which means that this model explains about 24% of the variance in PTSD. The full model (Appendix A), shows the weightings for each item in the subscale and the regression coefficients showing the extent to which the one variable affects the other. Below is a list of key findings from the full model.

SEM: Summary of Findings

1. Those who experience abuse as adults and children are likely to develop PTSD, mental health problems and substance abuse in general.
2. Childhood abuse particularly can drive homelessness and mental health issues that go on to drive substance abuse, which in turn drives antisocial friends, employment/financial troubles and involvement in the CJS.
3. Abuse as an adult is a driver for employment/financial problems.
4. Substance abuse is a strong predictor of antisocial friends and the reverse is true almost to an equal degree. There is a 'vicious triangle' between antisocial friends, housing safety and substance abuse. The problem is propagated where prison drives more experiences of antisocial friends and substance abuse.
5. A persistent pattern is that mental health problems both past and present drive substance abuse, which can, in turn drive mental health issues.
6. PTSD and previous mental health issues are strong predictors anxiety and depression, which drives substance abuse.

1.4 Discussion & Conclusion

The purpose of this research is to investigate the overall patterns of need, statistically demonstrate the link between severity and complexity of need, explore the causal relationships of need and offer a more nuanced model of complex needs. The key findings for these aims will be discussed in light of previous research and their implications in their own subsection below:

1.4.1 General Patterns of Need Amongst CJI Women

Women in the CJS report higher rates of physical abuse, sexual abuse, emotional abuse, child neglect, and overall childhood victimisation (Wanamaker et al., 2022). This trend is evident in the current research, where a significant portion of the cohort presents with traumatic experiences. Specifically, 57% of the cohort experiences flashbacks or nightmares about their traumatic events, and 60% report feeling 'numb'. Notably, over 80% of the cohort have endured physical or sexual abuse at some point in their lives, whether during adulthood or

childhood. Furthermore, 29% of the women report currently using drugs as a coping mechanism, which is not without consequences; 36% and 42% of the women report that they have experienced financial and health/emotional problems related to substance abuse, respectively. Figure 1.4 illustrates that physical abuse in adulthood is the highest-scoring issue among the cohort, followed closely by mental health problems. The prevalence of these traumatic events and mental health challenges is notably high among this group of women. For comparison, it is estimated that in the general population, 5% of adults (4% among men and 6% among women) experience depression (World Health Organization, 2023).

Rankin and Regan (2004) suggested that what makes needs complex is that they occur at the same time; results of this study also show a large number of positive correlations; higher scores on one needs scale typically correspond to higher scores on other needs scales, suggesting that these needs often co-occur rather than appearing in isolation within a significant portion of the cohort.

In recent years, there has been increasing awareness that groups engaged with justice, health, and welfare services face multiple issues requiring support. The cumulative impact of these needs is greater than their individual effects (Baldry, 2014); these compounding effects can further prevent access to services at the point of need. Unfortunately, many of these individuals receive inadequate responses from services typically designed to address issues in isolation. A frequent outcome for those with multiple needs is protracted contact with the justice system. This is often due to the failure of other services to intervene early and provide holistic, sustained support (Baldry et al., 2013).

1.4.2 *The Link Between Severity & Complexity of Need*

The results of this research show that the patterns of need, depicted in the network analysis (Figure 1.11), reveals a clear trend; the complexity of the networks increases with the severity of needs. This means that the women with the most severe needs tend to have problems that may be further exacerbated by negative feedback loops, which not only makes these needs even more severe but also begins to demand holistic support. As mentioned, (Rush et al.,

2014) suggests that complexity is an aspect of severity and mentions that the thing that makes needs complex is that they exist together. Rush et al. (2014), recognises that complexity also translates into severity, and Rankin and Regan (2004) suggests that this severity is more than just the sum of its constituent parts. Therefore, the 'dosage' of interventions must reflect this (Rush et al., 2014).

The results of the network analysis provides evidence for more holistic, multidisciplinary approaches for CJI women. Needs-based planning equips service managers, policymakers, and commissioning bodies with the tools to evaluate the spectrum of needs within their populations. The WRNA, as a trauma-informed tool, provides ample scope to assess the complex nature of needs in CJI women. This approach ensures that sufficient resources are allocated and available to meet these needs as they evolve Rush et al. (2014). Furthermore, it is vital that services are not provided in isolation. It can be seen that housing safety, antisocial friends and substance abuse are linked strongly; in the case where a person lives with, or is friends with others who take drugs, the efficacy of substance abuse interventions are likely to be significantly reduced.

Rush et al. (2014) suggests that the severity of need (driven by complexity, acuity and chronicity) must be addressed concomitantly by interventions; by not addressing the varied needs of women offenders, the strategy risks providing ineffective support. This research supports this stance, addressing complex needs where they arise and treating them as such. Hine (2019) suggests that the Female Offender Strategy does not do enough, even though it aims to create a comprehensive and holistic approach for working with female offenders. They suggest that the approach remains fundamentally paternalistic as it fails to consider the involvement of the women themselves in identifying their needs and determining how to address them.

1.4.3 *Causal Relationships of Need*

The SEM provides the direction and strength of those relationships and the number of variables we can explain by this model. The SEM shows that there is a link between trauma

and resulting mental health and substance abuse that persists. There is a significant body of research that shows a link between trauma, mental health and substance abuse. Those who experience trauma are twice or three times more likely to develop PTSD (Breslau, 2002; Breslau et al., 1995, 1997; Kessler et al., 2013), depression (Breslau et al., 1997) and substance misuse disorders (Breslau et al., 1997). These findings confirm a complex interplay between these three factors in this cohort of women, particularly that abuse, both as a child, and as an adult, drive marginalisation in the form of the employment/financial scales. For example, the results of the model show that childhood abuse and substance abuse can be a predictor of homelessness. Previous studies have also shown that childhood abuse can be a predictor of homelessness (Herman et al., 1997).

In the model, there were also indirect pathways from abuse to mental health to substance abuse and subsequently to homelessness. Unsurprisingly, homelessness has a detrimental impact on the employment and financial well-being of an individual. There are people in the cohort where homelessness was not explained by mental health or substance abuse but was explained by abuse. According to Chesney-Lind and Meda (2002) and Chesney-Lind and Sheldon (2000), the experience of abuse as a child at the hands of family members or acquaintances can act as a catalyst for various outcomes, including running away, early delinquency, and victimisation among females. This may account for a seemingly direct effect of abuse on homelessness.

Over the past two decades, there has been a significant rise in research focused on trauma, particularly its measurement concerning mental disorders and family violence. This body of work highlights the prevalence and diagnosis of PTSD among female prison populations. Key studies in this field underscore trauma as a pathological condition, pointing out the enduring effects of traumatic experiences and the intensified impact of experiencing multiple traumas throughout a person's life (Messina & Grella, 2006a). The model illustrates how these factors not only accumulate over time but also originate from trauma and ultimately lead to marginalisation.

According to the model, substance abuse is a strong predictor of antisocial friends, and the reverse is true almost to an equal degree. There is a 'vicious triangle' between antisocial

friends, housing safety and substance abuse. Research suggests that criminal others play a critical role in coercing women into crime or maintaining their involvement in crime over time (Chesney-Lind & Shelden, 2013; McDonald et al., 2006; Richie, 2018). The best overall model did not include relationship stability, but that does not mean that it does not play a role in the lives of CJI women. Relationship stability correlated with many other needs subscales. In adult life, dysfunctional, problematic, or abusive relationships with significant others also significantly raise the likelihood of criminal behaviour among women (Salisbury & Van Voorhis, 2009; Van Voorhis et al., 2010). Having criminal friends predicts criminal activity among both males and females (Dowden & Andrews, 1999; Gendreau et al., 1996). Therefore, It is no surprise that prison and antisocial friends have a causal interaction in the SEM.

This pattern highly reflects previous research; the high prevalence rates of ACEs (Adverse Childhood Experiences) and PTSD (Post-Traumatic Stress Disorder) in the personal histories of women in the CJS have been linked to their increased rates of substance use (Covington, 1999). Research suggests that childhood trauma is strongly associated with substance use in women as a maladaptive coping mechanism (Blanchette & Brown, 2006). Given the trauma, violence, and harm experienced by many CJI women, it is unsurprising that research has found substances may be used to cope with psychiatric distress, helping to numb depression, hypomania, or distress (Fazel et al., 2017; Jackson et al., 2011). Stalans (2009) concluded that women are more likely than men to begin using drugs due to life crises and trauma and that women differ from men in the primary factors contributing to substance abuse despite similar frequency and severity of use.

As the results show significant causal links in the needs, it is important to provide interventions that deal with upstream issues such as trauma and mental health. For example, trauma-informed care can be integrated into all aspects of service provision, ensuring that the underlying trauma driving many of these issues is addressed. Additionally, mental health services need to be robust and accessible, offering comprehensive support for those struggling with depression, PTSD, and other related conditions. Moreover, substance abuse treatment programs should be tailored to address the specific needs of women, recognising the role of trauma in their substance use. These programs should incorporate elements that help women develop healthier coping mechanisms and build resilience against future stressors.

Housing stability also needs to be a key focus. Ensuring safe, stable housing can disrupt the vicious cycle of homelessness and substance abuse, providing a foundation upon which other interventions can build. Support services that help women gain and maintain employment are crucial as well, addressing the financial instability that often accompanies homelessness. Furthermore, fostering positive social networks is essential. Programs that help women build supportive, non-criminal relationships may reduce their involvement in crime. Mentorship programs and community support groups can play a vital role in providing positive role models and a sense of community.

In conclusion, addressing the complex interplay of trauma, mental health, substance abuse, and social factors requires a holistic, multi-faceted approach. By targeting these upstream issues, interventions can be more effective in breaking the cycles of disadvantage and helping CJI women lead healthier, more stable lives.

1.4.4 Limitations & Future Research Directions

STRATIFICATION OF SEVERITY OF NEED

The first limitation of this study relates to how the severity of need was stratified. The tertiles applied were arbitrarily assigned to ensure three equally sized, comparable groups. Whilst this may be a good way as a proof of concept, to highlight the increasing complexity with increasing severity, there may be a more nuanced pattern which is lost. Future research can resolve this with a much larger sample size, and use of machine learning to detect these nuances.

COMPLEX NEEDS DEFINITION

As mentioned, the lists of issues defining complex needs, as generated by authors like Regan, Rankin, and Hamilton, include a range of physical and mental health conditions (e.g., brain injury, mental illness, physical disability), life events (e.g., trauma), relationships (e.g., family dysfunction, isolation), behaviours (e.g., behavioural difficulties), and socio-economic deprivations (e.g., homelessness, poverty). Some of these issues might typically be viewed as

needs, while others may not. Future analyses will disaggregate these issues further to enhance understanding and improve clarity.

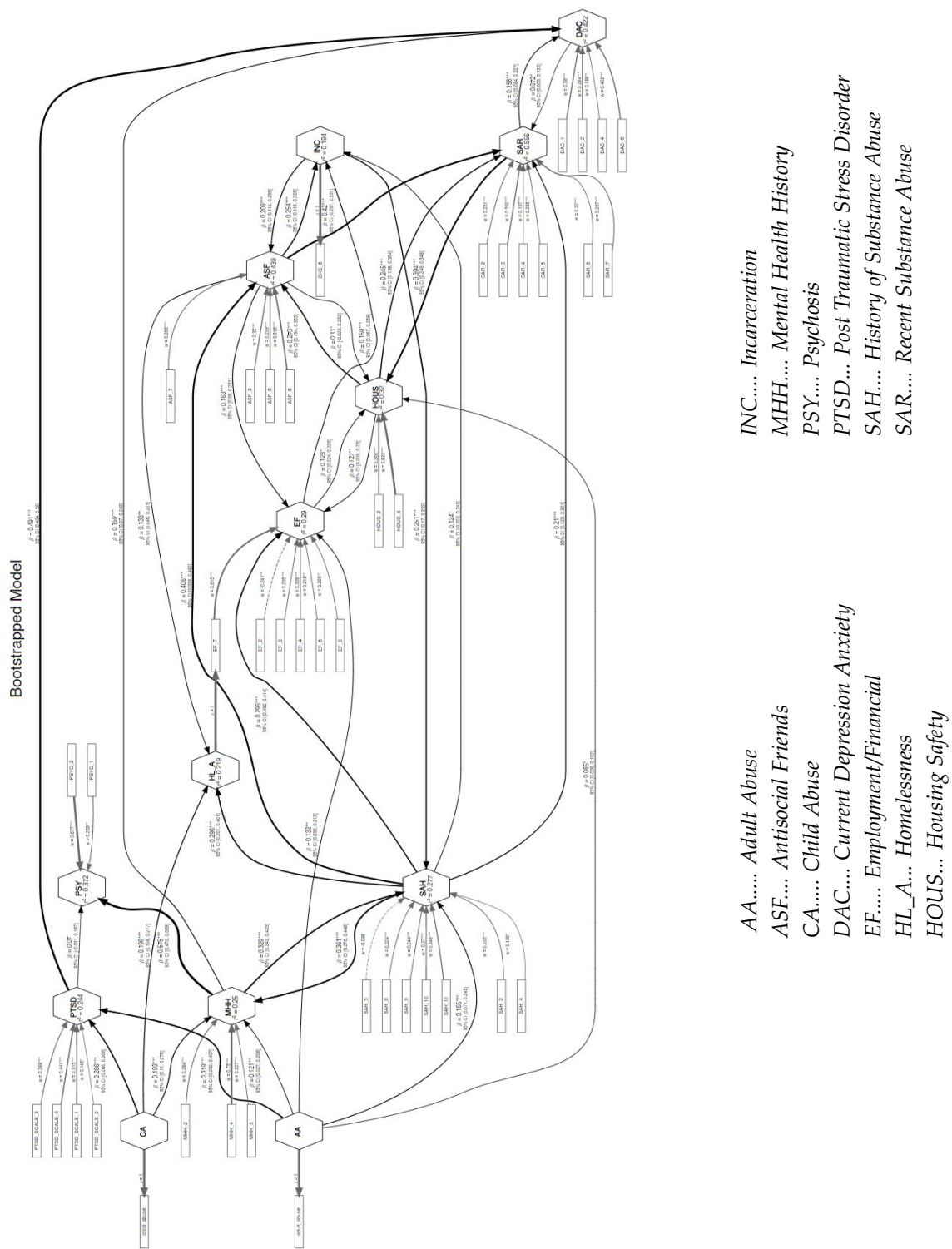
SAMPLE SIZE AND REPRESENTATION

The smaller sample size means that at individual items on the WRNA cannot be included in the network analysis preventing finer-grain analysis from being undertaken; this research used the whole scales were used to investigate patterns of need. The small sample size also means that it lacks representation of minority groups, and from this analysis, it is currently not known how complex needs manifest. Future research, that includes more data would solve this problem. Whilst the minority groups will always be a small proportion, the larger numbers would provide enough power to undertake statistical analyses to understand the patterns of need.

MODEL LIMITATIONS

The findings of this research highlight the intricate interplay between personal experiences, social relationships, and involvement in criminal behaviour. However, there are limitations to the model used. As with any model, it approximates the data, meaning there could be slight differences between real-life observations and model predictions. This model, while complex, does not fully capture the complexity of women's lives at the Women's Centres. An algorithm was written to select the model which best fit the data, and the best model were found to omit subscales such as antisocial attitudes and relationship stability. The dataset generated by WRNA assessments is a rich source of information that can provide additional insights through different statistical approaches, complementing the SEM.

1.5 Appendix A: Full Bootstrapped Structural Equation Model



1.6 Appendix B: Table of Descriptives

Question	No	Yes	Total
Needs help with reading / writing	443 (87.5%)	63 (12.5%)	506
Diagnosed with learning disabilities/difficulties e.g. ADHD, dyslexia, or had a special educational	395 (78.1%)	111 (21.9%)	506
Excluded from school or received services for diffi- culties/disabilities or dyslexia	299 (59.1%)	207 (40.9%)	506
Able to pay your bills without financial help from family or friends	167 (33.0%)	339 (67.0%)	506
Been homeless / lived in a hostel or shelter in adult- hood	245 (48.4%)	261 (51.6%)	506
Sole provider to child	112 (45.7%)	133 (54.3%)	245
Has access to a GP/dentist	59 (11.7%)	445 (88.3%)	504
Currently in supported living	430 (85.1%)	75 (14.9%)	505
In receipt of food bank vouchers / uses a food bank	354 (70.2%)	150 (29.8%)	504
Traded sex for money, survival, safety, somewhere to stay, drugs or pay debts	429 (85.1%)	75 (14.9%)	504
Able to keep your home warm enough	82 (16.3%)	422 (83.7%)	504
Keeps up with bills/debt repayments	132 (26.1%)	373 (73.9%)	505
Home is in a decent state of repair?	91 (18.1%)	411 (81.9%)	502
Feels safe at home/ where currently staying	109 (21.5%)	397 (78.5%)	506
Current housing is stable	143 (28.3%)	363 (71.7%)	506
Home environment free from violence	91 (18.0%)	415 (82.0%)	506
Home environment free of substance misuse	167 (33.0%)	339 (67.0%)	506
Close friends been on probation or parole	348 (68.8%)	158 (31.2%)	506
Close friends been in prison	363 (71.7%)	143 (28.3%)	506
Spends time with people who use alcohol/drugs	342 (67.6%)	164 (32.4%)	506
Most friends have been involved with the Police	390 (77.1%)	116 (22.9%)	506
Ever been diagnosed with mental illness	94 (18.6%)	412 (81.4%)	506
Ever been prescribed medication for mental health	100 (19.8%)	406 (80.2%)	506

Question	No	Yes	Total
Ever attempted suicide	217 (42.9%)	289 (57.1%)	506
Currently experiencing a loss of appetite?	236 (46.6%)	270 (53.4%)	506
Currently experiencing difficulty coping with fears about the future	200 (39.5%)	306 (60.5%)	506
Current changes to sleeping patterns	166 (32.8%)	340 (67.2%)	506
Are you experiencing any thoughts of taking your own life / suicidal thoughts?	435 (87.3%)	63 (12.7%)	498
Experienced physical abuse as an adult	162 (32.0%)	344 (68.0%)	506
Experienced physical abuse as a child	263 (51.9%)	243 (48.0%)	506
Experienced sexual abuse as an adult	314 (62.1%)	192 (37.9%)	506
Experienced sexual abuse as a child	318 (62.8%)	188 (37.2%)	506
Ever been physically/sexually abused	97 (19.2%)	409 (80.3%)	506
Have nightmares / flashbacks about traumatic experiences	216 (42.7%)	290 (57.3%)	506
Avoids situations that may remind of traumatic experiences	187 (37.0%)	319 (63.0%)	506
Constantly on guard/easily startled	197 (38.9%)	309 (61.1%)	506
Felt numb/ detached from others or surroundings	202 (39.9%)	304 (60.1%)	506
Received prior substance abuse treatment / services	341 (67.4%)	165 (32.6%)	506
Has substance abuse-related offences/cautions/charges on record	304 (60.1%)	202 (39.9%)	506
Has you have difficulty stopping drinking/drugs	281 (55.5%)	225 (44.5%)	506
Ever experienced health/ emotional problems resulting from alcohol or drug use	292 (57.7%)	214 (42.3%)	506
Drug use ever resulted in financial problems	324 (64.0%)	182 (36.0%)	506
Drug use has involved opiates, hallucinogens, dissociative drugs, like PCP, magic mushrooms, ketamine, spice or ecstasy	352 (69.6%)	154 (30.4%)	506

Question	No	Yes	Total
Past 6 months - arrests, recalls to prison or breaches of probation, licence, or parole conditions) related to drugs or alcohol use	427 (84.4%)	79 (15.6%)	506
Associate with individuals who drink heavily or use drugs	364 (71.9%)	142 (28.1%)	506
Currently using drugs/alcohol/medication to deal with things	356 (70.4%)	150 (29.6%)	506
Currently pregnant?	450 (96.2%)	18 (3.8%)	468
Has shared or full custody of children	80 (31.5%)	174 (68.5%)	254
Currently a single parent	191 (50.3%)	189 (49.7%)	380
Ever been investigated for abuse/neglect of a child	224 (58.3%)	160 (41.7%)	384
Family currently refuses to communicate because they are angry	376 (74.3%)	130 (25.7%)	506
Family is critical	302 (59.7%)	204 (40.3%)	506
Family members ever been in trouble with the law or had problems with substance abuse or domestic violence	282 (55.7%)	224 (44.3%)	506
Gets into relationships that are painful	255 (50.4%)	251 (49.6%)	506

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