

Exploring fitness to participate in court proceedings among defendants with Fetal Alcohol Spectrum Disorder: A systematic scoping review

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Abstract

Fetal Alcohol Spectrum Disorder (FASD) is a lifelong neurodevelopmental condition resulting from prenatal alcohol exposure, affecting both cognitive and behavioural functioning. Within the legal system, determining whether an individual can effectively participate in court proceedings is essential to ensuring a fair trial. Legal professionals, psychiatrists and psychologists must carefully assess the abilities and limitations of accused individuals, particularly those with FASD, whose cognitive impairments can significantly impact their legal fitness to participate. This scoping review examines empirical studies investigating FASD in relation to fitness to plead or equivalent legal constructs. A systematic search across six databases, following PRISMA guidelines, identified nine empirical studies. The findings highlight key challenges, including the invisibility of FASD within fitness assessments, immaturity-related barriers, the need for adaptive and executive functioning evaluations, limited judicial awareness, insufficient community resources, and the need for specialised legal frameworks such as alternative courts. To ensure fair legal proceedings, there is a pressing need for early recognition of FASD and diversion strategies, particularly within the UK, where research remains limited. This review discusses the legal implications, recommendations, and future research directions necessary to improve fitness to participate assessments and promote equitable access to justice for individuals with FASD.

1 Introduction

Fetal Alcohol Spectrum Disorder (FASD) is a neurodevelopmental condition resulting from prenatal alcohol exposure, affecting both cognitive and behavioural functioning (Webster et al., 2023). While individuals with FASD often demonstrate strengths in creative and artistic domains, and can thrive with appropriate support (Flannigan et al., 2021), the condition presents lifelong challenges that may significantly impact their ability to navigate legal proceedings. Without sufficient intervention, individuals with FASD are estimated to be nineteen times more likely to become involved in the Criminal Justice System (CJS) compared to those without FASD (Popova et al., 2011).

The prevalence of FASD is notably high, with estimates ranging from 1.8–3.6% in the UK, 2–5% in Europe, 1.1–5.0%, in four communities using a conservative approach in the US, 2 to 3% in Canada, and 2.91–4.41% in Australia (McCarthy et al., 2021; Wozniak et al., 2019; May et al., 2018; Popova et al., 2019; Tsang et al., 2025). Over time, researchers have sought to understand the specific vulnerabilities individuals with FASD face in legal contexts, including suggestibility, confabulation, and the absence of structured screening measures (Gilbert et al., 2023; Flannigan et al., 2018; Flannigan et al., 2025). Additionally, the need to include executive and adaptive functioning in testing has been widely discussed (Brown et al., 2017; Pei et al., 2016; Mela, 2022), further deficits including planning, organizing, impulse control, and social comprehension have also been raised. All of these challenges have the potential to affect an individual's ability to participate meaningfully in legal proceedings (Meltzer, 2007; Allely & Gebbia, 2016).

In several Western countries, legal frameworks recognize that if a defendant cannot comprehend or respond to charges, a conventional trial should not proceed. In England and Wales the courts rely on the Pritchard Criteria, established in the case of *R v Pritchard* in 1836, to assess a defendant's fitness to plead. The Pritchard Criteria, as confirmed in the case of *R v M (John)* 2003 states that to be fit to plead the defendant must be able to: understand the charges; decide whether to plead guilty or not; exercise the right to challenge jurors; instruct solicitor or counsel; follow the course of proceeding and be able to give evidence in their own defence. While jurisdictions such as the United States of America (USA), Canada, New Zealand, and Australia initially adopted a similar doctrine, legal precedents and statutory developments have led to divergent fitness standards (Blake et al., 2022). In Australia, comprehension and communication are emphasised with cognitive disorders being the primary indicator of incompetency. In contrast the USA prioritizes rationality, making psychosis the primary predictor of incompetency (White et al., 2012; Blake & Ogloff, 2020).

In addition to the Pritchard Criteria the Convention of the Rights of Persons with Disabilities (United Nations, 2006), and Article 6 of the European Convention of Human Rights (Council of Europe/European Court of Human Rights, 1950) assert that defendants must be able to understand and effectively participate in criminal proceedings. Effective participation presupposes that the defendant has a broad understanding of the nature of the trial process, what is at stake, and the significance of any penalty which may be imposed. The most comprehensive definition having been provided in the case of *SC v UK* (2005) (Owusu-Bempah, 2018).

Lawyers face many challenges in identifying FASD as a contributing factor to fitness determinations. Research has highlighted that most legal professionals know relatively little about FASD and therefore it is important that any assessments are performed by specialists with some expertise in FASD (Gordorn & Madore, 2021; Freckelton, 2016). A further challenge for legal professionals and expert witnesses involves the role of stigma. Stigma may cause individuals and families to carefully choose what they want to disclose to their representative (Dunbar Winsor, 2021).

Expert witness testimony plays a pivotal role in determining fitness to participate, with most jurisdictions requiring multiple psychiatric, forensic, clinical, or neuropsychological evaluations (Freckelton, 2016). Courts rely heavily on expert assessments, with near-perfect concordance between expert recommendations and judicial determinations (Zapf et al., 2004). A comprehensive medical-legal report can assist both the lawyers and judges involved with defendants living with FASD. Within any reports psychological assessments and social histories are important. Further, due to the difficulties in comprehension and recall it is critical that psychiatrists do not solely rely on the informants responses. It is also crucial that previous reports are not taken at face value without verification (Fast & Conry, 2009).

Despite the increasing recognition of FASD within some legal systems, no systematic reviews have specifically investigated fitness to participate in relation to FASD, underscoring a critical gap in research. The discordant evolution of fitness standards across Western jurisdictions and the hidden nature of FASD within fitness to participate assessments highlights an urgent need for empirical investigations into how FASD influences fitness determinations. A recent systematic review recognised that fitness to participate is an emerging field of study (Flannigan et al., 2025). To our knowledge, this is the first review to systematically identify empirical studies on FASD related fitness to participate determinations.

To ensure clarity, this article adopts the term “fitness to participate”, to encompass the variations in terminology such as fitness to plead, fitness to stand trial, effective participation and competency.

1.1 Objective

The objective of this scoping review was to identify empirical studies which have investigated FASD in relation to fitness to participate.

2 Materials and methods

2.1 Eligibility criteria

Studies were included in this review if they involved a human study population and investigated fitness to participate and FASD and associated words.

Studies were excluded if they were outside the scope of fitness to participate proceedings. Papers not published in English, dissertations, book chapters, systematic reviews, literature reviews, discussion papers (also considered review papers) and case law reviews were also excluded.

The reference sections of relevant systematic/literature reviews; editorials; commentary papers; dissertations were carefully screened for any potentially relevant articles.

2.2 Information sources and search strategy

The guidelines described by the Preferred Reporting Items for Systematic Scoping Reviews and Meta-Analyses (PRISMA) were followed (Page et al., 2021). The extension for Scoping Reviews 22 item checklist was used to improve transparency PRISMA-ScR (Trico et al, 2018). The flowchart shown in Fig. 1 outlines the process of identifying relevant articles following PRISMA guidelines.

Several articles identified in the scoping review did not meet the inclusion criteria due to their methodological approach. Case law reviews, which summarise and analyse judicial decisions, were excluded as they do not present original empirical data and are typically classified as secondary legal analyses. However, given their relevance to court decisions and broader judicial trends, key insights from these reviews are integrated into the results section. Similarly, systematic reviews, opinion pieces, and editorial discussions that did not meet inclusion criteria were assessed for critical perspectives and are incorporated into the broader legal discussion.

2.3 Databases searched

Searches were carried out on 29th August 2024 on six databases including; the Web of Science; MEDLINE; CINAHL; PsycINFO; PubMed; and Taylor and Francis legal database. Covidence software platform was used to manage and streamline the systematic review (www.covidence.org). Duplicates were automatically removed Covidence.

2.4 Search terms

Search terms included words relating to FASD and the equivalent of fitness to participate.

"fetal alcohol" OR "foetal alcohol" OR "alcohol related neuro-developmental disorder" OR "alcohol-related neurodevelopmental disorder" OR "alcohol related neurodevelopmental disorder" OR "FAS" OR "FASD" OR "prenatal alcohol" OR "PAE" "Fetal Alcohol Syndrome" OR "Foetal alcohol syndrome" OR "Partial Foetal Alcohol Syndrome" OR "Partial Fetal Alcohol Syndrome" OR "PFAS" OR "NDPAE" OR "Neurobehavioral disorder associated with prenatal alcohol exposure" OR "Static Encephalopathy alcohol exposed"

AND

"criminal justice" OR "fitness to plead" OR "fit to enter plea" OR "unfit to plead" OR "not fit to plead" OR "unfit to be tried" OR "fit to stand trial" OR "unfit to stand trial" OR "fitness to be tried" OR "fitness to stand trial" OR "criminal elements" OR "Special measures" OR "reasonable adjustment*" OR "vulnerable defendants" OR "common law capacity" OR "Pritchard criteria" OR "effective participation" OR "ability to participate" OR "fair hearing" OR "mental capacity" OR "capacity to participate" OR "cognitive impairment" OR "trial" OR "defence" OR "defense" OR "mitigation" OR "sentencing" OR "expert witness" OR "witness" OR "Court proceeding" OR "court" OR "insanity" OR "NGRI" OR "Not guilty by reason of insanity" OR "criminal court" OR "legal process" OR "legal proceeding*" OR "intermediaries" OR "practitioner knowledge" OR "knowledge of FASD" OR "criminal responsibility" OR "legal process" OR "culpability" OR "mens rea" OR "criminal conduct" OR "diminished responsibility" OR "mitigating" OR "criminal liability" OR "courtroom process" OR "legal decisions" OR "actus reus" OR "requisite intent to harm" OR "criminal justice process" OR "legally responsible" OR "Juror" OR "judge" OR "lawyer" OR "solicitor" OR "barrister" OR "legal representation" OR "prosecution" OR "jury" OR "competency to stand trial" OR "death penalty"

2.5 Screening

In addition to the database searches, citations included in the articles identified were checked for relevance. Numerous permutations of FASD and fitness to participate were also entered into Google Scholar and a thorough search for articles, not identified in the databases search, was made. A further search on Google Scholar took place on the 21th October 2024 with a final search being made on the 25th February 2025. Alerts were also put in place on 'Google Scholar' and 'Research Gate' to tag any new research.

The papers were reviewed independently by CA and AP.

2.6 The risk of bias

To assess the quality and rigour of the studies extracted quality assessment tools, in the form of JBI checklists, were completed to assess the quality of the variety of study designs (Munn et al., 2020). Joanna Briggs Institute (JBI) is a global organisation promoting and supporting evidence-based decisions that improve health and health and service delivery. Table 2 identifies the type of checklist completed to ensure quality and rigour. The checklist scores, the strengths and limitations of the studies as well the relevance, reliability, validity and applicability of the studies.

Table 1
JBI checklist for quality and rigour

Author (s) and year	Critical Appraisal Checklist	Quality Checklist Score	Strengths	Limitations	Relevance	Reliability	Validity	Applicability
McLachlan et al., (2014).	Analytical cross sectional studies (Moola et al., 2020)	7/8 87.5%	This study employs validated individualised forensic assessment tools. It added jurisdictional specific content to Grisso's instruments to increase validity. It used a comparative design with participants from a real world criminal justice setting to ensure applicability to actual legal contexts.	The study has a modest sample. The assessments were completed under ideal conditions and are likely to reflect an underrepresentation of deficits in the population. The underlying causes of impaired psycho-legal abilities were not explicitly assessed and raters were not blinded to the participants diagnostic status.	This is the first study that has attempted to empirically evaluate the psycho-legal abilities of young offenders with FASD. It highlights the need for specialised forensic assessments raises issues of remediation and the consideration of legal protections.	The study follows rigorous ethical guidelines, including informed consent and institutional review board approval. Procedures for data collection, scoring, and statistical analysis are clearly documented, ensuring replicability.	This study fills a critical research gap in forensic psychology and legal studies by providing empirical evidence on the psycho-legal abilities of young offenders with FASD.	This study specifically highlights the challenges youth with FASD face in understanding their legal rights. The assessments align with the legal criteria determining fitness to plead.
Pei et al., (2016)	Qualitative research checklist (Lockwood et al., 2015)	6/8 75%	This study provides important information about the experiences of individuals living with FASD within the CJS. It had clear objectives, methodology and analysis.	The authors acknowledge that this study provides emerging and preliminary information. The study has a small sample in a limited jurisdiction. There is no explicit philosophical framework guiding the research and limited discussion of researcher bias and positionality.	This study provides valuable evidence of the systematic challenges that individuals with FASD face in the CJS.	The use of semi structured interviews allowed for in depth exploration of the participant's experiences. The study uses thematic coding ensuring a structured approach and had a team of multiple coders to enhance trustworthiness and reduce bias.	The study demonstrates strong validity it had clearly defined objectives used appropriate data collection methods, had ethical integrity, used a structured coding process and used direct quotes.	This study is highly applicable and provides first hand insight into the barriers individuals with FASD face in the CJS.
McLachlan et al. (2019)	Reporting Prevalence Data (Munn et al., 2015)	8/9 88%	The sample size was adequate for estimating prevalence of FASD in a correctional population using active case assessment. It included power calculations, effect size, confidence intervals, comparability. It included a detailed descriptions of study subjects and setting. It followed Canadian FASD Diagnostic Guidelines. The team received training, supervision and consultation with clinicians and held case conferences to discuss findings and	The study acknowledges the estimates may be limited by a conservative sample size and voluntary participation. The challenge of confirming PAE in the non-clinically referred adult sample. The over representation of Indigenous Canadians recovering from colonial policies.	This study provides important information for clinicians, administrators and policy makers in understanding the relevance of FASD across both the health and legal contexts. More diagnosed participants had significant impairment in the executive functioning domain. It raises the lack of training and awareness among clinicians, limited diagnostic capacity, evidence based screening tools and the relative 'invisibility' of FASD.	The study measured the FASD in a standard and reliable way for all participants ensuring high consistency. Best practices for analysing forensic mental health data ensured the findings were systematic and unbiased.	Measures were taken to ensure systematic and unbiased participant inclusion, reinforcing the study's validity	The study provides quantitative evidence on prevalence cognitive impairment individuals with FASD in correctional settings and need for mental health professionals consider FASD related impairment mandatory screening protocols to ensure fair legal proceedings.

Author (s) and year	Critical Appraisal Checklist	Quality Checklist Score	Strengths	Limitations	Relevance	Reliability	Validity	Applicability
			reach clinical consensus.					
Douglas et al., (2012)	Analytical cross sectional studies (Moola et al., 2020)	7/8 87.5%	The study employs a validated survey methodology, uses comparative legal analysis to contextualise findings, collects demographic information which strengthens validity. The method section is comprehensive outlines the research design, participant selection and ethical considerations.	The study acknowledges the low response rates could introduce bias and that those who participated may have knowledge or an interest in FASD. The study employed self-reported responses that maybe subject to potential bias.	Highlights awareness of FASD limited to Queensland in contrast to the USA and Canada where courts often consider FASD in fitness to plead assessments. The unique difficulties FASD presents directly impacts their ability to participate in their defence. Current legal frame works do not adequately account for FASD. A Greater need for training to identify signs of cognitive impairment and adjust legal proceedings.	The standardised survey methodology ensured consistency in data collection. The use of self-report is a common and accepted method for assessing professional knowledge and attitudes.	The study employed appropriate statistical analysis methods to ensure the validity and reliability of its findings.	The study builds on existing studies highlighting gaps in judicial awareness legal protections individuals with FASD. It suggests that in light of the Extraordinary challenges FASD presents the criminal justice system should try things differently.
Blagg et al., (2017)	Qualitative research checklist (Lockwood et al., 2015)	9/10 90%	The authors explicitly acknowledge their theoretical and cultural positioning. The aims align with the research question exploring justice interventions and alternatives for vulnerable defendants with FASD. The study integrates place-based interviews and focus groups ensuring indigenous voices shape the interpretation of results.	Using a postcolonial perspective although acknowledged may influence the interpretation of findings. Although the article does not explicitly state the formal institutional ethics approval process (such as approval from a university ethics committee), it does emphasize community-based ethical approval and adherence to Indigenous research protocols.	Highlights legislation that enables a person who is found unfit to be indefinitely detained. Raises issue of legal advisors being put in a precarious position. FASD amplifying the chances of involvement in the CJS. Diversion is needed and alternative system. Highlights that Indigenous youth, with FASD and other cognitive impairments, maturation does not bring with it desistance from offending,	The study employs a qualitative action research approach, which aligns with the thematic analysis used to interpret findings. The study's postcolonial framework ensures that results are analysed within the broader context of colonial dispossession, rather than in isolation.	The research process itself evolves through community dialogue, reinforcing the mutual impact between the researchers and the study participants.	By embedding the research within Indigenous-owned agencies, the methodology ensures that results are interpreted through culturally sensitive lenses, rather than imposing Western legal perspective. This congruence strengthens study's ability to propose meaningful reforms and highlight the systemic failures affecting Indigenous youth with FASD.
Young et al., (2018)	Checklist for Case Series (Munn et al., 2020)	9/10 90%	The high methodological rigor, clear reporting and practical implications highlighted by this study make it a reliable and impactful research study.	The study acknowledges that the small cohort should be considered when interpreting the results. The results are representative of one jurisdiction in Australia. It was not established whether there was pretrial management of comorbid psychotic disorders and the potential contribution of close informant reports on court determinations were not assessed.	This study indicates that the severity of cognitive impairment can be associated with unfitness. The pivotal role psychiatrists play in Mental Health Court (MHC) determinations for people with cognitive disabilities is highlighted. The need for training at every level of the justice	The study followed structured psychiatric and cognitive evaluations conducted by psychiatrists ensuring consistency across all cases.	The study ensured that all eligible cases within the timeframe were included to prevent selection bias. The identification of cognitive impairment was systematic and unbiased.	The study provides quantitative evidence that the severity of cognitive impairment be associated with unfitness. Psychiatrists play a pivotal role in MHC determinations for people with cognitive disabilities

Author (s) and year	Critical Appraisal Checklist	Quality Checklist Score	Strengths	Limitations	Relevance	Reliability	Validity	Applicability
				The judicial determinations were not clear.				
Tan et al., (2018)	Checklist for Case Series (Munn et al., 2020)	5/8 62.5%	This study had a comprehensive data collection over a five year period. It combines forensic evaluation with Youth Court outcomes providing a holistic view of fitness determinations. The study provides statistical rigor in its use of logistic regression to analyse predictors of fitness determinations.	The authors acknowledge that the data was captured from one youth forensic service in New Zealand limiting generalisation. That individual report writers could differ in their approach to evaluating fitness. As a retrospective study the standardisation of interviews did not occur. The Ministry of Justice data was limited reducing the sample size and could be biased. The IQ scores of 32 defendants were not recorded in the reports reviewed.	This study provides empirical insights into how age, immaturity and diagnosis influence fitness determinations in New Zealand Youth Courts. It raises the issue of whether developmental immaturity and neurodisability like FASD should be explicitly considered in fitness assessments. It highlights the need for more screening and accommodations for individuals with FASD to ensure a fair proceedings.	This study provides a robust methodology using clear legal statutory criteria used logical regression and methods that ensure reliable associations between variables. The finding of 75% agreement rate between forensic evaluators and court determinations reinforce interrater reliability.	A structured data set was provided and records demographic, clinical and legal variables ensuring methodological transparency. However, there is no discussion of model assumptions which affects internal validity.	This study provides specific evidence on whether youth with neurodisability like FASD should be explicitly considered fitness assessmen 4% had FAS Immaturity considered. association between diagnosis a court finding unfitness.
Wakefield et al., (2024)	Checklist for Case Series (Munn et al., 2020)	7/10 70%	This study had a clearly defined study design, comprehensive case inclusion, detailed data collection and reporting and has a large data set.	The authors acknowledge incomplete data on the outcomes and the small number of unfit defendants. The reasons the assessors opined whether a defendant was fit or unfit was not analysed. Most reports did not use standardised fitness assessment instruments. The study has a regional focus and there is limited detail with regard to the statistical analysis of the data.	This study provides empirical evidence on the increasing number of court ordered fitness assessments in New Zealand. It is relevant to forensic psychiatry resources, legal policy and human rights. The fact that few cases of FASD were highlighted raises concerns over underdiagnosis in forensic settings.	The retrospective audit provides consistent data extraction over a eight year period. In 97% of cases the assessors reached agreement. The validity is affected by the limited transparency in statistical methods.	The study uses established legal and forensic criteria and provides comprehensive data collection and consistent expert assessments. However, the legal disposition of 29 out of 105 unfit defendants was unknown creating gaps in the long term legal outcomes.	This study has strong applicability forensic psychiatry, policy and challenges providing sufficient provision of mental health services.
Brown et al., (2016)	Analytical cross sectional studies (Moola et al., 2020)	6/8 75%	This study uses a mixed method approach to highlight gaps in the District Attorney knowledge and training of FASD in the United States of America (USA). It uses a valid web based survey. It is noted that the open ended questions provide strong alignment with the research goals, ethical approval is acknowledged and there is meaningful interpretation of qualitative responses.	The study relies on self-reported data which may introduce bias and has no standardised tool for measuring knowledge levels. The study has limited control over confounding factors. The authors acknowledge the modest response rate and the fact that it was limited to prosecutors. They consider the study exploratory. The qualitative response provides limited discussion in relation to researcher bias. There is also limited qualitative analysis on the findings.	This study provides empirical evidence that US prosecutors are not trained to recognise the unique difficulties individuals with FASD face which could lead to inappropriate prosecutions for those who lack capacity to participate in proceedings.	The survey design, standardised questions and reproducibility of the findings demonstrates strong reliability. The modest response rate and self-reported data means there are some limitations with this study.	The study demonstrates strong validity in its methodology and reasonable accuracy in its findings.	This study highlights significant gaps among US prosecutors regarding FASD related impairment that could affect a defendant's ability to participate effectively in criminal proceedings.

Table 2
Study Characteristics

Author (s) and year	Country	Sample/Population Characteristics	Aims of the article	Study Design and Method(s)	Main Findings
McLachlan et al., (2014).	Canada	Two groups of young offenders 50 with FASD and 50 without prenatal alcohol exposure completed	To raise issues surrounding the law and justice intervention and non-intervention. To emphasise FASD cannot be uncoupled from the history of colonial settlement. To highlight the need for a fresh diversionary paradigm. To map out a reform agenda based on a decolonizing alternative to the mainstream justice process..	Qualitative research undertaken in three indigenous communities. Interviews and roundtables.	Western Australian legislation enables a person who is found unfit to be indefinitely detained. Legal advisors are put in a precarious position. Diversion or an alternative system is needed. Diversion for indigenous populations into indigenous owned therapeutic alternatives. In the context of many Indigenous youth, particularly those with FASD and other cognitive impairments, maturation does not bring with it desistance from offending. Judicial discretion should be used whilst reform takes place as it already exists in legislation and common law.
Pei et al., (2016)	Canada	9 individuals with an FASD (5 males, 4 females; mean age of 34.1 years, age range of 24–59 years) 12 professionals working in the criminal justice system (3 males, 9 females).	To explore the experiences of individuals in the criminal justice system with a Fetal alcohol spectrum disorder (FASD) in order to identify possible ways to reduce the likelihood of re-entry into the criminal justice system.	Qualitative research methods used to interview individuals with FASD and professionals who work with clients with FASD. Part of a larger program of research.	Once individuals with an FASD entered the criminal justice system, there were multiple factors that continued to place these individuals at a disadvantage. In particular: (1) biological factors, (2) psychological and social issues, and (3) factors that trapped individuals with FASD in the system and hindered their ability to fully understand and act in their best interest within the justice system
McLachlan et al. (2019)	Canada	A sample of 80 justice-involved adults (ages 18–40, 85% male) over an 18-month period from 2013 to 2015.	Prevalence and characteristics of adults with fetal alcohol spectrum disorder in corrections	The participants completed interdisciplinary clinical assessments comprising medical and psychological evaluations to estimate the prevalence of FASD in Northern Canada	A high rate of FASD was found which could have been as high as 31.2% with confirmation of prenatal alcohol exposure. Most participants in this study presented with significant neurodevelopmental and cognitive deficits in at least two domains of functioning, irrespective of diagnosis, it was noted that neurocognitive deficits could have an impact on fitness to plead.
Douglas et al., (2012)	Australia	37 magistrates, nine District Judges and two supreme Court judges	To report the results of a survey of members of the Queensland judiciary about their understanding of FASD and how they deal with FASD in their judicial role	Survey by post and online. Questions about personal background, awareness of FASD, impact of FASD on practice and training, and information needs.	80% of the judiciary had not heard of FASD. There are questions of fitness to plead in Canada and USA. The rushed environment of the lower courts and the pressure to plead guilty are not conducive to ensuring clear communication and understanding of the process for a person with FASD.
Blagg et al., (2017)	Australia	60 people interviewed from legal and mental health services, 15 workers from partner organisations, 35 court and police personnel at a round table event.	To raise issues surrounding the law and justice intervention and non-intervention. To emphasise FASD cannot be uncoupled from the history of colonial settlement. To highlight the need for a fresh diversionary paradigm. To map out a reform agenda based on a decolonizing alternative to the mainstream justice process.	Qualitative research undertaken in three indigenous communities. Interviews and roundtables.	Western Australian legislation enables a person who is found unfit to be indefinitely detained. Legal advisors are put in a precarious position. Diversion or an alternative system is needed. Diversion for indigenous populations into indigenous owned therapeutic alternatives. In the context of many Indigenous youth, particularly those with FASD and other cognitive impairments, maturation does not bring with it desistance from offending. Judicial discretion should be used whilst reform takes place as it already exists in legislation and common law.
Young et al., (2018)	Australia	Extracted case file data of 92 individuals who had a criminal case referred to the Queensland Mental Health Court (MHC).	To (1) describe the severity of impairment in people with cognitive disability referred to the Queensland Mental Health Court; (2) estimate the association between severity of impairment and a determination of unsoundness or unfitness by the MHC; and (3) assess the socio-demographic, clinical and legal factors that predict being	MHC record review	Over half the individuals referred to the MHC had moderate to severe cognitive impairment with a 1.5 increased likelihood of being found unfit to stand trial compared to mild/borderline cognitive impairment. This study suggests that the clinical level of cognitive impairment is key in applying moral, social and legal criteria. Almost two in three individuals with mild or borderline cognitive disability were found unfit to stand trial by the MHC. Psychiatrists play a pivotal role in MHC determinations for people with cognitive disability. Disability-specific training for clinicians and justice professionals at every level of the justice and MHC process is needed. The study infers that Fetal alcohol spectrum disorder, and

Author (s) and year	Country	Sample/Population Characteristics	Aims of the article	Study Design and Method(s)	Main Findings
			deemed unsound or unfit to stand trial by Court in Australia.		acquired brain injury may not result in significant cognitive impairment.
Tan et al., (2018)	New Zealand	A retrospective review fitness to stand trial reports for o 79 youth consecutively referred to the Region Regional Youth Forensic Service from 2010 to 2015	To better understand how juvenile fitness to stand trial is approached in New Zealand, particularly with respect to the notion of immaturity and its effect on fitness to stand trial determinations in light of international research.	A cross-sectional observational study involving retrospective review of forensic evaluation reports and court outcomes.	More than half (58%, n = 46) of youth in the sample were opined to be mentally impaired. Intellectual disability was the most common diagnosis. Other diagnoses used by evaluators to demonstrate mental impairment included attention deficit hyperactivity disorder (ADHD, 17%), psychosis (4%), autistic spectrum disorder (ASD, 4%) and foetal alcohol syndrome disorder (FASD, 4%). No statistically significant association was found between these diagnoses and court findings of youth being unfit to stand trial.
Wakefield et al., (2024)	New Zealand	A retrospective audit of 415 defendants Court ordered health assessor reports.	To audit defendants assessed by a New Zealand forensic psychiatry service	An audit of fitness to stand trial assessments made by psychiatrists between 2014 and 2022.	Primary diagnoses were psychotic disorders (37%), intellectual disability (13%) and acquired neurocognitive disorders (15%). Few people with foetal alcohol spectrum disorder were identified suggesting FASD is overlooked by court assessors. The increase in fitness to stand trial reports has implications for the forensic mental health services.
Brown et al., (2016)	USA	216 USA District Attorneys 166 men and 50 women	To investigate the knowledge and legal experiences of District Attorneys concerning FASD, and to compare these across sexes, legal experience levels, as well as geographical	The survey was distributed electronically to all US District Attorneys following the Dillman Total Design Method.	The need for forensic screening instruments. District attorneys were found to vary in their ability to accurately identify signs and symptoms of FASD, underestimated the prevalence of criminal justice involvement among individuals diagnosed with FASD. Not routinely aware of unique psycho-legal impairments of this population.

3 Results

The titles and abstracts of 1722 studies were screened. Seven further empirical studies were identified from the citation search and the update searches. After the removal of duplicates and further screening 1051 studies were found to be irrelevant. Sixty-five studies were extracted and assessed for eligibility. A further 56 studies were excluded using the eligibility criteria leaving nine studies that provided empirical evidence from the database searches.

A total of nine empirical studies were identified in this scoping review investigating some aspect of FASD and fitness to participate within the CJS. Table 2 provides the study characteristics stating the author and year, country, sample/population, aim of the study, the study design and methods and main findings.

[Table 2 Study characteristics about here]

3.1 Articles extracted

This review includes nine studies from four countries: Canada (3), Australia (3), New Zealand (2), and the United States (1). The extent to which these studies address fitness to participate in legal proceedings and FASD varies considerably, warranting an examination of the notable trends across the jurisdictions.

3.2 Notable Trends Across Jurisdictions

3.2.1 Canada

The scope and variety of studies within Canada provide a leading example of empirical Inquiry. In Canada, individuals with FASD have been recognized as a vulnerable population since the passing of resolutions by the Canadian Bar Association in 2011. The resolution underscored the increasing attention on FASD in North American justice policy (McLachlan et al., 2014). A landmark study by McLachlan and colleagues (2014) was the first in-depth investigation into the cognitive impairments affecting legal fitness among individuals with FASD. This study highlights the challenges faced by youth in comprehending their legal rights and court proceedings. It specifically considered the issues surrounding fitness to participate and the abilities needed to participate effectively. Building on these findings, a 2016 qualitative study explored the lived experiences of individuals with FASD navigating the criminal justice system (Pei et al., 2016). This study provided direct evidence of the barriers faced by individuals living with FASD and their ability to understand court proceedings, marking it as the only study offering first-hand insights into legal competency concerns. A further advancement in empirical inquiry is evidenced by McLachlan and colleagues 2019 quantitative study. The prevalence study examined the prevalence of FASD within correctional populations, utilizing active case assessments. The findings emphasized the urgent need for mental health professionals to incorporate FASD specific screenings in forensic evaluations (McLachlan et al., 2019)

3.2.2 Australia

Australia has provided an emerging awareness of FASD and the issues surrounding fitness to participate and the institutional gaps (Tulich, 2020; Chisholm et al., 2017). Early discourse on FASD in Australian legal settings began with a 2012 study surveying the Queensland judiciary members on their knowledge of FASD (Douglas et al., 2012). The study revealed systemic barriers, including the pressures to plead guilty in fast paced lower court environments, which pose additional challenges for individuals with FASD in understanding legal procedures. At the time, Canada and the USA were conducting routine FASD fitness to participate assessments, whereas the authors acknowledge that Australia and New Zealand had limited testing protocols. By 2017, research was expanded to include a discussion around fitness to participate with qualitative research addressing the fitness to plead assessments, the vulnerabilities of Indigenous youth, and the need for alternative solutions incorporating community participation (Blagg et al., 2017). Further research in 2018, examined case file data from the Queensland Mental Health Court (MHC). The authors of the 2018 study found notable associations between cognitive impairments and unfitness determinations (Young et al., 2018). While the study suggested that FASD may not necessarily lead to severe cognitive impairment, it highlighted that two in three individuals with mild to borderline cognitive disabilities were deemed unfit to stand trial by the MHC.

3.2.3 New Zealand

Research from New Zealand has shown an increased awareness of the issue surrounding fitness to participate and the empirical studies have concentrated on forensic assessment and judicial recognition. In 2018 a retrospective study examined 79 cases in the Youth Court, evaluating how fitness assessments influenced judicial outcomes (Tan et al., 2018). This study revealed a strong association between intellectual disability and unfit to participate determinations, though FASD diagnoses (4%) did not show statistical significance in judicial findings. In contrast, a recent 2024 forensic psychiatry audit assessed fitness to participate evaluations within adult criminal proceedings (Wakefield et al., 2024). Despite FASD's known prevalence within the CJS, only a small number of cases were formally identified, indicating gaps in screening and recognition. This lack of identification was noted despite disability advocacy groups supporting the courts in relation to neurodivergent cases. The study reinforced the growing demand for forensic mental health services.

3.2.4 USA

In the USA empirical evidence on fitness to participate and the issues surrounding fitness remains limited. In 2016 a web-based survey assessed prosecuting District Attorneys' awareness and experience with FASD related legal issues (Brown et al., 2016). While the study offered limited insights into fitness to participate concerns, it highlighted significant gaps in prosecutorial knowledge underscoring the need for improved training, screening protocols, and research into legal comprehension issues.

3.3 Comparative Findings

Across the jurisdictions identified, Canada leads in empirical research, conducting comprehensive investigations into cognitive impairments, legal fitness, prevalence, and lived experiences. Australia's framework is evolving, with growing judicial awareness and the emergence of mental health courts to assess fitness to participate concerns. New Zealand is increasingly incorporating forensic assessments into legal proceedings and has an awareness of the challenges individuals with FASD face, although formal identification of FASD remains inconsistent. The United States has explored prosecutorial awareness, but systemic knowledge gaps persist, affecting the application of FASD related fitness to participate assessments in court.

3.4 Case Law Reviews and Judicial Interpretation

The empirical studies identified in this scoping review provide evidence that recognition of FASD within judicial proceedings remains inconsistent. This is also evidenced by the limited discussion of FASD within fitness to participate appeal cases reviewed from the court decisions. In 2023 a systematic review of 350 Canadian cases found that only two appeal cases referenced FASD in fitness to participate considerations and the FASD evidence *'did not have great relevance in either of the two cases'* (Mullally et al., 2023:425).

In the USA, federal case law reviews indicate broader fitness to participate concerns. A 2022 survey by Brown et al. explored FASD-related suggestibility and wrongful convictions, but none appeared to directly examine fitness to participate (Brown et al., 2022). Similarly, a 2013 study by Douds and colleagues found that courts refused to hold competency hearings based solely on prenatal toxic exposure (Douds et al., 2013).

While fitness to participate determinations remain underexplored, these reviews underscore ongoing legal challenges. The Judges appear to recognise the implications of FASD, but the application within fitness to participate hearings remains inconsistent, highlighting the urgent need for improved screening, legal education, and standardized protocols in fitness to participate assessments.

4 Discussion

The empirical studies reviewed in this research underscore the vulnerabilities of both youth and adults with FASD in legal proceedings, particularly regarding fitness to participate. Despite the variations in study methodologies, there is growing international recognition of the need to address critical issues when individuals with FASD face the justice system (Flannigan et al., 2025).

This section examines the broader legal and theoretical concerns raised in the identified empirical studies, along with insights from discussion articles and the case law reviews. Key themes include judicial inconsistencies in recognizing FASD related impairments, barriers to fitness to participate assessments, and the challenges of ensuring fair trial participation. By integrating these perspectives, this discussion highlights the need for enhanced legal frameworks, improved assessments, and greater awareness of the impact of FASD on legal processes.

4.1 Judicial Awareness and Training Deficiencies

FASD has been described as an invisible disability due to the variability in cognitive functioning. Where expressive language abilities may remain intact, an illusion of competence, despite significant underlying impairments (such as comprehension) being present (Chudley, 2008). The first challenge for legal

professionals is to be able to recognise the possibility of FASD and the impact it is likely to have on defendants ability to be fit to participate in proceedings (Passmore et al., 2018). There also remains a significant challenge in relation to diagnosis, with FASD frequently being missed or misdiagnosed as Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), or conduct disorders. This challenge leads to inaccurate prevalence estimates and missed opportunities for early intervention (Chasnoff et al., 2015; McLachlan et al., 2019).

Current research indicates that a Legal professionals' ability to identify and accommodate FASD in court proceedings varies. In Canada, Gagnier et al. (2011) emphasise the importance of legal counsel introducing the possibility of FASD, noting that expert assessments and testimony can significantly aid judicial decision-making. However, they caution that the justice system should not become a substitute for social services. This contrasts with Johansen-Hill (2019), who argues that deficiencies in community resources often force the criminal justice system to compensate, making its role in supporting individuals with FASD a necessity. Butcher (2020) further underscores this concern in New Zealand, emphasising that individuals with FASD frequently face cycles of addiction and poverty. Butcher considers that because FASD cannot be cured, the quality of life for affected individuals is highly dependent on legal and societal support, making criminal law a vital institution for ensuring fair treatment.

Due to complex nature of FASD, and the need for multidisciplinary assessments, medical-legal reports often fail to fully consider the cognitive impairments associated with FASD. McLachlan et al. (2014) noted that psycho-legal deficits in defendants with FASD receive less attention than severe psychopathology, likely due to their cooperative demeanour. Additionally, Roach & Bailey suggested that the fast-paced environment of lower courts exacerbated these challenges, pressuring defendants to plead guilty prematurely and limiting their ability to communicate effectively (Roach & Bailey, 2009).

Finally, there remains a significant gap in training for legal professionals, medical practitioners, and the judiciary regarding FASD, its manifestations, and its impact on competency assessments (Mela, 2022; Allely & Gebbia, 2016; Brown et al., 2024; Allely & Mukherjee, 2019). An illustrative example comes from Wakefield et al. (2024), who found that among 415 fitness to stand trial reports in New Zealand, few suspected FASD cases were identified despite the presence of disability advocacy groups within the courts. This suggests systemic oversight in recognizing FASD, reinforcing the urgent need for enhanced judicial training and standardised evaluation protocols.

4.2 Systematic Barriers in Legal Processes

One of the most pressing concerns in the fitness to participate determinations is the role of immaturity, particularly in young defendants with FASD facing criminal proceedings. FASD can result in young adults functioning cognitively at the level of a child. Within the legal system developmental immaturity is rarely anticipated or addressed (Fast & Conry, 2009). Three empirical studies in this review highlight the overrepresentation of Indigenous youth within the CJS in Western Australian, New Zealand and Canadian courts. Tan et al. (2018) found that immaturity did not significantly influence mental health evaluators' assessments of fitness, suggesting that New Zealand evaluators apply a higher threshold for fitness compared to the Youth Court standard. In contrast, USA judges explicitly factor age into fitness determinations, demonstrating jurisdictional differences in the role of developmental maturity in legal decisions. Studies have indicated that there are broader implications regarding immaturity in fitness to participate determinations with a need for further discussion in relation to the implications in criminal proceedings (Blagg et al., 2017; McLachlan et al., 2019; Tan et al., 2018).

Beyond youth-related immaturity, lifelong fitness concerns for individuals with FASD further complicate judicial proceedings. McLachlan et al. (2014) emphasise that defendants found unfit are not restorable to fitness may face indefinite detention, imprisonment, or supervision with conditions they cannot realistically follow (Roach & Bailey, 2009). In serious cases, charges are rarely discharged, creating long-term barriers for affected individuals. To address these gaps, researchers advocate for alternative court models that accommodate individuals with FASD and psycho-legal impairments. Blagg et al. (2017), Chisholm et al. (2017), and Bush (2017) propose a needs-based approach for unfit Aboriginal persons with FASD, ensuring culturally responsive legal interventions. Perlin & Cucolo (2022) position FASD as both a due process issue and a human rights concern, advocating for therapeutic jurisprudence as a key legal framework.

Further discussions on specialized courts reinforce the necessity for legal environments to be tailored to neurodevelopmental disabilities. Wartnik & Carlson (2011) examined case studies from Therapeutic Drug Courts, while Brown et al. (2024) called for greater judicial intervention through specialized FASD courts. Douglas et al. (2012) explored problem-solving courts, highlighting Brisbane's Special Circumstances Court as a model that supports defendants with homelessness, impaired decision-making capacity, and minor criminal charges through rehabilitation and treatment-oriented strategies.

These discussions underscore the urgent need for systemic reforms, particularly in fitness to participate determinations for individuals with FASD. Specialised legal frameworks, enhanced judicial awareness, and improved access to alternative court models are essential to addressing the persistent barriers faced by vulnerable defendants.

4.3 Standardizing Fitness Assessments and Screening

The need for standardised screening and assessment protocols for FASD has been widely discussed across the empirical and review studies (Passmore et al., 2016; Brown et al., 2024; Allely & Mukherjee, 2019). While recognizing the challenges in developing effective screening tools due to FASD's complex presentation, researchers emphasize that such instruments could enhance identification, evaluation, and competency determinations (Brown, 2024).

The only UK discussion paper identified in this scoping review reinforces this need. While primarily focused on suggestibility, false confessions, and competency concerns within an American context, it raises significant recommendations, including an urgent need for further empirical research into the psycho-legal impact of FASD, specialised training for medical and legal professionals, and the implementation of formal screening protocols to address gaps in structured assessment measures (Allely & Mukherjee, 2019).

4.4 Rethinking Traditional Fitness to Participate Assessments

The use of traditional fitness to participate assessments remains inconsistent, hindered by the absence of standardised screening protocols. Existing fitness determinations frequently overlook key factors such as developmental immaturity and co-morbid conditions with a reliance on IQ based metrics. Mela in 2022 criticised the use of traditional competency frameworks, arguing that legal professionals fail to account for the functional realities of FASD when applying models designed for neurotypical individuals. Studies have suggested that assessments should align with adaptive and executive functioning capacities, a recommendation echoed in Brookbanks et al. (2021) and Butcher (2020), who advocate for screening beyond IQ and facial dysmorphism to determine a defendant's legal participation capability.

The lack of judicial awareness of FASD and the need to incorporate a holistic approach to assessments was discussed by Luckasson & Schalock in 2015. The authors stressed the importance of disability-specific training for professionals, advocating for culturally validated standardised diagnostic and screening tools. They emphasised a need to incorporate collateral information from individuals close to the defendant rather than relying solely on clinical assessments.

These findings reinforce the urgent need to modernize legal fitness to participate assessments, moving beyond outdated methodologies toward individualised, evidence-based screening protocols tailored to FASD and other cognitive disabilities.

4.5 Limitations

Although extensive search terms were used in this review it is possible that the search failed to capture all of the relevant research in this field. To minimise the risk of missing any relevant articles additional searches on 'Google Scholar' were made using the search criteria previously mentioned (see Table 1).

All of the studies extracted had limitations when checked for quality and rigour either due to modest or limited samples, incomplete data of self-reported data (see Table 2). However, many of the limitations had been acknowledged by the authors with suggestions made for future research.

4.6 Future research

This review highlights several critical gaps requiring further investigation to improve fairness and access to justice for individuals with FASD in relation to the ability of being fit to participate. Key priorities include enhancing judicial awareness through targeted training, particularly its influence on fitness to participate assessments and legal outcomes. Research should also explore how developmental immaturity and co-occurring conditions impact assessment validity. Standardisation is essential in developing structured screening tools, specifically for FASD. Research is also required to evaluate the reliability of assessments with a view to including adaptive and executive functioning in all assessments. Ultimately there is a need to make further inquiry into therapeutic courts and specialised legal responses to support equitable trial participation. Broader systemic reform should also consider alternative legal frameworks that better accommodate neurodevelopmental impairments.

Conclusion

This scoping review sought to identify empirical studies examining FASD in relation to fitness to participate or comparable legal constructs internationally. The findings reveal that while Canada, the USA, Australia, and New Zealand have begun addressing this issue within legal frameworks, research remains extremely limited in the UK, exposing a significant gap in judicial understanding and implementation.

Further research is required to examine cross-national approaches, ensuring legal frameworks are both comprehensive and adaptable to the unique needs of individuals with FASD. By prioritizing these research and policy advancements, legal systems can progress toward more informed, consistent, and fair competency determinations, ensuring that individuals with FASD receive the recognition, accommodations, and protections necessary for meaningful participation in legal proceedings.

Declarations

Ethical Approval

Not applicable

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Availability of data and materials

This study is a systematic scoping review and did not involve the collection of original empirical data. All data extracted from the included studies during the review process are available within the article. The screening and selection process was conducted using Covidence software.

Author Contribution

Author 1 wrote the main manuscript text and author 2-4 reviewed the manuscript.

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Figures

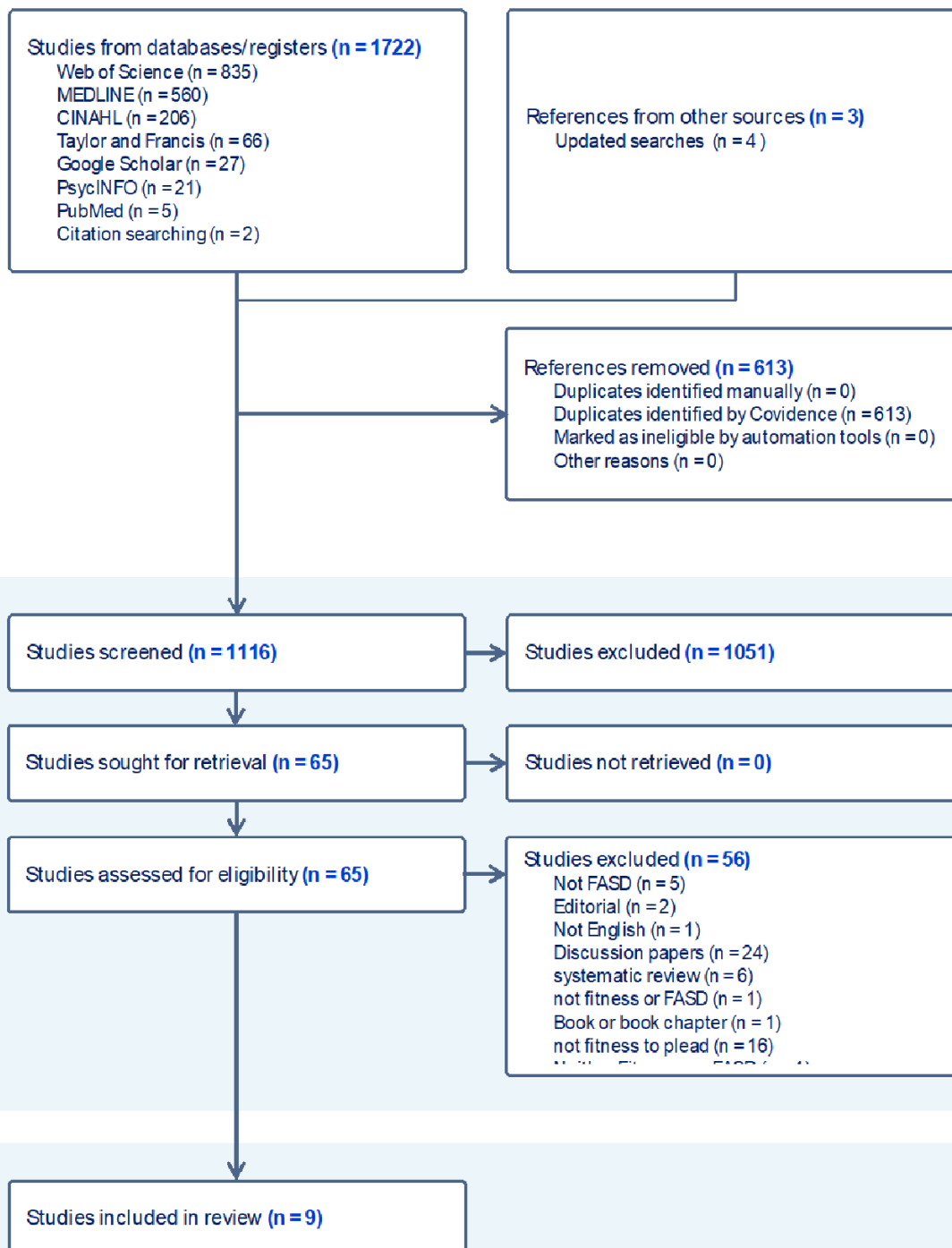


Figure 1

PRISMA Flow Chart