Author:
Archer, Charlotte S

Title:
The management of anxiety disorders in UK primary care

a multi-method study

Author:
Archer, Charlotte S

Title:
The management of anxiety disorders in UK primary care: a multi-method study

The management of anxiety disorders in UK primary care: a multi-method study

Charlotte Archer

A dissertation submitted to the University of Bristol in accordance with the requirements for award of the degree of Doctor of Philosophy in the Faculty of Health Sciences

Bristol Medical School

September 2020

Word count: 69,490

Abstract

Background

Between 1998 and 2008, GP recorded anxiety symptoms increased, but recorded anxiety disorders decreased. No data are available for recent years. Little is known about trends in prescriptions for anxiety, or the views of individuals with anxiety and those who treat it. This thesis aimed to understand the identification, diagnosis and management of anxiety in UK primary care.

Methods

Qualitative interviews with 15 GPs, 20 patients, and 9 therapists, explored practitioners' and patients' views on the identification, diagnosis and management of anxiety.

Two quantitative studies used Clinical Practice Research Datalink data (n=2,569,153 adults registered with UK practices between 2003-2018). Incidence rates and 95% confidence intervals were calculated for: (1) recorded anxiety symptoms and diagnoses; (2) anxiolytic prescriptions.

Results

Interview findings indicated that having an anxiety disorder diagnosed, and considered as a separate condition to depression, helped patients understand their symptoms and the treatment needed. However, GPs were reluctant to give a diagnosis, and did not distinguish between the two conditions. GPs held the view that patients prefer to take medication, whereas patients did not view medication as a positive choice. GPs and therapists commented on a recent rise in anxiety in young adults.

The incidence of anxiety symptoms rose from 6.2 to 14.7/1000 person years at risk (PYAR) from 2003-2018. Between 2003-2008, the incidence of anxiety diagnoses fell from 13.2 to 10.1/1000PYAR; markedly increasing between 2014-2018 to 15.3/1000PYAR.

Between 2003-2008, the incidence of antidepressant prescriptions decreased from 10.2 to 7.4/1000PYAR; rising to 11.7/1000PYAR in 2018. Incidence of prescriptions of beta-blockers increased over the study, whereas incident benzodiazepine prescriptions decreased.

Incidence of anxiety symptoms and diagnosis, and of prescriptions of each drug class, rose particularly in young adults in recent years.

Conclusion

Recent increases in anxiety and anxiolytic prescriptions may reflect increased presentation to primary care, especially in young adults.

Acknowledgements and dedication

I have been incredibly fortunate to have three brilliant supervisors – Nicola Wiles, Katrina Turner, and David Kessler. Thank you so much for your support, encouragement, and guidance, and all the time spent helping me to develop as an independent researcher. Thank you also to Stephanie MacNeill and Becky Mars, for your help and advice with the CPRD studies.

I am so grateful to each participant that took part in the interviews, and for each GP practice that supported the study, without whom this research would not have happened. Thank you for sharing your experiences and sharing a passion for increasing the open discussion of anxiety.

This thesis presents independent research funded by the National Institute for Health Research (NIHR) School for Primary Care Research (SPCR) (project reference CA2017). I would like to acknowledge my funder, the SPCR, for enabling me to take the first step towards doing my own research, and providing a supportive environment in which to do so.

My gratitude also goes to my colleagues and friends, for taking an interest in my work, and for keeping me going with your support and care. My deepest thanks to my parents for the encouragement to take every opportunity. Finally, to my husband Matt, thank you for your love and patience.

This thesis is dedicated to Jack.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED: ..... DATE:.....29.09.2020.....

Presentations and publications associated with this thesis

Paper currently in preparation:

- To be submitted for publication to BJGP: **Archer C**, Kessler D, Wiles N, Turner K. GPs' and patients' views on the value of diagnosing anxiety disorders in primary care: A qualitative study.
  Contribution: Conceptualised study, carried out data collection, led on data analysis, and prepared first draft of paper.
  I agree that the student's contributions to this publication are correct to the best of my knowledge.
  [redacted]_____ (Dr Katrina Turner, PhD supervisor)

Presentations at national conferences:

- **Archer C**, Kessler D, Wiles N, Turner K. Patients' and Practitioners' views on detecting, diagnosing and managing Anxiety Disorders in Primary Care. School for primary care research annual trainee conference, Oxford, 24th September 2018.

- **Archer C**, Kessler D, Wiles N, Turner K. Detecting, diagnosing and managing Anxiety in UK Primary Care. School for primary care research annual trainee conference, Oxford, 9th September 2019.

Presentations at regional conferences:

- **Archer C**, Kessler D, Wiles N, Turner K. Do primary care patients think it is important to consider anxiety separately from depression? South west society for academic primary care conference, Bristol, 5th March 2020. https://sapc.ac.uk/doi/10.37361/sw.2020.1.1
  Contribution: Conceptualised study, carried out data collection and analysis of the data, and prepared first draft of abstract.

  I agree that the student's contributions to the work outlined in this abstract are correct to the best of my knowledge.

  [redacted]_____ (Dr Katrina Turner, PhD supervisor)

Presentations with abstract accepted for oral presentation but conferences postponed/cancelled due to COVID-19:

- **Archer C**, Turner K, Kessler D, Wiles N. Trends in the recording of anxiety in UK primary care: a multi-method approach. Primary Care Mental Health research conference, York, 21st May 2020. https://sapc.ac.uk/doi/10.37361/sigpcmh.2020.1.1
  Contribution: Conceptualised study, carried out qualitative data collection and analysis of the qualitative and quantitative data, and prepared first draft of abstract.

  I agree that the student's contributions to the work outlined in this abstract are correct to the best of my knowledge.

  [redacted]__ (Professor Nicola Wiles, PhD supervisor)

- **Archer C**, Kessler D, Wiles N, Turner K. Do GPs and patients have differing views about the value of managing anxiety in primary care? A qualitative study. Annual Scientific Meeting: Society for Academic Primary Care conference, Leeds, 13th July 2020.
  https://sapc.ac.uk/doi/10.37361/asm.2020.1.1
  Contribution: Conceptualised study, carried out data collection and analysis of the data, and prepared first draft abstract.

  I agree that the student's contributions to the work outlined in this abstract are correct to the best of my knowledge.

  
  _____ (Dr Katrina Turner, PhD supervisor)

Poster presentations at regional conferences:

- **Archer C**, Kessler D, Wiles N, Turner K. Do primary care patients think it is important to consider anxiety separately from depression? South West Society for Academic Primary Care conference, Bristol, 5th March 2020.

Presentations at internal (University of Bristol) seminar series:

- **Archer C**. Anxiety Disorders in UK Primary Care – PhD research plan. Centre for Academic Mental Health Research Seminar, Bristol, 9th November 2017.

- **Archer C**. Detecting, diagnosing and managing Anxiety Disorders in UK Primary Care – PhD research overview. Postgraduate researcher symposium, Bristol, 6th December 2017.

- **Archer C**, Turner K, Kessler D, Wiles N. Trends in primary care prescribing for anxiety between 2003-2018. Centre for Academic Mental Health Research Seminar, Bristol, 21st July 2020 [delivered online].

Table of contents

List of Tables

List of Figures

Abbreviations

APC: Annual Percentage Change

APMS: Adult Psychiatric Morbidity Survey

AWP: Avon and Wilshire Mental Health Partnership NHS Trust

BAP: British Association of Psychopharmacology

BNF: British National Formulary

BNSSG: Bristol, North Somerset and South Gloucestershire

BWT: Bristol Wellbeing Therapies

CAPC: Centre for Academic Primary Care

CBT: Cognitive Behavioural Therapy

CCG: Clinical Commissioning Group

CI: Confidence Interval

CIS-R: Clinical Interview Schedule Revised

CMD: Common Mental Disorders

CPRD: Clinical Practice Research Datalink

CRN: Clinical Research Network

DSM-5: Diagnostic and Statistical Manual of Mental Disorders

EU: European Union

GAD: Generalised Anxiety Disorder

GAD-7: General Anxiety Disorder 7 item Scale

GP: General Practitioner

IAPT: Increasing Access to Psychological Therapies

ICD-10: International Classification of Diseases

InPsyTe: Psychological Therapies Health Integration Team

IQR: Inter-Quartile Range

IR: Incidence Rate

IRR: Incidence Rate Ratio

ISAC: Independent Scientific Advisory Committee

MADD: Mixed Anxiety and Depressive Disorder

MAOI: Monoamine Oxidase Inhibitor

MDD: Major Depressive Disorder

MHRA: Medicines and Healthcare products Regulatory Agency

NICE: National Institute for Health and Care Excellence

NHS: National Health Service

OCD: Obsessive-Compulsive Disorder

PHE: Public Health England

PHQ-9: Patient Health Questionnaire 9 item scale

PND: Postnatal Depression

PPI: Patient and Public Involvement

PR: Prevalence Rate

PRR: Prevalence Rate Ratio

PTSD: Post-Traumatic Stress Disorder

PYAR: Person Years At Risk

PYFU: Person-Years of Follow-up

QOF: Quality Outcomes Framework

RCGP: Royal College of General Practitioners

RCT: Randomised Controlled Trial

REC: Research Ethics Committee

SD: Standard Deviation

SNRI: Serotonin–Norepinephrine Reuptake Inhibitor

SPCR: School for Primary Care Research

SSRI: Selective Serotonin Re-uptake Inhibitor

TCA: Tricyclic antidepressant

THIN: The Health Improvement Network

TTC: Time To Change

UK: United Kingdom

UTS: Up-To-Standard

WHO: World Health Organisation

YLD: Years Lived with Disability

Chapter 1 Introduction

1.1 Thesis overview

This thesis focuses on the management of anxiety disorders in United Kingdom (UK) primary care. The body of work presented is comprised of three studies: (1) a qualitative study exploring practitioners' and patients' views and experiences of the identification, diagnosis and management of anxiety; (2) a quantitative study examining trends in the recording of anxiety diagnoses and symptoms in UK primary care; and (3) a second quantitative study examining trends in the prescribing for anxiety in UK primary care.

The thesis is structured as follows. Anxiety is introduced in a general context in this chapter (Chapter 1), in terms of how it is defined, the epidemiology and pressure it places on the NHS, the impact of anxiety on the individual, and recommended treatments for anxiety in UK primary care. At the end of this chapter, the main areas of interest and the studies reported in this thesis are introduced.

In Chapter 2, existing qualitative and quantitative evidence is reviewed and summarised with a focus on identification, diagnosis, and management. This is followed by a short summary of the literature, and the aims and objectives of this thesis. Following this, the qualitative methods, results and discussion are presented in Chapter 3, followed by the methods, results and discussion for the quantitative studies in Chapters 4 and 5. In Chapters 4 and 5, data from the qualitative study are presented alongside quantitative results to aid interpretation of the trends observed. Finally, Chapter 6 provides an overall discussion of both the quantitative and qualitative results, reflections on the strengths and limitations of the thesis, and details implications of the findings and potential future work.

1.2 What is anxiety?

The term anxiety can refer to a broad range of constructs. It can be used to describe the sensations people might feel prior to an anxiety-provoking situation, such as a job interview or public-speaking, which might be considered a relatively normal anticipatory response (Gonzalez-Bono et al., 2002). It can also be used to describe a personality trait, and indeed there are several measures that have been developed to quantify individual differences of anxiety as a trait (Spielberger & Reheiser, 2003). It may also be used to refer to anxiety disorders, that is, symptoms of anxiety that are experienced to a level that reach a clinical diagnostic threshold (Zimmerman et al., 2004).

The term anxiety disorders is used to describe a group of mental disorders that can cause severe distress, or significant fear or worry, that does not go away, or can get worse over time (Antony & Stein, 2008). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) details anxiety disorders that broadly fall into categories of social phobia (or social anxiety disorder), panic disorder, generalised anxiety disorder (GAD), and specific phobias such as agoraphobia (American Psychiatric Association., 2013). Obsessive-compulsive disorder (OCD) and posttraumatic stress disorder (PTSD) are not considered anxiety disorders in the DSM-5, and research focused on anxiety does not tend to include these conditions (Walters et al., 2012; John et al., 2016). In addition to the DSM-5 disorders, the International Classification of Diseases (ICD-10) also includes mixed anxiety and depressive disorder (MADD), whereby patients exhibit co-morbid symptoms of anxiety and depression that cause impairment or disability, but are below the clinical threshold (World Health Organisation, 1992). Psychological symptoms of anxiety include a feeling of 'dread' or of being on 'edge', restlessness, irritability, and difficulty concentrating (Tuma & Maser, 2019). Anxiety can also induce physical symptoms, such as heart palpitations, excessive sweating, shortness of breath, trembling or shaking, or a sense of dizziness (Tuma & Maser, 2019). Furthermore, those with panic disorder will experience panic attacks that can occur either regularly or at any time, and this can often be for no apparent reason (Tuma & Maser, 2019).

Anxiety disorders are frequently associated with other psychiatric morbidities such as major depressive disorder (MDD) (Martin-Merino et al., 2010). Due to the extensive symptom overlap, and the fact the two are frequently co-morbid, this can make accurate identification of anxiety difficult (Ronalds et al., 1997). In clinical practice, a diagnosis of MADD may be given to patients that present with co-morbid symptoms, even if the symptoms of both the anxiety and the depression are above clinical threshold. Patients with MADD have a poorer prognosis than those with either anxiety or depression alone (Roy-Byrne et al., 2008). In addition, their symptoms are more likely to be treatment resistant, and they will experience greater disability (Roy-Byrne et al., 2008). Together, anxiety disorders, depressive disorders, and mixed anxiety and depressive disorder, have been termed common mental disorders (CMD). Due to their collective increasing prevalence in the UK, reducing CMD is now a major public health challenge (Davies, 2014).

1.3 Historical context of anxiety

For much of the past century, the most common mental health condition was anxiety, termed a 'nervous breakdown' or 'neurosis' (Swindle Jr et al., 2000). It was thought of as a "problem of the nerves" caused by psychosocial stress, and the focus was on the somatic symptoms (Horwitz, 2010).

In contrast, depression was considered much less common. Depression was associated with patients who were experiencing vegetative or psychotic symptoms, and these patients were more likely to be hospitalised (Shorter, 2008). However, in many countries, by the 1970s, health insurance was increasingly being used to pay for treatment, and providers stipulated that that they would only pay for treatment if it was for a specific disorder, rather than a "problem of living" (Horwitz, 2010). Around the same time, attitudes within psychiatry transitioned from advocating the psychodynamic domain, to the biological (Kolb et al., 2000). Proponents of the biological approach argued that it would ensure the discipline was reliable and scientific, and research into the biological underpinnings of depression gave momentum to this paradigm shift (Bunney & Davis, 1965). Therefore, when the third edition of the DSM was published in 1980, it divided anxiety into multiple sub-types (such as the newly termed GAD, and panic disorder), on the basis that they had different biological responses to medication (Crocq, 2017). In contrast, MDD become the only major nonpsychotic category among the affective disorders (Horwitz, 2010).

Alongside this, there was a backlash from the public and the media against benzodiazepines, the main anxiolytic medication that had been traditionally used for anxiety (Gabe, 1990). Whilst the growth in prescriptions of anxiety medications declined, prescriptions for antidepressants substantially increased, driven by pharmaceutical marketing targeting the treatment of depression (Healy, 1997). Thus, toward the end of the 20th century, there was shift from anxiety toward depression, with diagnosis rates for depression growing at a much faster rate than those for anxiety (Horwitz, 2010). It has been suggested that problems previously considered as 'anxiety', were instead labelled as 'depression', and it is the latter that now dominates mental health research and clinical treatment (Horwitz & Wakefield, 2007).

1.4 Epidemiology of anxiety and impact on the NHS

Globally, anxiety disorders are ranked as the sixth leading cause of non-fatal health loss when considering years lived with disability (YLD) (World Health Organisation, 2017). Within the European Union (EU), roughly 38% of people experience a mental health condition each year, of which anxiety is the most common disorder (14%) (Wittchen et al., 2002). In the UK, anxiety disorders represented 3.5% of total YLD in 2015 (World Health Organisation, 2017), with the proportion of young adults with GAD increasing from 3.6% in 2007 to 6.3% in 2014 (Stansfeld et al., 2016). Within UK general practice, the prevalence and incidence of anxiety disorders is high (prevalence: 7.2%, incidence: 9.7 per 1000 person-years) (Martin-Merino et al., 2010). In reality, these figures are likely to be higher in the general population as many individuals do not seek professional help for their symptoms (McAteer et al., 2011). Of those patients that do seek help, it is likely to be from their general

practitioner (GP), rather than a private therapist (van Rijswijk et al., 2009). As the prevalence of anxiety is increasing, so too is the demand on National Health Service (NHS) primary care services for the care of those with anxiety (Lépine, 2002). GAD in particular is thought to be a key factor in the high utilisation of primary care services (Hoffman et al., 2008).

Historically, the main first-line pharmacological treatment for anxiety was benzodiazepines. However, in more recent years concerns around toxicity and dependency have led to a move away from prescribing benzodiazepines, to selective serotonin re-uptake inhibitors (SSRIs) (Lader et al., 2009). There has also been increasing demand from the public for non-drug treatments. This has led to substantial investment in the Increasing Access to Psychological Therapies (IAPT) programme. Set up around 2007/2008, IAPT is a national primary care initiative developed to increase access to, and availability of, talking therapies. IAPT was designed to reduce the economic impact of mental health related long-term sickness through improving access to talking therapies. Before the service was set up, there was evidence to suggest that anxiety and depression had led to a reduction in England's national income of about £80 million each year (a 4% reduction), through a combination of unemployment, sick days, welfare benefits and reduced productivity (OECD, 2014). In addition, the service costs for the NHS treatment of anxiety were around £1.2 billion in 2007, and this was estimated to increase to £2 billion by 2026 (McCrone et al., 2008).

Between 2007 and 2019, the provision of IAPT services is thought to have cost the NHS about £1 billion (Marks, 2018). However, it is argued that the IAPT programme saves costs when set against the expenses of welfare payments and physical healthcare (Layard & Clark, 2015). In 2018/2019, there were 1.6 million referrals to the service, roughly an 11% increase in the number of referrals compared with previous years (Baker, 2020). Despite the increasing number of referrals, the wait time between referral and the first date of an intervention has decreased from 23 days in 2016/17 to 20 days in 2018/19 (Baker, 2020). Yet for some patients the waiting time is still considered too long, with just over 10% of patients waiting longer than six weeks for therapy in 2018/19 (Atkinson, 2014; Baker, 2020). Therefore, GPs remain the primary point of ongoing clinical care and support for these patients.

1.5 Impact of anxiety

For patients experiencing anxiety, the severity of the symptoms can range from mild to severe, and symptoms can have a significant impact on their quality of life. An association between anxiety and impairment in social functioning and physical problems is often reported (Goldberg & Huxley, 1992), and this can be highly distressing for individuals and those around them. It can also lead to occupational, social and physical disability, and early mortality (Zivin et al., 2015). In addition,

patients may be reluctant to seek help for many reasons, including viewing antidepressants as addictive, believing treatment options are stigmatising, or seeing practical and economic barriers to psychological therapy (Prins et al., 2008). In patients who do not seek help, but who view themselves as needing clinical care, untreated anxiety can lead to greater symptom severity at follow-up (van Beljouw et al., 2010). Furthermore, if untreated, patients with co-morbid symptoms of anxiety and depression have outcomes comparable with those of conditions such as diabetes or heart disease, experiencing a significant reduction in physical, social and emotional functioning (Schonfeld et al., 1997). Even when receiving treatment, patients with comorbid depression and anxiety have a worse trajectory than individuals being treated for anxiety or depression alone (Penninx et al., 2011).

1.6 Treatments for anxiety

Current National Institute for Health and Care Excellence (NICE) guidelines for the treatment of anxiety and depression are similar, in that they advocate a stepped care model (NICE, 2009, 2011b). Treatment recommendations within the guidelines depend on the severity of impairment, with the mainstays of active treatment being antidepressant medication and/or psychological therapy. If patients do not respond to the initial intervention, they may be 'stepped-up' to the next level of intervention. Similarity between treatment guidelines for depression and anxiety results in convergence in some areas which can contribute to a lack of clarity around the distinction between the two disorders. As previously outlined, often patients access the recommended psychological interventions through local IAPT services. Patients can either self-refer or be referred by their GP, and are assessed independently of their GP diagnosis, and offered appropriate treatment depending on their symptoms (Clark, 2011). The specific stepped-care model for anxiety is discussed in detail in Chapter 2.

1.7 Thesis interests

As previously mentioned, there is a high prevalence and incidence of anxiety in the UK, and this is an increasing public health challenge. For patients with the condition, symptoms can be debilitating and can reduce quality of life. This can be further compounded by the fact that, sometimes, accurate identification and diagnosis can be difficult.

The literature review detailed in Chapter 2 establishes that there are limited data on the views and experiences of individuals with anxiety, and of those who treat it. It is also not known whether the incidence of anxiety in UK primary care has changed in recent years, particularly in terms of

individuals who experience symptoms of anxiety, and individuals who receive a formal diagnosis. There is also little information about how patients with anxiety manage their condition, and what treatments GPs offer to help alleviate symptoms.

This thesis is comprised of three studies to address these unknowns: a qualitative study exploring how practitioners and patients view and experience the identification, diagnosis and management of anxiety disorders; a quantitative study investigating trends in the recording of anxiety diagnoses and symptoms; and a second quantitative study examining trends in drugs prescribed for anxiety. The aims and objectives of these three studies are outlined in Chapter 2.

Chapter 2 Literature Review

2.1 Chapter overview

This chapter focuses on existing literature relating to anxiety disorders in primary care and is presented in three sections. The first describes how anxiety is identified and diagnosed by GPs, and also covers issues relating to the discussion and labelling of anxiety in primary care. Previous data on the incidence rates of recorded anxiety diagnoses and symptoms are also discussed. The second section outlines the NICE guidelines for the treatment of anxiety and focuses on the literature around psychological interventions, such as cognitive behavioural therapy (CBT), and provides more details of the IAPT programme. The third section covers pharmacological treatment, starting with an overview of drugs that can be prescribed for anxiety, followed by more in-depth discussion of antidepressants, benzodiazepines, and other drugs. In keeping with the multi-method design of this thesis, both the qualitative and quantitative evidence is reviewed and summarised throughout this chapter. Finally, the literature and the evidence gaps are briefly summarised, followed by the aims and objectives of the thesis.

Search strategy

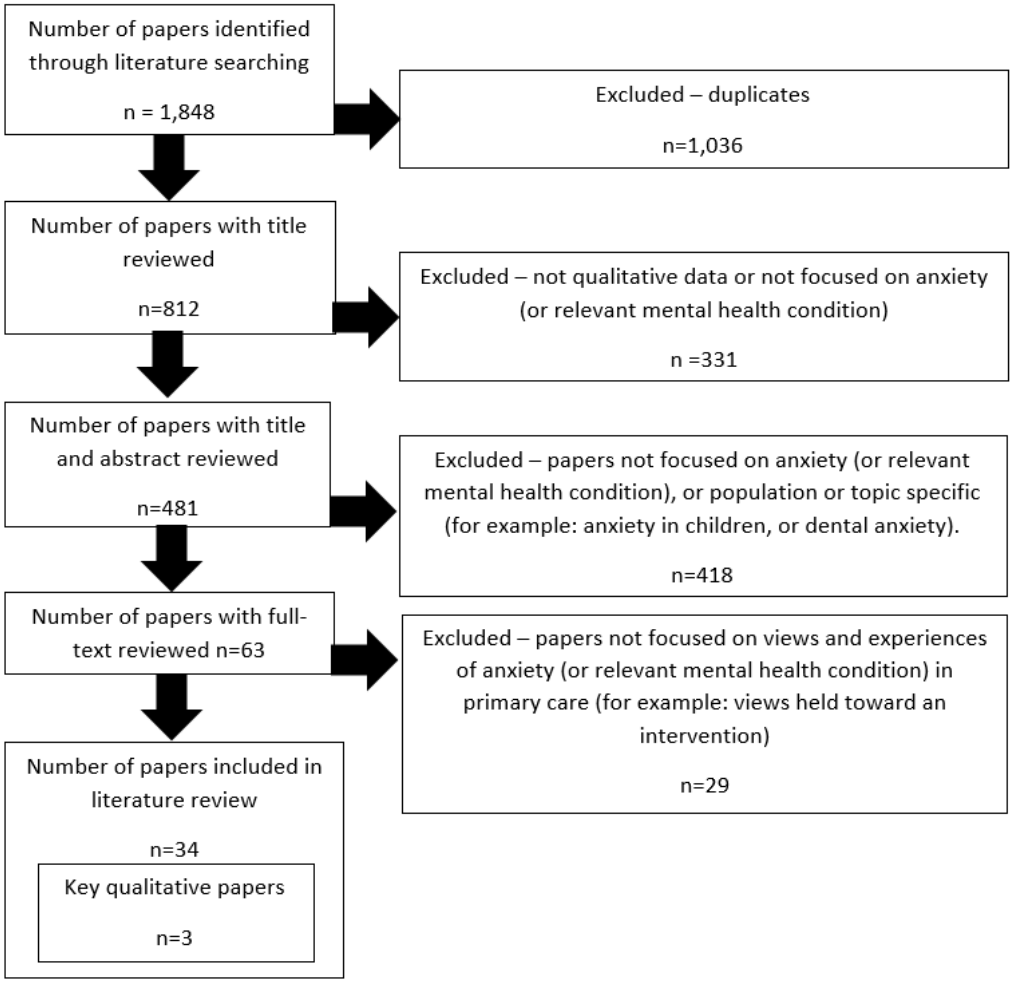
Qualitative literature

Preliminary searches of the literature highlighted a notable lack of qualitative research where the primary focus was on anxiety. Therefore, a broad search strategy was employed to identify a wide range of research that may be relevant to understand the views of patients and primary care practitioners. A range of databases were electronically searched (PsycINFO, Medline, Embase & Web of Science) to provide greater coverage of all potential publications. The initial search terms used are presented in Table 1 and were informed by the reference list of previously identified papers, and the Medical Subject Headings from each database. Terms were chosen to ensure all research was retrieved regardless of the qualitative method used, or the type of anxiety disorder. This included using text word searching (.tw) and method searching (.md), and combining terms using the 'or' and 'and' functions. Searches yielded a large volume of papers (n=1,848), and a flow chart depicting the screening process is provided in Figure 1.

Table 1 Qualitative search terms

Qualitative methodology		• (("semi-structured" or semistructured or unstructured or informal or "in-depth" or indepth or "face-to-face" or structured or guide or guides) adj3 (interview* or discussion* or questionnaire*)).tw. • (focus group* or qualitative or ethnograph* or fieldwork or "field work" or "key informant").tw. • exp qualitative research/ or qualitative study.md. • exp interviews/ or exp group discussion/ • literature review.md. or narrative review.md or qualitative synthesis.tw
Mental health	Initial search terms (anxiety specific)	• anxiety disorders/ or generalized anxiety disorder/ or posttraumatic stress disorder/ anxiety disorder*.tw. or anxiety.tw • social phobia/ or social anxiety/ or social anxiety disorder.tw.
	Additional mental health terms	• mental disorders/ or mental health.tw. or common mental disorder*.tw. or emotional disorder*.tw. • depression/ or depressive disorder/ or major depression.tw.
Primary care		• primary health care/ or general practitioners/ • family physician/ or GP.tw. or general practitioner*.tw. • primary care.tw. or general practice.tw or family practi*.tw.
Topic specific		• diagnosis/ or diagnos*.tw. or categor*.tw. or label*.tw • view*.tw. or perspective*.tw. or attitude*.tw. • management/ • help-seek*.tw. or stigma.tw. or barriers.tw

Figure 1 A flowchart demonstrating the selection of qualitative papers for inclusion in the literature review



After removing duplicates and quantitative papers, initial screening of abstracts took place. Many abstracts referred to anxiety as a symptom of another condition, or as part of a psychometric measure in the methodology, and therefore were not relevant. A substantial number of articles were excluded at this point. Additionally, research focused on specific populations was not included as it was considered outside of the remit of this thesis. This included, for example, veterans, patients with chronic disease, and autistic individuals. Work that had been conducted in relation to situation specific anxiety was also excluded (i.e., dental anxiety or performance anxiety).

The remaining papers were read in detail, and for those that were relevant to the aims of the thesis (n=34), notes recorded on the populations and key findings. The majority of the literature was focused on patients presenting with depression, or general mental health. However, there were three main articles that were specific to anxiety, either on its' own or comorbid with depression, that were considered most relevant. These have been summarised in Table 2, along with the key evidence gaps, and are discussed further within the main body of the literature review.

Additional searches were undertaken to ensure that all literature relating to depression and general mental health, that might also be relevant to anxiety, had been retrieved. Terms relating to these topics were added to the literature search and are also recorded in Table 1. No further relevant papers were identified as a result of this additional search.

Table 2 Key qualitative evidence

Authors and title	Sample and method	Relevant Key themes	Key gaps
Kadam et al (2001). A qualitative study of patients' views on anxiety and depression	Interviews with 27 patients from one practice. Identified as having anxiety and/or depression by a practice population questionnaire survey (interviewed in 1998-1999)	• A hostile world – stigma, and lack of understanding of mental health • Searching for sources of help - worry that symptoms would be seen as trivial by GP, and not enough time to disclose symptoms	• No data on how many patients had anxiety, and if views differ on the two conditions • No data on how many had a diagnosis, and the views held toward receiving a diagnosis • >20years ago
Ford et al. (2016). "You don't immediately stick a label on them": a qualitative study of influences on general practitioners' recording of anxiety disorders	Two vignettes used with 17 GPs from three general practices (conducted in 2013-2014)	• Giving patients a coding 'label' - concern is it stigmatising • Time as a tool to delay coding • Concerns about usefulness of coding in general	• Focused on how GPs code, but no data on how anxiety is discussed with patients • No data on causes, those at risk, or treatments for anxiety
Geraghty et al. (2017). 'You feel like your whole world is caving in': A qualitative study of primary care patients' conceptualisations of emotional distress	Interviews with 20 patients from ten practices. Identified as experiencing emotional distress, but not diagnosed (interviewed in 2013)	• Experience of stress as different to a mental health condition • Depression viewed negatively • Anxiety described as distinct from stress	• Focused predominately on depression, but unclear how many patients had anxiety symptoms • No data on views held toward anxiety disorders

Quantitative literature

Whilst the literature searches for qualitative papers were broad, the searches for the quantitative evidence were narrower, reflecting the specific aims of understanding trends in recording of anxiety,

and trends in prescribing for anxiety. The same databases were used (PsycINFO, Medline, Embase & Web of Science), and the search terms are outlined in Table 3. As with the qualitative searches, search terms were informed by the reference list of previously identified papers and the Medical Subject Headings from each database. Again, text word searching (.tw) and method searching (.md) was used and combining terms using the 'or' and 'and' functions. As the literature did not comprise a formal systematic review, a record of the number of papers retrieved, and subsequently excluded, was not kept. However, all evidence retrieved that was directly related to GP recording of anxiety, and GP prescribing for anxiety, has been included in the literature review.

Table 3 Quantitative search terms

Quantitative methodology	• trends.mp. or over time.mp. or cohort Studies/ or cohort.tw • incidence/ or prevalence/ • literature review.md or systematic review.md or narrative review.md
Recording of anxiety	• anxiety symptoms.tw or anxiety diagnoses.tw or anxiety.tw • anxiety disorders/ or generalized anxiety disorder/ or posttraumatic stress disorder/ • social phobia/ or social anxiety/ or social anxiety disorder.tw.
Medication	• Benzodiazepines/ • Antidepressive Agents/ or antidepressants.tw • Antipsychotic Agents/ or antipsychotics.tw • exp Anticonvulsants/ or gabapentinoids.tw • exp Adrenergic beta-Antagonists/ or beta-blockers.tw • anxiolytics.tw

2.2 Identification and Diagnosis of Anxiety

The identification of anxiety can be challenging, particularly as the symptoms of anxiety are frequently associated with many physical illnesses, and often occur alongside depression and other mental health disorders. This challenge applies to both clinical and research settings. In UK based research, the Clinical Interview Schedule Revised version (CIS-R) is often used to establish whether an individual meets criteria for a mental health disorder, such as anxiety (Lewis & Pelosi, 1990). The CIS-R is comprised of five diagnostic categories from the ICD-10: GAD, depressive episode, phobias (including social phobia), obsessive-compulsive disorder and panic disorder. If symptoms of both anxiety disorders and depressive episodes are present, but do not meet the criteria for any of the five diagnostic categories, and neither is clearly predominant, then a diagnosis of MADD may be used (World Health Organisation, 1992). However, the validity and clinical usefulness of MADD has been questioned, with some arguing that not enough is yet known about the diagnosis and its' outcomes, or its' stability over time (Walters et al., 2011). Instead, it has been reasoned that if a

patient has subthreshold symptoms of anxiety and depression, they should be given the subthreshold diagnosis of those categories, for example, dysthymia (Batelaan et al., 2012). Whilst MADD was not included in the DSM-5, it continues to be used in UK research and clinically, and is frequently used for patients who present with both subthreshold and threshold symptoms of anxiety and depression (Möller et al., 2016).

In contrast with research settings, specific diagnostic tools for anxiety are used infrequently by GPs in primary care, largely due to the constraints on consultation time. That said, evidence suggests they are more likely to be used if a patient is presenting with a specific sub-type of anxiety, or requires referral to secondary care (Olariu et al., 2015). The most frequently used tools to screen for symptoms of anxiety or depression in clinical practice are the General Anxiety Disorder 7 item Scale (GAD-7) (Spitzer et al., 2006) and the Patient Health Questionnaire 9 item scale (PHQ-9) (Kroenke et al., 2001). Alongside these tools, a diagnosis of an anxiety disorder is informed by discussions between the patient and GP, and is based on the patient's medical history and reported symptoms (Ford et al., 2016). However, this can be challenging as GPs need to assess, potentially diagnose, and formulate a treatment plan, and do so within a consultation that is often no longer than ten minutes. Furthermore, distinguishing between anxiety subtypes can be a complex task regarded by many GPs as more appropriate for specialists (Ford et al., 2016).

Talking about mental health symptoms to gain an accurate assessment of what is going on may be particularly challenging with certain groups of patients. An important factor in the identification and diagnosis of anxiety is communication, and previous literature reviews have found a gap in communication between clinicians and patients when discussing mental health, with the individual characteristics of both influencing the likelihood of a discussion around a diagnosis taking place (Milton & Mullan, 2014). This includes older patients, who may think it is 'normal' to be anxious or find it difficult to discuss their mental health (Wuthrich & Frei, 2015), and men who may perceive more than women that there is a stigma around disclosure of anxiety (Clement et al., 2015). Similarly, there can also be a language barrier with some patients, with research suggesting GPs are less likely to identify mental health symptoms in patients from particular ethnic groups, such as African Americans or Hispanics (Borowsky et al., 2000), or those that are Asian (Comino et al., 2001).

In addition, as previously outlined, it can often be difficult to disentangle anxiety disorders and depression. Frequently anxiety can be labelled as depression or stress, or go unexplained for many years, and this makes it more difficult for patients to understand the specifics of their condition (Anxiety UK., 2009). This may have further implications for treatment pathways, particularly if those making referrals for treatment do not understand that anxiety disorders may require different

treatment approaches to depression. For example, the combination of CBT and medication may be beneficial for patients with depression, but patients with panic disorder who receive both psychological and pharmacological treatment may be more likely to relapse in the long term compared with those who receive only CBT (Barlow et al., 2000). Many patients report depressive symptoms developing as a result of their untreated anxiety, suggesting that if practitioners can identify and treat anxiety first, later depressive symptomology may be prevented or ameliorated (Anxiety UK., 2009). Furthermore, national charity data suggests the public have much less awareness and understanding of anxiety disorders than of depression, suggesting fewer patients may seek help for symptoms of anxiety (Anxiety UK., 2009). When examining the current literature on the diagnosis of anxiety, studies have tended to focus less on anxiety disorders, and more on depression, or depression that is comorbid with anxiety. However, research suggests that anxiety may be just as important as depression, particularly when considered alongside its' impact on physical illnesses (Roy-Byrne et al., 2008).

All of the above complexities around identifying anxiety can lead to the under-detection and under-treatment of anxiety (Rosner, 2015). Research has estimated that around 50% of patients with anxiety or depression do not have their condition detected by their GP (Kroenke et al., 2007). There is some evidence that the use of diagnostic tools might improve detection of anxiety disorders. A meta-analysis of 24 studies of assisted and unassisted diagnoses of anxiety reported higher sensitivity (63.3%) for detecting anxiety when using diagnostic tools, compared with unassisted diagnoses (sensitivity: 30.5%), but with slightly lower specificity seen in assisted compared with unassisted (87.9% versus 91.4%) (Olariu et al., 2015). However, such studies only provide a picture of what happens in a single consultation. Importantly, there is evidence that GPs identify most patients with anxiety and depression during follow-up consultations. In a longitudinal study in UK primary care, only 18% (n = 16/88) of patients reporting severe symptoms did not have a diagnosis at subsequent consultations (Kessler et al., 2002). However, it is not known if those in whom anxiety is not diagnosed ever seek help for their symptoms, and the impact anxiety has on their quality of life.

Patients may choose not to seek help because they are unaware they are experiencing symptoms of anxiety, or because they find it difficult to disclose emotional concerns to their GP (Parker et al., 2020). Those that are aware they are experiencing anxiety may be concerned that they would not be consulting for a legitimate reason, such as a physical health problem, or that doing so would be a waste of GP time (Rogers, 2001; Cromme et al., 2016). Qualitative interviews with patients with either anxiety or depression found patients reported hiding symptoms for fear they would not be accepted as readily as a physical illness (Kadam et al., 2001). Patients felt their GP would see their anxiety problems as 'trivial' or that there was a lack of encouragement by GPs to disclose

psychological problems, with not enough time during consultations to discuss their mental health needs (Kadam et al., 2001; Barnes et al., 2019). Likewise, self-stigma or perceived stigma from family or friends can also contribute to a reluctance to seek help, and this has been found in studies of patients with anxiety and with depression (Davies, 2000; Barney et al., 2006; Clement et al., 2015). In addition, some patients may not consult because they do not know where to get help (Salaheddin & Mason, 2016).

2.2.1 Discussion and labelling of anxiety within the primary care consultation

For patients who consult their GP and have anxiety identified, evidence from the 2014 Adult Psychiatric Morbidity Survey (APMS) suggests there may be a difference in how patients refer to their diagnosis, compared with the symptoms they are experiencing (Stansfeld et al., 2016). It reported that whilst most people with common mental disorders state the diagnosis given to them by a healthcare professional is 'depression' or 'panic attacks', the most common symptoms indicated on the CIS-R, are those of GAD (Stansfeld et al., 2016). These discrepancies may reflect the terminology used by GPs to talk about mental health with patients. There may be a disparity between the disorder GPs identify, and the label they chose to use when discussing symptoms with the patient. Likewise, patients may interpret discussions around their symptoms to be those of depression or panic attacks, rather than seeing anxiety as a specific condition (Anxiety UK., 2009). Research with patients with arthritis has demonstrated that they experience consultations very differently to the clinicians, particularly with regard to discussions around symptoms, and this may contribute to misunderstandings around diagnosis (Stiggelbout et al., 2012). For example, patients felt it was useful and positive to have a definitive label for their 'problems', but only if the doctor had conducted enough tests, taken the time to explore other possibilities, and conveyed this process to the patient (Stiggelbout et al., 2012). In contrast, doctors felt it was more important to offer reassurance and then move on, often not going into much detail about diagnosis for milder cases, or giving much opportunity for shared decision-making (Stiggelbout et al., 2012).

In the case of anxiety symptoms, previous research in the Netherlands found that GPs think patients prefer to be assigned a physical cause for their mental health symptoms, with GPs considering the treatment plan for managing distress as more important than the diagnosis itself (van Rijswijk et al., 2009). Qualitative research with GPs and health visitors in the UK on postnatal depression (PND) found that GPs were reluctant to medicalise the symptoms of PND and give a diagnosis, particularly if they were unable to offer appropriate treatment (Chew-Graham et al., 2008). Similarly, health visitors preferred to use lay constructs rather than medical labels, unless patients could be referred

to appropriate services. This may be particularly relevant for anxiety disorders, where the wait for access to IAPT therapies can often be substantial, and a proportion of patients with anxiety may perceive medication as addictive or a less favourable option than psychotherapy (Prins et al., 2008). In addition, when considered in the context of IAPT interventions, the services only tend to use diagnostic labels as a means of measuring outcomes, focusing on patient set goals and reported impairment, rather than the diagnosis.

There is limited literature on how patients perceive mental health labels, and most research on this topic has been conducted outside the UK. Research conducted in Zimbabwe, indicated that there is no direct equivalent word for anxiety, but there is a construct of mental illness termed 'kufungisisa', which means the disease of thinking too much (Patel et al., 2001). Research in India reports patients using 'tension' or 'worry' as a long-term label for their symptoms, rather than anxiety or depression (Andrew et al., 2012). It was common for patients to report seeing their GP for the physical symptoms of mental illness, such as palpitations or numbness, rather than using psychiatric labels (Andrew et al., 2012). In contrast, a Norwegian study identified students going through a process of accepting that, rather than just shyness, their social anxiety was a symptom of mental illness, and once identified it was something they recognised as a part of who they were (Hjeltnes et al., 2016). This gave them a "language for understanding" their symptoms, and an ability to make sense of the emotional distress they had experienced. Further qualitative research with patients in Australia found that the use of a specific and accurate label, such as 'anxiety' rather than 'stress', predicted a preference for help-seeking, and encouraged acceptance of treatments as being useful (Wright et al., 2012). It is important to consider the cultural context of these findings, particularly in the case of the first study, in which Indian culture demonstrates a preference for a physical rather than a psychiatric cause (Andrew et al., 2012).

To date, UK studies have focused on patient views of depression or patients with threshold 'emotional distress' without a diagnosis. Geraghty et al. (2017) found that patients without a diagnosis, but with either anxious or depressive symptoms, considered their experience different to how they perceived 'actual' depression or 'mental illness'. They rejected the idea of having 'actual' depression and felt the term had negative connotations, preferring to use the label 'stress' or 'not coping'. The authors did not ask patients for their views on anxiety specifically, although patients used the label anxiety in a more definitive way than that of depression, in that they used it to refer to an underlying anxiety disorder, rather than when they were discussing their responses to stressful situations. Similarly, another UK study found the label of depression was associated with negative stigma for patients, with difficulty understanding the diagnosis, and a reluctance to accept treatment for it (Cornford et al., 2007). As such, there is currently an ongoing debate within clinical practice

about how useful it is to communicate psychiatric diagnoses to patients (Kelly, 2018), or indeed if the psychiatric construct of diagnosing a specific mental health disorder is still a valid model (Deacon, 2013). So far, the UK literature on patient perspectives on the value of diagnosing anxiety is limited.

2.2.2 Trends in the Diagnosis of Anxiety

When patients consult for anxiety, GPs record presenting symptoms or diagnoses in patients' computerised medical records (de Lusignan & Chan, 2008). There is evidence to suggest that how GPs have recorded presentations of anxiety has changed over time. Between 1998 and 2008 GP recording of anxiety symptoms increased (from 3.9/1000PYAR to 5.8/1000PYAR), whereas GP recording of anxiety disorders decreased from 7.9/1000PYAR to 4.9/1000PYAR between 1998 and 2008 (Walters et al., 2012). Research examining the incidence of anxiety codes combined with depression codes also found an increase in symptom codes, but with a stable incidence of diagnosis codes, between 2000 and 2009 (John et al., 2016). The fall in recorded anxiety diagnoses reported in the former study may be due to a reluctance by GPs to formally label patients with an anxiety disorder, or a preference for using broad symptom codes rather than distinguishing between the subtypes of anxiety (Walters et al., 2012; Swift et al., 2014). Few studies have explored GP views on mental health diagnostic labels in the UK that might explain these trends, and only two studies have explored GPs' views specifically in relation to anxiety. One of these studies focused on childhood anxiety (O'Brien et al., 2017). The other found GPs were reluctant to label patients with an anxiety disorder in the early stages, regardless of how confident they may feel about the diagnosis (Ford et al., 2016). Other factors that may influence the likelihood of a GP giving a formal diagnosis may be their experience of managing anxiety disorders, with skills-based training shown to increase diagnosis rates (Naismith et al., 2001).

There have also been differences in the recording of anxiety according to age and gender. Studies have found the incidence of anxiety in women to be twice that seen in men (Martin-Merino et al., 2010; Walters et al., 2012; Stansfeld et al., 2016). Incidence has also been found to be higher in younger adults, with previous research using primary care data finding the incidence of anxiety highest in adults aged 20-29 years old (Martin-Merino et al. (2010). The 2014 APMS, which used population data, also found similar results in terms of age differences (Stansfeld et al., 2016). In addition, evidence from national survey data suggests that the incidence of anxiety in young adults may be increasing over time, with mental health disorders in those aged 16-24 years reported to be nearly ten times higher in 2014, compared with 1995 (Pitchforth et al., 2019). However, there are no

data on the incidence of anxiety in UK primary care in more recent years, both in terms of looking at the incidence of anxiety overall, and by age and gender.

There have been several factors that may have affected incidence rates and may have changed how anxiety is being recorded by GPs. These include the introduction of the depression Quality Outcomes Framework (QOF) in 2006 (British Medical Association, 2006); the introduction of the IAPT service in 2007/2008; the economic recession in 2008; and the updated NICE anxiety guidelines published in 2011 (NICE, 2011b).

The first of these changes, the QOF, was introduced to incentivise recording of clinical quality indicators. Indicators such as regular reviews were required for patients with a range of common health conditions, including depression, but not including anxiety. An analysis of trends in the recording of depression indicated that the introduction of the depression QOF in 2006 impacted GPs' willingness to label patients with a diagnostic code, with an increase in the use of symptom codes (Kendrick et al., 2015). Although anxiety disorders are not one of the given conditions required to have quality indicators by the QOF, the change in practice may also apply to how GPs record anxiety, or there may have been a tendency to prioritise the recording of depression over anxiety, particularly in cases where patients presented with mixed anxiety and depression (Mitchell et al., 2011). Furthermore, qualitative data suggests that review type consultations now have a biomedical focus, that establishes a situation in which the GP is the expert and the patient's 'agenda' is not acknowledged (Chew-Graham et al., 2013). Whilst this biomedical model may be largely satisfactory for physical conditions, it may be at odds with the needs of patients with mental health conditions, and may be a barrier to productive conversations about mental health (Chew-Graham et al., 2013).

The second event that may have influenced trends in the recording of anxiety is the introduction of IAPT in 2007/2008. Increasing availability of talking therapy does not appear to have reduced the prevalence of anxiety at a population-level, as reported in the APMS (Stansfeld et al., 2016). However, it may have reduced the number of patients presenting to GPs if patients have self-referred directly to IAPT services. This is discussed further in section 2.3.2. In contrast, the 2008 economic recession may have led to an increase in recorded anxiety, as recessions have been associated with increased prevalence of common mental disorders (Frasquilho et al., 2016). The analysis of trends in the recording of depression, referenced in the previous paragraph, also found that after the 2008 recession, the prevalence of depression increased in men. This increase was associated with increased unemployment (Kendrick et al., 2015).

Finally, the NICE guidelines for the management of GAD and panic disorder were updated in 2011. This update is discussed further in the following section (2.3). One of the updated recommendations was that the *"recognition and communication of the diagnosis of GAD should occur as early as possible to help people understand the disorder and start effective treatment promptly"* (page 7) (NICE, 2011b). It is possible that the inclusion of this recommendation may have encouraged GPs to diagnose anxiety disorders at an earlier stage than they might have previously. The updated guidelines may also have increased general awareness of the importance of anxiety among GPs, which may have led to better recognition and therefore increased diagnosis rates.

2.3 Management of anxiety – stepped care and psychological therapies

As outlined in Chapter 1, treatments for anxiety are guided by a stepped-care model, with the recommended intervention based on symptom severity (NICE, 2011a). The NICE stepped care model for GAD and panic disorder, originally published in 2004, was updated in 2011. Updated recommendations include the following: *"recognition and communication of the diagnosis of GAD should occur as early as possible to help people understand the disorder and start effective treatment promptly",* and *"do not offer an antipsychotic for the treatment of GAD in primary care"* (page 7 + 18) (NICE, 2011b). The latest stepped care model, from the guidance published in 2011, is outlined in Table 4, along with the model for depression for comparison. Each step of the model for anxiety and depression are similar. However, medication is recommended as an option at step 3 for anxiety, compared with the earlier recommendation at step 2 for depression, with fewer interventions for anxiety, compared to depression. In addition, NICE specifies that for patients who present with depression, with comorbid anxiety symptoms, the depression should be treated first (NICE, 2011a).

When considered in the context of the stepped care model, the first step (step 1) for all known and suspected presentations of anxiety is education about the condition and the options for treatment, along with active monitoring of symptoms. Education may include materials such as an information leaflet or website that a GP or other health-care professional can signpost patients to. Often, this can be the first step patients make towards gaining a better understanding of their mental health, and has been the focus of national policy and population level campaigns (Jorm et al., 2000). The basis of these campaigns tends to centre on introducing the patient to stress-reduction activities, such as mindfulness, or increasing knowledge around mental health symptoms and management strategies (Gu et al., 2015). They are designed to be easy to implement, applied immediately, inexpensive, and hopefully accessible to more people than conventional psychological or pharmacological interventions (Donker et al., 2009).

Table 4 The stepped-care model from the NICE clinical guidelines for GAD/panic disorder and depression

Step	Focus of Intervention	GAD & panic disorder recommended intervention*	Depression recommended intervention∞
1	All known and suspected presentations of **GAD/panic disorder/ depression**	Identification and assessment; education about condition and treatment options; active monitoring	Assessment, support, psychoeducation, active monitoring and referral for further assessment and interventions
2	Diagnosed **GAD/panic disorder** that has not improved after education and active monitoring	Low-intensity psychological interventions: individual non-facilitated self-help, individual guided self-help and psychoeducational groups	
	Persistent subthreshold depressive symptoms or mild to moderate **depression**		Low-intensity psychosocial interventions/psychological interventions (e.g. Individual facilitated self-help, computerised CBT), medication and referral for further assessment and interventions
3	**GAD/panic disorder** with inadequate response to step 2 or marked functional impairment	High-intensity psychological intervention: CBT (or applied relaxation for GAD) or a drug treatment	
	Persistent subthreshold depressive symptoms or mild to moderate **depression** with inadequate response to step 2; moderate and severe **depression.**		Medication, high-intensity psychological interventions (e.g. CBT, behavioural activation, counselling), combined treatments, collaborative care and referral for further assessment and interventions
4	Severe/complex treatment-resistant **GAD/panic disorder/ depression** and marked functional impairment, high risk of self-harm/risk to life	Highly specialist treatment, such as complex drug and/or psychological treatment regimens; input from multi-agency teams, crisis services, day hospitals or inpatient care	Medication, high-intensity psychological interventions, electroconvulsive therapy, crisis service, combined treatments, multi-professional and inpatient care

*Adapted from tables in the NICE clinical guidelines *CG113 (NICE, 2011b) and ∞CG90/CG123 (NICE, 2009, 2011a)*

Following on from step 1, are steps 2 and 3, which refer to low and high intensity psychological interventions respectively. Low intensity interventions are for patients with mild to moderate anxiety that has not improved after identification, education and monitoring. Step 2 may include guided self-help, computerised CBT, or psycho-educational groups. The psycho-educational groups may include one-off or repeated group sessions with a therapist, with psychoeducational exercises (Donker et al., 2009). These sessions make take place face-to-face, or increasingly, are delivered online (Reins et al., 2019). High intensity interventions are intended for patients with severe anxiety, and those who have not responded to step 2 interventions, and include individual CBT with a high intensity trained therapist (Donker et al., 2009). CBT is discussed further in section 2.3.1. As outlined above, drug treatment is also recommended at step 3 as an option, and this is discussed in further detail in section 2.4. The final step (step 4) is for severe anxiety, and includes complex drug and/or psychological therapy, and is likely to include working with secondary care teams. Alternative therapies may also be used to help with the symptoms of anxiety. These include acupuncture or herbal remedies, exercise based activities such as yoga, or diet-based changes such as increasing omega-3 consumption (Ravindran & da Silva, 2013). However, these therapies are not NICE recommended, largely due to limited evidence supporting their effectiveness (Ravindran & da Silva, 2013).

2.3.1 Cognitive behavioural therapy (CBT) and applied relaxation

CBT is a form of talking therapy, and is the main psychological therapy recommended by NICE for the treatment of anxiety (Clark, 2011). CBT is based on the idea that how people think about things affects how they feel and what they do. When people experience negative or unrealistic thoughts, they may interpret situations incorrectly, and this has a negative impact on any further action they take. Therefore, the therapy aims to help patients become aware of these negative thoughts and think about how they behave, and explores whether there may be alternative thoughts and actions that would be more helpful (UCL, 2020a). It is intended to be a collaborative therapy, with patients encouraged to take shared responsibility for the work and view the process as a 'guided-discovery', with the skills learnt enabling them to cope better with any potential future adversity (UCL, 2020a).

There have been several meta analyses of randomised controlled trials (RCT) that suggest CBT is an effective therapy for treating anxiety disorders (Hofmann & Smits, 2008; Tolin, 2010). Furthermore, there is evidence that this benefit not only relates to the short-term period after treatment (Stewart et al., 2009), but is also maintained over 12 months (DiMauro et al., 2013). Notably, qualitative work with patients with depression has shown that long-term use of the skills learned during CBT may

relate to how the patient engaged with therapy. Those who saw it as a learning process were better able to manage their symptoms long-term, compared with those who saw it as a chance to talk about their problems (French et al., 2017).

With reference to the NICE guidelines, applied relaxation is the only other recommended high intensity therapy for GAD. This is focused on helping the patient to learn how to relax in a way that enables a corresponding reduction in tension and anxiety (Hayes-Skelton et al., 2013). Applied relaxation may be useful for patients with 'worry', compared with intensive CBT which may be effective for patients with physical symptoms of anxiety (Dugas et al., 2009). There is some evidence that CBT more may be more effective than applied relaxation at maintaining improvement of GAD symptoms over the long-term (24 months) (Dugas et al., 2010). However, there are challenges for GPs to deliver CBT in primary care consultations due to the time taken to learn CBT techniques (Aschim et al., 2011), and the lack of time during the consultation (Wiebe & Greiver, 2005).

2.3.2 Increasing Access to Psychological Therapies (IAPT)

Whilst GPs can implement some CBT techniques, as just mentioned, they may not always have the time or training to do so. In addition, patients may not be able to afford talking therapies given through private providers.

Although IAPT was set up to increase access to talking therapies for anyone who may need it, there has not been a corresponding reduction in the prevalence of anxiety and depression when examined at a population-level in the APMS (Stansfeld et al., 2016). In fact, as outlined previously, the APMS found that the prevalence of anxiety has increased since the introduction of IAPT. The increase may be due multiple possible causes, but may include gaps in treatment access, or the limited long-term effects of CBT for anxiety (Bastiampillai et al., 2019). Whilst the NICE guidelines for the treatment of anxiety recommend 12-15 sessions of CBT, the average number of treatment sessions received by patients in IAPT is much lower (average sessions for anxiety and depression in 2018/19: 6.9) (NICE, 2011b; Baker, 2020). Furthermore, it is estimated that only 15% of patients with anxiety or depression received treatment through IAPT in 2016 (Kendrick, 2018; Baker, 2020). Whilst the target is to increase this proportion to 25% in 2020/21, that still leaves the remaining three quarters who will receive care through their GP, if indeed they seek help at all (Kendrick, 2018).

Patients can self-refer to IAPT, or be referred by their GP (Clark, 2011). Some GPs may prefer to encourage self-referral to IAPT as they view it as an important step toward patient recovery, although some patients may find this a barrier (Thomas et al., 2019). Indeed a recent study found

that attendance is likely to be better in those who self-refer, compared with those who have been referred by their GP (Davis et al., 2020). However, there are no data from IAPT practitioners as to whether self-referral also improves engagement with treatment. When a patient contacts the service, they are assessed on the severity and duration of their symptoms and, if appropriate, offered an intervention. This assessment is independent of any diagnosis that the GP may have made. It is not known if GP diagnoses tend to be consistent with the conditions identified by IAPT assessments, and if there is an impact on therapy when they are discordant. If a patient presents with co-morbid anxiety and depression, then the two conditions are treated as separate conditions. If patients do not have a preference for which condition to work on first, then the depression is treated first, which is in line with NICE guidelines (Clark, 2011). There are no data on whether patients have a preference for working on a particular condition first, or if IAPT practitioners think it is important to treat one prior to the other or both together.

Therapists deliver low or high intensity interventions based on a standard IAPT protocol (Clark, 2011). A considerable part of IAPT interventions are focused on normalising experiences of anxiety, and qualitative evidence suggests that patients find this particularly useful in group interventions where they meet other patients with anxiety (Newbold et al., 2013). IAPT measures the outcome of treatment in terms of recovery rate and reliable change in symptoms. The former is based on a reduction in the severity of symptoms, and the aim is to reduce symptoms to the point at which they would be below the clinical threshold of an anxiety disorder, whereby the patient is viewed as having recovered. In 2018/19, around two thirds of those finishing IAPT therapies experienced an improvement in symptoms, with 52.1% having moved to recovery (Clark, 2018; Baker, 2020).

2.4 Management of anxiety – pharmacological therapy

In primary care, other than psychoeducation or referral to IAPT, the main treatment option for anxiety is medication. The most frequently prescribed drugs are antidepressants, which include monoamine oxidase inhibitors (MAOIs), SSRIs, serotonin–norepinephrine reuptake inhibitors (SNRIs), and tricyclic antidepressants (TCAs). Whilst MAOIs and TCAs are effective in the treatment of anxiety, the newer antidepressants (SSRIs and SNRIs) are safer, better tolerated, and are recommended as first-line treatments for each of the anxiety disorders (Nash & Nutt, 2007; NICE, 2011b; Baldwin et al., 2014). Other medications that may be prescribed as monotherapies or augmentation therapies include benzodiazepines, buspirone, anticonvulsants, atypical antipsychotics and beta-blockers (Baldwin et al., 2011; Baldwin et al., 2013; Dooley, 2015). Of the anticonvulsants, only pregabalin is recommended in the latest NICE guidelines as a second-line treatment for GAD

and panic disorder. Whilst benzodiazepines are not recommended as a routine treatment for anxiety, NICE guidelines state there may be some specific indications where they may be appropriate, such as short-term crisis management (NICE, 2011b, 2014). Data that specifically relates to use of these medications in the treatment of anxiety are outlined in the following sections: antidepressants – section 2.4.1, benzodiazepines – section 2.4.2, and other drugs (antipsychotics, beta-blockers, and anticonvulsants) – section 2.4.3.

Research using a large nationally representative dataset, The Health Improvement Network (THIN), found that 63% of patients with an anxiety disorder were prescribed either an antidepressant, benzodiazepine, or antipsychotic in the first three months after being diagnosed (Martin-Merino et al., 2010). Of these patients, 12% were treated with an antipsychotic, 18% received a benzodiazepine, and 80% received an antidepressant, of which the majority (60%) were SSRIs. However, this study did not exclude patients with depression, and therefore some of these prescriptions may have been for comorbid anxiety and depression. There is also evidence to suggest patients with anxiety, or mixed anxiety and depression, are less frequently offered pharmacological therapy by their GP when compared with patients with depression (Hyde et al., 2005b).

There may be differences in prescribing according to patients' age and gender. For example, previous UK studies have shown antidepressant use to be twice as prevalent in women compared to men for anxiety (Martin-Merino et al., 2010), and for depression (Mars et al., 2017). The level of prescribing of antidepressants for any indication has also been shown to increase with age (Mars et al., 2017; Public Health England, 2019). A US study has shown similar trends for benzodiazepine use, again for all indications, regarding both gender and age (Olfson et al., 2015), with prescriptions thought to be inappropriately high in older adults (Van Der Hooft et al., 2008). Similarly, a Swedish study found that for the treatment of GAD with antidepressants, benzodiazepines, antipsychotics and buspirone, treatment duration tends to be longer in older adults, who are more likely to be receiving a combination of medications from within those drug classes (Sandelin et al., 2012).

2.4.1 Antidepressants

Although antidepressants, and in particular SSRIs, are the recommended first-line treatment for anxiety, there is little guidance on which SSRI to use in the first instance, and RCTs comparing sertraline or citalopram have found that both are effective, well tolerated drugs in the treatment of depression (Ekselius & Eberhard, 1997; Stahl, 2000). However, citalopram may be more effective than fluoxetine, particularly in the treatment of anxiety symptoms (Patris et al., 1996; Bougerol et al., 1997). In addition, whilst NICE guidelines do advise the prescription of antidepressants in some

cases of subthreshold and mild depression, there is some evidence that antidepressants are not always appropriately prescribed in this group (Baumeister, 2012). It is not known if this is also the case for patients with symptoms of anxiety below the diagnostic threshold.

There is some variability in how patients respond to different types of SSRIs, and patients may switch between different SSRIs if symptoms do not improve, or if they experience unwanted side effects (Simon et al., 1996). Side effects can include weight gain, sleepiness, and reduction in sexual functioning (Cascade et al., 2009), and there has also been concern about the possibility of an increased risk of suicide in patients treated with SSRIs (Healy et al., 2003). Furthermore, the use of SSRIs for anxiety may initially exacerbate symptoms (Quagliato et al., 2018). Consideration of the risks and benefits of using these drugs is important, and qualitative evidence has shown that some GPs think they are over-valued, used too readily, and that the effects seen are similar to the natural recovery of an anxiety disorder (van Rijswijk et al., 2009). Indeed, another qualitative study found that GPs are cautious in their prescribing of antidepressants for depression, employing strategies of watchful waiting in the first instance (Hyde et al., 2005a). Furthermore, GPs have reported patients are reluctant to take antidepressants due to potential side effects and dependency (van Rijswijk et al., 2009). Patients have also reported negative views of antidepressants, seeing them as something foreign, chemical, or unnatural, and only viewing themselves as having properly recovered from a mental health disorder once they have stopped taking antidepressants (Bosman et al., 2016). However, the same study also reported that patients thought there was a biological cause of their anxiety or depression, and therefore the antidepressants were helping to fix this biological imbalance.

Despite concerns from both GPs and patients about antidepressants, there has been a substantial increase in the prescribing of these drugs over the past two decades, with the greatest increase being observed for SSRIs, which account for the majority of antidepressants prescribed (Lockhart & Guthrie, 2011). Rates of SSRI prescriptions rose from 1.03 per 100 person-years in 1995 to 2.15 per 100 person-years in 2001, but remained stable from then to 2012 (McCrea et al., 2016). Whilst this figure is for all indications, including depression, this will include prescriptions for anxiety. The reasons for this upward trend are not clear, but it is thought to be due to an increase in the long term use of antidepressants, rather than an increase in those starting the medication (Moore et al., 2009; Mars et al., 2017). However, to date, how this increase in the long-term prescribing of antidepressants relates to anxiety disorders is not known. Similarly, it is unclear if the increase could be linked to concerns around the use of benzodiazepines and potential reduction in their use (Dunlop & Davis, 2008). A mixed-methods study found that GPs thought that part of the increase

seen in antidepressant prescribing was due to clinical decisions to use antidepressants in instances where they previously might have used benzodiazepines to treat anxiety (Morrison et al., 2008).

Trends in prescribing for anxiety may be influenced by the increased availability of psychological therapy through the IAPT programme. The majority of patients prefer psychological therapies to medication (van Schaik et al., 2004). Gyani et al (2012) found that GPs who can refer patients to IAPT services are less likely to offer medication to patients with severe depression. Although the authors did not comment on anxiety specifically, if these preferences are strong, this may have been expected to influence prescribing for anxiety (Sreeharan et al., 2013). However, in the three years following the inception of the IAPT programme, antidepressant prescribing rates (for all indications) increased (Sreeharan et al., 2013), which may reflect long waiting times (Atkinson, 2014). It is not known how prescribing of antidepressants for anxiety has changed over time.

2.4.2 Benzodiazepines

Patients with severe or acute symptoms of anxiety may be prescribed benzodiazepines on a short-term basis to help with acute distress. This may be as a combination treatment to alleviate side effects of antidepressants, such as increased feelings of anxiousness or jitteriness, or as a monotherapy (Dunlop & Davis, 2008). They may also be prescribed as a second line treatment for patients who have not improved on antidepressants, or prescribed long term for those with a severe prognosis (Nutt, 2005). A meta-analysis comparing benzodiazepines with TCAs for the treatment of anxiety found that benzodiazepines had a superior adverse effect profile and greater efficacy compared with TCAs (Offidani et al., 2013). In addition, an RCT of lorazepam, paroxetine and placebo for GAD showed that, for the 115 participants who completed the study, the group who received the benzodiazepine had a reduction in their somatic symptoms compared with both placebo and paroxetine (Feltner et al., 2009).

However, benzodiazepines are not considered to be effective in the treatment of anxiety with comorbid depression, and they can also cause severe side effects, such as sedation and memory problems (Baldwin & Polkinghorn, 2005). Additionally, patients can become dependent on benzodiazepines and struggle with the withdrawal of treatment, potentially experiencing rebound anxiety (Baldwin et al., 2011). Therefore, due to their potential for abuse, through either dependency or toxicity, benzodiazepines are not recommended for routine treatment or long term use (NICE, 2014). When prescribed, it should be on a short term basis of up to four weeks, and should only be at a low dose (Lader, 2015). Some have argued that the NICE guidelines should be reviewed to include benzodiazepines as a first-line, long-term treatment for anxiety due to the

evidence for their efficacy when used as a combination therapy, and the lack of evidence for other anxiolytics superiority in treating anxiety (Starcevic, 2014). In contrast, other authors consider the risk to benefit ratio as too harmful for most clinical situations, arguing that they should become a controlled substance to reduce potentially "dangerous prescribing" (Moore et al., 2015).

Benzodiazepines were more often prescribed routinely in the past and were the mainstay in the treatment of anxiety disorders for many years (Lader, 2011). Currently there are a substantial number of elderly patients who have taken benzodiazepines on a long term basis (Kurko et al., 2015). Qualitative interviews with GPs in America found that they viewed the use of benzodiazepines as an effective treatment for anxiety in elderly patients, and were less concerned about the risks of continued use for this group of patients (Cook et al., 2007b). The same authors also interviewed elderly patients, and reported that they were reluctant to discontinue this medication (Cook et al., 2007a). GPs in the UK report being cautious of initiating benzodiazepines, being vigilant in their monitoring when they do, and as not considering long-term prescribing as appropriate (Rogers et al., 2007). Nonetheless, they did not criticise GPs for initiating long-term benzodiazepine prescriptions in the past as it was the norm, and there was a lack of prior evidence about potential harm (Rogers et al., 2007). Similarly, a Belgian study found that GPs were reluctant to use benzodiazepines, but did so because of the lack of alternatives that would work quickly, and insufficient time that they are able to spend with their patients to address psychosocial problems (Anthierens et al., 2007). Interestingly, there is also evidence that GP practices that prescribe antidepressants at a higher rate, also prescribe higher levels of benzodiazepines (Morrison et al., 2008).

Nevertheless, current UK practice is at odds with clinical guidelines, with prescriptions of benzodiazepines appearing to remain at a moderate levels, despite ongoing concerns from the medical community (Donoghue & Lader, 2010; Sirdifield et al., 2013). Indeed in England, between 2008 and 2012, primary care prescribing of benzodiazepines was relatively constant, varying between 10.9 and 11.1 million prescriptions each year (MHRA, 2015). Evidence from Public Health England (PHE) suggests incidence has started to decline in recent years (Public Health England, 2019). Of the 11 million annual benzodiazepine prescriptions, around one-third to a half of these prescriptions are for anxiety (Simon & Ludman, 2006; Haw & Stubbs, 2007; Bachhuber et al., 2016). The remaining proportion of these prescriptions are for other indications, which include controlling epileptic seizures, alleviating insomnia, and use in acute psychiatric settings (Riss et al., 2008; Riemann & Perlis, 2009; Citrome & Volavka, 2011). It is not known if the potential decreasing use of benzodiazepines for insomnia may be masking changing trends in the prescribing of benzodiazepines for anxiety (Siriwardena et al., 2006; Hoffmann, 2013). Evidence suggests that there are still a large

group of patients in the UK who are taking benzodiazepines on a long-term basis, and clearly this is a concern for public health (Davies et al., 2017). However, there are no data on benzodiazepine use specifically for anxiety, and how this may have changed over time.

2.4.3 Other medications prescribed for anxiety

SSRIs and SNRIs are specified as the first-line pharmacological therapy for GAD, usually followed by a change to another SSRI/SNRI, mirtazapine, buspirone, or benzodiazepines (Baldwin et al., 2011). Nonetheless for these first and second-line treatments, there are significant side effects and remission may only occur in one-third of patients, and a third to two-thirds of the remainder may not experience any improvement (Huh et al., 2011). There are alternatives to these conventional drugs, such as antipsychotic medication, beta-blockers, or anticonvulsants. There is evidence that atypical antipsychotics, and in particular quetiapine, may be as effective as antidepressants in reducing symptoms for patients with GAD, however the tolerability of these drugs is lower due to the unwanted side effects (Depping et al., 2010). Furthermore, the 2011 update to the NICE guidelines specified that antipsychotics were no longer recommended in the treatment of GAD and panic disorder. Nonetheless, for all indications, antipsychotic prescriptions increased by 5.1% between 1998 and 2010 (Ilyas & Moncrieff, 2012).

Beta-blockers may help control the physical symptoms of anxiety, such as palpitations, and this in turn may be part of a positive feedback loop that reduces anxiety. However, the evidence is sparse. A study published in 1987 found that the beta-blocker propranolol was more effective than placebo in treating the symptoms of anxiety after a two week period, but that this was not maintained over time (Meibach et al., 1987). In contrast, a small open-label study with 31 patients examined their use for GAD, and found evidence of effectiveness in the short-term (Swartz, 1998). However, there is inconclusive evidence for the therapeutic benefit, and a lack of RCTs in recent years (Steenen et al., 2016; Brudkowska et al., 2018). Nevertheless, beta blockers may be useful for specific situations, such as performance anxiety for musicians (Patston & Loughlan, 2014). In terms of anticonvulsants, pregabalin, which was licensed in 2004, has been shown to lead to the most improvement in both physical and psychological symptoms of anxiety (Lydiard et al., 2010). When looking at prescriptions for all indications, there has been an increase in patients starting the drug, from 128 per 100,000 person years to 379 per 100,000 person years between 2007 and 2017 (Montastruc et al., 2018). There are some concerns about the potential abuse of pregabalin, along with gabapentin, with increasing reports of excessively high doses and rises in dependency (Evoy et al., 2017). In 2019 both pregabalin and gabapentin were reclassified as controlled drugs, and there have been concerns

about what impact this might have on patients with anxiety (Torjesen, 2019). However, there are no data on the prescribing rates of anticonvulsants for anxiety, or that of antipsychotics or beta-blockers.

2.5 Summary and evidence gaps

How GPs record anxiety has changed over time, with an increase in the recording of anxiety symptoms and a decrease in the recording of anxiety disorders between 1998 and 2008 (Walters et al., 2012). However, there are no data on the incidence of anxiety recorded by GPs in UK primary care in recent years, and there have been several events and developments that may have had an impact on trends in coding: the introduction of the depression QOF in 2006; the introduction of the IAPT service in 2007/2008; the economic recession in 2008; and the publication of the updated NICE anxiety guidelines in 2011.

The earlier changes observed may relate to a possible reluctance by GPs to formally label patients with an anxiety disorder (Walters et al., 2012; Ford et al., 2016), or a potential reluctance by patients to fully disclose their extent of their symptoms to their GP (Kadam et al., 2001; Cromme et al., 2016). The reasons are unclear as there has been limited research exploring GP and patient perspectives on the identification, diagnosis and management of anxiety. Furthermore, the management of anxiety in primary care encompasses care from GPs, which is mainly medication focused, to psychological treatments, usually provided through IAPT. However, to date, IAPT therapists' views and experiences of how referral and diagnosis can influence management within the service and impact on patient engagement with treatment, have not been explored.

In addition, there is a wide range of anxiolytic medication that may be prescribed for the treatment of anxiety disorders (Baldwin et al., 2005). Antidepressants are the main recommended drug, and whilst it is known that there has been a substantial increase in the prescribing of antidepressants for depression in the past two decades (Lockhart & Guthrie, 2011), it is not known if this increase is also seen in prescriptions for anxiety. Likewise, other drugs such as benzodiazepines may be prescribed for anxiety. Whilst benzodiazepine prescriptions for all indications were stable between 2008 and 2012 (MHRA, 2015), no data for benzodiazepine use have been published to indicate how trends may have changed for anxiety. This is also the case for the other drugs used in the treatment of anxiety – antipsychotics, beta-blockers and anticonvulsants.

2.6 Aims and objectives

The overall aim of this thesis is to gain an understanding of how anxiety is being diagnosed and managed within UK primary care. This thesis details qualitative interviews held with GPs, patients and IAPT therapists, to explore their views and experiences of the identification, diagnosis and management of anxiety. It also details a quantitative study conducted to investigate trends in the recording of anxiety diagnoses and symptoms between 2003 and 2018 using data from the Clinical Practice Research Datalink Gold (CPRD), and a second quantitative study using the same dataset that examined trends in prescribing of drugs used to manage anxiety by GPs. Together, the results of these three studies provide a comprehensive insight into the management of anxiety in UK primary care. The specific aims and objectives of each study are outlined below.

2.6.1 Practitioners' and patients' views on identifying, diagnosing and managing anxiety disorders in primary care

The overall aim of the qualitative study conducted as part of this thesis was to understand how patients and practitioners view and experience the identification, diagnosis, and management of anxiety disorders in primary care. The specific objectives were:

- To understand how GPs conceptualise, diagnose and discuss anxiety, and explore factors influencing these processes.
- To explore patient experiences of anxiety in terms of help-seeking, diagnosis and management.
- To explore IAPT therapists' views on how diagnostic labels may influence management within primary care psychological services and patient engagement with treatment.

2.6.2 Trends in the recording of anxiety diagnoses and symptoms in UK primary care

The first quantitative component of this thesis aimed to investigate trends in the incident recording of anxiety diagnoses and symptoms in UK primary care between 2003 and 2018 using CPRD Gold data. It also aimed to examine potential differences in trends according to age and gender.

2.6.3 Trends in the prescribing for anxiety in UK primary care

The second quantitative study for this thesis aimed to investigate trends in prescribing for anxiety disorders in UK primary care between 2003 and 2018, again using CPRD Gold data, and to examine factors that may be associated with these trends.

Specifically, the study objectives were:

- To examine trends in prescribing overall and by drug class (antidepressants, benzodiazepines, beta-blockers, anticonvulsants, antipsychotics) between 2003 and 2018.
- To examine potential differences in prescribing over time according to age and gender
- To determine whether any changes in prescribing over time were due to: (i) an increase in the number of new patients receiving medication (incident cases); and/or (ii) changes in the duration of treatment over the study period.

Chapter 3 Practitioners' and patients' views on identifying, diagnosing, and managing Anxiety Disorders in Primary Care

3.1 Chapter overview

This chapter details the qualitative component of the thesis that was conducted to understand how patients and practitioners view and experience the identification, diagnosis and management of anxiety disorders in primary care. The chapter starts with an outline of the main research paradigms and the theoretical stance taken. It then details the methods used, and findings from the interviews held with patients, GPs and IAPT therapists. It ends with a discussion that summarises the results, reflects on the study's strengths and weaknesses, situates the findings within the context of previous research, and outlines implications for potential future research. Some sections in this chapter are based on a journal article which is due to be submitted for publication to BJGP: GPs' and patients' views on the value of diagnosing anxiety disorders in primary care: A qualitative study (Archer et al.). Findings from GP and therapist interviews, relating to the recording of, and prescribing for, anxiety, are outlined in the subsequent chapters (Chapters 4 and 5 respectively).

3.2 Methods

3.2.1 Research paradigms and theoretical stance

The concept of research paradigms is defined as a set of ontological and epistemological assumptions shared by all researchers working within that paradigm, which relate to how the phenomena of interest should be viewed and studied (Kuhn, 2012). Broadly speaking there are two main paradigms within healthcare research, which tend to be described as having opposing assumptions. The first is positivism, which is usually connected with quantitative methodology. It is based on the assumption that there is one concrete reality, which can be understood through objective methods to test hypotheses (Park et al., 2020). Traditional methods used within this paradigm aim to statistically test the relationship between exposure and outcomes variables, and include randomised controlled trials, systematic reviews and meta-analyses, and structured interviews. The other paradigm is interpretivism, which is usually associated with qualitative work. Interpretivism posits that reality is socially constructed, and understood through one's own experiences, rather than there being one true reality (Kelliher, 2011).

Sample sizes in qualitative research tend to be smaller than those seen in quantitative research, with the focus on richness and depth of data. Methods include in-depth interviews, focus groups, and ethnographic studies. Researchers may seek multiple perspectives, and practice iterative and emergent data collection techniques (Willis et al., 2007). There is also a third paradigm, that can be viewed as sitting between these two paradigms, called critical realism. Whilst it shares the tenets of positivism, stating that there is one true reality, it theorises that there is a difference between what can be observed within the world, and that reality, and argues that the latter can only be understood through one's own experiences and perspective (Patomäki & Wight, 2000).

The study described in the chapter has taken an interpretivist stance, employing qualitative methods of data collection and analysis to understand events and experiences from the perspective of those involved. How the stance taken fits within a multi-methods thesis is discussed in Chapter 6 (section 6.3).

3.2.2 Overall study design

Having reviewed the literature on anxiety, it was evident that there is a lack of qualitative research that focuses solely on patients with anxiety, or on patients with depression and anxiety, where anxiety is the primary diagnosis. In addition, it was apparent that whilst research had explored some of the complexities around GP coding of anxiety, it had not explored how this might affect diagnoses and discussions with patients. Therefore, I designed a qualitative study that would entail conducting in-depth interviews with GPs and patients about their views and experiences of the identification, diagnosis and management of anxiety. I decided this study would also include interviews with therapists working within the IAPT service, as being practitioners whose role is focused on the psychological treatment of anxiety, they might bring a valuable perspective on how anxiety should be managed in primary care.

Note that as I was the only researcher working on this study, I have referred to myself as 'the researcher' from this point forward.

Semi-structured interviews were conducted on a one-to-one basis with participants. This method of data collection was viewed as the most appropriate, as semi-structured interviews allow individuals to explain their views and experiences in detail, and in their own terms, and to raise issues that were salient to them but not predicted by the researcher. They also allow the researcher to guide the focus of the interview and probe responses if necessary. Interviews were held with practitioners working in the Bristol, North Somerset and South Gloucestershire (BNSSG) region, and with patients

registered with general practices in the same region. This region includes areas of varying socio-economic deprivation.

The study had HRA and ethical approval from the South West Frenchay Research Ethics Committee (REC reference: 18/SW/0088). Local study site approvals were given by the BNSSG Clinical Commissioning Group (APCRC reference: 2018-021) and Avon and Wiltshire Mental Health Partnership NHS Trust (AWP reference: 1041AWP).

3.2.3 GP interviews – recruitment, sampling and data collection

GPs were recruited for interview through GP practices who had been informed about the study by the West of England Clinical Research Network (CRN). Practices were given the option of supporting recruitment for both GPs and patients, only GPs, or only patients. The CRN informed the researcher which practices were willing to support the study and in what way. The researcher then sampled practices from this list that varied in terms of whether they were located in relatively affluent or relatively deprived areas, determined by the deprivation decile recorded on the National General Practice Profiles website (Public Health England, 2020). Deprivation deciles were calculated from the 2015 English Indices of Deprivation (National Statistics, 2015).

To recruit GPs, practice managers working in the practices involved, provided their GPs with a study invitation letter and an information sheet. The researcher also presented the study at practice team meetings, to give GPs the opportunity to ask questions directly. Practice managers then emailed response forms completed by GPs who were interested in taking part. These forms asked GPs for their contact details and gender. This information, alongside knowledge of their practice, was used to purposively sample GPs for interview of varying gender, and who worked in practices that differed in terms of their deprivation decile. GPs sampled were then contacted by telephone, provided with more information about the study and asked if they were still willing to be interviewed. GPs were informed that they could be interviewed in person or by telephone. It was hoped that giving them this choice would encourage GPs to take part, and research suggests that well-structured telephone interviews can collect the same information as those conducted in person (Sturges & Hanrahan, 2004). If the individual was willing to be interviewed, an interview time and place (if a face to face interview) were agreed during this telephone call.

Informed consent was taken from GPs immediately prior to the interview, via either verbal telephone consent or written consent in person. Consent was also sought to audio-record the interview. Interviews were conducted with a topic guide to ensure consistency (Appendix - A.1). The

guide was based on the aims of the study, informed by the literature, and discussed within the supervisory team and with members of the study's patient and public involvement (PPI) group (detailed later). It included questions about causes and symptoms of anxiety; management of mental health in primary care; similarities and differences between anxiety and depression; and how diagnoses were coded and discussed with patients.

Data collection and data analysis proceeded in parallel, and the topic guide was slightly revised to incorporate questions that related to issues raised by interviewees. After each interview, GPs were asked to complete a brief demographic questionnaire that requested information on their gender, age, length of time practising as a GP, whether they were salaried or a partner, and any additional psychiatry or mental health qualifications. The information gathered was used during the analysis to reflect on whether accounts given varied depending on the GP's gender, age and length of time practising; and to describe GP interviewees when disseminating findings.

3.2.4 Patient interviews – recruitment, sampling and data collection

Patients were also recruited for interview through GP practices. Again, these practices were informed about the study by the CRN. The researcher selected practices from the list of those who responded with expressions of interest to support patient recruitment, and that varied in terms of whether they were located in relatively affluent or relatively deprived areas, according to the recorded deprivation decile on the National General Practice Profiles website (Public Health England, 2020).

GP practices identified eligible patients through database searches and manual screening of retrieved records. Eligible patients were those aged 18 years or older, and having a current diagnosis of either anxiety disorder, MADD, or as having reported anxiety symptoms to their GP in the last 12 months. Excluded were those who had a recent history of bipolar disorder, schizophrenia, personality disorder, dementia, substance (alcohol/drugs) misuse, or who the GP felt would be unable to complete the questionnaires.

Eligible patients were mailed an invitation letter and information sheet about the study by their GP practice (Appendix - A.2). Patients interested in participating posted response forms back to the researcher, using stamped addressed envelopes that were enclosed with their invitation letters. Reminder letters were sent to patients who had not responded after two weeks.

Patients were also recruited for interview by GPs opportunistically mentioning the study to patients who were eligible to participate during face-to-face consultations. For patients interested in taking

part, GPs completed a brief 'permission to contact' form and gave the patient a copy of the invitation letter and information sheet to take away. The 'permission to contact' form requested information on the patient's contact details and basic sociodemographic information (age, gender and ethnicity), and was sent back to the researcher by secure fax. GPs also completed and faxed a referral form confirming that the patient met the eligibility criteria. This information, alongside researcher knowledge of their practice, was used to purposively sample individuals of varying age, gender, ethnicity, who were registered with practices that differed in terms of deprivation decile. Having received both forms, individuals sampled were then contacted by the researcher by telephone to explain more about the study, and asked if they were still willing to be interviewed. Like GPs, patients were given a choice of being interviewed over the telephone or in person. The date, time and location (if a face to face interview) was then arranged.

Immediately prior to interview, informed consent was taken either verbally by telephone or written in person. Consent was also sought to audio-record the interviews. During the interviews, key areas were discussed with each individual using a topic guide (Appendix - A.3). It was designed in parallel to the GP guide to ensure key areas relevant to both patients and GPs would be covered, as this would help comparison of GPs' and patients' views when analysing the data. Key areas covered by the patients' guide included causes and symptoms of anxiety; help-seeking for anxiety; management of mental health; similarities and differences between anxiety and depression; and whether they felt it was important for GPs to distinguish between anxiety and depression. As data collection and data analysis proceeded in parallel, the topic guide was slightly revised in response to insights gained as the interviews progressed. After each interview, patients were asked to complete a brief questionnaire that gathered further socio-demographic information (age, education, employment & marital status) and symptoms of anxiety and depression using the GAD-7 (Spitzer et al., 2006) and the PHQ-9 (Kroenke et al., 2001). This information was gathered so that the researcher could explore during data analysis whether factors such as symptom severity appeared to affect views expressed, and in order that the sample interviewed could be described in detail when disseminating results.

3.2.5 IAPT therapist interviews – recruitment, sampling and data collection

All the GPs interviewed refer patients into the local IAPT service. At the time of interview, this was the Bristol Wellbeing Therapies (BWT) service. If the patients interviewed choose (or had chosen) to self-refer for NHS talking therapy treatment, this was also the service that would assess and manage them. Therefore, we interviewed therapists who worked in BWT in order to provide insight into the

management of anxiety, from the perspective of practitioners who have been trained in the psychological treatment of anxiety.

All therapists working in the BWT service were invited to take part, and were given an invitation letter and information sheet by their service manager. The researcher also presented the study at one team meeting, to ensure therapists had the opportunity to ask questions about the study in person. Therapists who were interested in participating provided their contact details and current level of IAPT work (i.e. high or low-intensity practitioner) on a signup sheet during the team meeting or emailed the researcher directly. On receiving contact details for those willing to be interviewed, all therapists were contacted by telephone, provided with more information about the study and asked if they were still willing to be interviewed. As with the GPs and patients, therapists were given a choice of being interviewed over the telephone or in person. The date, time and location (if a face to face interview) was then arranged.

Informed consent, via either verbal telephone consent or written consent in person, was taken immediately prior to the interview (Appendix - A.4). Consent was also sought for audio-recording the interview. During the interviews, key areas were discussed with each individual using a topic guide (Appendices - A.5). The guide was developed in parallel with the GP and patient guides, to ensure that areas relevant to each group of interviewees would be covered, as this would help during data analysis when comparing the views of GPs, patients and therapists. As with the GPs' and patients' guides, key areas covered included causes and symptoms of anxiety, and the similarities and differences between anxiety and depression. However, the therapists' guide also covered the management of anxiety and depression within IAPT, and how diagnostic labels affect patients' engagement with IAPT interventions. After the interview, therapists were asked to complete a brief questionnaire that requested information about their professional qualifications, length of time working in IAPT, and socio-demographic information (age, gender), that was then considered during the analysis and used to describe those interviewed.

3.2.6 Data analysis

Data collection and analysis took place in parallel, so that data collection could end when data saturation had been reached, i.e. no new themes were identified in the later interviews (Mason, 2010). This was an iterative approach, whereby initial interviews informed later interviews. For example, insights from early interviews with GPs indicated that the sociodemographic characteristics of their patients may influence whether GPs suggest self-referral to talking therapies. As a result of

this an additional four GPs were interviewed. These GPs worked in practices with a lower deprivation decile than the practices of those previously interviewed. Iteration also took place between the patient and practitioner interviews. For example, patient interviews highlighted that anxiety and depression were not being discussed as separate conditions. Therefore, later interviews with practitioners included a question on whether they highlighted the distinction between the two conditions with patients, even if they were coded separately.

All interviews were audio recorded, transcribed verbatim and checked for accuracy. Following the steps defined by Braun and Clarke (2006), data were analysed thematically. A thematic approach was used to highlight the views each group held towards a specific issue, for example the value of managing anxiety separately from depression, and to enable comparisons to be made within and across the interviews to identify common themes and differences in accounts.

Initially, each dataset was analysed separately, with the patient interviews fully analysed before the GP interviews, followed by analysis of the therapist interviews. For each dataset, the researcher and a member of the supervisory team read and re-read a subset of transcripts to identify possible codes, and then met to compare and discuss their coding and interpretation of the data. There was a 'pause' in interviews at this point, to reflect on the preliminary data collected, and whether there needed to be revisions made to the topic guides. Some slight revisions were made, such as the use of the term 'over-medicalised' rather than 'over-pathologised'. Following these discussions, a preliminary coding framework was developed for each interview set. The three coding frameworks were developed in parallel to ensure common codes were used when appropriate. Each coding framework was revised as new codes were identified in subsequent transcripts, with the coding frameworks for the other interview sets also revised, where appropriate. Transcripts that had previously been coded were recoded where necessary. All transcripts were electronically coded in NVivo 12 (QSR International, 2020), so that coding reports could be electronically generated to extract data relating to each code.

Once all the data had been coded, coding reports were created. They were read and re-read to identify key themes and deviant cases. Using an approach based on Framework analysis (Ritchie & Spencer, 1994), data in these reports were summarised in tables where the rows represented each interviewee and the columns each code. Due to the number of codes identified, multiple tables were created (for each dataset). Each table collated codes broadly relating to diagnosis, causes and symptoms, management, or comparisons of anxiety and depression. Once data had been summarised in each table, the researcher wrote summary documents that detailed individual accounts, key themes identified, and deviant cases. Notes were also made about possible

explanations for the accounts given. When considering possible explanations for the patients' data, the researcher identified similarities and differences in accounts from individuals who varied in terms of their demographics, duration of symptoms, and/or experiences of depression. For the practitioner datasets, the researcher considered patterns and differences between the accounts given by practitioners who varied in terms of age, gender, and number of years practising; and for the GPs, the sociodemographic characteristics of their patients; and for the therapists, the level they were working at within IAPT. Themes and subthemes identified during the analysis, and the possible relationships between them, were then summarised in mind-maps to provide a visual overview. These mind-maps, and the researcher's interpretation of the data, were discussed with a member of the supervisory team. An example of the mind-maps is provided in the Appendix - A.6. Findings from the three datasets were then compared to identify similarities and differences between GPs', patients', and therapists' accounts.

3.2.7 PPI involvement

Four PPI contributors, who had all been referred to IAPT services, were identified during a local Psychological Therapies Health Integration Team (InPsyTe HIT) meeting. They were asked if they would be willing to support the study by one of the InPsyTe HIT directors, and all agreed. At this HIT meeting, ran by the InPsyTe HIT co-ordinator and directors, PPI contributors discussed and commented on initial ideas for the study and the research aims. One month later, contributors provided input into the content of the interview topic guides by email. Questions around differentiating between anxiety and depression were included as a result of this. Seventeen months later, four individuals were invited to a meeting with the researcher to comment on study findings. This included one individual who had attended the first meeting, and three who had been invited through the University of Bristol's Centre for Academic Primary Care's (CAPC) PPI pool of contributors. Contributors felt the results were important, relevant, and agreed with the researcher's interpretation.

3.3 Results - overview

The results from each dataset are presented separately below. GPs', patients', and therapists' views have been detailed under the headings of causes and symptoms (and help-seeking for patients), diagnosis or labelling, management, and comparisons between depression and anxiety. These headings relate broadly to the aims of the GP, patient, and therapist interviews. Under each heading, findings have been presented to highlight similarities and differences identified between the accounts of each interview group. Within these different sections, there are subheadings that reflect the themes identified during the analysis.

3.4 Results - GPs

Between September 2018 and March 2019, fifteen GPs from six GP practices were interviewed (Table 5). Interviews lasted between 20 to 40 minutes (mean: 29 minutes). Four GPs were interviewed in their practice, and the remainder over the telephone. All the interviews were conducted by the researcher. Just over half of the GP interviewees were women (n = 8, 53.3%), and the mean age was 44.9 years (Standard deviation (SD) 7.7 years). Those interviewed had been consulting in general practice between 4 and 27 years. One GP reported an additional qualification in mental health or psychiatry.

Table 5 Socio-demographic details of GP interviewees and their associated general practices

Details of GPs interviewed				Details of GP practices	
ID	Gender	Partner/Salaried	Age	Deprivation Score 1-10*	Clinical commissioning group (CCG)
1	Male	Partner	30-39	3	Bristol
2	Female	Partner	40-49	9	South Gloucestershire
3	Female	Salaried	30-39	9	South Gloucestershire
4	Male	Partner	50+	9	South Gloucestershire
5	Female	Partner	40-49	10	North Somerset
6	Female	Partner	50+	3	Bristol
7	Female	Partner	40-49	10	North Somerset
8	Male	Partner	40-49	10	North Somerset
9	Male	Partner	40-49	10	North Somerset
10	Female	Salaried	40-49	4	Bristol
11	Male	Salaried	30-39	4	Bristol
12	Male	Partner	50+	1	Bristol
13	Female	Partner	40-49	1	Bristol
14	Male	Partner	30-39	6	South Gloucestershire
15	Female	Partner	50+	6	South Gloucestershire

**Deprivation score for the practice patient population where 1 indicates the most deprived patient population and 10 the least deprived.*

3.4.1 GPs' views on the causes and symptoms of anxiety

Most GPs viewed anxiety as a result of a combination of internal and external factors, and talked about specific 'at risk' groups.

Causes of anxiety

GPs reported that there were multiple causes of anxiety, rather than one specific cause. Most GPs divided causes into *"nature and nurture"* (GP 1), and commented that it was a combination of these causes that resulted in an individual developing anxiety. From the nature, or internal perspective, GPs talked about personality traits and inherited familial links, or genetic pre-disposition. GPs commented on *"anxious families"* (GP 6), and observed that patients refer to themselves as *"born worriers"* (GP 6).

> *"I think it's to do with just inherent personality, and how much of that is genetic and how much isn't I don't know. I suppose I think familial and a sort of inherent thing are the main causes, and then I think there are life issues which happen, and it's usually when people get in trouble that their inherent personality goes too far." GP 6*

From the nurture, or external perspective, GPs commented on childhood experiences, and included childhood upbringing, trauma, and seeing how family members may react to stresses. Additionally, they also commented on challenging or stressful experiences as an adult, as being a cause or a trigger.

Some GPs commented on anxiety resulting as a lack of balance or control over multiple areas of a patient's life.

> *"It's about balance isn't it, and I think people start to get anxious when things in their life aren't balanced in the way they need to be. That balance is unique to them and it's about I think, you know, it might be the balance between work and home, it might be the balance in their relationship, it might be the balance of never having any time to relax and to do something for themselves. It might be the balance of how much control they feel they have, but usually I think if you're just thinking about what causes anxiety, I think drilling down into where they've lost that balance versus control, I think helps us to look at it." GP 5*

One GP felt anxiety was an experience that related to how patients perceive their situation, resulting from an interaction of their personality, circumstances, and views on life.

> *"I think anxiety is a feeling which people experience, and for each individual it's a complex interaction of their personality, their family background, their work circumstances, their*

relationship status, their perceptions of the meaning of things. I don't think that the cause as such- I think I'd hesitate to use the word cause, I think it's a, yeah, it's an experience, and a perception, and interpretation of how people feel in the context of various things." GP 4

Some GPs commented on changes over time, with increasing levels of anxiety seen within society, and cited several reasons for this. Many GPs commented on how the increased reliance on using the internet for shopping, working, and interacting with people, had reduced people's social and physical contact with others. Furthermore, GPs felt the rise in social media use was contributing to a skewed perception of what an ideal life should be like, resulting in pressure to achieve the impossible.

Causes of anxiety and changes over time are discussed in more detail in Chapter 4.

<u>Groups at risk of anxiety</u>

GPs identified groups of patients that they thought were at risk of developing anxiety. Most GPs referenced young women as experiencing the *"true sort of isolated anxiety"* (GP 9), whereby they experienced generalised symptoms of anxiety, without low mood. Some GPs also felt the elderly population were most at risk because they were the group that might be least likely to seek help for symptoms of mental health, perhaps due to a reluctance to acknowledge they might need help for mental health problems, or due to social isolation.

"Our older teenagers are hugely vulnerable at the moment, and some of the young adults actually, and I think the parents, more commonly mums, but the ones that are just trying to juggle too much. But we've got a lot of- like extreme elderly, you know, late eighties elderly who live on their own in a rural area with no facilities, no local services, no bus, no nothing. There's even patches in this surgery area where there are no care agencies that will cover some of the villages, and those people get very, very- they get very stressed because, and I think that there is a patch of- there is a pocket of people that are very vulnerable to anxiety, and I look after two or three people who are desperate, who truly are anxious in that bracket who just will not get help. They are the generation that just don't see it as a thing, you put up and shut up, and they're really suffering and they're just a naturally silent, hidden pocket of need really." GP 5

However, GPs also reflected that the groups they had identified as at risk, such as young women, were also the same groups that they were most likely to see. They commented that this might mean men are as much at risk as women, but may not be *"addressing things"* (GP 8). GPs also reported

that whilst the older groups did consult quite regularly, but they did not tend to consult specifically about anxiety or acknowledge they might need help for anxiety.

> *"Although saying that, they're still the war generation so they don't want to make a fuss so they might present in a different way, like phoning frequently for visits about other health issues." GP 1*

Symptoms of anxiety

GPs were consistent in explaining the symptoms of anxiety, and distinguished between physical and psychological symptoms. GPs felt the physical and psychological symptoms were intertwined, although they stated that some patients might find it easier to talk about symptoms of 'stress' rather than use the word 'anxiety'.

> *"Occasionally they'll use a different word, like stressed, and then when you sort of tease things out a little bit, it sort of seems to be more generalised anxiety." GP 10*

GPs reported that patients consulted for the physical symptoms frequently, and that sometimes patients were surprised when they explained these symptoms were due to anxiety.

> *"Some people will present with physical symptoms, and so they're looking for a sort of kind of physical cause for their symptoms. And then it may be that you have to work with them gradually to sort of, eventually, come to understand that maybe there isn't some underlying physical illness that we're going to identify and maybe this is anxiety." GP 8*

GPs also commented that about a third of their patients presented with low mood, and that these patients might find it difficult to explain how they were feeling, if they did not realise they were experiencing anxiety (in addition to, or instead of, the low mood).

> *"Some present with mood problems, but they don't really know how to put their finger on how they're feeling, and then if you sort of go through the history, it is anxiety symptoms that come out." GP 13*

3.4.2 GPs' experiences of diagnosing, recording, and discussing anxiety

Within the accounts given by most of the GPs interviewed, there were themes around the threshold for a diagnosis, normalisation, and the impact of diagnosing.

Threshold for coding and diagnosing

As mentioned earlier, GPs talked about anxiety as a potentially learned behaviour, that could relate to the rise of social media and the concept of chasing the "*perfect life"* (GP 1). Therefore, there was a sense that it was not an illness that should be diagnosed by a medical practitioner, but rather it could be a personality trait or genetic pre-disposition. However, GPs acknowledged that they had a role in supporting patients' understanding and management of their symptoms, although also reflected that they had little time, resources or expertise to do this. Some GPs said they were careful what words they used when discussing anxiety with patients, reporting a tendency to use words like "*anxious or on edge*" (GP 1) rather than 'anxiety', as the latter could imply they were making a diagnosis.

GPs referred to anxiety as being something that everyone experiences in some way, such as prior to an interview or an exam. They reported that patients can have difficulty in understanding that there is a distinction between this type of transient anxiety, which might be better termed as 'stress', versus that which would be diagnosable at a clinical level.

> *"I think that people get confused between stress and anxiety... and again where does… very bad stress then flip into anxiety because actually sustained stress will make you anxious in the end anyway, so how do you spot someone who's switching into the next step of the problems." GP 5*

GPs stated anxiety was very common in primary care, with five to ten percent of their patients presenting with symptoms. They emphasised that a large part of their role was about normalising anxiety as a human emotion, and that they had a 'threshold' for it becoming a clinical problem. GPs stated they were reluctant to code for an anxiety diagnosis when a patient first presented. This could be more challenging if patients presented with preconceived thoughts about having an anxiety disorder (or depression, or both).

> *"Now everybody knows they're depressed before they come to the doctor, they tell me they're depressed but they usually don't meet the criteria [for a disorder]. It's quite difficult to engage people in that kind of conversation 'cos they already know they meet the criteria 'cos they've read it on the internet." GP 4*

When GPs were referring to the threshold for coding, they explained the decision to code for an anxiety disorder was dependent on severity and chronicity of symptoms. Information gathering was essential when considering coding for an anxiety disorder, with a focus on duration and excluding physical conditions. However, limited consultation time with patients meant there was little time to

establish this. GPs explained that discussions around mental health are complex, and fully understanding a patient's situation and symptoms could take longer than the time the GP had available. As such, GPs encouraged follow-up appointments and continuity of care where possible, and would delay coding for an anxiety disorder until they had established an accurate picture of what was going on, following multiple appointments with the patient.

> *"I think it depends whether they come back. So, yeah, (pause) yeah, so I might not code it as that on the first consultation but I think if it's, you know, if it's becoming more apparent as the consultations develop then I might do, so I might code it as anxiety states say on the first consultation, and then [it] might develop into [a] generalised anxiety type code or even chronic anxiety if they'd had episodes in the past." GP 10*

The accounts about thresholds for coding, and specific codes used by GPs, are discussed in more detail in Chapter 4.

<u>Reluctance to use a diagnostic label</u>

GPs described themselves as generalists who did not specialise in psychiatry, and viewed this as another challenge for them in knowing when to code for a disorder, rather than just symptoms. As such, several GPs reported that they would *"shy away from labelling it as generalised anxiety disorder without a psychiatrist back-up"* (GP 1), or that it would be the role of a psychiatrist to diagnose an anxiety disorder.

> *"I think anxiety is treated very much in primary care, it's rare that I refer someone, but to actually label someone with an ICD-10 diagnosis anxiety condition, I don't go through that formal thought process. We probably just generally label it as anxiety rather than actually a formal medical diagnosis label. We're just not as expert at doing that as a psychiatrist." GP 9*

Some GPs reported that they did not think they had ever given a diagnostic code themselves, and had only ever used them when re-activating old codes that had been previously recorded by another GP.

> *"I don't think I've actually put an anxiety disorder really as a diagnosis, I think I've often- it has often been reactivation of an old diagnosis." GP 3*

<u>The value and impact of labelling</u>

GPs commented that by the time a patient with anxiety presented to them, there was an expectation from the patient that the GP had to provide treatment, and that the condition needed

to be recorded as a medical disorder. GPs reflected this could result in medicalising symptoms that were a normal part of life, or that anxiety was becoming over-pathologised.

> *"I think we tend to make things more a disorder than we did before. They were just 'oh she's always been an anxious soul' rather than it being a label, so I think there is a little bit of a tendency to do that." GP 6*

One GP reported that he did not think it was helpful to 'label' anxiety at all, and found discussions around anxiousness and what is 'normal' to be a better use of consultation time.

> *"I don't think it's helpful to see it as a pathology, which is a disease that's treated by doctors. I think that happens far too much… if I have the time and the person is sort of philosophically minded, then I'll try and engage them in a little sort of philosophical conversation about what's normal, 'who decides what's normal?'" GP 4*

GPs commented that some patients want a label, and that it can help patients understand what is going on in terms of their mental health, and to think about treatment and how they could get better. They felt it could have a positive impact on patients' management of their anxiety, with diagnosis tending to elicit feelings of relief or a sense of control for patients.

> *"It gives them an identity they can relate to; it puts everything into perspective for them and they then can say I've got this - I think patients sometimes like the ownership of something. I guess maybe it's that realisation they have got a problem, and if they've got a problem, they've got a diagnosis, therefore have a treatment element to it. A relief that there is actually something there they've got and maybe it's then not their fault or something." GP 9*

Yet, GPs also commented that sometimes their patients discouraged them from coding for anxiety, as they were concerned about having potentially stigmatising labels on their medical records, and thought there was a possibility of employers or insurers viewing it, or because they did not think that they had anxiety. Some GPs also reported perceptions that sometimes patients did not want or a need a label, they just wanted help with their symptoms.

> *"I would say lots of people I talk to they don't want a medical label; they don't want to be given a diagnosis, they just want assistance with how they're feeling." GP 4*

GPs mentioned they did not code if they thought it would be unhelpful for the patient, or if giving a diagnosis might be *"troublesome"* (GP 6) in terms of them then needing to spend more time discussing the diagnosis than helping the patient with their symptoms. Several GPs stated that

coding for anxiety was particularly unhelpful if it encouraged patients to adopt a "*sick role"* (GP 13), potentially exacerbating the situation.

> *"Some people I think it makes it easier for them to assume the sick role, and to think that they're not getting better… but then they lose their self-confidence about returning to work which then exacerbates the anxiety situation, and they kind of carry the mantle around with them that they suffer with anxiety." GP 13*

> *"Some people respond well to having a diagnosis and a label, but others…malingering is too strong a word for it, but then you just wonder if they just attach all their problems to that and that's not necessarily the case." GP 7*

GPs also discussed the value of making a formal diagnosis of anxiety, in terms of the impact it would have on the management of the condition. GPs commented that there were long waiting times to access talking therapies, described secondary mental health care for anxiety as non-existent, and viewed the threshold for accessing psychiatric support as too high for this patient group. Therefore, most GPs saw little practical value in making a diagnosis. However, in contrast to this, some GPs reflected that recording a diagnosis of anxiety could be beneficial for patients in terms of enabling them to access help, or further support, outside the health care system.

> *"Having a label can sometimes be a useful product that allows them to either access help, access benefits and maybe get some time off." GP 12*

In addition, some GPs commented that there was a relationship between coding for an anxiety disorder and prescribing medication, in that they would not prescribe medication without first making sure the patient had a diagnostic code. This is discussed in more detail in Chapters 4 and 5.

3.4.3 GPs' experiences of treating anxiety within primary care

GPs talked about the use of medication and psychological therapy, and about constraints on their time or skill, in the management of anxiety.

Treatments for anxiety

GPs reported different strategies in discussing treatment options, such as continued discussion in repeat appointments, and time for patients to consider their options. They stated decisions on treatment were often patient-driven and guided by the patient's previous experience of medication

or talking therapy. GPs said they would generally suggest a combination of talking therapy, self-help resources, and medication.

> *"So, I normally manage it with a kind of combination of things in terms of offering sort of talking therapy type treatments, and considering medication if it feels appropriate. Depending obviously on the level of distress and their experiences before, and giving them some self-help resources in terms of websites and apps and all those kind of things, books, that kind of thing, if that seems to be their thing. So basically, largely dependent on what you think that they want and what their previous experiences are of previous therapies." GP 2*

GPs commented that they would suggest patients reconsulted after a short period to see how they were getting on with managing the symptoms of anxiety, and at this point they might suggest something else, such as medication (if the patient had not already tried it).

All GPs commented on the immense value that the IAPT service gave patients, particularly for signposting to other services. However, they reported whilst the threshold for accessing treatment was lower than that of secondary care, there was still a long wait for patients to start getting help. Nonetheless, many GPs said they always suggested referral to IAPT as an option, regardless of whether they were also suggesting medication.

> *"I always tell them to [self-refer to IAPT] (laughs). I don't ever leave it out as an option really and I think it's important 'cos- As far as I'm aware, I mean in terms of gold standard, CBT is the one thing if that people engage with and do it well, that's more likely to change their anxiety than just taking an antidepressant." GP 9*

Some GPs commented that they thought patients preferred medication, over trying to manage their anxiety in another way – *"they don't want to try and manage it themselves, they'd rather have tablets"* (GP 3). GPs reported that some patients expected medication when they consulted, and wanted a quick fix rather than seeing it as a long-term management issue. However, GPs reported that they generally avoided rushing into prescribing medication, particularly within the first consultation. GPs acknowledged that *"where warranted they could be a useful tool"* (GP 12), but there were also some GPs who spoke about currently reviewing their practice, and "*trying to give suggestions other than medication"* (GP 1). They used repeat appointments to encourage patients to think about their options, and tried to offer medication alongside referral to talking therapies.

One GP saw medication for anxiety as a last resort, that should only be done in conjunction with a multi-disciplinary team.

"I think anybody who's taking medication for anxiety, that should be done only because there is very significant, long-term, ongoing management by a multi-disciplinary team of psychologists, occupational therapists, and psychiatrists, who engage long-term with those patients. Because medication for anxiety should be a last, well I mean this is what the guidelines say to what they were, it should be because you've tried everything else." GP 4

GPs reported that the use of antidepressants for anxiety could sometimes confuse patients. Some GPs reflected that this could make it harder for patients to understand why they were being prescribed antidepressants, when they identified as having anxiety.

"But often people will- when you mention the antidepressants to them they'll say 'oh but I feel quite happy, I'm not depressed'- so they clearly feel that they don't- they don't always understand it. Some of them are quite vocal about the fact that they have no- they're not depressed, they're quite happy with their life." GP 3

Data on prescribing for anxiety, such as GPs' views on prescribing, are discussed in more detail in Chapter 5.

<u>Reflections on NHS primary & secondary care</u>

GPs reported limited availability of mental health professionals for patients in their practice. One GP said that they had previously had a practice counsellor, but that the funding had been stopped due to the introduction of IAPT talking therapies. GPs said that they felt there should more mental health support available, embedded within practices.

"I think if we had an experienced mental health worker managing patients with anxiety and depression. I think everyone should know that if you're not feeling mentally well you go to a mental health worker, not a GP 'cos then you'll get proper management…it would seem likely that they would need to be embedded in GP practices." GP 4

GPs commented that there were groups of patients with anxiety that were not being appropriately managed within primary care, in particular individuals too severe for primary care, but not severe enough for secondary care, and so "*they just fall between the gaps"* (GP 1).

GPs reflected that for those patients, CBT might just be a "*sticking plaster*" (GP 6), and that those patients were likely to return again and again to their GP, needing more than their GPs could offer. GPs also reported the lack of time and training they had to manage these patients.

"It's giving them CBT type strategies as best we possibly can even though if you said, 'well are you qualified in it?' I'll say 'no but I've been on a few training days'. It is a bit daft isn't it that

we end up doing more or less the same for every person, but it's because that's what we have available and it's a real, real shame." GP 5

"I'm finding increasingly mental health services are virtually non-existent. I see my role as the GP to manage the problem but I'm not the psychotherapist, I'm not the counsellor, I've got ten minutes with this patient, I can see them again and again, but once I've diagnosed the issue, we really need to be able to access appropriate resource and signpost people. I always worry that you say 'there's good evidence that CBT may help, ring them up', and you know that the patient's going to ring up and then be told that they're not going to get anything for ages and what does that do to them?" GP 8

Many GPs commented that secondary care for anxiety felt non-existent. GPs stated they hardly ever referred patients to secondary care if they had anxiety, unless their functioning was severely impaired. GPs explained that this meant their own practice threshold for referrals was very high, as they knew from "*years of experience that we were wasting our time referring patients".* (GP 12).

3.4.4 GPs' views on the differences between anxiety and depression

GP accounts highlighted that diagnosing anxiety can be complicated by the presence of co-morbid depression, and they outlined differences between two conditions in terms of presentation and management.

<u>Difference between the presentation of anxiety and depression</u>

GPs described depression as generating a lack of motivation, or lowered energy levels, whilst they thought anxiety resulted in *"higher, or heightened energy"* (GP 12). They reported depression as being a general *"lowness of spirits, of things not getting better"* (GP 6), whereas anxiety was centred around worry and overthinking. GPs also reflected on the cyclical relationship between the two conditions, and how they can both cause each other and co-exist.

"With some people it's depression, and then that causes them to be not motivated, and [they] don't want to go out and [they] don't want to see people, and then they start to get the physical symptoms of anxiety and worry about things. And [they] can't rationalise what they're thinking because they're depressed, and I think there are some people who are anxious and feel that way, and then that lowers their mood and then they get the symptoms of depression, so I think they both co-exist." GP 3

GPs also explained differences between how anxiety and depression manifest, with depression being the condition more likely to be presented repeatedly in practice. They commented that they did not know if this was because anxiety was more likely to resolve, or because patients with anxiety were less likely to return with it again.

> *"I tend to see people with depression repeatedly coming back maybe a bit more but I don't know whether that's because the anxiety's gone away or because maybe they don't feel that it needs to be presenting repeatedly I don't know." GP 2*

Distinguishing between anxiety and depression

GPs talked about anxiety and depression as having a large symptom overlap, and that it was common for patients to meet the criteria for both. One GP referenced the idea of *"the whole Venn diagram thing"* (GP 5), and that patients sat somewhere within that *"middle grey area and you're trying to unravel which is which"* (GP 5).

GPs commented that it could be difficult to distinguish between anxiety and depression during short consultations, and this might be reflected in the codes they use. They reported a tendency to use co-morbid labels, or sometimes just code for *'depression'* if the anxiety symptoms were not clearly the primary problem.

> *"Often there's one symptom that's overwhelming. It can be difficult if someone's depressed and having panic attacks, and I think that the majority I do put as depression, but if someone has predominantly anxiety then I will classify them as depression with anxiety." GP 12*

That said, some GPs commented that depression, or low mood, was often the condition they diagnosed first in co-morbid patients, with the anxiety becoming more evident later. They reported this might be because the symptoms of depression were apparent to the patient and therefore the condition that they consult for. However, GPs stated that after some probing, they often also identified symptoms of anxiety. In contrast, GPs also described patients consulting for panic attack type symptoms, yet further investigation would indicate depression.

> *"So if it's someone with depression it'll be 'I'm just feeling really low, I'm fed up', and then if you start probing there will be some [anxiety symptoms] there that you unearth, but they probably would come in with the depression symptoms 'cos that's what they're feeling most. Whereas somebody who's really panicky and anxious might come in with panic attacks, and actually as we were talking it becomes evident that because they've been battling with this for a long time, they're actually quite depressed as well 'cos it's quite tiring just dealing with the anxiety all the time." GP 8*

Two GPs said that anxiety could lead on to depression, particularly in the case of untreated social anxiety, whereby anxious thoughts and strategies such as avoidance could put patients at risk of depression.

When anxiety and depression were clearly co-morbid, most GPs reported that they did not discuss this distinction with patients. They stated they might use the term 'mental health' or might just focus symptoms in terms of the causes, such as cumulative lack of sleep or stress from work. GPs also commented that they did not explain the distinction between the two because the treatment pathway was the same for both.

> *"I don't think I do [distinguish between them]. Well not to them, if you see what I mean, necessarily highlighting which bit is which. No, I think I probably don't particularly pull those two separately, I guess because they tend to be managed the same." GP 2*

GPs described consultations as being patient driven, in that if patients distinguished between anxiety and depression, then GPs reported they did the same.

<u>Differences in the management of anxiety and depression</u>

Most GPs commented that due to the potential suicide risk, there was an increased likelihood that they would act promptly or actively follow-up patients with depression, in comparison with those who only had anxiety. For this reason, some GPs stated they thought they would be "*more likely to prioritise depression over anxiety"* (GP 11) and increased referrals to secondary care for these patients.

> *"With depression more people would probably be referred on if they've got low, you know, if they've got suicidal thoughts and things, things you don't tend to get with anxiety. So probably greater use of primary care liaison services I think." GP 15*

However, two GPs reported that whilst they were aware that GPs "*tend to have a generic way of looking at depression as being more serious than anxiety"* (GP 12), they did not completely agree with that, and were aware that anxiety could be just as limiting for patients. They commented that they mitigated this by *"asking the same questions of both diagnoses"* (GP 12) when considering management of symptoms.

> *"Actually, anxiety limits people's lives more than depression, and it made me consider anxiety far more seriously than I had before. The idea that because we think depression is feeling sad, and we all know what it feels like to feel sad, that that must be the worst thing to be. And although depression at its' worst is, most people get on with their lives. So I see- people with*

anxiety, it paralyses them often so their lives are limited by it because they don't do things because of that anxiety, whereas the depressed people do them even if they're not quite engaging." GP 6

In terms of treatment for anxiety and depression, most GPs commented that there was not any significant difference between the two conditions. They stated that depending on severity, they would suggest self-help or offer talking therapies, medication or secondary care referral for both. One GP reflected that it was strange to use the same treatments for different disorders with different symptoms.

"I think the difference lies within the skillset that I don't have, which is the psychological management of it. As a GP - if somebody is anxious or depressed they still get Sertraline, even though you're trying to treat different symptoms, which is just bizarre when you think about it. On the face of it you're doing something very similar for them, but in reality they are very different disorders, but I think that is where it is more the psychological strategies in terms of how you alter the thinking, behaviours and understanding." GP 5

Nonetheless, GPs also said they were more likely to treat patients with SSRIs more quickly if they presented with depression, due to the increased risk of suicide. Some GPs also commented that they might be more likely to use a higher dose of SSRIs for anxiety, and said they would not use benzodiazepines or propranolol for 'pure' depression. Data relating to specific drugs used, and the threshold for prescribing, are discussed in more detail in Chapter 5.

3.5 Results – patients

Twenty patients were interviewed (Table 6) between October 2018 and March 2019. They were recruited through four GP practices. Six patients were interviewed at their GP practice, ten in their own home, and the remainder over the telephone. The interviews lasted between 15 to 70 minutes (mean: 34 minutes). Half of the interviewees were women (n = 10, 50%), and the mean age was 54 years (SD 19.7 years). As per the inclusion criteria, all patients had either symptoms of anxiety or a diagnosis of an anxiety disorder. Nine patients had a GAD-7 score of 10 or more. Just over half the sample (n=11) also disclosed current or past experience of depression.

Table 6 Socio-demographic details of patient interviewees

	All Patients n = 20
Age: mean (SD) in years	54 (19.7)
Female: n (%)	10 (50.0)
White British: n (%)	19 (95.0)
Highest educational qualification: n (%)	
A levels/advanced diploma/degree	13 (65.0)
GCSE, standard grade, O-level or equivalent	4 (20.0)
No formal qualifications	3 (15.0)
Marital status: n (%)	
Married/living as married	12 (60.0)
Single	5 (25.0)
Divorced	3 (15.0)
Employment status: n (%)	
Paid employment	12 (60.0)
Retired	6 (30.0)
Unemployed due to ill health	2 (10.0)
Practice deprivation decile: n (%)	
3rd most deprived decile	4 (20.0)
4th most deprived decile	6 (30.0)
9th least deprived decile	5 (25.0)
10th least deprived decile	5 (25.0)
GAD-7 score: median [IQR]*	6.5 [5, 12]
PHQ-9 score: median [IQR]*	5 [2, 11.5]
**Interquartile range*	

3.5.1 Patients' views and experiences of causes, symptoms and help-seeking

Causes of anxiety

Patients generally reported being unable to identify a specific cause of their anxiety, and their accounts suggested there were multiple causes that had cumulatively led to their symptoms. Patients of working age speculated that they had been under increasing amounts of stress, either due to education, work, or their personal lives (e.g. divorce, supporting family, financial issues). Three patients stated that the first time they experienced anxiety was after a panic attack, but they were unable to identify what had triggered the attack About half the patients, and in particular

those of retirement age, commented that they thought there might be some element of anxiety as being an inherited trait, or that it was related to their upbringing.

Symptoms of anxiety

Patients reported physical and psychological symptoms of anxiety as being entwined, and for some patients, this combination was incredibly debilitating, with one leading to the other.

> *"I think it's more of a physical thing. I've been suffering with nerve problems within my breast armpit area since September, and I believe that that is from my anxiety. When I phoned 111 to ask advice they said to go to A&E as they were worried that it was a blood clot. It turned out it wasn't but I do think a lot of all this has stemmed from anxiety, nerves, you know, all that kind of thing, so when you're then worried about your own health, you just feel like you're on this treadmill." Patient 16*

Common physical symptoms reported were palpitations, trembling hands, nausea, and chest pains. Such symptoms could elicit panic attacks. Psychological symptoms included a feeling of disconnect or being on edge, rumination over past events, or worry about the future, and a general sense of being *"worked up"* (Patient 2). Some patients also reported worrying about the anxiety itself, in terms of what other people would think, i.e. they were anxious about having symptoms that could be observed by others.

> *"I start to get very hot and sweaty, I get palpitations, what I'm being anxious about is the only thing I can focus on. I don't really socialise very much; I get very anxious in social- well social areas. Paranoia is a little bit of my symptoms as well, so I was quite- became quite paranoid that everybody knew what was wrong and everything." Patient 9*

Despite only one patient reporting a specific diagnosis for social anxiety, many patients commented that they struggled with social situations with other people, where they were *"not very good at mixing with people"* (Patient 4). They speculated that this might be because they were anxious about what others might think, unsure how social situations would go, or that they did not have control over what might happen.

There was also a sense that patients found anxiety physically exhausting, and that after situations that elicited symptoms or prolonged periods of anxiety, patients needed time to recover and rest.

> *"I just lock myself in my house and I don't go out, and I just shut all the curtains and can't be bothered with the world. As you can see, I won't answer the phone to anyone. So it feels as*

though my heart is going to come out- I'm awake all-night thinking, and sleeping all day." Patient 7

Help-seeking

Patients' accounts indicated that they might not seek medical help because they were not aware they were experiencing symptoms of anxiety, or at a threshold that would require medical help, or because they were reluctant to discuss their symptoms with others. Some patients assumed their symptoms were related to their physical health, or because they were *"run down"* (Patient 12). This was commonly reported in relation to chest pains or palpitations. There were also some patients, usually male, who reported not knowing what anxiety was.

"The paramedics had tried to convince me that I needed to go, and I was like no I'm just rundown, I don't think I fully appreciated what anxiety was." Patient 12

Patients reflected on the role society has had in perpetuating a lack of awareness of anxiety. They felt that there could be a lack of understanding in differentiating between what might be termed as normal anxiety, such as that experienced prior to a job interview, and anxiety at a level requiring treatment. Patients said the use of the same word for two different situations was unhelpful, and reported how this contributed to a perception that anxiety was *"common"* (Patient 2) and therefore not something to seek help for.

"It's because it's so common that people just choose to ignore it [anxiety]." Patient 2

Some patients commented that they had normalised their symptoms of anxiety, viewing them as a being a part of who they were. For many years they felt they could "*handle it"* (Patient 16), or that the symptoms would eventually go away. As such, for these patients it took reaching a crisis point to trigger a consultation with their GP. Family members or close friends were frequently reported as encouraging or arranging the initial GP appointment. These crisis points were described by patients as *"breakdowns"* (Patient 7) and a time when symptoms had become "*unbearable"* (Patient 19) and they were no longer able to cope.

"Feeling so unwell and so out of control, I kind of experienced symptoms over the year and they sort of come and go, and I've never sought help…I think perhaps this year the level of it made me speak to my GP and maybe do something about it." Patient 13

Self-stigma and perceived stigma of what others would think also contributed to a reluctance to consult. Some patients reported a sense of failure or embarrassment in having to ask for help, whilst others were afraid of disappointing their families.

"Even in your own family you wouldn't mention anything, they would think of it as a stigma, madness… ooh no you mustn't tell anybody." Patient 3

Patients also delayed seeking help if they thought their employers or insurance companies would have to be informed. Language such *"nutcase"* (Patient 10) or *"crazies"* (Patient 12) were used to describe how others might view them, with derogatory terms preventing help-seeking for fear of being given such labels.

<u>Reluctance to discuss anxiety with a GP</u>

Prior to consulting, patients were concerned about how their GP would react to them, predicting that they might not understand or take them seriously. Some felt they would not be believed, and they had to reach a "*low point"* (Patient 2) for the GP to *"recognise that there was a problem"* (Patient 2). They reported feeling anxious about having to call to book an appointment, and found it difficult to talk about symptoms over the telephone.

During the consultation, patients were worried about talking about anxiety, and how to build rapport with the GP whilst doing this. This was further intensified by a lack of continuity of care with a specific GP, with patients finding it hard to disclose symptoms of anxiety to GPs they had no prior relationship with. Past experiences with GPs also intensified this discomfort, with previous negative interactions contributing to reluctance to make an appointment with the practice.

"When I rang up this last sort of episode, I was very anxious about doing so because I do feel it's a bit of a weakness to admit it… I do sometimes find that some of my GPs think I'm a bit of a hysterical woman. I haven't always been listened to." Patient 9

Patients also reported that they did not want to bother their GP. They felt their symptoms were not serious enough to take up their time, and that they might take too long or ask questions that the GP viewed as not important. For some patients this meant they did not ask about everything they had wanted to discuss, and often avoided arranging follow-up appointments.

"It sort of feels a bit like sometimes I'm wasting the GP's time if I just sit there and say 'I'm on these tablets and do I need to keep taking them?', and they say 'yeah', it feels a bit pointless really but- yeah. It is something I would like to talk to them about really." Patient 13

There were some patients who did not want to talk about their anxiety, even though they knew they had symptoms. When they did consult with their GP, it was in relation to a physical health condition.

"I didn't really trouble my doctor with it, but it came out through other symptoms. I tend to get chronic fatigue-like symptoms and it was diagnosed as part of that. I knew all along of course

that it was depression and anxiety so I suppose, I mean I'd said it was the doctor that suggested that these other medical things might be anxiety and depression related, but I mean, I went to the doctors knowing I was depressed and anxious." Patient 4

For many patients, GPs had explained anxiety was experienced by everyone, and that it was normal to have some level of anxiety. Patients stated they recognised that most people experienced anxiety to some extent, and that anxiety could be helpful in some situations. However, particularly those who had long-term anxiety, went on to draw comparisons between the level of anxiety that they experienced, versus that which other people experience.

"I felt like everyone experiences anxiety and I don't know why mine feels particularly bad or why my symptoms are particularly bad." Patient 2

3.5.2 Patients' experiences of diagnosis and the value of diagnosis

Most patient accounts suggested that there was a value in receiving a diagnosis of anxiety, however, the way in which this was communicated to them was important.

<u>The value and impact of labelling</u>

When patients received a diagnosis of anxiety, and it fitted with the causes, symptoms, and impact it was having on their life, they found it helped them to accept and understand their condition. Patients reported a sense of "*relief*" (Patient 6) that they now had a "*label"* (Patient 9) for how they had been feeling, and that they were not "*mad, they were ill*" (Patient 5). Some patients experienced receiving a label as profoundly moving, as it provided clarity and helped them to engage with treatment. Such comments were mainly made by patients who were more educated and had experienced a longer duration of symptoms.

"[The diagnosis] helped accept that I'm ill, that you can't always just keep yourself busy and ignore [it] and it'll go away, and everything will be fine. So, it is quite helpful just to hear somebody medical telling me that. Almost gave me permission to acknowledge that I, you know, just how anxious I am." Patient 20

"I remember looking at that diagnosis and tears coming down my face. It helped me to have a title and go 'this is what I'm working with and here's what I'm going to do to try and get better'." Patient 12

Receiving a diagnosis of anxiety was also important for patients in terms of facilitating better management of their mental health and helped *"to change the way I look at things"* (Patient 8), and

know that it was *"something I could try to control"* (Patient 13). Patients reported that it helped them to think about their treatment options and led to readiness to engage with those options.

> *"Once the diagnosis was official, I suppose I tried a bit harder to find an answer, to find a way of helping myself." Patient 4*

> *"I had a much better understanding of what was going on and it gave me the mental ability to deal with it, and say well, well why are we doing this?" Patient 11*

In addition, for those patients that did not fully understand anxiety, once a diagnosis had been made, it was important for the GP to take the time to explain the diagnosis.

> *"I did struggle a bit at first to wonder what it was all about, but I mean Dr S was here at the time, she was very good, [she] did help me along the way a lot [in understanding anxiety]." Patient 15*

Whilst patients reported value in receiving a diagnosis, two patients commented that it was *"good to have a diagnosis"* (Patient 10) but it left them "*in limbo"* (Patient 10) as it was not followed up by the GP, apart from being offered antidepressants, which they did not want.

The label of 'anxiety' was difficult for some patients. They explained that this was in part due to how anxiety is viewed by society. Some of them suggested that this might be because most people think they have experienced anxiety in some way, and therefore do not understand how debilitating it can be. For some, this meant they choose not to share their anxiety diagnosis with other people.

> *"There's less understanding with anxiety. I think when you [tell] somebody you're anxious they see it as 'yeah I get anxious too', I don't think people understand that when we mean we're anxious to this level, it's totally consuming. So I don't say I have anxiety because it requires a lot more explanation and understanding, I just say I have mental health issues." Patient 9*

<u>Lack of clarity around the diagnosis</u>

Patients' accounts suggested they did not understand how GPs determine, record and communicate diagnoses. Comments were made about the disparity between what might be discussed during a consultation, and what might be written on fit notes (medical sickness certificates), or what is discussed during psychological therapy sessions. Patients reflected that this was not particularly helpful, and that particular phrases, such as 'anxiety states' were too medical, and did not provide clarity on whether or not they had an actual diagnosis of anxiety.

"I'm not sure if he did make a diagnosis in a very clear sense…I was wondering 'what's he putting on the fit note', and he put anxiety states which is a really weird expression. So, I don't know whether I'm diagnosed with an anxiety condition, or what that means." Patient 1

Other patients had depression recorded as a formal diagnosis, but felt they understood their diagnosis better when the GP referred to it as *"anxiety leading into depression"* (Patient 19). When patients were unclear about whether they had a diagnosis of an anxiety disorder, or felt the diagnosis did not fit with their experience, they were less able to understand their symptoms. For patients who had not had a diagnosis communicated to them by a GP, but had described severe anxiety symptoms during a consultation with their GP, uncertainty remained about whether they had experienced anxiety.

"I don't think anybody's ever told me 'Mr (name), you have anxiety', as clear as that. It's always been 'mm, well maybe you do, but…'." Patient 5

3.5.3 Patients' experiences of the treatment in primary care

Most patients talked about their experiences of medication, but accounts differed in terms of how positively they viewed managing their symptoms pharmacologically. They also spoke about talking therapies but reported a lack of availability.

<u>Management with GP support</u>

Many patients reported that the first time they consulted about anxiety, the GP's initial response was positive. Most patients commented that GPs were "*very good, kind and understanding"* (Patient 1), that they were "*super lovely, responsive"* (Patient 8) and "*weren't dismissed in any way"* (Patient 5). However, some patients reflected that GPs had not always responded in this way, and in the past had been unhelpful or not listened.

Patients reported that initially, their GP explained treatment options in terms of medication and talking therapies, and then suggested a return appointment to give the patient time to consider their options. Many patients found this very helpful, and it gave them ownership over the direction of their treatment. However, two patients stated they found this unhelpful, and wanted their GP to be more directive.

"She signed me off work for a couple of weeks which was her advice. She explained the options in terms of SSRIs or the counselling route. I didn't feel, you know, I was just running on empty at the time so I didn't feel I had the mental space or head space to be able to explore CBT, or

anything along those lines at the time, so that was definitely- I don't think I can do that at this time. And so I went away without any real treatment and she basically sent me away to think about it which, looking back, I don't think that was necessarily the best thing." Patient 12

For the ongoing management of anxiety, some patients stated they had some GPs who they would intentionally avoid as they knew they did not have an *"open ear and were understanding"* (Patient 16). Patients reported trying to arrange appointments with GPs who were easy to talk to, and commented that continuity of care was very important as it was easier to talk about the anxiety without having to build rapport first.

"That initial going and talking about it is really difficult, it gets easier because for me, you know, if I build a rapport with somebody then I find it much easier to talk to them and through one, two, three, four, five sort of times that I've gone to the doctor about something like this, I've only seen- I've seen four doctors, so four out of five times, but it's sort of establishing that rapport again - sometimes you just want to check in, you know, and just- 'so this is what happened, this is what I did, this is what I'm taking, what do you think about that?', and it might be 'yep all sounds fine, carry on as you are'" Patient 20

<u>Treatments for anxiety</u>

There was a sense that some patients did not view taking medication for anxiety as a positive choice, that they *"would prefer to do things naturally than with medicines, and not numbing it"* (Patient 1). Some patients commented that they were *"against taking medication"* (Patient 3), or that *"it didn't appeal [because of] the lack of control I'd have"* (Patient 8). Others were concerned about the long-term effects.

"I don't think anybody really knows the very long-term effects of taking this stuff, because they're relatively new aren't they, and I don't think anyone knows what happens if you take these antidepressants for thirty or forty years." Patient 4

For patients taking medication for anxiety, there were mixed feelings about how patients and GPs discussed staying on treatment long-term. Some patients expressed a preference for coming off antidepressants, or beta-blockers, but had been persuaded by their GP to stay on them.

"I said about stopping them [beta-blockers] and she said 'oh well not yet because it's not just going to go away'." Patient 13

Other patients had concluded that they would need to continue taking their medication, but wanted reassurance from the GP that it was safe, and necessary, to do so.

"I'm still kind of feeling I would like to get off medication (laughs), but I've come to the conclusion that maybe I'm going to have to stay on. So I want the GP to tell me that that is necessary, it's not dangerous, that it would be advisable." Patient 3

A third group of patients reported a conflict between what they wanted, which was to continue taking medication, versus their GP suggesting they should be stopping their tablets.

"[The] GP was almost contributing to the fact that it was bad to take this tablet, which wasn't helpful. I'd go to my GP, they'd give me this tablet, [I] took it for a year and that's it, he felt that I was cured. I have still had problems with my GP wanting to get me off them, and I've tried, but generally within a few months of reducing them down I'm back and having to put them up again." Patient 9

For patients who had been referred to talking therapies, most patients reported they had been put off by the long waiting time to be seen initially. They commented that *"I needed something that would help me now instead of twelve weeks' time"* (Patient 2). Some patients were able to pay for private therapy or access therapy though work. Patients that had accessed NHS talking therapies reported that they were *"both interesting and useful"* (Patient 5), but that it then stopped once they were no longer "*ill enough"* (Patient 5).

Patients who had completed a course of CBT found it invaluable. The course had helped them *"to realise that it's not curable, but it can be managed"* (Patient 9), and gave them *"a toolkit"* (Patient 8) to manage their symptoms.

"CBT, absolutely brilliant. Well, when I came out from seeing the doctor, I mean I'm not a modern person, but I went 'yes!' Somebody at long last understood what was happening and had some solutions in place. I recognised, I'm quite a sensible person really, I recognised there's no cure for anxiety, but it can be handled and that's my attitude really." Patient 10

Patients reported a variety of self-care strategies, some related to physical activity such as yoga or cycling, whilst others were tasks used to distract their thinking, such as arts and crafts.

<u>Reflections on NHS primary & secondary care</u>

Patients reflected that ten-minute consultations were not long enough to discuss the management of mental health conditions. They also mentioned they would have liked more availability in terms of talking therapy, perhaps in the form of *"practice psychotherapists, because there must be more people suffering"* (Patient 10). Patients commented that they did not want to be taking up their GPs time, but also felt like they needed someone to talk to.

"I would have liked a little bit more support on the talking side of it. I mean, I wasn't very good at it and I was a bit cynical about it, but I would have liked a bit more of that I think because I've been to the doctors, two or three times, saying that 'I really don't want to carry on taking antidepressants forever, what else can I do?', and I haven't got very far with that, if I'm honest with you." Patient 4

Patients also commented that they had expected and wanted one-to-one, or small group work, but had been offered large group work or guided self-help. Some patients reflected that although they had been able to access one-to-one therapy through their workplace occupational therapy instead, this was not an option for everyone.

"I think there needs to be better resources for it, so things like the talking therapies, that needs to be sorted out. I mean I was really lucky that I work for (trust) and they have a really good occupational health team, but there's a lot of people I know who don't have access to that, and they don't get the help that they need. So I think something definitely needs to be sorted about that, maybe looking into why it's such a problem." Patient 9

One patient expressed concerns that urgent help was only available to those who were able to finance it themselves, and reflected that if it had not been available, the symptoms of anxiety may have been too much for her to continue living.

"I know if I had been in a different situation and did not have the money for private counselling I think- If I had to wait a few months for therapy I'm not sure, to put it bluntly, if I would have been here anymore and (pause) yeah, that worries me." Patient 8

Two patients went on further to reflect that there had been a lack of investment in anxiety as a medical condition or illness, in terms of understanding the causes, developing treatment to manage it, and providing resources for patients to access therapy. Patients commented on the availability of diabetes nurses in general practice but no mental health nurses.

3.5.4 Patients' views on the difference between anxiety and depression

Patients' accounts suggested that there are differences between anxiety and depression, and that it was important that they were considered as separate, distinct, conditions.

<u>How it feels to experience anxiety and depression</u>

Patients with experience of depression reported feeling *"low"* (Patient 2, F18-25) or having an "*absence of feeling"* (Patient 1).They also talked about depression as having *"no emotion at all"*

(Patient 20), or being "*worthless, suicidal"* (Patient 3). This was in contrast to anxiety, which was described as having too many thoughts. Patients also commented on the conflict between the two conditions in terms of symptoms.

> *"Anxiety for me is a fear of not achieving things, letting people down, it tends to result in me being very, very active. Whereas when you get a bad bout of depression it kind of tries to drag you the other way, so you don't feel like doing anything, you don't feel like being bothered or whatever. So, for me there is a real conflict there and there is a real battle, so I've got this drive to get things done 'cos I'm worried that I haven't. I mean it's clearly different, and the anxiety never goes away." Patient 4*

Most patients (n=15) also reported clear differences between the two in terms of impact. They reported that whilst the depression made them less engaged or less interested in life, anxiety prevented them from engaging in anything at all, and was potentially more debilitating on a daily basis. There was a sense that anxiety was the 'ever-present' condition, with depression tending to be more short-lived, although still devastating to deal with. This was important in terms of management, as several patients commented on seeing a flare-up of anxiety symptoms as a warning sign for preventing the onset of depression.

> *"Anxiety is quite bad to be fair. The anxiety is going out in public, when I'm trying to breathe and my heart hurts and I'm watching people looking at me. The depression you can just cry to yourself and then you go on." Patient 7*

<u>Considering anxiety and depression as separate, distinct conditions</u>

These differences meant patients felt it important that GPs diagnosed and considered anxiety separately from depression. However, patients who had not received a clear diagnosis of anxiety, commented that anxiety was not usually viewed as a medical condition in its own right. It was important that equal consideration was given to the management of the symptoms of both anxiety and depression and *"treated more separately instead of linked together"* (Patient 2). When this did not occur, conversations with their GP around medication were unproductive, with one condition not recognised, and/or not treated.

> *"I don't think anxiety was quite as well diagnosed… I had depression and when I look back actually no, I had some anxiety, the anxiety wasn't treated as it wasn't treated as a separate thing." Patient 12*

Moreover, for these patients, anxiety was frequently reported to be a cause, or a pre-cursor to depression, rather than existing alongside it.

"Anxiety comes first. Anxieties give me panic, makes me scared, afraid. I get palpitations, sweaty and hot, where I have unreasonable thoughts and obsess over things, become a little bit paranoid. Whereas depression is what comes afterward. I think I can separate them quite [well], 'cos I know one's going to follow the other. But what I have been trying to do is once I know the anxiety is there, is manage that better, so I don't get to the depression." Patient 9

For four patients, there was a lack of clarity between what anxiety and depression were when thinking about them as separate constructs. They had not asked their GP about the distinction, and were unclear if the medication they were receiving was meant to help the symptoms of one or both conditions.

Three patients were unsure about whether it was important that anxiety and depression were considered separately by the GP. They reflected on the differences in the causes and in how the symptoms of each condition made them feel, but were undecided if that meant there was a need to for them to be discussed separately within the consultation. For these patients, their GP had never distinguished between anxiety and depression when discussing their mental health, and they had always thought of them together. Most remarked that being interviewed was the first time they had ever given it any consideration.

"I've never thought about it….I don't know- I don't even know whether I know the difference other than when I'm anxious I have a knot in my stomach, when I'm depressed I'm very flat and grumpy, you know, I don't want to go to the party, I don't want to go out, don't make me do that, I don't care." Patient 20

<u>How anxiety and depression are viewed within society</u>

Nearly all patients reported that within society, there is less awareness and understanding of anxiety compared with depression. Patients commented that *"anxiety is talked about more, but it is less understood"* (Patient 8). Whilst the stigma of depression was viewed as decreasing, patients did not think this was happening for anxiety. Several patients referred to "*celebrities"* (Patient 4) helping to break down stigma around mental health and depression, but that this was not happening for anxiety as a separate condition.

"There's much less of a stigma attached to depression now and that's fantastic. I'm not sure that anxiety is quite the same. No, it's not, definitely. People tend to discuss depression on social media quite a lot now, and are much more open about it. So there's celebrities that are coming out and they have this, that, and the other form of depression, but you don't ever hear people talking about anxiety as a separate condition. And you don't very often hear people

talking about anxiety as the cause of depression, nothing like that. So no, I don't think it's quite the same. I don't think there's quite the level of understanding." Patient 4

Patients also reflected on the use of language around anxiety and depression, and there was a sense that they felt the word 'depression' was viewed by other people as more serious than the word 'anxiety', perhaps because anxiety has become so common within everyday conversations.

"You can be anxious before you go out to take part in a play, or you can be anxious before you make a speech, but then once you've done it, that's like the butterflies and it's not the same as anxiety, it's not the same as- we have anxiety and feeling anxious, it's so different from everyday life, anxiousness. It's unfortunate that we use the same words but that's what we have don't we?" Patient 3

3.6 Results - Therapists

Nine therapists were interviewed (Table 7) between October 2018 and February 2019. Five of the interviews were held face to face at the BWT service, and the rest were held by telephone. The interviews lasted between 25 to 45 minutes (mean: 34 minutes). Two thirds of the therapists interviewed were women (n = 6, 66.6%), and the mean age was 32.8 years (SD 8.7 years). Those interviewed had been working in IAPT between less than six months and up to 10 years. Most of the therapists described their professional background as having a psychology degree (n = 4, 44.4%) or being a CBT therapist (n = 3, 33.3%).

Table 7 Characteristics and professional background of therapist interviewees

	All Therapists (n = 9)
Age: mean (SD) in years	32.8 (8.7)
Female: n (%)	6 (66.7)
Professional Background: n (%)	
Counsellor/counselling psychology	1 (11.1)
CBT therapist	3 (33.3)
Other: psychology degree	4 (44.4)
Other: support worker	1 (11.1)
Years qualified: mean (SD)	3.3 (3.3)
Years working in IAPT: mean (SD)	5.2 (3.6)
BABCP accredited: n (%)	3 (33.3)
Low intensity practitioner: n (%)	6 (66.7)

3.6.1 Therapists' views on the causes and symptoms of anxiety

Most therapists viewed anxiety as a result of a combination of internal and external factors, and talked about specific 'at risk' groups.

Causes of anxiety

When talking about causes of anxiety, therapists reported that they felt it was "*ingrained"* (Therapist 7) in some people, and that patients talked about always being "*worriers"* (Therapist 7). They explained this made it difficult for patients to identify the age of onset, as anxiety was something they felt they had always experienced. However, therapists commented that they tried to help patients understand anxiety was something that could be treated, and was not necessarily a fixed part of who they were.

> *"People quite often will say 'I'm a worrier', and almost laugh it off because it's I guess [it's] known maybe in our culture. But [they] might not necessarily realise how much worrying can affect us, and how much actually that might be an anxiety thing, not so much a personality characteristic." Therapist 4*

They also commented on the links with *"parental anxiety, upbringing, and expectations on young people in modern society"* (Therapist 1), with genetic predispositions enhancing vulnerability to environmental factors. Therapists also reported that stressful life events could be a trigger, such as changes or trauma, and that this was usually the point at which patients came into the service.

> *"It could be work [that led to the anxiety], it could be work stress or any related financial things, it could be break ups and- It can be because of early childhood experiences that may have been traumatic or difficult for the person to manage. Relationships could be anxiety, failures, people suffer from severe anxiety because they cannot cope with the pressure and the lack of time and the lack of quality of life." Therapist 6*

Groups at risk of anxiety

When asked about who they thought might be more at risk of developing anxiety, all therapists reported they felt younger people were now under more pressure, and this pressure had led to an increase in anxious symptoms in this group.

> *"There is so much pressure at the moment put on young people in terms of performance, in terms of university, with fees increasing, perfection. I think there's actually research that's just come out around that, and social media, and all of those factors will contribute to people*

becoming a lot more stressed and anxious, so I've definitely noticed that with young people." Therapist 1

The theme on the increase in anxiety seen in younger patients is discussed in further detail in Chapter 4.

Therapists also commented that they had seen an increase in younger men presenting to the service, however they reflected that they thought this might be due to a potential decrease in stigma around male mental health, rather than an increase in males being at risk.

Symptoms of anxiety

Each therapist described the symptoms of anxiety in a similar way. Each therapist made a distinction between the physical sensations of anxiety (e.g. palpitations, shortness of breath) and psychological symptoms (e.g. restlessness, feelings of dread), but explained that they were closely linked. In addition, the three high intensity therapists interviewed commented that anxiety was an inability to *"handle uncertainty"* (Therapist 3). They reflected that it was not clear if that was a cause or a symptom of anxiety, but that it meant patients were constantly worrying or thinking about something, until they were able to achieve "*certainty"* (Therapist 3).

When asked if there was a difference between anxiety and an anxiety disorder, therapists stated that both were at opposite ends on a continuum of severity. Therapists commented that anxiety might be the type of sensation that most people experience *"before a presentation at work, that kind of day to day language, and accepted as day to day problem without having a mental health disorder"* (Therapist 8). They explained that the point at which it would become a disorder, would be when symptoms were severe enough to impact on their ability to function, and when patients presented with the elements of the sub-types of anxiety, such as agoraphobia.

"There are a smaller group of people that do suffer with anxiety, to perhaps a clinical level, and that's when it steps into the anxiety disorder territory…. so essentially anxiety might be the low end of the spectrum, and anxiety disorder might be the high end of the spectrum, in terms of mild versus severe." Therapist 3

3.6.2 Therapists' experiences of how labels are used within the IAPT service

Therapists talked about the use of labels within the service. They said that although labels (such as depression, anxiety, and the subtypes of anxiety) were widely used within IAPT, and their use a mandatory part of therapists' work, IAPT therapists do not formally 'diagnose' anxiety.

Language used

Therapists said, when initially presenting in IAPT, patients often used words such as 'worry' and 'anxiety' to explain how they had been feeling or, if they were more familiar with medical terminology, they might use phrases like *"I suffer from social anxiety, or from health anxiety"* (Therapist 6). One therapist (Therapist 7) reflected that the language used by their patients had changed. When she had first started working in IAPT about five years ago, patients had tended to use words such as '*stress*' or '*depression*'. This same therapist went on to say that she thought this might be because the young adults who were now coming through the IAPT service, were more comfortable with the term '*anxiety*' compared with older patients.

> *"I feel younger people definitely are more comfortable using the word anxiety, so I think they would very much, you know, 'I'm feeling anxious' and I feel like that happens a lot less with older people. With older people it's 'I'm feeling stressed' even though it would be similar presentations, but it's almost like the language is different. I don't know if that's something to do with what the perception of an anxious person is, and especially if it's somebody who's quite high functioning, highly functioning and anxious, you know, they're like well 'no 'cos I'm working every day and I'm going out and, you know, I do everything I need to do so therefore I'm not anxious and I must just be stressed'" Therapist 7*

Therapists reported that they were also careful in the language they used with patients, and might use terms such as 'panic' instead of 'panic disorder', or 'social anxiety' instead of 'social anxiety disorder'. They commented that they felt by doing this, they were able to build better relationships with their patients, as it kept an element of normality to the discussion, without feeling like they were specifically categorising them. They also stated that, where possible, they would mirror the language used by patients.

> *"I tend to just try and use a language that they use rather than put it in my own language, to try and help people understand it in their own way and their terminology, rather than them potentially- or confuse them or worry about it." Therapist 5*

Value and impact of labelling

Therapists reported that they referred to anxiety, or an anxiety disorder, as a label rather than a diagnostic term. Therapists stated that they might introduce the sub-types of anxiety, such as panic disorder, or PTSD, but that they were clear with patients they were not formally 'diagnosing', but rather explaining that the symptoms they were experiencing were indicative of that condition. In addition, one therapist explained that she thought "*realistically the only people who can properly*

diagnose is either a psychiatrist or psychologist, and that's with a long assessment. I just don't think I have the ability to do that and I wouldn't really want to do that, which I think is unethical" (Therapist 5). However, therapists also explained that *"IAPT likes its disorders, it likes to quantify things"* (Therapist 5), and that this was because *"they [the disorder] help to specify or categorise the different treatments and the different* pathways" (Therapist 6). As such, therapists commented that they had to be "*really specific with a provisional [label]"* (Therapist 1) and that it was part of their role to share that label with the patient based on the assessment they had done. Therapists explained that they thought this was positive, as most patients found this very helpful, as it normalised their experience.

> *"I think most people feel kind of reassured in some way that what they're experiencing is something that's identifiable and can be understood. It's helpful sometimes to focus on one particular type of anxiety, and say to people 'you're experiencing this', so it could be excessive worry, generalised anxiety, things like this. People, yeah, often kind of like to know when they're feeling anxious, what it is that's going on for them." Therapist 2*

Yet, for some patients, therapists commented that labels could be unhelpful. They said patients might be reluctant to hear the label because it was a surprise for them, or because they had not heard of that type of anxiety before. Therapists also reported that sometimes patients took on the label in a way that could prevent them from trying to get better, i.e. they saw it as a part of who they were, rather than something that could be treated.

> *"I know that sometimes people will take labels and run with them, and then it will be 'I am this for the foreseeable future', rather than 'I've had an episode of this, I've been treated'. I think some labels get used incorrectly by patients so that kind of sense of patients saying 'I'm a bit OCD' or things like that, kind of mislabelling and misdiagnosing themselves as well. There sometimes can be the wording of 'my depression', 'my anxiety', which can feel very ingrained in somebody - and that can be hard to shift." Therapist 7*

Furthermore, labels could cause issues when patients presented to the service after being referred by their GP. Therapists reported that patients usually had not been given a specific diagnosis already by their GP, except perhaps *"mixed anxiety and depression, or clear diagnoses like OCD"* (Therapist 1). However, in situations where a GP had given a diagnosis, if the diagnosis did not fit with the label that the IAPT service had identified, therapists stated this could be challenging when working with a patient. It can *"hold a lot of power for some people"* (Therapist 5), in that they "*hold on"* (Therapist 5) to the diagnosis and to the type of treatment they think might be helpful.

"If they've been given kind of a diagnosis by the GP that then we don't necessarily agree on, then that's when it can present difficulties, because sometimes the patient will obviously have been given some kind of label, go away and have their own kind of thoughts and ideas based on what they've researched as to what might be helpful for them. Whereas we might have a kind of competing idea on what might be helpful, and then you've got that kind of conflict there around what we think and what their GP thinks, and what might necessarily be the right kind of treatment for them and the right evidence base. And that's when it can prove a bit tricky." Therapist 9

3.6.3 Therapists' experiences of treating anxiety within IAPT

GP referral versus self-referral to IAPT

When discussing GP referrals into the IAPT service, therapists reported that they no longer received many patients through this route. Instead, they stated that most patients called up the service themselves, having been advised to do so by their GP or having heard about the service in another way. Therapists commented that they thought this was positive, as it gave patients a sense of *"empowerment"'* (Therapist 14), and they were more likely to be motivated to change, and have *"more manageable expectations and clearer goals"* (Therapist 6). However, therapists also reported that self-referral suggested by a GP could be an issue if the GP did not have the time to explain how the service worked, or what therapy was about.

"Sometimes they have no clue what the therapy is about. The GPs won't have the time to explain, and say 'call this service, they are treating anxiety', but there are very specific ideas for entering the service and getting the treatment, because we cannot accommodate complex cases. And people may have physical conditions or long-term conditions, and co-morbid [mental health] that may be [related to] anxiety…and they come saying that the main problem is a physical one but we are not specialised to do that." Therapist 6

Therapists commented that this could make the management of anxiety challenging, as these patients might need longer to understand the process of how therapy would work. In some cases, therapists reported that these patients would be too complex for the service to help, particularly if they had co-morbid conditions, such as psychiatric disorders, or severe symptoms.

Treatments for anxiety

When first starting work with a patient, therapists reported that normalising symptoms was a very important initial phase, alongside explaining that there are ways to deal with anxiety.

> *"I guess try and normalise it [anxiety], starting off just that we all experience this, it's normal. I guess try and find a little bit more about it in terms of where it's coming from and how it's impacting them, and the degree of the impact. But I guess first of all I guess responding to that in terms of normalising it first and foremost because actually… [when they are] quite distressed and going through these things, you know, it's just actually [important to] normalise that for them [and it] can help a little bit." Therapist 5*

Most interventions for anxiety were delivered at low-intensity (step 2 in IAPT services), such as guided self-help, psychoeducational groups, or computerised CBT. All therapists emphasised the importance of psychoeducation, and helping patients to understand their anxiety to enable them to get better. They stated that if patients were able to be aware of the symptoms, the links between the physical and psychological symptoms, and what may be making them worse, then they would be in a better position to understand what they could do to improve them. Therapists talked about how they helped patients to learn how to *"break the cycle of anxiety"* (Therapist 6) by focusing on behaviour and thoughts.

> *"You'll go through [the] ABC cycle kind of thing, and you'll start asking them to make links between the physical symptoms, the avoidance, the safety behaviours, the thoughts, and try and start to make links with that. I suppose that's where the difficulty can come about, if people can't see the connection between how the thoughts are impacting on the behaviours, 'cos we look a little bit at the physical in terms of relaxation and psycho-ed around it, but we're mostly focussing on the behaviour and thoughts. That can be a bit of a challenge if they're not seeing how that's interplaying, and how that kind of vicious cycle is being maintained." Therapist 7*

Reflections on NHS primary & secondary care

When discussing the management of anxiety at step 2, therapists reflected that whilst they thought this was an appropriate level for short-term treatment, they did not think it was adequate in terms of the long-term effectiveness.

> *"People will come back. We get people who have had lots of past episodes with us. They have improved but temporarily, not permanently. I would like to see more treatments in terms of*

what we offer. We are quite focussed on CBT, what about the future and how do we maintain that and not have a relapse - so it doesn't address a lot of that." Therapist 6

In addition, some therapists reported that there was a lack of evidence-based treatment for patients who did not fit clearly into IAPT protocol categories, such as generalised anxiety disorder or panic disorder. Therapists suggested patients who had multiple types of sub-threshold anxiety, or a mix of anxiety subtypes, might therefore not receive an intervention that would work for them.

"People do present that don't fit the protocol of one specific anxiety disorder, but they do have fairly debilitating anxiety, and I suppose it is that kind of smesh board of just trying a few different half techniques that is lacking in the evidence base. Actually, how difficult that might be for clients, 'cos then I suppose they're getting almost a lucky dip. They might get it where it works really well and they manage to find the right combination for them, but equally they could leave the service with not having had any IAPT specific treatment and become quite demoralised to the entire thing." Therapist 7

Nonetheless, therapists also emphasised that the ability to be flexible with the interventions they can offer patients was a large strength of the IAPT service.

When asked to reflect on the management of anxiety by GPs, therapists reported that they thought GPs were too busy to be able to manage anxiety, but that was the role of the IAPT service.

"I don't think GPs have the time to manage anxiety. I think if someone's had anxiety, by the time they've said something they've normally had it for a long time, and it takes some time to explain it, and I sort of feel like GPs are under too much pressure to actually work through it with them. I think it's a big relief to GPs to say 'just phone this number', and I think that that can just sometimes be as helpful for us to do the work rather than them to do it, 'cos they've got a million other things to do, so I think that that's probably pretty positive support for GPs to say 'these are the people to go to, they'll explain everything.'" Therapist 8

However, therapists also commented that they would like to see GPs working closer with the service, with more of a multi-disciplinary relationship, particularly when patients were on medication such as benzodiazepines long-term.

"Whilst we're engaging in treatment, it doesn't feel like the GP has much of a role at all, apart from to kind of respond to any medication management needs, or to be there if any kind of risk management concerns come up. But apart from that…it doesn't feel like there's that kind of multi-disciplinary relationship there. Which certainly for some patients where they do have good relationships with their GPs, and they see them quite regularly, that could be quite helpful

for them to kind of play a part in that treatment plan, as well to help facilitate the recovery." Therapist 9

Therapists reported that they felt early education was key to preventing anxiety becoming an issue for patients. Some therapists stated that they thought this should be provided in schools from an early age, whilst others felt universities or employers should fill this gap.

> *"Prevention can be a really helpful technique, so getting people to really understand those symptoms, and to know what they mean. And [to] look after their wellbeing quite well early on can have [a] really good preventative function [in terms of] developing an anxiety disorder. So rolling out educational courses in schools, universities, employers, etcetera, I think [that] is probably the way forward." Therapist 1*

3.6.4 Therapists' views on the differences between anxiety and depression

Therapists said there was a difference between the presentation of anxiety and depression, and that they treated the two conditions separately.

<u>Difference between the presentation of anxiety and depression</u>

Some therapists commented that they generally found depression to be focused on rumination about the past and "*going over certain things that had already happened"* (Therapist 1), and anxiety related to worries about the future, such as *"what's going to happen or if I'm going to succeed"* (Therapist 6). Other therapists stated that this distinction was not as clear-cut, and that depression could be experienced as a lack of desire to do things in the future, and anxiety could be a combination of past rumination that translated into future worries.

> *"Depression is lack of desire to do anything in terms of the future, getting on, going out, doing things and making plans. Whereas anxiety can be a combination of thinking about the past and ruminating over things that have happened in the past, but that feeds into worry about the future as well." Therapist 3*

Therapists commented that often anxiety appeared to occur before the depression, and that it might be part of what was maintaining the depression for the patient. Therapists reported that not all patients had insight into this, and that they would spend time talking to patients about timelines so that patients and therapists understood which condition had presented first.

"Often it is clear with somebody experiencing anxiety it leads to depression, so I kind of ask about the timeframe, about what came first basically and 'what do you think underlies the other?' If you're going to focus on anxiety you have to be quite clear that that is the thing that's maintained depression for people and it is underlying depression, so we try to check that out with people and whether they have insight to do that as well, as much as I can." Therapist 2

Some therapists commented that they thought anxiety had *"more of an impact"* (Therapist 7) on patients, as it felt like the more constant condition, in comparison with depression which might come and go. They also reported that patients talked about the symptoms of anxiety having the greatest impact, and therefore some patients indicate a preference to work on these over the symptoms associated with their depression.

"I: Generally speaking, is there a preference for which they choose to work on?

T: The anxiety because it's the most disturbing, like in day-to-day spaces. They find the anxiety symptoms more disturbing because it impacts a lot on the body and the sensations and the functioning and the sleep and the appetite. So depression comes- it's usually- people who address the anxiety and find the coping strategies to manage those symptoms, they then have an improvement in their depression too because they are more- they can cope better." Therapist 6

In terms of the frequency that therapists saw patients, where anxiety was the primary problem, estimates ranged from *"50% if not higher"* (Therapist 4) to "*75%, to 90-100% some weeks"* (Therapist 3). Most therapists reported that they *"probably see anxiety more than depression"* (Therapist 5).

<u>Distinguishing between anxiety and depression</u>

Some therapists commented that part of their role was helping patients understand the difference between anxiety and depression, and they used tools such as the PHQ-9 and GAD-7 to do this, along with "*using diagrams and help unpick it"* (Therapist 7). They reported that they *"separate them for a reason to try and make treatment clearer and more effective for people"* (Therapist 2).

"There might be some bits that overlap but it will still kind of help to unpick it because, as the assessor and therapist, that's what we should be doing." Therapist 7

However, some therapists reported that if *"they [the patient] are describing both [conditions] as quite intense, then we don't try to distinguish them"* (Therapist 6) when talking to the patient in the assessment. This was because they did not like to *"categorise the separate symptoms, to make them*

feel like I want to put them in a box" (Therapist 6). However, therapists stated that they have to categorise patients for the purposes of the electronic record in IAPT.

Differences in management of anxiety and depression

All the therapists stated that anxiety and depression are treated separately within IAPT. As such, regardless of whether the patient was aware of the distinction between the two, therapists reported that, as part of the IAPT process, co-morbid patients were asked which condition they would like to work on first. This could be challenging for patients to hear that they had to prioritise whichever one was worse, or having the most impact. If patients were unable to decide, the therapists stated that they followed NICE guidelines, which recommended treating depression first.

> *"It can be quite a difficult thing to hear 'well actually you have to prioritise which one is worse.' Quite a difficult experience for the patient and quite often they don't really know, so that's what our role is, to give them a bit more to help them to understand a little bit more about the anxiety and depression, so that they can make that decision." Therapist 1*

Therapists reported that it was more challenging to work with patients with co-morbid depression and anxiety, as *"one could be a barrier to receiving treatment for the other"* (Therapist 1). For example, symptoms of depression such as lack of motivation or energy could prevent engagement with CBT for anxiety, but they stated this could also happen in reverse, with anxiety symptoms such as worry or avoidance being an issue when treating depression.

> *"Patients might say 'I tried to do that, but I couldn't do it because I felt really low'. So you start to work on that but the anxiety then prevents them from doing that so, yeah, it does make things more difficult, but for most of the clients we see are co-morbid in reality." Therapist 5*

Although therapists stated that the assessment process was the same for both conditions, they outlined how the interventions to manage each condition differed. Whilst interventions for anxiety were focused on psychoeducation or exposure therapy, for depression it tended to focus on behavioural activation, or talking therapy.

> *"For anxiety disorders we only offer cognitive behavioural therapy, whereas for depression people can either access cognitive behavioural therapy or counselling, and that's just according to the kind of NICE guidance, why we offer it like that." Therapist 9*

3.7 Discussion

3.7.1 Summary of findings

This study focused on understanding how patients and practitioners view and experience the identification, diagnosis and management of anxiety disorders in primary care. There was some tension between the views of each group in terms of the key themes. The key findings from each group of interviewees in relation to these themes are summarised in Table 8, and discussed below.

Table 8 Findings from each interview group on key themes

Key themes	GPs	Patients	Therapists
The value of a diagnosis	Reluctant to diagnose an anxiety disorder for several reasons: they did not have enough information; they thought it could be unhelpful or stigmatising; or because it would be the role of the psychiatrist to make a formal diagnosis. There was recognition that some patients may find a diagnosis helpful, but they had limited time to discuss labels with patients.	Valued having a diagnosis. It led to acceptance of anxiety as a medical condition and helped them to think about how they were going to get better and the treatment they needed. Patients wanted GPs to be able to take the time to explain their diagnosis.	An emphasis on labelling symptoms by category or subtype in IAPT. However, they do not diagnose anxiety in the formal sense. Recognition a label could be helpful for patients.
Distinguishing between anxiety and depression	GPs felt there was a close relationship between anxiety and depression, and thought that depression was more likely to be identified first. However, they did not tend to distinguish between the two conditions when discussing mental health with patients.	Patients felt that anxiety was a potential cause of their depression, and that it could have greater impact on their daily lives. It was therefore important that anxiety and depression were considered as distinct disorders.	Therapists identified anxiety as a potential cause of depression. They tend to distinguish between the two conditions when working with patients, as this enables better understanding of mental health, and more effective treatment.
Contrasting views on treatment	GPs held the view that patients had a preference for taking medication, rather than 'self-help'. This was compounded by the considerable wait times to access therapy through the IAPT service.	Most did not view taking medication as a positive choice, and were reluctant to do so. However, the considerable wait times for therapy meant they felt they had limited alternative options.	Patients who self-referred into IAPT (compared to GP referral) were described as more motivated to change. Although therapists recognised the competing demands on GPs' time, they wanted GPs to work closer with the service.

GPs and therapists identified young adults as being at risk of anxiety, and GPs also recognised that elderly patients were at risk. Therapists did not mention the latter, perhaps because this patient population does not self-refer to IAPT services, and are less readily referred by GPs than those of a younger age (Pettit et al., 2017). Over-65s comprise only 7% of referrals to IAPT (Age UK, 2020). Patients mentioned that they were reluctant to seek help from their GP because they were concerned about wasting GP time and that symptoms were not severe enough.

GPs were reluctant to diagnose an anxiety disorder early on because they felt they did not have enough information initially to make a diagnosis, or because they thought it could be unhelpful or potentially stigmatising for the patient. Some GPs also felt it would be the role of the psychiatrist to make a formal diagnosis. Therapists were clear that whilst that there is an emphasis on labelling symptoms by category, or subtype, the IAPT system does not encourage them to formally diagnose anxiety. However, there was recognition from both GPs and therapists that some patients wanted a label, or that it could be helpful. Patients' accounts supported this, as they indicated they valued having a diagnosis, and that it led to acceptance of anxiety as a medical condition and helped them to think about how they were going to get better and engage with treatment. For many, this was important in their progress towards recovery. Patients also wanted GPs to be able to take the time to explain their diagnosis, yet GPs commented on the limited time that they could give to patients. However, GPs encouraged the use of follow-up appointments to mitigate this, and this also provided the continuity of care that patients viewed as important. In contrast, whilst IAPT therapists are able to give more time to discuss labels, they are not able to provide long-term continuity of care (on average, patients receive only 6.9 sessions (Baker, 2020)). This may be particularly pertinent for chronic recurrent conditions, such as GAD.

In terms of treatment, some GPs thought that patients had a preference for medication. However, most patients did not view taking medication as a positive choice, and were averse to doing so. Patient reflections that there has not been enough investment in anxiety drew parallels with the GP data, whereby GPs described limited availability of those trained in mental health, and secondary care as being non-existent for this group of patients. Both GPs and patients also noted the considerable wait times for IAPT therapy. Therapists recognised that patients who self-referred into IAPT (as opposed to being referred by their GP) were often more motivated to change, and although they recognised the competing demands on GPs' time, they wanted GPs to work closer with the service and adopt a more multi-disciplinary approach.

Patients and therapists spoke about anxiety as being a potential cause of depression, and that it could have greater impact on their daily lives. In contrast, whilst GPs felt there was a close

relationship between anxiety and depression, most GPs reported depression as being the condition they were more likely to identify first. On the whole, therapists reported that they distinguished between the two conditions when working with patients, as this enabled patients to better understand their mental health. It also led to more effective and appropriate treatment. Patients reiterated the importance of considering anxiety and depression as distinct disorders, and explained that when this did not happen, the anxiety was not recognised or treated. However, for the most part, GPs did not tend to distinguish between anxiety and depression when discussing mental health with patients.

3.7.2 Strengths and limitations

The use of in-depth interviews allowed interviewees to raise issues that were salient to them. Conducting data collection and analysis in parallel enabled early insights to inform later interviews, and to establish when data saturation had been reached. The option of telephone interviews may have encouraged individuals to take part in the study (Sturges & Hanrahan, 2004). In addition, designing the topic guides for each set of interviews in parallel, and conducting interviews with the three different groups of participants in parallel, ensured key areas were covered with GPs, patients and therapists, and allowed insights from each to inform the focus of the other interviews, aiding later triangulation of GPs', patients' and therapists' views during analysis .

Purposively sampling participants helped toward achieving maximum variation in each group, in terms of, for example, age and gender. We cannot assume, however, that the views expressed will be representative of other patients and practitioners. The research was all based in Bristol and the surrounding area. Only one male under the age of thirty-five was interviewed. Our difficulty in recruiting male patients might be because young men are often uncomfortable, or unwilling, to talk about their mental health (Lynch et al., 2018). In addition, only one patient was interviewed was from an ethnic minority. Ethnic minorities are frequently under-represented in research (Redwood & Gill, 2013), and in this study, the practices that responded with expressions of interest to support recruitment did not have large ethnic minority populations.

We recruited patients through GP practices who already had an anxiety symptom or diagnosis code in their recent medical history. Consequently, this study does not capture the views and experiences of those who have not yet sought help for anxiety. All interviewees volunteered to be interviewed, and therefore, those who took part were probably patients or practitioners who viewed themselves as having particular knowledge and experiences of anxiety. The study invitation clearly stated the research was focused on understanding anxiety. It is therefore possible that patients who strongly

identified as having anxiety were more likely to take part, and they may have more severe symptoms, or have different views on the importance of diagnosis. Likewise, although only one GP reported an additional qualification in psychiatry, it is possible that GPs interviewed may have had more of an interest in mental health than those who did not respond to the study invitation. In addition, all the therapists interviewed worked within the BWT service. Recruitment of therapists from other talking therapies services was considered, particularly as IAPT services differ across the UK in terms of organisation and therapies provided. However, BWT was the service available to the GPs and patients interviewed. Also, time was limited and within this service there were therapists who differed in terms of their age, gender, qualifications, level of training, and length of time working in IAPT. It therefore provided the sample needed to achieve the aim of these interviews, i.e. to gain insight into the management of anxiety from the perspective of practitioners trained in psychological treatment.

3.7.3 Comparison with existing literature

Previous studies have also found that patients are concerned that GPs would view consultations about mental health problems as wasting their time (Rogers, 2001; Cromme et al., 2016), and find it difficult to disclose emotional concerns to GPs (Parker et al., 2020). As mentioned by GPs and patients in our study, time constraints can also make it difficult to discuss anxiety (Barnes et al. (2019). Patients emphasized that continuity of care is important to the disclosure and management of anxiety, and can help to facilitate a collaborative relationship whereby the GP is offering advice and facilitating decision making. Again, this is supported by the work of others (Buszewicz et al., 2006) . Having a collaborative relationship between the GP and patient is beneficial, and increasing patient education around their mental health empowers them to have more awareness and input into decisions around their treatment options (Saver et al., 2007). As patients in this study stated, having an understanding of mental health problems is important, and the consultation with the GP can be central for this (Parker et al., 2020). However, whilst research by Cape et al. (2010) indicated that coming to an understanding of mental health problems is primarily patient led, this study has found that consultations can also be driven by GP discussions around normalisation, diagnosis, and management.

GPs have been shown to normalise symptoms of depression to avoid over-medicalisation (Chew-Graham et al., 2002), as they have here in relation to anxiety, and there has been an ongoing debate about how useful it is to communicate psychiatric diagnoses to patients (Kelly, 2018). GPs have previously recognised the value of a label in identifying something as being ‘wrong’, but have been

reluctant to use medical labels for women with symptoms indicating postnatal depression, due to a lack of resources available for referring women (Chew-Graham et al., 2008). However, patients in this study emphasised that, if appropriate, receiving a diagnosis was important, particularly in terms of helping them accept their illness and engage with treatment. Thomas et al. (2019) have recently found that self-referral to IAPT is viewed by GPs as an important step toward patient recovery, and data from therapists in this study suggests self-referral led to empowerment and proactivity of patients.

Although depression and anxiety are often co-morbid, previous studies have not compared patients' and practitioners' views on anxiety and depression directly. This study specifically focused on the importance of such a distinction and highlighted that patients want them to be considered separately, despite this not always happening in general practice. Patients in this study reported experiencing anxiety as having more of an impact on their daily lives than depression, and existing evidence shows that over time, patients with anxiety have a longer, more chronic course than those with depression (Penninx et al., 2011). Indeed, this study highlighted that IAPT therapists treat the two conditions separately, in line with NICE guidelines (Clark, 2011).

3.7.4 Implications and future work

There is a reluctance to seek help for anxiety, and we need to understand why this is. Future research could explore the views and experiences of patients who have not yet sought help for the symptoms of anxiety.

GPs and IAPT therapists need to be aware that some patients may find being given a diagnosis of anxiety helpful, and that doing so can create an opportunity to educate patients about this specific condition. In addition, patients want anxiety and depression to be considered separately as distinct disorders, because of the greater impact of anxiety on their daily lives, and because it can be a precursor to depression. Currently, GPs do not generally distinguish between them.

Finally, there is a contrast between GPs' views that patients prefer to take medication, whereas patients often do not view medication as a positive choice and are averse to taking it. There is a need for GPs to explore patients' views on taking medication, and to reiterate that it is not an 'either-or' situation in terms of treatment.

Awareness of these issues – of patients wanting a diagnosis, of considering anxiety and depression separately, and concerns around taking medication – and more discussion around these, may lead to better outcomes for patients, particularly in terms of better engagement with treatment.

Chapter 4 Trends in the recording of anxiety diagnoses and symptoms in UK primary care

4.1 Chapter overview

This chapter details one of the two quantitative components of this thesis. The focus is on investigating trends in the incident recording of anxiety diagnoses and symptoms in UK primary care between 2003 and 2018, and to examine potential differences in trends according to age and gender. Whilst predominately detailing quantitative findings, the chapter also presents data gathered during the qualitative interviews with GPs and therapists that give insight into the rationale underpinning their coding decisions, providing detailed insight and indicating possible reasons for the trends observed in the quantitative findings.

The chapter starts with a brief overview of how GPs record clinical events in primary care, and of a dataset that captures this – CPRD Gold. This is followed by details of the quantitative methods and a description of the purpose of the qualitative data in this chapter, and how it relates to this study. Quantitative results are then presented in terms of describing trends in the recording of anxiety over time, with additional data presented according to gender, age, and diagnostic sub-type. Each section presents trends in coding of any anxiety code (either a diagnostic code or a symptom code), trends in diagnostic codes, and trends in symptom codes. In-depth findings from the qualitative interviews with GPs and therapists that relate specifically to trends in coding of anxiety are also presented. The chapter finishes with a discussion of both the quantitative and qualitative results, reflections on the strengths and limitations of the study, and situates the findings within the context of previous research and implications for future work.

4.2 Methods

4.2.1 Use of electronic health records for epidemiological research

Within the UK, anxiety is commonly managed by GPs in primary care. It is estimated that over 98% of the UK population are registered with a GP practice (Herrett et al., 2015). When GPs diagnose anxiety, or indeed any other condition, they record these consultations in patients' computerised medical records (de Lusignan & Chan, 2008). When each of these patients' electronic medical records are anonymised and combined into a substantial dataset, they enable large observational research, providing researchers with a highly detailed database and longitudinal follow-up data (Gnani & Majeed, 2006).

One of these databases providing such secondary data is the CPRD Gold (Walley & Mantgani, 1997), and this was the source of the quantitative primary care data used in this study. Other primary care databases include THIN (Bourke et al., 2004) and QResearch (Hippisley-Cox et al., 2004). One of the main distinctions between these databases is the source of the data in terms of the practice management software used by practices, with EMIS software most commonly used in the UK (Kontopantelis et al., 2013; EMIS Health, 2020). CPRD Gold data is derived from electronic records of practices using Vision practice management software (In Practice Systems LTD, 2020), with practices using EMIS software (EMIS Health, 2020) contributing data to CPRD's separate Arum database in recent years. In contrast, THIN data originates solely from practices using Vision (In Practice Systems LTD, 2020), whilst QResearch is comprised of data from practices just using EMIS software (EMIS Health, 2020). QResearch is the least utilised out of these three primary care databases, possibly due to the higher data quality seen in Vision based datasets (de Lusignan et al., 2015). Of the remaining two databases, CPRD Gold and THIN, there is around a 60% overlap between contributing practices (Carbonari et al., 2015). However, THIN has less practices and represents a slightly smaller proportion of the UK population compared with Gold (in 2015 THIN covered 6%; in 2017 CPRD Gold covered 8% (Kontopantelis et al., 2018)).

The population comprised within the CPRD Gold database is considered to be representative of the wider UK population with regard to gender and age, although there is some under-representation of practices situated within the inner-London area, and fewer smaller practices than that seen at a national level (Walley & Mantgani, 1997). Although the database has undergone several name-changes since its' inception, data has been recorded for CPRD since 1987 (Walley & Mantgani, 1997).

As stated above, all practices that have signed up to contribute to CPRD Gold use Vision practice management software (In Practice Systems LTD, 2020). For each registered patient, the record contains information such as registration dates, demographic details, consultation dates, tests, prescriptions, referrals, and clinical details. Practices use a comprehensive coding thesaurus of clinical terms to record presenting symptoms or diagnoses and, at the time of conducting this research, practices sampled used the READ code system (de Lusignan, 2005). GPs are also able to record additional information as 'free-text', but these are not shared with researchers as standard, due to the possibility of identifiable data being included. Provided the patient has not opted out of data sharing, practices provide these anonymised records to the CPRD Gold database on a monthly basis.

CPRD conduct quality checks on the data at both patient and practice level (Herrett et al., 2015). The assessment for patient data is termed 'acceptability', and the metric is determined by registration

status, validity of age and gender, and the number of recorded events in the patient's record. For practices, being classified as 'up-to-standard' (UTS) is dependent on the number of recorded deaths, and continuity of recording. The UTS date is calculated from the point at which the practice meets the qualifying criteria for these measures. At the point of data extraction for this study in July 2019, there were 17,269,826 acceptable patients, of which 2,852,166 were currently registered at 337 contributing practices. Despite having a very large dataset, with 'acceptability' and UTS data quality checks, interpretation of the data from these patients should still be considered carefully. As with any secondary data analysis, further steps should be taken by the researcher to assess potential issues in data completeness and accuracy.

CPRD provide the data to researchers in a combination of data files, ordered by the type of information they contain, such as prescriptions in the 'therapy' files, or READ codes in the 'clinical' files. Data dictionaries are also supplied to decode 'medcodes' and 'prodcodes' used in the files, which relate to READ codes and medication respectively. The analytic approach taken for this study is outlined in the following section.

4.2.2 Study protocol

The protocol for this study was approved by the CPRD's Independent Scientific Advisory Committee (ISAC) prior to undertaking data analysis.

Design and study population

This study examined trends in the incident recording of anxiety diagnoses and symptoms in UK primary care between 2003 and 2018. The study used a retrospective cohort design. The sample included patients aged 18 years or over, registered at a CPRD Gold practice between 1st January 2003 and 31st December 2018. Patient records had to be classified as 'acceptable' by CPRD, and from a practice that was considered UTS for at least one year prior to date of entry into the study (1st January 2003). In addition, patients had to be registered with practices that had contributed data for the whole of the specified study period, that is, between 1st January 2003 and 31st December 2018.

Data preparation

Data management and analysis was conducted using Stata version 15.1 (StataCorp LLC, 2020).

Using the criteria outlined previously, data were extracted from the CPRD Gold database by a member of the CPRD team on 22nd July 2019. Data were provided as multiple flat text files for each

of the following: practice details, patient details, consultations, immunisations, staff, clinical, therapy, referrals and tests. An individual patient identifier, unique to each patient, is used to link data across each data file. These files were imported into Stata and saved as Stata data files.

Initially, each data file containing 'medcodes' (i.e. those with clinical data containing recorded anxiety codes) was merged with the patient and practice files using the patient identifier. Each data file was then cleaned by removing patients with missing or inaccurate data. This included patients whose recorded transfer out date (the date the patient left the practice) or date of death was before the current registration date; those whose registration date was after the end date of the study (31st December 2018); and those who turned 18 years of age after: (i) the end date of the study, (ii) their transfer out date; or (iii) their date of death. Patients who were missing data on gender (n=5) were removed. Duplicate rows of data were dropped where the row had the same patient identifier and, for those with an anxiety code, the same patient identifier, 'medcode' (i.e. READ code) and recorded read code date.

In addition, patients who had a recorded anxiety code, but missing data on the date of the code, or whose anxiety code was recorded after the recorded date of death or transfer out date, were retained within the study population, but that code was not included in the analysis.

Codes for Anxiety

Those with a recorded diagnosis of an anxiety disorder and/or recorded symptoms of anxiety were identified using the READ codes outlined in the Appendix - A.7.

This READ code list was compiled from codes in the NHS UK READ Codes Clinical Terms (Version 3, April 2018) under the category of anxiety, and cross-checked with code lists from previous epidemiological research on recording of anxiety (Walters et al., 2012; John et al., 2016). In keeping with other studies focusing on anxiety, codes for phobias, obsessive compulsive disorders, and post-traumatic stress disorder were excluded (Walters et al., 2012; John et al., 2016).

Incident use of codes in each calendar year was examined in terms of: (i) those with a new episode defined by any anxiety code (symptom or diagnosis code); (ii) those with a new episode defined by a diagnosis code; and (iii) those with a new episode defined by a symptom code. A new episode was defined as a recorded symptom or diagnosis of anxiety in that year, with no prior recorded code of that category recorded in the previous twelve months. Patients may have had more than one episode within the study period, provided that there was a minimum of twelve months between episodes. For patients that entered the study in 2003, information on codes used in the year (2002) prior to the study start date were used to identify a new episode. This approach to defining a new

episode is in line with previous epidemiological research on anxiety (Walters et al., 2012), and is appropriate given that anxiety can be a chronic condition, and hence patients may be more likely to be presenting repeatedly. Patients had to have been registered with CPRD Gold for one year before the first recorded anxiety code, to ensure high quality assessment of incident cases.

Calculating person-years at risk

The CPRD Gold database provides researchers with longitudinal data on individuals, enabling the examination of trends over time in the general population. Each patient has a varying duration of follow-up, with the follow-up time commencing when they join the study. A patient's follow-up time ends at the end of the study, or earlier if they: (i) die; (ii) transfer out of a CPRD Gold contributing practice; or (iii) experience the event of interest – in this instance – an incident anxiety code. When measured in years, follow-up time is referred to as person-years-at-risk (PYAR).

PYAR was used as the denominator in this study, with patients entering the study on either: (i) 1st January 2003 or (ii) the last date of their current registration. Patients stopped contributing PYAR on the earliest of: (i) their transfer out date; (ii) date of death; (iii) end of the study, 31st December 2018; or (iv) date of the incident anxiety code.

In order to preserve patient anonymity, CPRD only provide year of birth. Patients that were identified as under 18 years of age, on the calculated date of entry, had their entry year amended to the year they turned 18 within the study period. Any anxiety codes recorded prior to this date were not included in the analysis.

Statistical analyses

The following analyses were conducted defining a new episode of anxiety as: (i) any anxiety code – either a diagnosis or symptom code; (ii) a diagnosis code; and (iii) a symptom code.

To investigate trends in the incidence of recorded anxiety codes over time, the incidence of recorded anxiety was calculated for each year of the study period. Annual incidence rates were calculated by dividing the annual number of incident cases by the total PYAR for each year, and are presented per 1000 PYAR. Estimates of 95% confidence intervals (95%CI) for these rates were calculated based on the Poisson distribution which is used when describing the number of events occurring over a period of time. Data were plotted on a graph to examine changes over time for all incident cases of anxiety, and then separately for diagnosis and symptoms. Data were also stratified by gender and age. Age was categorised into eight age-bands (<25, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years).

Poisson regression was used to estimate incidence rate ratios (IRR) that compare incidence rates between years, age-bands, and gender. Univariable poisson regression models were used to examine the association between year of recording, age, gender, and incidence of anxiety symptoms/diagnoses. IRRs and 95%CIs are reported. Multivariable poisson regression models that included year, age and gender were used to examine the independent effects of such factors. Sensitivity analyses were conducted to account for any clustering within practices within the multivariable model using the 'vce (cluster)' command in Stata, which stipulates that the standard errors "allow for intragroup correlation" (StataCorp LLC, 2020).

In addition, an interaction between age and year was included in the multivariable poisson regression model in order to examine whether trends in recording of anxiety over time varied according to age. This was formally tested using a likelihood-ratio test that compared models with and without the interaction term. An interaction between gender and year was also examined using the same approach in order to examine whether the trends in the recording of anxiety differed by gender.

Changes in trends over time were examined using joinpoint regression using Joinpoint Trend Analysis Software version 4.7.0.0 (National Cancer Institute, 2020), which is available for download from the National Cancer Institute Surveillance Research Program website (https://surveillance.cancer.gov/joinpoint/). It is designed to take time-trend data, and fit a joinpoint model with the minimum number of joinpoints allowed by the data thus identifying points at which there is a change in the linear slope of the trend.

In the first instance, the software models the minimum number of joinpoints (i.e. zero joinpoints, which would be a straight line). It then models (using the permutation test with a specified alpha level of p=0.05) whether adding an additional joinpoint would provide a better fit to the data. It continues to test this up to the maximum number of joinpoints specified by the user (up to two for this analysis, based on the recommended maximum number of joinpoints for the number of datapoints within the study). Through this process, the model identifies the best fitting model for the data and hence the years (with 95%CI) at which changes in trends occurred. The best fitting model for: (i) any anxiety code; (ii) diagnosis codes; and (iii) symptom codes were presented graphically. In addition, the annual percentage change (APC) for each of the identified trends based on the slope of each line 'segment' between joinpoints was also calculated.

Finally, in order to better understand the use of the wide range of diagnosis codes used by GPs in the study, additional analyses were undertaken. Diagnosis codes were grouped based on the ICD-10 classification system (World Health Organisation, 1992) according to whether the code used aligned

with non-specific anxiety codes (termed NSA), mixed anxiety and depression codes (termed MADD), or codes relating to panic attacks or disorders (termed Panic). These groups are in line with previous epidemiological research on anxiety (Walters et al., 2012). Annual incidence rates were calculated for each diagnostic group as described earlier and are presented per 1000 PYAR. Estimates of 95% confidence intervals (95%CI) for these rates were calculated based on the Poisson distribution. Data were plotted on a graph to examine changes over time for all incident cases for each diagnostic group.

4.2.3 Qualitative data

During the qualitative interviews held with 15 GPs and nine therapists that were detailed in Chapter 3, interviewees talked about trends in patients presenting with anxiety, the codes they use, and differences between coding of anxiety symptoms and coding for an anxiety disorder. These data are presented within this chapter to provide insight into possible reasons for the trends observed in the quantitative analysis.

4.3 Results

4.3.1 Descriptive statistics

Sample characteristics

The final dataset included 176 practices at which a total of 2,569,153 eligible patients were registered across the 16-year period (2003-2018). The median number of eligible patients registered per practice was 12,642 [IQR: 9,188 to 18,425]. There were 17,554,704.06 person-years of follow-up (PYFU) (median follow-up 4.9 years [IQR: 1.8 to 12.0 years]). There was a total of 264,127 incident anxiety codes (any anxiety code - either diagnosis or symptom) recorded over the duration of the study.

When focusing on either diagnosis codes or symptom codes, there were 216,126 recorded new episodes of anxiety diagnoses with 18,135,058.53 PYFU, and 197,217 new episodes of anxiety symptoms with 18,312,128.32 PYFU, over the duration of the study.

GP use of anxiety codes

A large number of READ codes – in terms of both diagnosis and symptoms – were used by GPs during the period of the study (Table 9 and Table 10).

Table 9 Frequency of Read codes used by GPs to record anxiety diagnoses – all diagnosis codes and diagnosis codes by sub-type group

	Code or code group	Total	
		Freq.	%
Diagnosis codes	anxiety states	93,989	43.5
	anxiety with depression	61,831	28.6
	panic attack	22,668	10.5
	anxiety state NOS	7,301	3.4
	panic disorder	5,740	2.7
	[X] mixed anxiety and depressive disorder	3,735	1.7
	generalised anxiety disorder	3,482	1.6
	chronic anxiety	3,125	1.5
	anxiety state unspecified	3,095	1.4
	agoraphobia with panic attacks	1,879	0.9
	[X] anxiety disorder, unspecified	1,549	0.7
	[X] mild anxiety depression	1,091	0.5
	[X] anxiety NOS	991	0.5
	[X] other anxiety disorders	984	0.5
	[X] generalised anxiety disorders	928	0.4
	recurrent anxiety	703	0.3
	[X] agoraphobia	630	0.3
	[X] panic attack	528	0.2
	[X] panic disorder (episodic paroxysmal anxiety]	430	0.2
	[X] social phobias	410	0.2
	social phobic disorders	226	0.1
	[X] persistent anxiety depression	204	0.1
	agoraphobia without mention of panic attack	153	0.1
	[X] anxiety state	140	0.1
	[X] anxiety neurosis	135	0.1
	[X] panic state	83	0.0
	[X] panic disorder with agoraphobia	49	0.0
	[X] other mixed anxiety disorders	29	0.0
	[X] other specified anxiety disorders	12	0.0
	[X] agoraphobia without history of panic disorder	3	0.0
	[X] social neurosis	3	0.0
	Total	**216,126**	**100**
Diagnosis codes - sub-type group	Non-specific anxiety (NSA)	112,898	52.2
	Mixed anxiety and depression (MADD)	66,861	30.9
	Panic attack or disorder (PANIC)	29,449	13.6
	Other anxiety codes	6,918	3.2
	Total	**216,126**	**100**

Many of these READ codes are neither usefully descriptive or discriminant between different disorders, or variants of anxiety. To better understand the use of these codes, one of the most widely used classification systems of psychiatric disorder, the ICD-10 classification system was used to group the diagnosis codes used by GPs (World Health Organisation, 1992). These were grouped according to whether they related to non-specific anxiety codes (termed NSA), mixed anxiety and depression codes (termed MADD), or codes relating to panic attacks or disorders (termed Panic). These grouped counts are presented in Table 9 (diagnosis codes) and Table 10 (symptom codes).

The most frequently used diagnostic codes were 'anxiety states' (43.5%), 'anxiety with depression' (28.6%) and 'panic attack' (10.5%), totalling 178,488 out of 216,126 (82.6%) of anxiety diagnosis episodes (Table 9). ICD-10 diagnostic codes were used less frequently, with 'generalised anxiety disorder' and 'mixed anxiety and depressive disorder' each representing less than 2% (n=3,482/216,126); n=3,735/216,126) of diagnostic codes. When the diagnostic codes were grouped, codes relating to NSA accounted for more than half of diagnosis codes used by GPs, with a further 31% attributed to the category of MADD (Table 9).

When recording anxiety symptoms, GPs mostly used three codes: 'anxiousness symptom', 'anxiousness' and 'worried' (Table 10). These three codes were used in the vast majority (n=192,243; 97.5%) of anxiety symptom episodes (Table 10).

Table 10 Frequency of Read codes used by GPs to record anxiety symptoms

Symptom codes	**Total**	
	Freq.	%
anxiousness symptom	104,278	52.9
anxiousness	69,775	35.4
worried	18,220	9.2
anxious	2,532	1.3
nerves	958	0.5
O/E - anxious	923	0.5
tension - nervous	448	0.2
O/E panic attack	64	0.0
nervous - nervousness	19	0.0
Total	**197,217**	**100**

4.3.2 Trends in coding over time

Incidence rates for GP recorded anxiety – any anxiety code, diagnosis codes and symptom codes – are presented in Figure 2 and Table 11. The incidence of any anxiety code rose from 17.8/1000PYAR in 2003 to 28.5/1000PYAR in 2018. Between 2003-2008, the incidence of anxiety diagnoses fell from 13.2/1000PYAR to 10.1/1000PYAR; after which the incidence of anxiety diagnoses remained fairly constant, before increasing in later years (Table 11 and Figure 2). The incidence of anxiety symptoms more than doubled over the entire study period rising from 6.2/1000PYAR in 2003 to 14.7/1000PYAR in 2018 (Table 11 and Figure 2).

Figure 2 Trends in the incidence of GP recorded anxiety (any code, diagnosis, and symptom codes) between 2003 and 2018

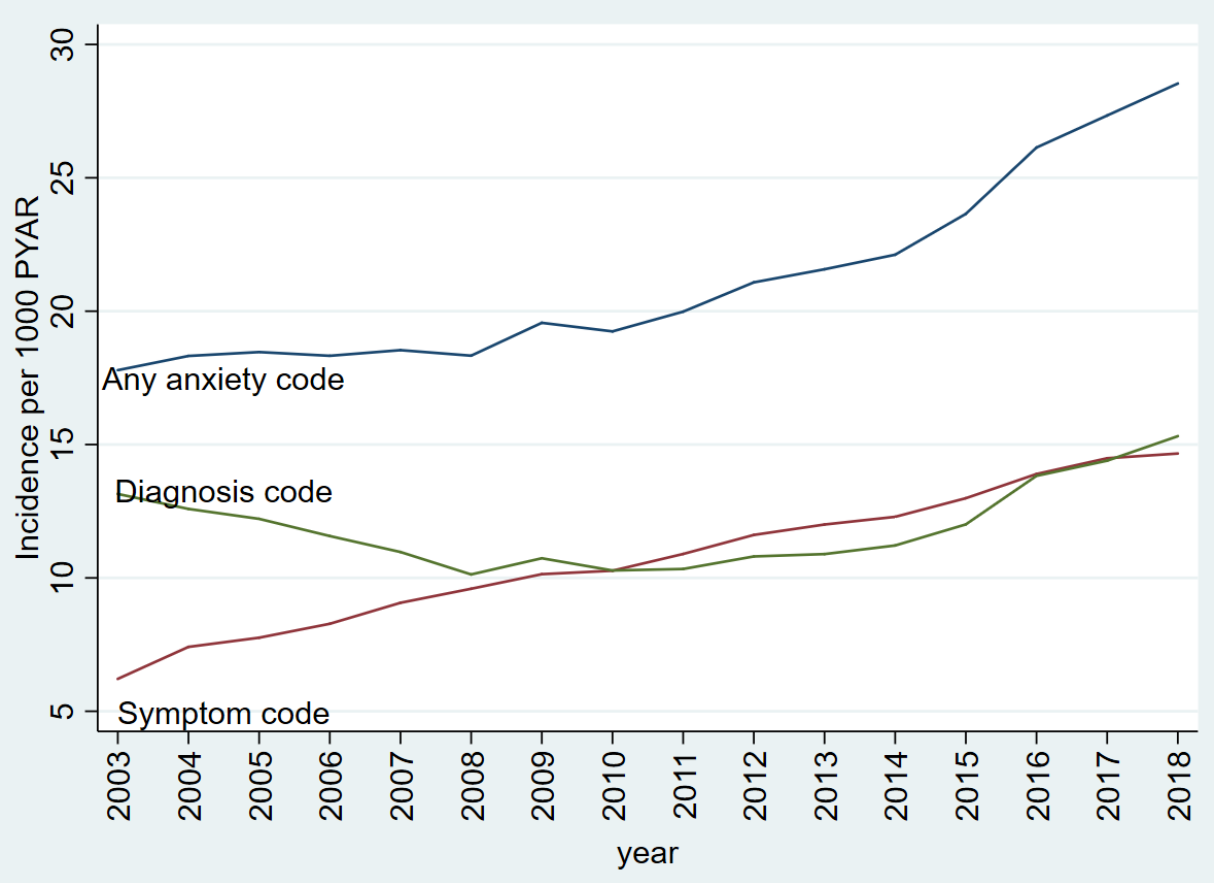
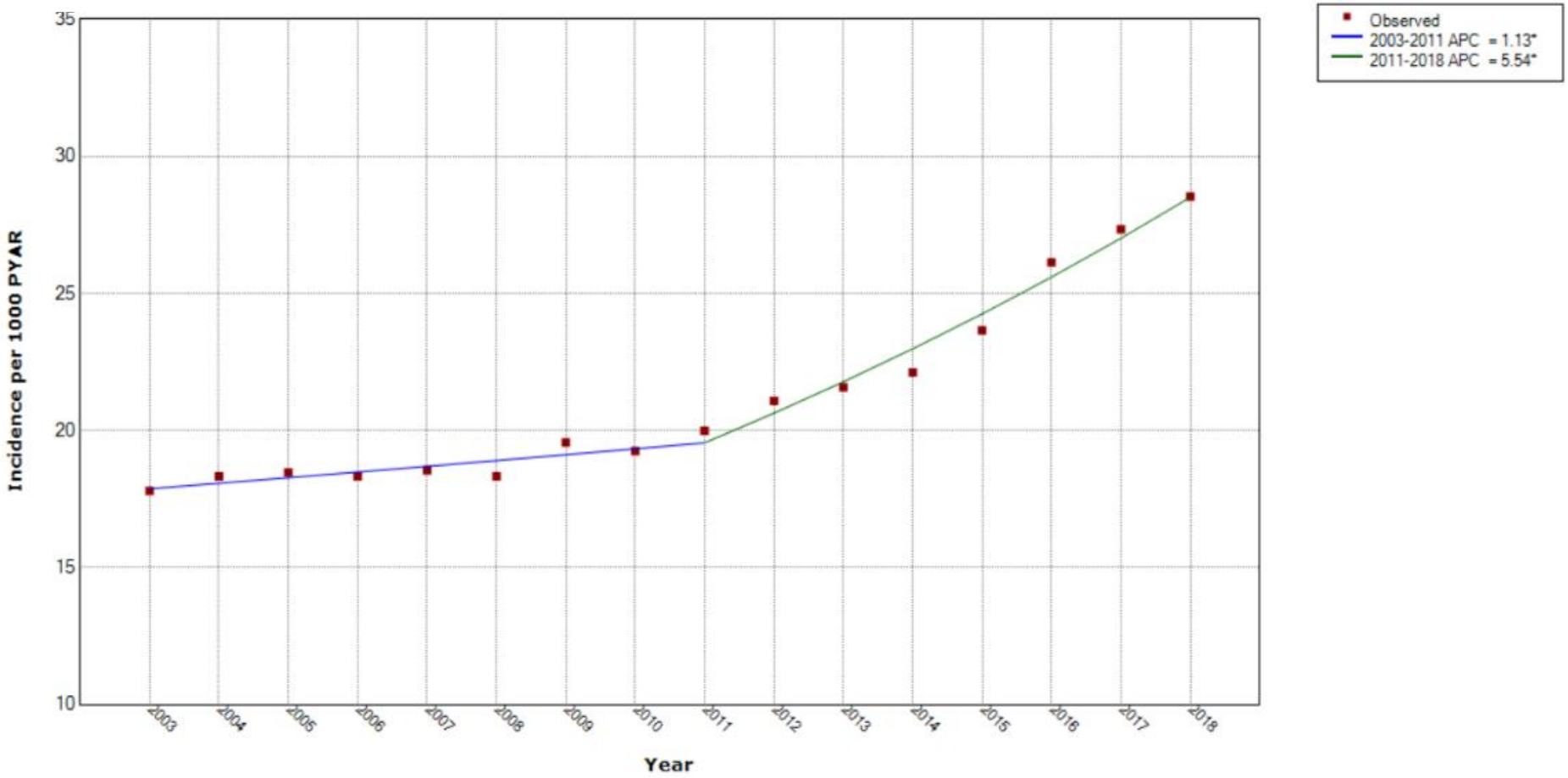


Table 11 Incidence rates for GP recorded anxiety – any anxiety code, anxiety diagnoses and anxiety symptoms – between 2003 and 2018

Variable		Any anxiety code				Diagnoses				Symptoms			
		N of events	PYAR	Incidence (1000PYAR)	(95%CI)	N of events	PYAR	Incidence (1000PYAR)	(95%CI)	N of events	PYAR	Incidence (1000PYAR)	(95%CI)
Year	2003	19653	1104840	17.8	(17.5-18.0)	14560	1107325	13.2	(12.9-13.4)	6905	1111271	6.2	(6.1-6.4)
	2004	20174	1101094	18.3	(18.1-18.6)	13957	1108836	12.6	(12.4-12.8)	8295	1118817	7.4	(7.3-7.6)
	2005	20139	1090525	18.5	(18.2-18.7)	13476	1103323	12.2	(12.0-12.4)	8668	1117151	7.8	(7.6-7.9)
	2006	19969	1089605	18.3	(18.1-18.6)	12808	1107044	11.6	(11.4-11.8)	9301	1123201	8.3	(8.1-8.5)
	2007	20165	1087647	18.5	(18.3-18.8)	12172	1109495	11.0	(10.8-11.2)	10215	1126579	9.1	(8.9-9.2)
	2008	20009	1091521	18.3	(18.1-18.6)	11324	1117947	10.1	(9.9-10.3)	10884	1134517	9.6	(9.4-9.8)
	2009	21323	1089956	19.6	(19.3-19.8)	12036	1120938	10.7	(10.6-10.9)	11525	1136496	10.1	(1.0-10.3)
	2010	21006	1091637	19.2	(19.0-19.5)	11582	1126857	10.3	(10.1-10.5)	11723	1141488	10.3	(10.1-10.5)
	2011	21808	1091322	20.0	(19.7-20.3)	11685	1130669	10.3	(10.2-10.5)	12465	1143857	11.0	(10.7-11.1)
	2012	23114	1096434	21.1	(20.8-21.3)	12318	1140092	10.8	(10.6-11.0)	13372	1151609	11.6	(11.4-11.8)
	2013	23645	1096102	21.6	(21.3-21.9)	12456	1143493	10.9	(10.7-11.1)	13846	1153634	12.0	(11.8-12.2)
	2014	24320	1099656	22.1	(21.8-22.4)	12910	1150993	11.2	(11.0-11.4)	14250	1159472	12.3	(12.1-12.5)
	2015	26088	1103179	23.7	(23.4-23.9)	13907	1158402	12.0	(11.8-12.2)	15137	1165447	13.0	(12.8-13.2)
	2016	28952	1107757	26.1	(25.8-26.4)	16137	1167097	13.8	(13.6-14.0)	16305	1173397	14.0	(13.7-14.1)
	2017	30252	1106657	27.3	(27.0-27.7)	16835	1169467	14.4	(14.2-14.6)	17031	1175674	14.5	(14.3-14.7)
	2018	31582	1106771	28.5	(28.2-28.9)	17963	1173081	15.3	(15.1-15.5)	17295	1179517	14.7	(14.5-14.9)

Changes in trends over time were examined formally using joinpoint regression. The best fitting model for any anxiety codes included one joinpoint at 2011 (95% CI 2009 - 2014), after which there was a substantial increase in the incidence of recorded anxiety codes (Figure 3).

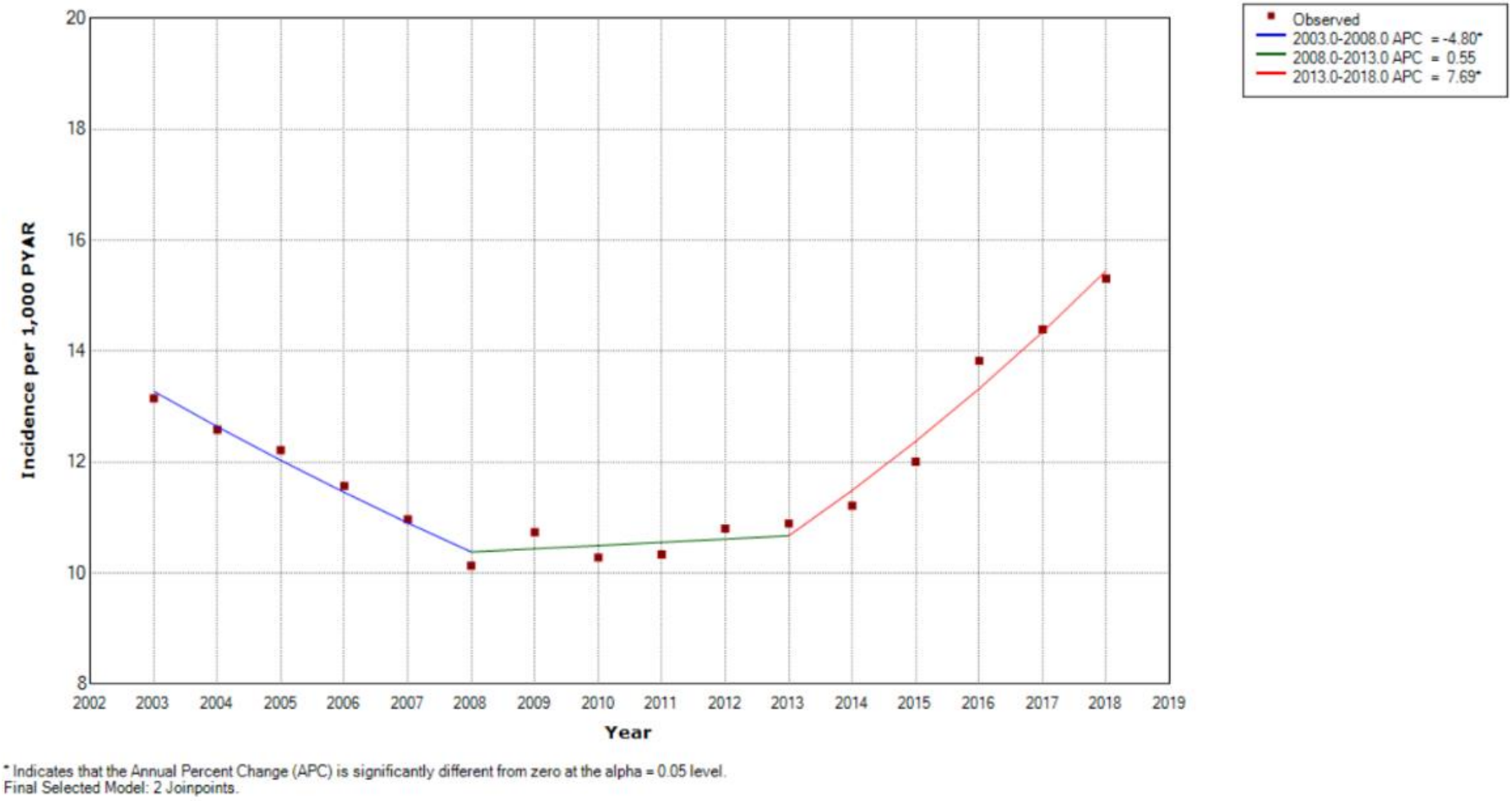
Figure 3 Best-fitting join point model of incidence of any anxiety code per 1000PYAR



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 1 Joinpoint.

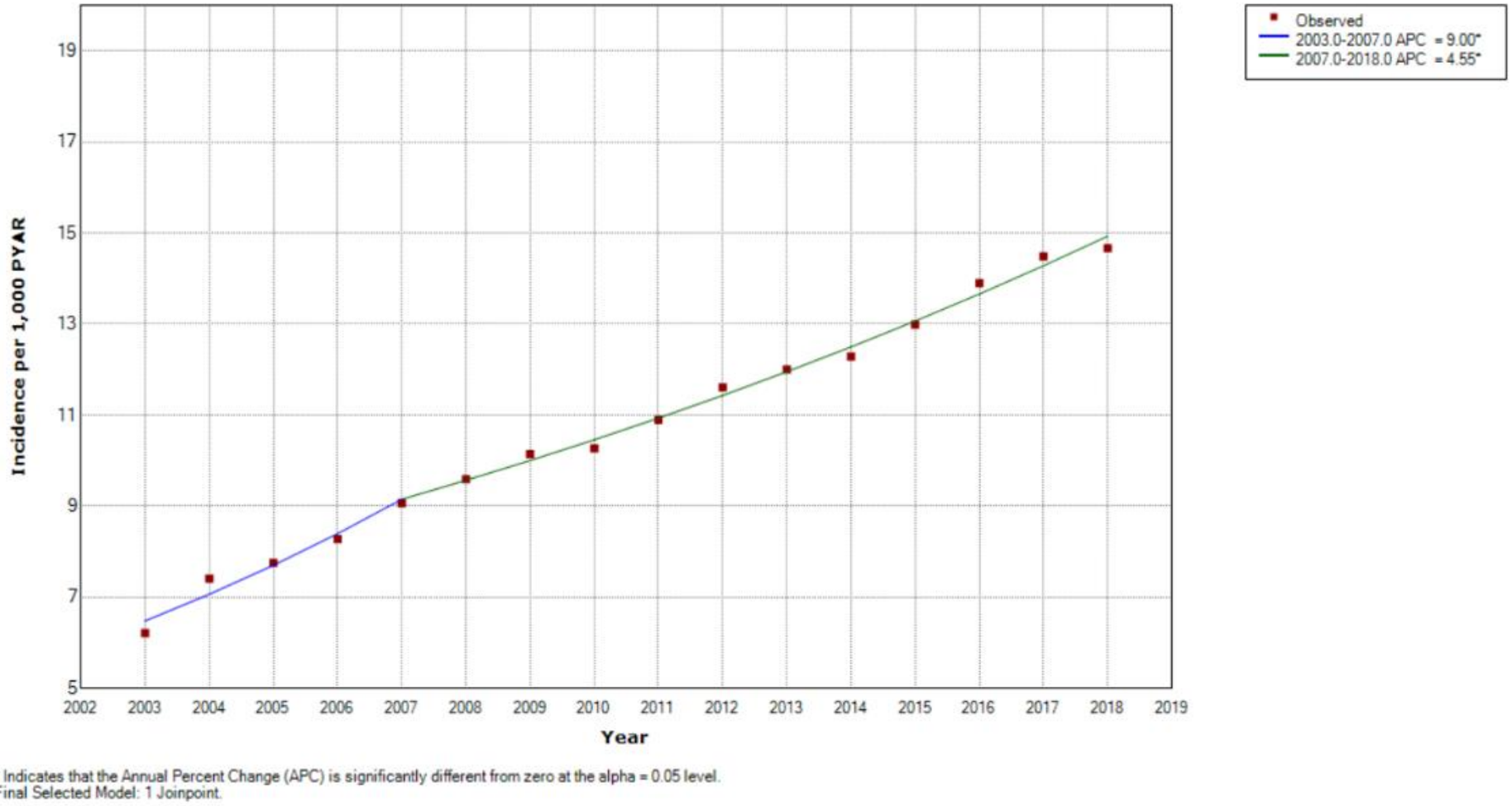
For diagnosis codes, the best fitting joinpoint model included two join points: one in 2008 (95% CI 2006-2011), after which the recorded incidence of anxiety diagnoses remained fairly constant, and one in 2013 (95% CI 2011-2016), after which there was a substantial increase in recorded incidence of anxiety diagnoses (Figure 4).

Figure 4 Best-fitting join point model of incidence of diagnosis codes per 1000PYAR



For symptom codes, the best fitting join point model had one join point at 2007 (95% CI 2005-2009), after which recorded incidence of symptom codes continued to increase, but at a slower rate compared with earlier years (Figure 5).

Figure 5 Best-fitting join point model of incidence of symptom codes per 1000PYAR



Incidence rate ratios (IRRs) for year, gender and age group for any anxiety code, anxiety diagnosis, and anxiety symptoms are shown in Table 12, Table 13, and Table 14. After adjusting for age and gender, the IRR for any anxiety code was 1.65 (95% CI 1.63-1.68) when comparing 2018 with 2003 (Table 12). For symptom codes only, after adjusting for age and gender, incidence more than doubled (IRR 2.41 (95% CI 2.34-2.48)) when comparing 2018 with 2003 (Table 14).

Recorded incidence of anxiety in women was nearly twice that of men (Table 12, Table 13, and Table 14). This was consistent across any anxiety code, anxiety diagnoses and anxiety symptoms (adjusted IRR: women compared with men: any anxiety code IRR 2.13 (95% CI 2.11-2.14); diagnosis codes IRR 2.07 (95% CI 2.05-2.09); symptom codes IRR 2.12 (95% CI 2.10-2.14)) (Table 12, Table 13, and Table 14).

Recorded incidence of anxiety (any anxiety code) decreased with age, with the incidence for those aged 85+ years being just over half (IRR: 0.58 (95%CI: 0.57-0.60)) that of the youngest age group (<25 years) (Table 12). A similar pattern was found for recorded incidence for anxiety diagnoses (Table 13), with the incidence for those aged 85+ years being approximately half (IRR: 0.48 (95%CI: 0.46-0.50)) that of those aged under 25 years, and for anxiety symptoms (Table 14), with a 30% reduction in the incidence of anxiety for the oldest age group compared with the youngest age group (IRR: 0.67 (95% CI 0.65-0.69)).

Sensitivity analyses were conducted to examine the potential impact of clustering within GP practices on findings. Whilst confidence intervals were wider, findings were consistent with the results that did not allow for clustering for any anxiety code, diagnosis codes, and symptom codes (Appendix A.8 - Table 31).

Table 12 Incidence rate ratios for GP recorded anxiety – any anxiety code

Variable		Any anxiety code					
		Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	1.03	(1.01-1.05)		1.03	(1.01-1.05)	
	2005	1.04	(1.02-1.06)		1.04	(1.02-1.07)	
	2006	1.03	(1.01-1.05)		1.04	(1.02-1.06)	
	2007	1.04	(1.02-1.06)		1.05	(1.03-1.07)	
	2008	1.03	(1.01-1.05)		1.04	(1.02-1.06)	
	2009	1.10	(1.08-1.12)		1.12	(1.09-1.14)	
	2010	1.08	(1.06-1.10)		1.10	(1.08-1.12)	
	2011	1.12	(1.10-1.15)		1.14	(1.12-1.17)	
	2012	1.19	(1.16-1.21)		1.21	(1.18-1.23)	
	2013	1.21	(1.19-1.24)		1.24	(1.21-1.26)	
	2014	1.24	(1.22-1.27)		1.27	(1.25-1.30)	
	2015	1.33	(1.31-1.35)		1.36	(1.34-1.39)	
	2016	1.47	(1.44-1.50)		1.51	(1.48-1.54)	
	2017	1.54	(1.51-1.56)		1.58	(1.55-1.61)	
	2018	1.60	(1.58-1.63)		1.65	(1.63-1.68)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	2.09	(2.07-2.10)		2.13	(2.11-2.14)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	1.09	(1.08-1.10)		1.08	(1.07-1.10)	
	35-44	1.03	(1.02-1.05)		1.05	(1.04-1.06)	
	44-54	0.97	(0.96-0.98)		0.97	(0.96-0.98)	
	55-64	0.84	(0.83-0.85)		0.84	(0.83-0.85)	
	65-74	0.74	(0.73-0.75)		0.72	(0.71-0.73)	
	75-84	0.77	(0.76-0.79)		0.73	(0.72-0.74)	
	85+	0.67	(0.65-0.68)		0.58	(0.57-0.60)	

**Multivariable model adjusted for year, gender, and age band*

Table 13 Incidence rate ratios for GP recorded anxiety - diagnosis codes

Variable		Diagnosis codes					
		Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	0.96	(0.94-0.98)		0.96	(0.94-0.98)	
	2005	0.93	(0.91-0.95)		0.93	(0.91-0.96)	
	2006	0.88	(0.86-0.90)		0.89	(0.87-0.91)	
	2007	0.83	(0.81-0.85)		0.84	(0.82-0.86)	
	2008	0.77	(0.75-0.79)		0.78	(0.76-0.80)	
	2009	0.82	(0.80-0.84)		0.83	(0.81-0.85)	
	2010	0.78	(0.76-0.80)		0.79	(0.77-0.81)	
	2011	0.79	(0.77-0.81)		0.80	(0.78-0.82)	
	2012	0.82	(0.80-0.84)		0.84	(0.82-0.86)	
	2013	0.83	(0.81-0.85)		0.84	(0.82-0.86)	
	2014	0.85	(0.83-0.87)		0.87	(0.85-0.89)	
	2015	0.91	(0.89-0.93)		0.93	(0.91-0.96)	
	2016	1.05	(1.03-1.08)		1.08	(1.05-1.10)	
	2017	1.09	(1.07-1.12)		1.12	(1.10-1.15)	
	2018	1.16	(1.14-1.19)		1.20	(1.17-1.22)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	2.03	(2.01-2.05)		2.07	(2.05-2.09)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	1.09	(1.07-1.11)		1.08	(1.06-1.10)	
	35-44	1.06	(1.04-1.07)		1.06	(1.04-1.08)	
	44-54	0.96	(0.94-0.97)		0.96	(0.94-0.97)	
	55-64	0.81	(0.79-0.82)		0.80	(0.79-0.81)	
	65-74	0.65	(0.64-0.67)		0.64	(0.62-0.65)	
	75-84	0.66	(0.64-0.67)		0.62	(0.61-0.63)	
	85+	0.54	(0.53-0.56)		0.48	(0.46-0.50)	
**Multivariable model adjusted for year, gender, and age band*							

Table 14 Incidence rate ratios for GP recorded anxiety - symptom codes

Variable		Symptom codes					
		Univariable IRR	(95%CI)	P value	Multivariable IRR	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	1.19	(1.16-1.23)		1.20	(1.16-1.23)	
	2005	1.25	(1.21-1.29)		1.25	(1.21-1.29)	
	2006	1.33	(1.29-1.37)		1.34	(1.30-1.38)	
	2007	1.46	(1.42-1.50)		1.47	(1.43-1.52)	
	2008	1.54	(1.50-1.59)		1.56	(1.51-1.60)	
	2009	1.63	(1.58-1.68)		1.65	(1.60-1.70)	
	2010	1.65	(1.60-1.70)		1.67	(1.62-1.72)	
	2011	1.75	(1.70-1.81)		1.77	(1.72-1.83)	
	2012	1.87	(1.82-1.92)		1.89	(1.84-1.95)	
	2013	1.93	(1.88-1.99)		1.96	(1.90-2.01)	
	2014	1.98	(1.92-2.04)		2.01	(1.95-2.07)	
	2015	2.09	(2.03-2.15)		2.12	(2.06-2.19)	
	2016	2.24	(2.17-2.30)		2.28	(2.21-2.34)	
	2017	2.33	(2.27-2.40)		2.38	(2.31-2.44)	
	2018	2.36	(2.29-2.43)		2.41	(2.34-2.48)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	2.09	(2.07-2.11)		2.12	(2.10-2.14)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	1.08	(1.06-1.10)		1.07	(1.05-1.09)	
	35-44	0.98	(0.96-0.99)		1.00	(0.98-1.01)	
	44-54	0.94	(0.92-0.95)		0.93	(0.91-0.95)	
	55-64	0.84	(0.82-0.85)		0.83	(0.82-0.85)	
	65-74	0.81	(0.79-0.83)		0.78	(0.77-0.80)	
	75-84	0.88	(0.86-0.90)		0.83	(0.82-0.85)	
	85+	0.77	(0.75-0.80)		0.67	(0.65-0.69)	
**Multivariable model adjusted for year, gender, and age band*							

4.3.3 Trends in coding over time by gender and age

As highlighted above, the recorded incidence of anxiety was more common in women but the overall pattern of trends over time (in any anxiety code, diagnoses and symptoms) were similar for males and females (Figure 6, Figure 7 and Figure 8). The incidence rates for men and women (for any anxiety code, diagnoses and symptoms) are provided in the Appendix A.9 - Table 32 and A.10 - Table 33.

In order to formally test whether incidence varied over time according to gender, the multivariable Poisson regression model was repeated including an interaction between year and gender. There was no evidence of an interaction by gender for any anxiety code (p value for interaction = 0.38). However, there was evidence of an interaction between year and gender for diagnosis codes ($p<0.001$). Visual inspection of the graph presenting the incidence of GP recorded anxiety (diagnosis codes) (Figure 7) suggested that these interaction effects may be driven by differences in the incidence of recorded diagnoses in later years, however, the differences were small and may not be meaningful and should therefore be interpreted with caution. In addition, there was weak evidence of interaction between year and gender for symptom codes ($p=0.053$), but again this should be interpreted with caution.

Figure 6 Incidence of GP recorded anxiety (any anxiety code) per 1000 PYAR by gender

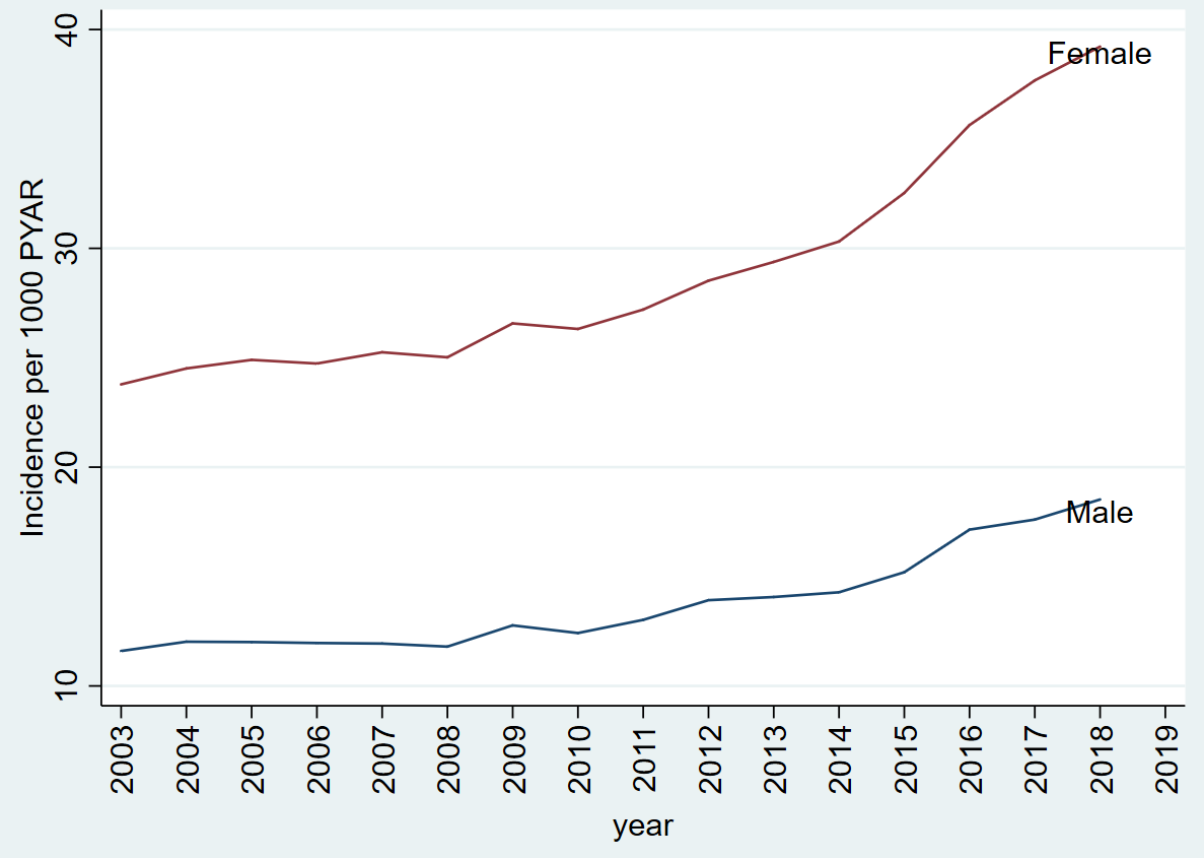


Figure 7 Incidence of GP recorded anxiety (diagnosis codes) per 1000 PYAR by gender

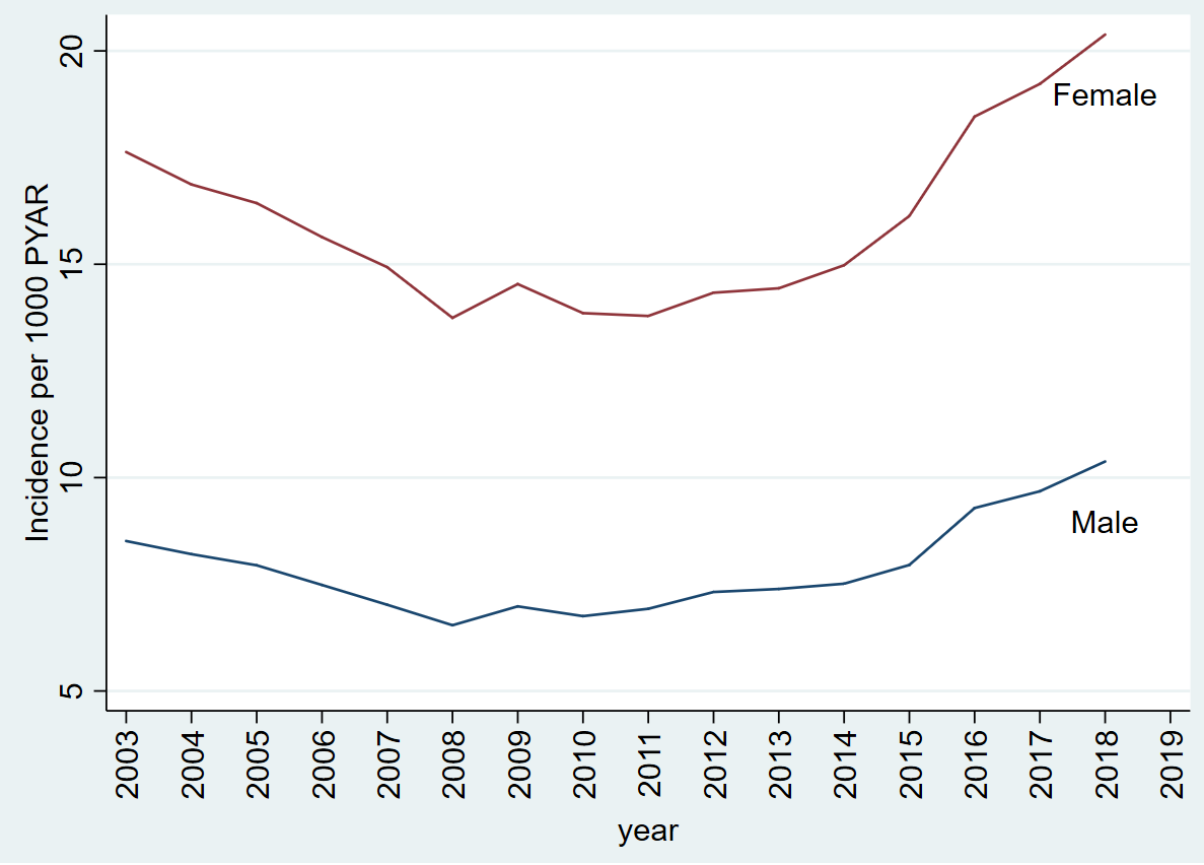
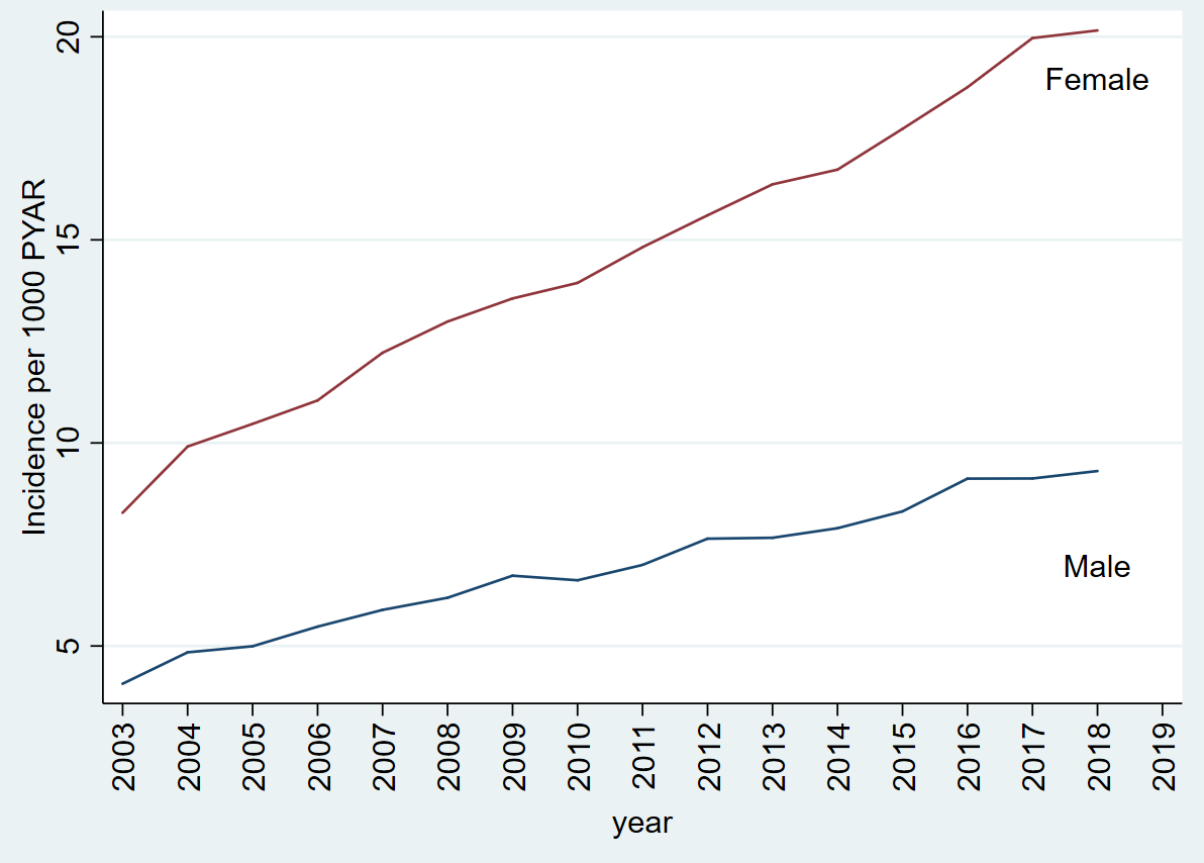


Figure 8 Incidence of GP recorded anxiety (symptom codes) per 1000 PYAR by gender



Incidence rates were stratified by age and are presented in Figure 9, Figure 10 and Figure 11 for any anxiety code, diagnosis and symptoms respectively, with the underlying data presented in the Appendix A.11 - Table 34. Recorded incidence increased substantially in the younger age groups in later years of the study. In order to formally test whether incidence varied over time according to age, the multivariable Poisson regression model was repeated including an interaction between year and age. There was strong evidence of an interaction between year and age for all models (any anxiety code: p value for interaction *<0.001*; diagnosis codes: *p<0.001*; symptom codes: *p<0.001*).

There was a marked increase in the recorded incidence of anxiety diagnosis between 2013 and 2018 in the two youngest age bands, increasing from 11.8/1000PYAR to 24.4/1000PYAR for the under 25s and from 13.1/1000PYAR to 22.7/1000PYAR for those aged 25-34 years. Incidence of anxiety diagnosis fell over time in the oldest age groups, decreasing from 10.5/1000PYAR in 2003 to 8.1/1000PYAR in 2018 for those aged 75-84 years and from 8.4/1000PYAR in 2003 to 6.1/1000PYAR in 2018 for those aged over 85 years (Figure 10).

There was a marked increase in the recorded incidence of anxiety symptoms over the duration of the study for the two youngest age bands, increasing from 4.6/1000PYAR to 22.2/1000PYAR for the under 25s and from 5.7/1000PYAR to 21.2/1000PYAR for those aged 25-34 years. In contrast, whilst the incidence of anxiety symptoms increased over the first half of the study period for the oldest age groups (65-74 years; 75-84 years and 85+ years), incidence then decreased in the second half of the study period (Figure 11).

Figure 9 Incidence of GP recorded anxiety (any anxiety code) per 1000 PYAR, by age

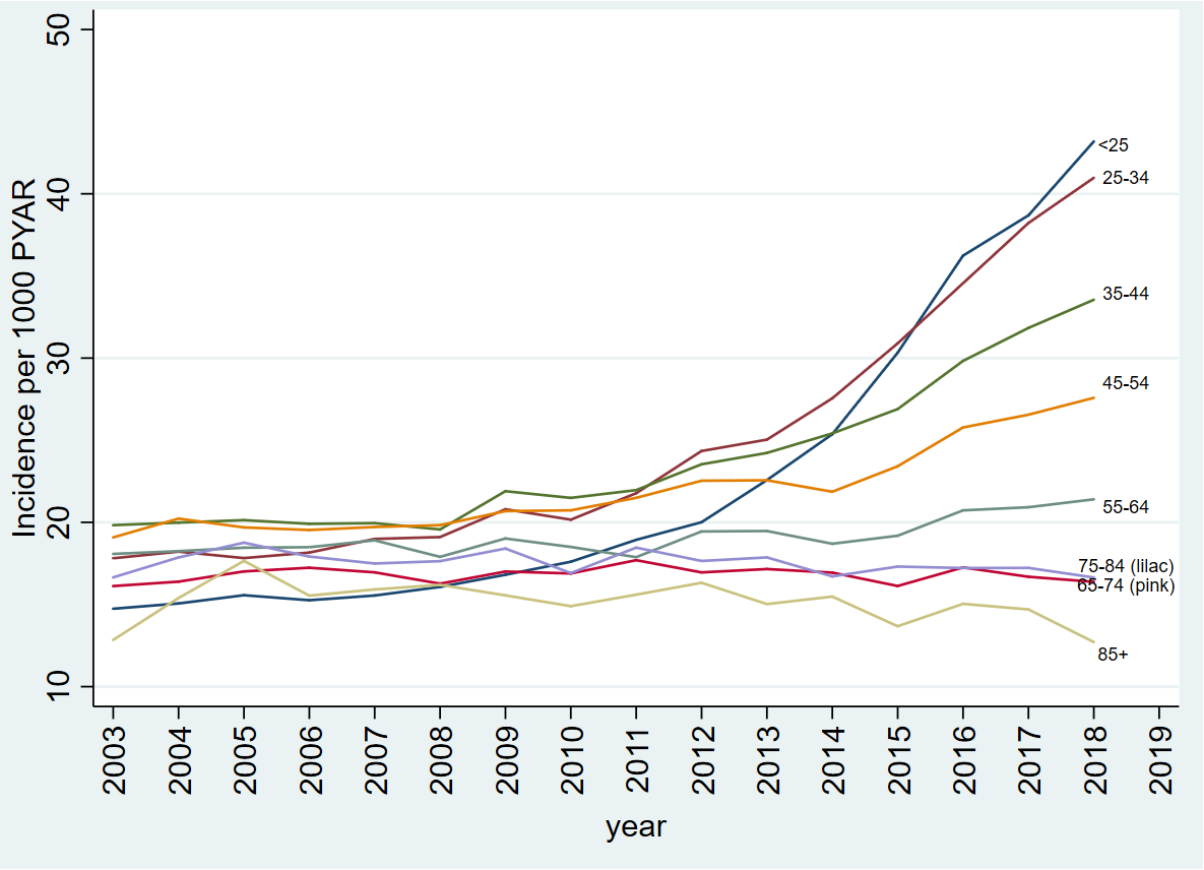


Figure 10 Incidence of GP recorded anxiety (diagnosis codes) per 1000 PYAR, by age

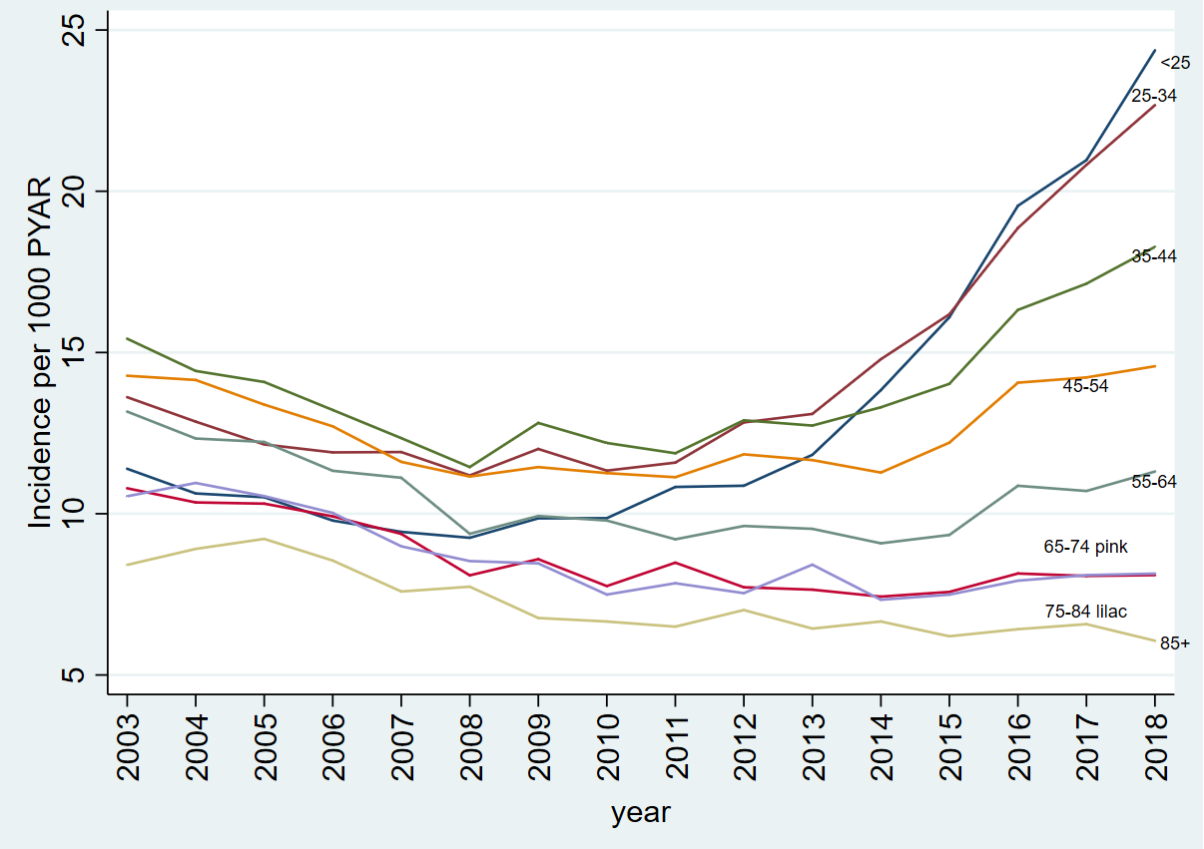
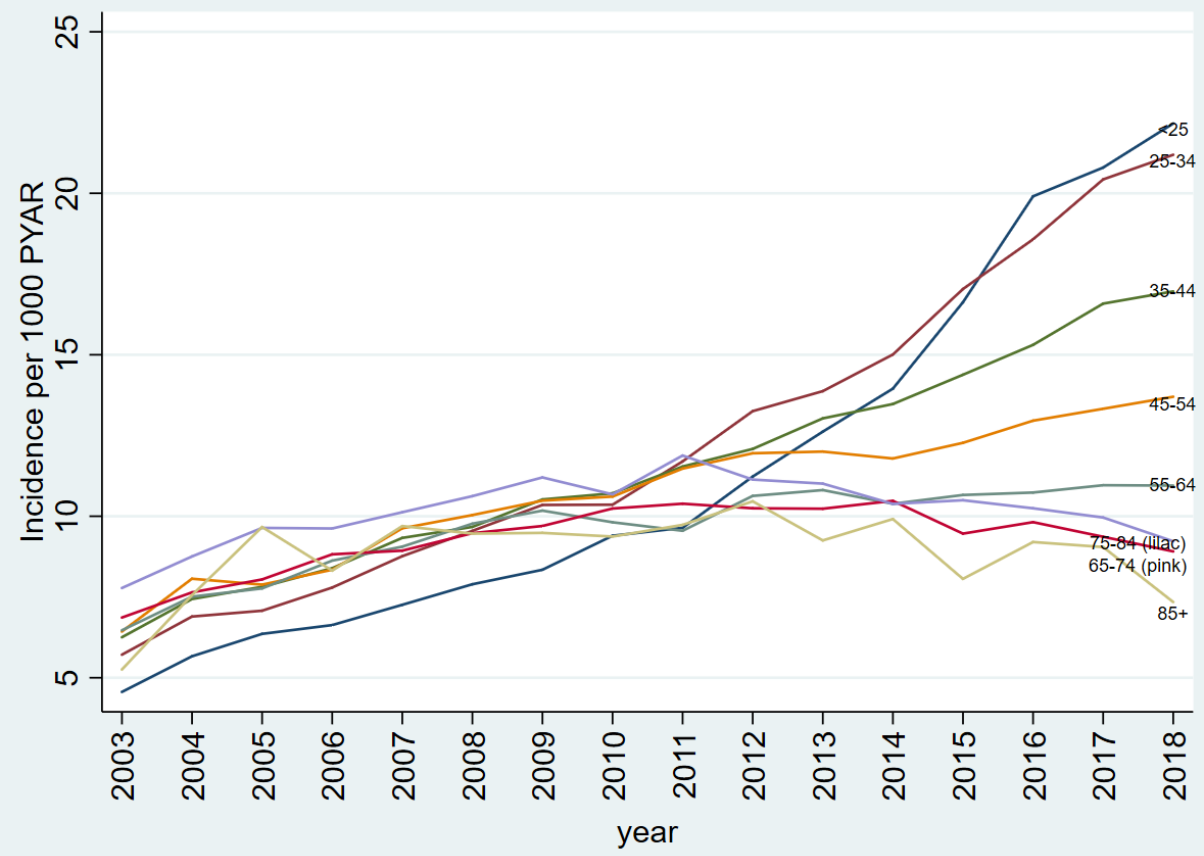


Figure 11 Incidence of GP recorded anxiety (symptom codes) per 1000 PYAR, by age



4.3.4 Trends in coding over time of diagnosis subtypes

Trends over time in the diagnosis subtype groups of NSA, MADD and Panic were also examined (Figure 12 and Table 15). Between 2003-2008, the recorded incidence of generalised anxiety codes (NSA) fell from 7.0 to 5.3/1000PYAR; increasing over subsequent years to 8.2/1000PYAR in 2018 (Table 15). The incidence of mixed anxiety and depression codes (MADD) gradually decreased from 4.8/1000PYAR in 2003 to 2.9/1000PYAR in 2011; and then increased to 6.2/1000PYAR in 2018 (Table 15). The recorded incidence of panic attack and disorder codes (Panic) gradually declined over the 16-year study period, from 2.4/1000PYAR in 2003 to 1.0/1000PYAR in 2018 (Table 15).

Figure 12 Trends in the incidence of GP recorded anxiety (any diagnosis code, generalised anxiety (NSA), mixed anxiety and depression (MADD), and panic attack/disorder (Panic)) between 2003 and 2018

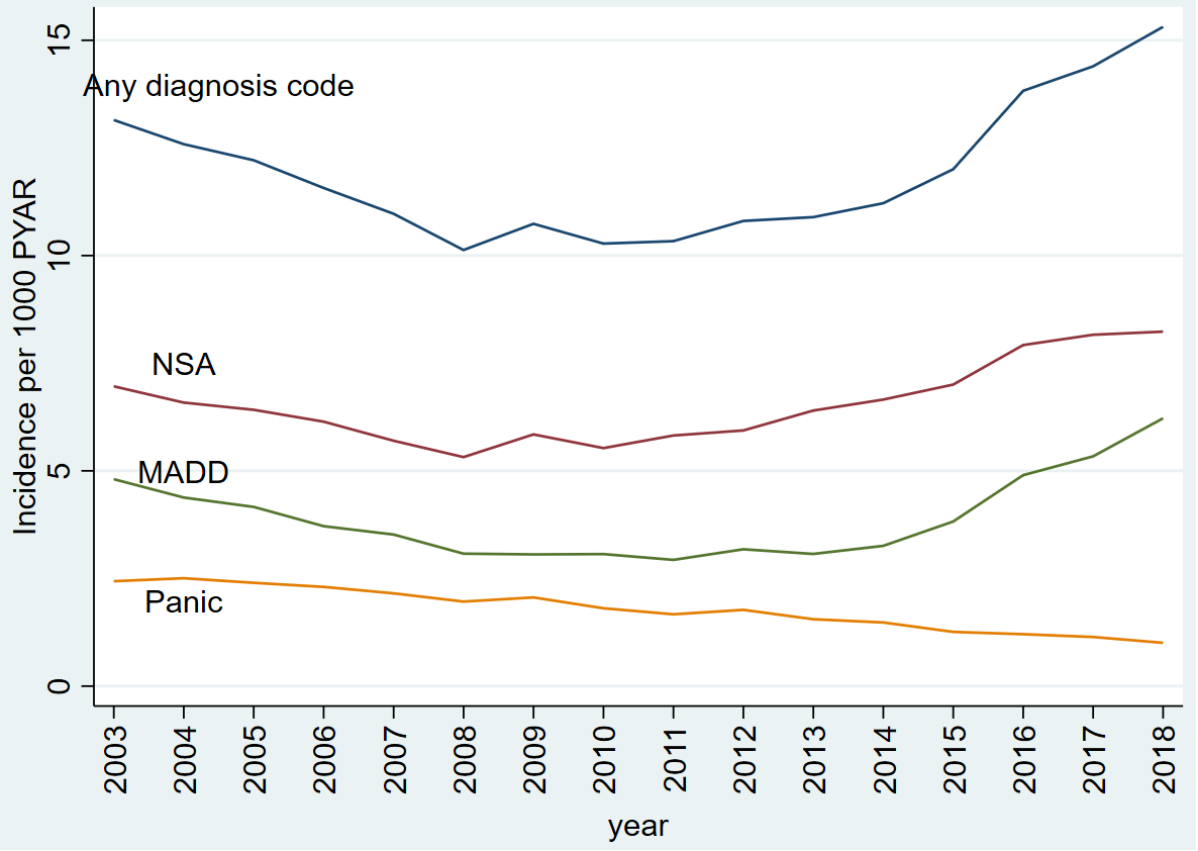


Table 15 Incidence rates for GP recorded diagnosis codes - generalised anxiety (NSA), mixed anxiety and depression (MADD), and panic attack/disorder (Panic) - between 2003 and 2018

Variable		NSA codes				MADD codes				Panic codes			
		N of events	PYAR	Incidence (1000PYAR)	(95%CI)	N of events	PYAR	Incidence (1000PYAR)	(95%CI)	N of events	PYAR	Incidence (1000PYAR)	(95%CI)
Year	2003	7735	1110795	7.0	(6.8-7.1)	5345	1111906	4.8	(4.7-5.0)	2713	1113259	2.4	(2.4-2.5)
	2004	7366	1118504	6.6	(6.4-6.7)	4914	1121800	4.4	(4.3-4.5)	2821	1125367	2.5	(2.4-2.6)
	2005	7175	1117956	6.4	(6.3-6.9)	4676	1123313	4.2	(4.0-4.3)	2708	1128498	2.4	(2.3-2.5)
	2006	6915	1125687	6.1	(6.0-6.3)	4209	1132822	3.7	(3.6-3.8)	2626	1139307	2.3	(2.2-2.4)
	2007	6449	1131423	5.7	(5.6-5.8)	4015	1140100	3.5	(3.4-3.6)	2473	1147528	2.2	(2.1-2.2)
	2008	6078	1142584	5.3	(5.1-5.5)	3547	1152729	3.1	(3.0-3.2)	2280	1160912	2.0	(1.9-2.1)
	2009	6712	1147923	5.9	(5.7-6.0)	3548	1159565	3.1	(3.0-3.2)	2407	1168332	2.1	(2.0-2.1)
	2010	6392	1156026	5.5	(5.4-5.7)	3586	1169326	3.1	(3.0-3.2)	2132	1178626	1.8	(1.7-1.9)
	2011	6763	1161722	5.8	(5.7-6.0)	3450	1176368	2.9	(2.8-3.0)	1980	1186411	1.7	(1.6-1.7)
	2012	6966	1173032	5.9	(5.8-6.1)	3780	1189160	3.2	(3.1-3.3)	2126	1199951	1.8	(1.7-1.9)
	2013	7540	1177990	6.4	(6.3-6.6)	3671	1195544	3.1	(3.0-3.2)	1876	1207214	1.6	(1.5-1.6)
	2014	7899	1186763	6.7	(6.5-6.8)	3930	1206211	3.3	(3.2-3.4)	1803	1218763	1.5	(1.4-1.6)
	2015	8374	1195608	7.0	(6.9-7.2)	4652	1216622	3.8	(3.7-3.9)	1550	1230583	1.3	(1.2-1.3)
	2016	9558	1206451	7.9	(7.8-8.1)	6021	1228668	4.9	(4.8-5.0)	1502	1245057	1.2	(1.2-1.3)
	2017	9884	1211024	8.2	(8.0-8.3)	6587	1234188	5.3	(5.2-5.5)	1431	1253591	1.1	(1.1-1.2)
	2018	10021	1217166	8.2	(8.1-8.4)	7719	1240802	6.2	(6.1-6.4)	1271	1263629	1.0	(1.0-1.1)

4.3.5 Qualitative data

As outlined earlier in section 4.2.3, findings were identified during analysis of the qualitative interviews with practitioners (GPs and therapists) that provided some insight into possible reasons for the trends seen in GP coding of anxiety. These findings were briefly mentioned in the previous chapter (Chapter 3) and are expanded upon below.

GP and therapist data – recent increases in anxiety

GPs said that they thought the number of patients presenting in primary care with anxiety had increased over time, and this had also increased their own awareness of anxiety and its' importance. GPs commented that there were multiple factors that could cause this increase in anxiety, but that some of the more recent contributors that could explain the rise related to increased use of the internet. They explained the reliance on using the internet for shopping, working, and interacting with people, meant people were physically more isolated from others and lacked 'real-life' social support.

> *"Increasingly people are becoming more isolated because they're not having to go out. They can do more online so they're actually- it's making people worse 'cos they're not having to go out to interact with people as much, and the less people then go out, that can cause anxiety about going out and doing things." GP 15*

In addition, GPs stated that social media had led to a skewed perception of what an ideal life should be like, resulting in pressure to achieve the impossible. GPs commented that it was now much easier to make comparisons with other peoples' lives, and to want the *"perfect life"* (GP 1) being presented by others on social media.

> *"I don't know whether it's social media or this sort of perception that everyone should have this perfect life, perfect looks, perfect body, perfect house, perfect holidays, which is everywhere. And the reality of life is that not everyone has…everything all the time and I think it's the expectation that 'I should have this and I don't, why don't I have it', and I think that's what's feeding a bit of an anxiety boom." GP 1*

> *"There just seems to be an awful lot more pressure on individuals, or perceived pressure, I think to either perform or to do things, or people's perception of what they need to achieve has been altered…I know that there seems to be recent articles about the correlation between the explosion of social media and the incidence of anxiety." GP 12*

In particular, GPs reported that they had seen a recent increase in younger patients with anxiety, i.e. patients aged *"18 to 25"* (GP 11), and this had been most notable in the past five years.

> *"I've been a GP for 20 years and the prevalence and incidence of anxiety seems to be on the increase, especially maybe in the last five years, especially in younger people but also I think a rise in everyone that I see, all ages I mean, but mainly in the younger people." GP 12*

They explained that they thought this was in part driven by social media, and by current pressure on young people - pressure to do well at school or university exams, pressure from peers, and pressure to secure and sustain employment.

> *"I think young people coming up have a lot more anxiety than we realise. There seems to be such pressure on them now in terms of exam performance, social performance, work performance and just- I feel it's certainly becoming more common in younger people." GP 7*

GPs also commented that this could be compounded by online gaming, whereby, if children have grown up gaming, or are spending lots of time gaming as young adults, then they are living in a world that does not provide them with social or physical interaction. This could lead to anxiety around having to go out or having contact with others.

> *"…like online gaming, I think all of that has a massive impact…and I think that's one of the reasons that there seems to be an increase is that there's much more- the sort of virtual world is not the same as the real world and I think that children and young adults are living in a virtual world and losing social and physical contact and it makes them anxious about going out and [having] social contact." GP 13*

Finally, GPs also stated that they felt in recent years there had been more recognition of anxiety as a problem by the public. Reduction in stigma, and increased awareness of anxiety in the media and by celebrities, meant that patients were now more likely to consult and seek help for anxiety.

> *"I think there's probably greater recognition from the public of their symptoms, less stigma and [more likely to] seek help about it." GP 1*

They explained that this meant patients often knew they 'had' anxiety and would *"specifically raise the question themselves"* (GP 4), and therefore there was potentially an expectation that the GP 'had' to give their symptoms a medical label of anxiety.

> *"By the time it gets to us we're probably over-pathologising it, because we're seeing it so we're kind of feeling we have to do something about it, and it's quite difficult just to say that's normal, don't worry about it." GP 2*

"I think it's a tough thing to say but I almost think that because of how the people come and see the doctor, you're tempted to medicalise it rather than- well hopefully we try and normalise it, but I do feel it's probably getting more medicalised." GP 11

Similarly, therapists also reported an increase in younger patients seeking therapy, mainly *"teens to 25 or 27"* (therapist 6), and cited similar causes to the GPs, such as social media and pressure to do well. They elaborated on the latter cause, in terms of the pressure placed on young people to do well, by society and by their parents, that can lead worry or anxious thought patterns.

"Generally with GADs it probably has to do quite a lot with the fact that in modern society the expectations toward younger people grow, so that creates a lot more anxiety in terms of their performance as well which can then translate in unhelpful worry." Therapist 1

"There is lot of focus because it's the society we live in at the moment that [is] very intense, and the expectations from parents, and media." Therapist 6

Therapists explained that, for university students, there was an additional pressure to do well due the significant fees that they were paying. Therapists commented on the culture at university, that there was an expectation that everyone was working hard, and students felt they could not understand why there were struggling, when others were not. This could be compounded by being away from home and family for this first time and having to take care of themselves in a potentially isolating situation.

"For the last few years, [there] is definitely an increase of anxiety with young people and I think…there is so much pressure at the moment put on young people in terms of performance, in terms of university, with university fees increasing as well, perfection, and I think all of those factors will contribute to people becoming a lot more stressed and anxious so I've definitely noticed that with young people." Therapist 1

"I guess with students, you know, moving home first time, [a] lot of anxieties come out, that can trigger a lot of different things or suicidal behaviour, pressures of university and looking after themselves." Therapist 2

Therapists talked about an increase in awareness *"in the media about mental health and anxiety"* (Therapist 2), with mental health days and groups on social media helping to normalise anxiety for the younger generation. They stated this was helping to reduce stigma and encourage young people to access IAPT services. Some therapists reflected that rather than there being more people experiencing anxiety, increased awareness was just enabling better detection of the condition.

"Our society I think is definitely talking about anxiety more, and therefore capturing people more who have anxiety disorders, but I personally don't think we're medicalising it more than is necessary." Therapist 9.

GP data - coding choice and influences

Trends in the recording of anxiety over time might also vary due to changes in GPs coding decisions. GPs commented they that used codes such as *"anxiety states"* (GP 9) rather than ICD-10 codes as they felt it would be the role of a psychiatrist to give a formal diagnosis, or because they felt *"anxiety state"* (GP 4) was generic enough to cover a general sense of anxiety, rather than codes such as *"stress at work"* (GP 4) which would be linked to a specific event or circumstance.

When GPs were asked about which codes they were most likely to use, most GPs referred to non-diagnostic symptom codes. *"Anxiousness"* (GP 11) was frequently cited as the more commonly used code for early presentation of anxiety symptoms. '*Mixed anxiety and depression'* or *'anxiety with depression'* was commonly used when patients presented with co-morbid symptoms, *'anxiety state'*, *'anxiety states'* or *'anxiety not otherwise specified'* for when anxiety presented on its' own, and *"panic if it seems panic"* (GP 15). GPs talked about progressing to other diagnostic codes during follow-up consultations, giving examples such as *"generalised anxiety… or…chronic anxiety"* (GP 10).

"I think it depends whether they come back. So, yeah, (pause) yeah, so I might not code it as that on the first consultation but I think if it's, you know, if it's becoming more apparent as the consultations develop then I might do, so I might code it as anxiety states say on the first consultation and then might develop into generalised anxiety type code or even a chronic anxiety if they'd had episodes in the past." GP 10

Furthermore, when talking about anxiety and depression presenting co-morbidly, GPs reported a tendency to code for both conditions "*under the umbrella of depression"* (GP 11).

"It can be difficult if someone's depressed and having panic attacks, and I think that the majority I do put them as depression, but if someone has predominantly anxiety then I will classify them often as depression with anxiety." GP 12

When asked about influences on the specific codes GPs might choose to use, some GPs mentioned the QOF as influencing the decision to code for a symptom rather than a disorder. Although they referred to depression rather than anxiety, there was a sense that the QOF had led to GPs being more cautious about using diagnostic codes across all mental health conditions.

"So I think QOF has actually skewed what we do because QOF says if you label someone with this you must review them, you know, if you use a drug you must do that and - I think that has skewed actual prevalence rates of things because now we might write low mood not depression, because actually if we write depression they chastise us if we haven't done so much within so number of weeks, so I think these things do change what we do. So I tend to be rather cautious about labels." GP 6

GPs reported that they tried to be consistent in the codes used, so if the patient had previously had an anxiety code recorded then they would reactivate it, or change all previous codes to be the same as the code they were about to use. GPs also said they avoided coding in free text, so that codes were easier to search for and were more meaningful within the coding hierarchy for that practice.

"If somebody's used an anxiety code previously we try and match up the same code or change all of them…so we'd always try and encourage our team to use that because they're easier to search for, they're more meaningful in the coding structure and hierarchy. It's just about making sure the record is as accurate as possible, and also technically correct, because if you haven't put it on in a correct way it might as well not exist. If you free text stuff it might as well not exist." GP 5

However, some GPs also talked about using codes interchangeably, with a tendency to select whichever anxiety code presented first on the drop-down list – "*whatever comes up first, 'that's a code for anxiety, that'll do*" (GP 2). They added that there were certain codes used by each practice, and the more those codes were used, the more likely they were to appear toward the top of the list, although this did not mean coding would necessarily be more consistent between GPs within the practice.

"What the systems often do is they have this sort of velocity coding stuff so that if as a practice you tend to use certain codes more often they will sort of appear towards the top of the list, but I think with things, if you looked at the coding of anxiety in practices I suspect it's pretty varied just because there's loads of different potential codes that one can pick." GP 8

<u>GP data – threshold for coding symptom versus diagnosis</u>

As mentioned above and in the previous chapter (section 3.4.2), GPs were reluctant to label patients with a diagnostic anxiety code. This may explain the quantitative finding of a decrease in the incidence of recorded anxiety diagnoses between 2003-2008. GPs said had concerns around giving patients potentially stigmatising labels, thinking they might be unhelpful for the patients, or that it would be the role of the psychiatrist to diagnose a disorder. Therefore, severity and chronicity of

symptoms were consistently reported by GPs as the two factors that they would use to determine whether they would code for an anxiety disorder, rather than using a symptom code. GPs talked about duration as being particularly important, with some GPs suggesting delaying coding for a disorder until a certain time period had passed, depending on the impact of symptoms.

> *"So persistent symptoms for…six weeks, a month, it depends on how functioning they are, so if they're still managing to work then I probably would delay the diagnosis longer. If they're completely not functioning then I would probably diagnose a bit sooner than that, so four to six weeks." GP 1*

> *"Duration is one thing, no response to various things they might have tried themselves, how it's affecting their life, there seems to be no precipitating factors so everything else seems to be ok…that sort of history of ongoing things in the past throughout their lives." GP 15*

Similarly, GPs said they would be looking for previous episodes of anxiety, whereby recurrent episodes had persistently occurred over a long period of time.

> *"So I might use anxiety as a single episode that may have a clear sort of factor that's transient in their life, or when it gets resolved, where…I guess more in a chronic or long-standing one that's when I'll consider changing it to anxiety disorder where they have a chronic or relapsing sort of form of anxiety, like long-standing." GP 11*

In addition, some GPs commented that there was association between coding for an anxiety disorder and prescribing medication, in that if they were prescribing medication, such as benzodiazepines or SSRIs, then it was likely that the patient would have had a recorded diagnostic code (patients do not need to be diagnosed to be given a prescription). One GP explained that if a patient presented with anxiety, and they were prescribing drug treatment, then they would also make sure a diagnostic code was recorded for that patient. That is, if a patient had reached a threshold for being prescribed medication, then they would have also reached the threshold for an anxiety diagnosis, rather than an anxiety symptom.

> *"If I was prescribing purely an SSRI for anxiety without depression, I would certainly make a formal diagnosis [with a diagnostic code] I think then." GP 6*

4.4 Discussion

4.4.1 Summary of findings

The recorded incidence of anxiety symptoms increased over the 16 years of the study (2003-2018). In contrast, the recorded incidence of anxiety diagnoses decreased over the first 5 years of the study period (2003-2008), before markedly increasing between 2013 and 2018. When subdivided by diagnostic category, non-specific anxiety codes (NSA) and mixed anxiety and depression (MADD) showed a similar trend. However, the recorded incidence of panic attack or disorder (Panic) gradually declined across the entire 16-year time period.

Recorded incidence in women was nearly twice that of men – in terms of any anxiety code, diagnosis codes, and symptom codes. There was some evidence of a difference between the incidence of anxiety diagnosis codes in women compared with men in later years of the study, although the differences were small and should be interpreted with caution.

There was evidence of an interaction between year and age. Recorded incidence – of any code, diagnosis and symptoms – increased substantially in the later years of the study in the younger age groups (under 25s and 25-34 year olds). There was also an increase in recorded incidence in recent years for 35-44 years and 45-54 year olds, although it was less marked. Whereas the recorded incidence for the older age groups (65-74 years, 75-84 years and 85+ years) declined in later years.

Generic anxiety codes such as 'anxiety states' were recorded much more frequently than ICD-10 codes, such as 'generalised anxiety disorder'. Interview data from GPs indicated that this was because they viewed it as the role of a psychiatrist to give a formal ICD-10 diagnosis. Interviews also indicated that GPs prefer to use symptom codes to diagnostic codes, and that they use these codes in a systematic way. Symptom codes were used if the anxiety was acute and less severe, and diagnostic codes were used if the anxiety was chronic and more severe. This may explain the increase in recorded incidence of anxiety symptoms during the study period, and the decrease in the recorded incidence of anxiety diagnoses over the first five years of the study. It therefore may reflect changes in GP recording, rather than a true change in incidence. However, GPs and therapists also commented on a rise in the presentation of anxiety in recent years, and suggested a greater awareness of anxiety in society and amongst GPs, could be a possible reason for this. A rise in the number of patients presenting with anxiety may explain the increase in reported incidence of diagnostic codes in the later period of the study. Furthermore, GPs and therapists both identified an increase in anxiety in younger patients, and this is consistent with the increase in recorded incidence – of both diagnosis and symptoms – found for the youngest age groups (<25 years and 25-34-year olds) in recent years. GPs and therapists suggested increasing pressure on young people in recent

years could be a potential reason for this, along with rising use of the internet and social media within society.

4.4.2 Strengths and limitations

The use of data from the CPRD Gold database enabled analysis of trends in a large sample size of more than 250,000 patients, which can be considered representative of the UK population. It also permitted analysis of trends in incident codes by age and gender and presents data over a long period of 16 years. An extensive code list was used, compiled from the national UK READ code clinical terms, and cross-checked with code lists from previous epidemiological research on recording of anxiety (Walters et al., 2012). It is therefore likely to capture all READ codes that GPs may use for anxiety, and prior research has validated such diagnoses recorded by GPs in primary care research databases (Martin-Merino et al., 2010). Using a wide range of codes also enabled analysis of trends in the incidence of any anxiety code, along with trends in the incidence of anxiety diagnoses, and of anxiety symptoms. In addition, grouping anxiety diagnoses into diagnostic sub-types allowed better understanding of the use of these codes in terms of one of the most widely used classification systems of psychiatric disorder, the ICD-10. Using a multi-methods approach in this study also aided understanding of trends seen. The interviews suggested possible reasons for the trends observed, and potential explanations for the changes in recorded incidence seen over time.

In terms of the limitations of the study, the sample is restricted to patients who have received an anxiety symptom or diagnosis READ code. It is likely that there are those with anxiety who have had a discussion with their GP about their symptoms, and even been prescribed anxiolytic medication, but have not had it coded within their record. Similarly, those whose anxiety is not detected, or where GPs have not coded it separately from depression or physical health conditions, will also not be included in this study. Likewise, it does not capture patients who may have anxiety symptoms, or a diagnosis, recorded in free-text on their electronic medical record, but no formal READ code. It is not possible to know what proportion of patients this might apply to, as free-text is not available for the purposes of research due to the possibility of identifiable data being included. Hence, the reported figures may be an underestimate, and if how GPs use the free-text recording has differed over time, then this may have biased the trends seen. In addition, this study is only capturing trends for those who consult for anxiety. As not all will seek help for their symptoms, these data will underestimate the incidence of anxiety within the general population. Finally, it cannot be known if

the results of the study are generalisable to anxiety presenting in other countries or other health care systems.

Only practices who provided data to CPRD Gold across the whole study period (2003-2018) were included in the analysis, in order to allow greater confidence in interpreting trends over time. If all practices that contributed data for part of the study period had been included, it would have made interpretation of trends over time more difficult, as it would not have been possible to know whether any differences were, at least in part, due to the differences in the practices contributing data over time. Whilst it is possible that there may be differences between practices with complete or partial data over the study period, no data were available on age, gender or coding for practices with partial data in order to look at this in detail. No information was available on why some practices stopped contributing to CPRD Gold. One possible explanation was that it may be related to a switch in the practice software being used (CPRD Gold only included practices using Vision software (In Practice Systems LTD, 2020)). EMIS software (EMIS Health, 2020) provides a greater opportunity to use free-text recording (compared to Vision systems) and therefore there may be differences in the coding of symptoms or diagnoses between practices with complete or partial data that may impact on the estimates obtained. However, it is difficult to quantify this, and previous research using a different CPRD dataset did not find any differences in age, gender, or use of diagnostic codes when comparing complete and partial data from contributing practices (Moore et al., 2009).

With regard to the qualitative interviews, topic guides were developed with the quantitative work in mind, and therefore specifically designed to collect data that would enable identification of possible reasons for the trends observed. For example, they included questions on: the causes of anxiety; who was most at risk of anxiety; and what specific READ codes GPs used and why. Interviews were analysed prior to analysis of the CPRD Gold data, and therefore not influenced by knowledge of the quantitative findings. Practitioners were purposively sampled who varied in terms of age, gender, deprivation decile of their practice (if a GP), and length of time working in primary care. Whilst those interviewed did not necessarily work at practices that had contributed to the quantitative dataset, the qualitative data demonstrated themes that were consistent with the trends seen. As outlined in Chapter 3 (section 3.7.2), the use of in-depth interviews allowed adequate time for disclosure of views, and conducting data collection and analysis in parallel enabled early insights to inform later interviews and to establish when data saturation had been reached. However, as previously highlighted, the GPs and therapists who took part were self-selecting, and it is possible that those interviewed had more of an interest in anxiety than those who did not respond to the invitation.

4.4.3 Comparison with previous studies

Compared with depression, there has been less epidemiological research on anxiety alone, although one study looked at the incidence of anxiety in primary care between 1998 and 2008 (Walters et al., 2012). However, there are no data on the incidence of anxiety in recent years, and there have been several changes that may have had an impact on trends in coding during this time: the introduction of the depression QOF in 2006 (British Medical Association, 2006); the introduction of the IAPT service in 2007/2008; the economic recession in 2008; and the NICE anxiety guidelines in 2011 (NICE, 2011b).

The introduction of the 2006 QOF provided financial incentives for practices that recorded certain qualifying READ codes and met practice performance indicators (Mitchell et al., 2011). Whilst there is not a QOF for anxiety disorders, there is a QOF for depression (British Medical Association, 2006). Previous research has found changes in how GPs recorded depression after its introduction, with increasing use of symptom codes (Kendrick et al., 2015). However, the present study did not find a corresponding increase in anxiety symptom codes around the time of the introduction of the QOF, rather finding a reduction in the rate of increase in incidence seen after 2007. It is possible that this reduction in the rate of increase may reflect increasing presentation to IAPT services (introduced in 2007/08), rather than to GPs. However, this is unlikely as any changes in incidence resulting from the introduction of IAPT would have been expected to have been seen over a prolonged period. In terms of the economic recession, it is feasible that this had an impact on incidence rates, as recorded diagnosis codes levelled off between 2008 to 2013, after a previously sharp decline. Previous studies have also found reversals in previously declining rates of suicide, and increases in rates of depression, after the recession (Coope et al., 2014; Frasquilho et al., 2016). Finally, the updated NICE anxiety guidelines in 2011, with their recommendation for earlier diagnosis, may have increased awareness of anxiety among GPs (NICE, 2011b). Indeed, this study found an increase seen in the incidence rate of any anxiety code – symptoms or diagnosis – after 2011.

Results from this study are consistent with that of Walters et al. (2012), in that recorded incidence of anxiety symptoms increased over time. When comparing incidence rates for the overlapping years, Walters et al. (2012) found symptom rates rose from 3.9 in 2003 to 5.8/1000PYAR in 2008, compared with the higher rates of 6.2 to 9.6/1000PYAR seen in this study. The higher incidence rates seen in the present study may be due to the additional symptom codes included in the READ code list, which account for 11% of the total symptom codes recorded by GPs ('worried', 'anxious', 'on exam - anxious', and 'on exam - panic attack'). Likewise, a recorded decrease in the incidence of anxiety disorders (defined as generalised anxiety codes only) observed at the end of the Walters et

al. (2012) study (4.9/1000PYAR in 2008) is also consistent with the decline seen in NSA codes in this study (5.3/1000PYAR in 2008). Similarly, there was a trend of reduced incidence of panic disorder and mixed anxiety and depression during the same overlapping period in the two studies, although rates in this study were slightly higher. Between 2003 and 2008, mixed anxiety and depression was 3.9 to 2.2/1000PYAR in the study by Walters et al. (2012), compared with 4.8 to 3.1/1000PYAR in this study. Whilst the present study included one additional mixed anxiety and depression code in the READ code list ('persistent anxiety depression'), this only accounted for a small percentage of the total codes used for this diagnostic sub-type. However, there is only a 60% overlap in the practices providing data to both CPRD Gold and THIN databases, and therefore it is possible that the higher rates seen in the present study are due to the differences in the populations seen by contributing practices (Carbonari et al., 2015). Importantly, the findings from Walters et al. (2012) only present trends in recording of anxiety up to 2008. Whilst the present study reports the continued increase of incident anxiety symptoms, it also highlights a contrasting increase in incident anxiety diagnoses since the end of 2008, and most notably in the most recent five years.

Using primary care data recorded in the Swansea Secure Anonymised Information Linkage (SAIL) Databank, another study reported an increase in symptom codes for anxiety, depression and MADD between 2000 and 2009, but a stable incidence of diagnosis codes over this period (John et al., 2016). However, this study did not present data for anxiety separately (John et al., 2016). Furthermore, as previously discussed, analysis of trends in the recording of depression indicate the introduction of the depression QOF in 2006 impacted GP willingness to label patients with a diagnostic code, with an increase in the use of symptom codes seen (Kendrick et al., 2015). Whilst Kendrick et al. (2015) only looked at depression, qualitative data from interviews with GPs about coding for anxiety supports this finding (Ford et al., 2016). That is, that GPs are reluctant to code for an anxiety disorder in the first instance, and prefer to use symptom codes where possible, as evidenced in the qualitative interviews in this study. However, this does not explain why the present study found an increase in diagnostic codes in more recent years. Literature suggests that increasing mental health promotion may be leading to increased awareness and reduced stigma (Stuart, 2016), and therefore, it is possible that a reduction in stigmatising views may be increasing help-seeking behaviour in the general public (Schnyder et al., 2017), along with greater awareness among GPs of the importance of diagnosing anxiety. A recent study used data from the nationally representative Attitudes to Mental Illness Survey, published annually between 2012 and 2016 (Henderson et al., 2017). The study found that the national anti-stigma campaign, 'Time To Change' (TTC), had led to an increase in intended help-seeking from GPs, and an increase in comfortable discussion and

disclosure of mental health. This may help to explain the rise in anxiety diagnoses seen in the last five years of the present study, along with the continued rise of anxiety symptoms.

The finding of an increased incidence of anxiety in women is consistent with previous research in primary care, whereby diagnoses of anxiety, or anxiety symptoms, are twice as high in women when compared with men (Martin-Merino et al., 2010; Walters et al., 2012). Surveys of the general population have also identified a higher prevalence of anxiety in women compared with men (Stansfeld et al., 2016). A critical review of research conducted within the community across the EU found an increased prevalence in women of all ages, with diagnoses of anxiety disorders in women over double that seen in men (Wittchen & Jacobi, 2005).

Using primary care data recorded in THIN between 2002 and 2004, an earlier study found that the incidence of any anxiety code was highest in adults aged 20-29 years old (Martin-Merino et al. (2010). However, the study did not distinguish between codes for anxiety disorders and codes for anxiety symptoms, and included a broader range of READ codes describing anxiety, such as phobias. The present study has extended these findings by using CPRD Gold data for a 16-year period and found that, in recent years, there has been an increase in the recorded incidence of anxiety – both diagnoses and symptoms – particularly for young adults (aged<35 years). This pattern reflects observations from population data.

Using data from the 2014 APMS, Stansfeld et al (2016) found that women aged 16-24 years old were three times more likely to have symptoms of common mental disorders than men in the same age band. In addition, the proportion of adults aged 16-24 years old with NSA increased from 3.6% to 6.3% from 2007 to 2014, whilst prevalence decreased for those aged over 75 years old, which aligns with the findings from this study. National survey data, focused specifically on prevalence in young people, has also identified that those aged 16-24 years were nearly ten times more likely to state that they had a mental health condition in 2014, compared with 1995 (Pitchforth et al., 2019). The authors speculate that this increase may be due to decreased stigma, and an increased awareness and willingness to discuss mental health, as outlined in other studies above (Henderson et al., 2017; Schnyder et al., 2017). One of the authors also suggests that an increase in pressure, the effects of social media and cyber-bullying, and 'generational inequality', may be contributing to the rise (Hargreaves, 2018). In the qualitative interviews for the present study, GPs and therapists suggested the recent increase in anxiety seen in younger adults, may be due to increased social media and internet use, and increasing pressure on this group. These findings are also mirrored by studies with adolescents, which have found increased social media use is associated with higher levels of anxiety (Woods & Scott, 2016; Vannucci et al., 2017; Keles et al., 2020). Therefore, an increase in the use of

social media combined with decreased stigma around mental health, with a corresponding greater awareness, may explain the increase in recorded anxiety – of any anxiety code, diagnosis codes, and symptoms codes – in recent years in younger adults.

4.4.4 Implications and future work

There was a decrease in the incidence of recorded anxiety diagnoses between 2003 and 2008, but the incidence of anxiety diagnoses increased in recent years (2013-2018). In contrast, there was an increase in the incidence of recorded anxiety symptoms over the 16-years of the study (2003-2018). The increase in recorded incidence of both diagnosis and symptom codes in later years of the study was substantial for younger adults. The earlier decline in recording of anxiety diagnoses may have been due to GP preference for using symptom codes rather than codes for an anxiety disorder. However, the recent rise in incidence of both recorded anxiety diagnoses and symptoms may reflect increased awareness of anxiety in both patients and GPs, and hence increased presentation in primary care. GPs and therapists both reported a rise in the incidence of anxiety amongst young adults and suggested that factors such as social media use, or an increase in pressure on young people may be contributing to this.

There is a clear need for future research to focus on the rise in anxiety seen in young adults in recent years and to understand why this is happening. Whilst this study reports GP and therapist perspectives, data on the views of patients are limited, particularly those under thirty-five years of age in which increasing incidence of anxiety was most notable. Future research could seek to interview young adults to understand these trends, and this would be critical in the development of potential interventions for young adults with anxiety, and the wider population. Additionally, a longitudinal study that focuses on the use of social media and the internet may help to explain if these factors play a causal role in anxiety. Future work is discussed further in Chapter 6 (section 6.5).

Chapter 5 Trends in the prescribing for anxiety in UK primary care

5.1 Chapter overview

This chapter details the second of the two quantitative components of this thesis, and presents qualitative data from the GP interviews that give insight into the rationale underpinning their prescribing behaviour, providing detailed insight and indicating possible reasons for the trends observed in the quantitative findings. The focus is on examining trends in medication prescribed for anxiety in UK primary care between 2003 and 2018.

The specific objectives of this quantitative component were to:

- Examine trends in prescribing overall and by drug class (antidepressants, benzodiazepines, beta-blockers, antipsychotics, anticonvulsants) between 2003 and 2018.
- Examine potential differences in prescribing over time according to age and gender.
- Determine whether any changes in prescribing over time were due to: (i) an increase in the number of new patients receiving medication (incident cases); and/or (ii) changes in the duration of treatment over the study period.

The chapter starts with an outline of the quantitative methods. This is followed by a description of the purpose of the qualitative data in this chapter, and how it relates to this study. The quantitative results are then presented. Firstly, brief descriptive statistics summarising the sample characteristics, then data on the prevalence and incidence of prescriptions for anxiety over the study period. This is followed by data on the duration of incident prescriptions, incidence of combination therapies, and doses of incident antidepressant medication. Each section presents overall trends in any anxiolytic medication, and trends in each drug class, alongside each other. In-depth findings from the qualitative interviews with GPs are then presented that relate specifically to prescribing for anxiety. The chapter finishes with a discussion of both the quantitative and qualitative results, reflections on the strengths and limitations of the study, and situates the findings within the context of previous research and implications for potential future work.

5.2 Methods

5.2.1 Study protocol

Data source

This study used the CPRD Gold, which, as summarised in the previous chapter (section 4.2.1), is a large observational database providing anonymised primary care data. The study protocol for the analysis was set out in advance and was approved by the CPRD ISAC.

As previously outlined, CPRD conduct quality checks on the data at both patient and practice level (Herrett et al., 2015), termed 'acceptability' and UTS respectively. As with the trends in coding for anxiety study, at the point of data extraction for this study (July 2019), there were 17,269,826 acceptable patients, of which 2,852,166 were currently registered at 337 contributing practices.

Design and study population

The study used a retrospective cohort design. The sample included patients aged 18 or over in CPRD Gold who had a prescription for an anxiolytic between 1st January 2003 and 31st December 2018. Patient records had to be classified as 'acceptable' by CPRD, and from a practice that was considered UTS for at least one year prior to date of entry into the study (1st January 2003). In addition, patients had to be registered with practices that had contributed data for the whole of the specified study period, that is, between 1st January 2003 and 31st December 2018.

Data preparation

Data management and analysis was conducted using Stata version 15.1 (StataCorp LLC, 2020).

The dataset that was used for the trends in coding for anxiety study, which was extracted from the CPRD Gold database by a member of the CPRD team on the 22nd July 2019, was also used for this study.

Initially, each data file was cleaned as outlined in the previous chapter (section 4.2.2). This included removing duplicated rows, and removing patients with missing or inaccurate data, such as those who had a recorded transfer out date or death date that was before the current registration date. Patients with missing data on gender (n=5) were also removed. For full details refer to Chapter 4 (section 4.2.2).

Codes for Anxiolytics

Analyses focussed on all prescriptions of any anxiolytic medication according to the appropriate British National Formulary (BNF) codes (outlined in the Appendix - A.12) during the study period.

This list of drugs was compiled based on the British Association for Psychopharmacology's (BAP) recommendations for pharmacological treatment for anxiety disorders (Baldwin et al., 2014) and the NICE guidelines (NICE, 2011b), and was also informed by GP interviews (sections 3.4 and 5.3.11). In addition, prescriptions were also examined by drug class: antidepressants; benzodiazepines; anticonvulsants (pregabalin and gabapentin only); atypical antipsychotics; and beta-blockers (propranolol only). Further analyses focussed on SSRIs and 'other antidepressant' prescriptions only.

Routine data does not link prescribing with symptoms or diagnoses. Therefore, in order to link the prescribing event with an anxiety code, in line with the protocol, the prescription for the anxiolytic medication had to have occurred within the 3 months prior to an anxiety READ symptom or diagnosis code date, or within the 6 months afterward. This aligns with timeframes used in similar studies (Moore et al., 2009). Anxiety codes were defined according to the READ codes outlined in the Appendix - A.7, and were comprised of symptom or diagnosis codes. These were the same codes as those used for the trends in coding for anxiety study reported in the previous chapter (section 4.2.2).

Originally, the protocol defined the study population as those who had a recorded anxiety code, in addition to the criteria listed under the study population sub-heading. However, once analysis commenced, it became apparent that the coding of anxiety and the prescribing of an anxiolytic were closely linked. That is, over half of the study population had a prescription on the same date as a recorded anxiety code, and therefore did not contribute any person-years-at-risk (median PYAR: 0 [IQR: 0, 0.41]). Therefore, a minor protocol amendment was approved by the CPRD ISAC in order to define those 'at risk' of receiving a prescription for anxiety as individuals aged 18 or over who were in CPRD Gold during the study period as described earlier.

Any anxiolytic prescription that commenced on the same date as another anxiolytic prescription was defined as combination therapy. For the analysis focusing on the incidence of anxiolytic prescriptions, patients had to have been registered with CPRD Gold for one year before the first recorded anxiolytic prescription to ensure high quality assessment of incident cases.

Calculating person-years at risk

Person-years at risk (PYAR) was used as the denominator, with patients entering the study on the last date of either their current registration date or the 1st January 2003. Patients stopped contributing PYAR on the earliest date of either their transfer out date; date of death; 31st December 2018; or date of their anxiolytic prescription. To preserve patient anonymity, CPRD only provide year of birth. Patients that were identified as under 18 years of age on the calculated date of entry had

their entry year amended to the year they turned 18 within the study period. Any anxiolytic prescriptions recorded prior to this date were not included in the analysis. Age was categorised into eight age-bands (<25, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years).

Statistical analyses

The following analyses were conducted firstly for any anxiolytic (any of the drugs listed earlier) and also for each drug class: (2) any antidepressant; (3) SSRIs & 'other' antidepressants; (4) benzodiazepines; (5) beta-blockers (propranolol); (6) antipsychotics; (7) anticonvulsants (pregabalin or gabapentin).

Trends in the prevalence of prescriptions for anxiety

To investigate trends in the prevalence of prescriptions, users of the products investigated were defined in each calendar year as patients who had received at least one prescription of that drug in that year. Period prevalence was calculated by dividing the number of cases by the total PYAR for each calendar year and are presented per 1000 PYAR. Estimates of 95% confidence intervals (95%CI) were calculated based on the Poisson distribution. Data were plotted on a graph to examine changes over time for all prescriptions of any anxiolytic, and then separately for each of the above drug classes. Data were also stratified by age and gender.

Univariable poisson regression models were used to examine the association between year of recording, age, gender and prevalence of the drug(s) of interest. Prevalence rate ratios (PRRs) and 95%CIs are reported. Multivariable poisson regression models that included year, age and gender were used to examine the independent effects of such factors. A sensitivity analysis was conducted to account for any clustering by practices within the multivariable model.

In addition, an interaction between age and year was included in the multivariable poisson regression model in order to examine whether trends in prescribing of anxiolytics varied according to age. This was formally tested using a likelihood-ratio test that compared models with and without the interaction term. An interaction between gender and year was also examined using the same approach in order to examine whether the trends in the prescribing of anxiolytics differed by gender.

Changes in trends over time were examined using joinpoint regression, using Joinpoint Trend Analysis Software (National Cancer Institute, 2020). The method tested for points in time where there was a noticeable change in trends. Models differing by one join point were compared to determine the model with the best fit to the data. A fuller explanation of joinpoint regression was provided in Chapter 4 (section 4.2.2).

A sensitivity analysis was conducted to consider anxiolytic medication prescribed within either the one month prior to the READ symptom or diagnosis code, or one month afterward. In addition, a sensitivity analysis was conducted to exclude patients prescribed low doses of amitriptyline in the analysis looking at any anxiolytic and all antidepressants.

Trends in the incidence of prescriptions for anxiety

To investigate trends in incident prescriptions, first time users of the products investigated were defined in each calendar year as patients who had received at least one prescription of that drug in that year, but had no prior prescriptions of that same drug during the study period, or in the one year before the study start date (i.e., 1st January 2002 for patients entering the study on 1st January 2003). A time frame of one year prior to date of entry was selected to allow for high quality assessment of incident cases at baseline.

Annual incidence rates were calculated by dividing the number of incident cases by the total PYAR for each year. They are presented per 1000 PYAR. Estimates of 95% confidence intervals (95%CI) for these rates were calculated based on the Poisson distribution. Data were plotted on a graph to examine changes over time for all incident prescriptions of any anxiolytic, and then separately for each of the above drug classes. Data were also stratified by age and gender.

As with the analysis investigating trends in prevalence, univariable poisson regression models were used to examine the association between year of recording, age, gender and incidence of the prescribing event of interest. Multivariable poisson regression models that included year, age and gender were used to examine the independent effects of such factors. A sensitivity analysis was conducted to account for any clustering by practices within the multivariable model.

Again, as with the prevalence analysis, an interaction between age and year, and gender and year, was included in the multivariable poisson regression model in order to examine whether trends in prescribing of anxiolytics varied according to age or gender. Changes in trends over time were also examined using joinpoint regression.

Sensitivity analyses were again conducted to consider anxiolytic medication prescribed one month either side of the READ anxiety code, and, in the analysis looking at any anxiolytic and all antidepressants, excluding patients prescribed low doses of amitriptyline.

Trends in prescriptions of combination therapy

For reporting incident combination therapies, an anxiolytic prescription that commenced on the same date as another anxiolytic prescription was defined as a combination therapy. Analyses were

conducted for: (1) any anxiolytic – any combination; (2) SSRI/'other' antidepressant and a benzodiazepine; (3) SSRI/'other' antidepressant and a beta-blocker (propranolol). NICE and BAP guidelines recommend a combination of an SSRI or SNRI with a benzodiazepine in certain clinical situations (NICE, 2011b; Baldwin et al., 2014).

Annual incidence rates were calculated by dividing the number of incident cases by the total PYAR for each year and are presented per 1000 PYAR. Estimates of 95% confidence intervals (95%CI) for these rates were calculated. Data were plotted on a graph to examine changes over time for all incident prescriptions of any anxiolytic, and then separately for each of the above drug class combinations. A sensitivity analysis was conducted to consider a later prescription for an anxiolytic medication issued within 4 weeks of the original prescription as a combination treatment. Where combination prescriptions were recorded across two years (i.e. December and January), the count was allocated to the year of the first prescription date.

Trends in treatment duration

To determine whether any changes in prescribing over time were due to changes in the duration of treatment over the study period, the duration of prescribed treatment was calculated for each incident anxiolytic prescription. The following analyses were conducted for each drug class: (1) any antidepressant; (2) SSRIs & 'other' antidepressant; (3) benzodiazepines; (4) beta-blockers (propranolol); (5) antipsychotics; and (6) anticonvulsants (pregabalin or gabapentin).

For each incident anxiolytic prescription, duration was derived by dividing the quantity of drug prescribed by the daily dose. If no dosage instructions were entered, then the median of the substance specific prescription duration of the same drug from the complete study cohort was used. Previous studies examining prescribing trends have used a similar approach (Moore et al., 2009; Mars et al., 2017). Depending on drug class, there were between 12 to 168 patients with incomplete dosage instructions. A prescription occurring within ≤12 months of the previous prescription ending (based on the prescribed dosing regimen) was considered part of the same treatment episode. Patients not prescribed medication for a period of >12 months were considered as having ended treatment, and any further prescriptions were regarded as part of a new treatment episode. Duration was subdivided into categories (<15 days, 16-30 days, 31-60 days, 61-180 days, 181 – 365 days, 366+ days). The proportion of each duration category was plotted by year to examine whether there have been changes in long-term prescribing over time.

Patterns of antidepressant dosing

Patterns of dosing for antidepressant prescriptions were calculated for prescriptions in the 'all antidepressant' drug class based on the expectation that there may be higher doses of antidepressants used in the treatment of anxiety (compared with prescribing for depression) (Cassano et al., 2002). There were 148 patients with missing dosage information, and a further 187 with daily dose values of zero. For these patients, the median dose for the substance specific prescription of the same drug from the complete study cohort was used. Median [IQR] doses were then tabulated for each individual antidepressant drug.

5.2.2 Qualitative data

During the interviews held with 15 GPs, which were detailed in Chapter 3, interviewees talked about when they might prescribe for anxiety, and their views and experiences of specific drugs they prescribe. These data are presented in this chapter to provide detailed insight into GPs' prescribing behaviour and thereby, possible reasons for some of the quantitative findings.

5.3 Results

5.3.1 Descriptive statistics

Sample characteristics

The final dataset included 176 practices at which a total of 2,569,153 eligible patients were registered across the 16-year period (2003-2018). The median number of eligible patients registered per practice was 12,642 [IQR: 9,188 to 18,425]. When looking at prescriptions for any anxiolytic, 9.8% (n=250,925) of eligible patients were prescribed an anxiolytic within the three months prior, or the six months after, an anxiety READ code.

There were 546,154 anxiolytic prescribing events recorded for the duration of the study (Table 16), in 250,925 patients, with 17,684,056.1 PYFU (median follow-up: 5.0 years [IQR: 1.7 to 12.3 years]).

Focusing on drug class, there were 449,499 antidepressant prescribing events recorded over the duration of the study (18,067,571.1 PYFU). When TCAs and MAOIs were excluded, there were 407,229 SSRI & 'other antidepressant' (e.g. SNRIs such as venlafaxine) prescribing events recorded over the duration of the study (18,065,985.6 PYFU). There were 210,743 benzodiazepine prescribing events (18,469,794.8 PYFU), 100,146 beta-blocker (propranolol) prescribing events (18,834,179.4 PYFU), 26,587 antipsychotic prescriptions (19,110,119.4 PYFU), and 28,601 anticonvulsant

prescriptions (19,108,786.2 PYFU). Across each drug class of interest, a greater proportion of patients were prescribed an anxiolytic on the same date as, or after, an anxiety READ code, than they were prior to the READ code (Table 16). This was most notable for atypical antipsychotics and anticonvulsants, where only 22.7% and 23.9% of prescribing events were prescribed prior to an anxiety code.

Table 16 Number of prescribing events during the study – for any anxiolytic and by drug class

Drug(s) of interest	**Prescription within defined time period**				
	Total Prescribing events	*3 months prior to anxiety code**		*Same date as, or 6 months after, anxiety code**	
	Freq.	Freq.	%	Freq.	%
Any anxiolytic	546,154∞	199,357	36.5	346,797	63.5
All antidepressants	449,499	147,548	32.8	301,951	67.2
SSRI & 'other' antidepressants	407,229	136,899	33.6	270,330	66.4
Benzodiazepines	210,743	92,050	43.7	118,693	56.3
Beta-blockers (Propranolol)	100,146	48,570	48.5	51,576	51.5
Atypical antipsychotics	26,587	6,029	22.7	20,558	77.3
Anticonvulsants	28,601	6,843	23.9	21,758	76.1
**includes codes relating to incident prescriptions and repeat prescriptions.*					
∞this figure only includes one anxiolytic per year, per patient. Hence, it is not a sum of total prescribing events from each drug class.					

There were 194,049 incident anxiolytic prescribing events recorded for the duration of the study (Table 17), in 194,049 patients, with 17,825,522.0 PYFU (median follow-up: 5.0 years [IQR: 1.8 to 12.5 years]).

Focusing on drug class, there were 163,273 incident antidepressant prescribing events (17,956,588.96 PYFU). When TCAs and MAOIs were excluded, there were 153,674 incident SSRI & 'other antidepressant' prescribing events (18,153,172.97 PYFU). There were 94,927 incident benzodiazepine prescribing events (18,513,252.17 PYFU), 52,421 incident beta-blocker (propranolol) prescribing events (18,847,530.62 PYFU), 10,358 incident antipsychotic prescribing events (19,113,653.14 PYFU), and 14,572 incident anticonvulsant prescribing events (19,109,588.97 PYFU). Again, patients were more likely to be prescribed an incident anxiolytic on the same date as, or after, an anxiety READ code (Table 17).

Table 17 Number of incident prescribing events during the study – for any anxiolytic and by drug class

Drug(s) of interest	Prescription within defined time period				
	Total Prescribing events	*3 months prior to anxiety code*		*Same date as, or 6 months after, anxiety code*	
	Freq.	Freq.	%	Freq.	%
Any anxiolytic	194,049∞	94,153	48.5	99,896	51.5
All antidepressants	163,273	69,544	42.6	93,729	57.4
SSRI & 'other' antidepressants	153,674	66,802	43.5	86,872	56.5
Benzodiazepines	94,927	51,491	54.2	43,436	45.8
Beta-blockers (Propranolol)	52,421	31,026	59.2	21,395	40.8
Atypical antipsychotics	10,358	2,593	25.0	7,765	75.0
Anticonvulsants	14,572	3,856	26.5	10,716	73.5
∞this figure only includes one anxiolytic per year, per patient. Hence, it is not a sum of total prescribing events from each drug class.					

5.3.2 Trends in the prevalence of anxiolytic prescriptions

Estimates of the prevalence of anxiolytic prescriptions are presented in Figure 13, with the underlying data on prevalence rates presented in Table 18, Table 19, and Table 20. Between 2003 and 2008, the prevalence of any anxiolytic prescription was fairly constant at 25-26/1000PYAR, rising sharply to 43.6/1000PYAR in 2018 (Table 18, Figure 13). During the study period, a similar pattern was seen for all antidepressants, and for SSRI and 'other' antidepressants only (Table 18, Figure 13). The prevalence of prescriptions for benzodiazepines was lower but remained fairly constant over the duration of the study (Table 19, Figure 13). Prescriptions for beta-blockers (propranolol) showed a gradual increase from 3.8/1000PYAR in 2008 to 8.7/1000PYAR in 2018 (Table 19, Figure 13). Antipsychotics and anticonvulsants were prescribed infrequently over the duration of the study (Table 19 and Table 20, Figure 13).

Figure 13 Prevalence of anxiolytic prescriptions (any anxiolytic, and by drug class) per 1000 person years between 2003 and 2018

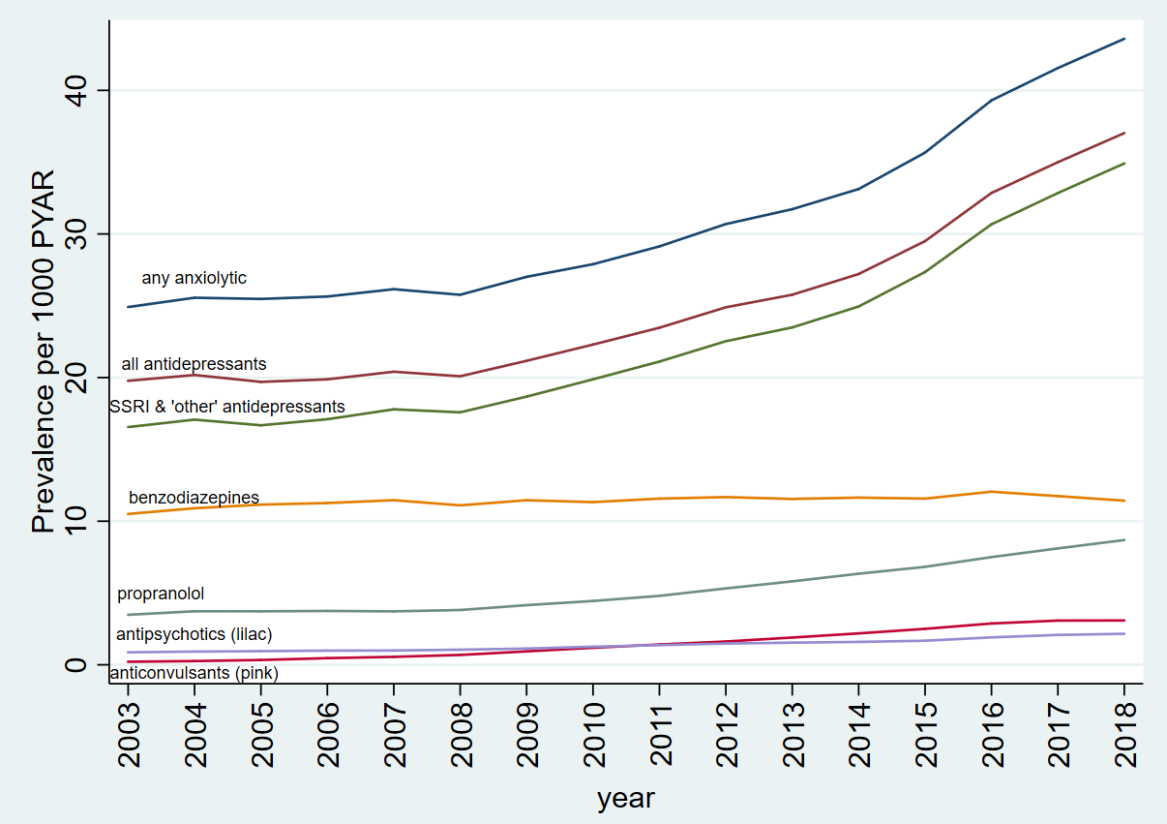


Table 18 Prevalence of anxiolytic prescriptions per 1000 person years between 2003 and 2018 - any anxiolytic, all antidepressants, and SSRIs and 'other' antidepressants

Variable		Any anxiolytic				All antidepressants				SSRIs and 'other' antidepressants			
		N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N *	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
Year	2003	27259	1094262	24.9	(24.6-25.2)	21714	1097927	19.8	(19.5-20.0)	21714	1097927	19.8	(19.5-20.0)
	2004	28014	1095981	25.6	(25.3-25.9)	22253	1102648	20.2	(19.9-20.5)	22253	1102648	20.2	(19.9)-20.5)
	2005	27755	1089464	25.5	(25.2-25.8)	21645	1098693	19.7	(19.4-20.0)	21645	1098693	19.7	(19.4-20.0)
	2006	28001	1091856	25.7	(25.4-26.0)	21933	1103342	19.9	(19.6-20.1)	21933	1103342	19.9	(19.6-20.1)
	2007	28571	1092352	26.2	(25.9-26.5)	22565	1105715	20.4	(20.1-20.7)	22565	1105715	20.4	(20.1-20.7)
	2008	28304	1098485	25.8	(25.5-26.1)	22373	1113529	20.1	(19.8-20.4)	22373	1113529	20.1	(19.8-20.4)
	2009	29691	1099018	27.0	(26.7-27.3)	23613	1115563	21.2	(20.9-21.4)	23613	1115563	21.2	(20.9-21.4)
	2010	30744	1102172	27.9	(27.6-28.2)	24977	1120114	22.3	(22.0-22.6)	24977	1120114	22.3	(22.0-22.6)
	2011	32136	1103020	29.1	(28.8-29.5)	26338	1122097	23.5	(23.2-23.8)	26338	1122097	23.5	(23.2-23.8)
	2012	34042	1109218	30.7	(30.4-31.0)	28117	1129367	24.9	(24.6-25.2)	28117	1129367	24.9	(24.6-25.2)
	2013	35205	1109683	31.7	(31.4-32.1)	29137	1130719	25.8	(25.5-26.1)	29137	1130719	25.8	(25.5-26.1)
	2014	36904	1113990	33.1	(32.8-33.5)	30911	1135969	27.2	(26.9-27.5)	30911	1135969	27.2	(26.9-27.5)
	2015	39873	1117944	35.7	(35.3-36.0)	33655	1140777	29.5	(29.2-29.8)	33655	1140777	29.5	(29.2-29.8)
	2016	44123	1122637	39.3	(38.9-39.7)	37667	1146445	32.9	(32.5-33.2)	37667	1146445	32.9	(32.5-33.2)
	2017	46615	1121776	41.6	(41.2-41.9)	40120	1146334	35.0	(34.7-35.3)	40120	1146334	35.0	(34.7-35.3)
	2018	48917	1122197	43.6	(43.2-44.0)	42481	1147348	37.0	(36.7-37.4)	42481	1147348	37.0	(36.7-37.4)

** N = Number of prescriptions*

Table 19 Prevalence of prescriptions of benzodiazepines, beta-blockers, and antipsychotics per 1000 person-years between 2003 and 2018

Variable		Benzodiazepines				Beta-blockers (Propranolol)				Antipsychotics			
		N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
Year	2003	11607	1104957	10.5	(10.3-10.7)	3867	1109668	3.5	(3.4-3.6)	966	1111347	0.9	(0.8-0.9)
	2004	12155	1114743	10.9	(10.7-11.1)	4191	1124116	3.7	(3.6-3.8)	1040	1128121	0.9	(0.9-1.0)
	2005	12426	1113993	11.2	(11.0-11.4)	4197	1126933	3.7	(3.6-3.8)	1078	1133101	1.0	(0.9-1.0)
	2006	12630	1121203	11.3	(11.1-11.5)	4265	1137385	3.8	(3.6-3.9)	1133	1145482	1.0	(0.9-1.1)
	2007	12910	1126158	11.5	(11.3-11.7)	4262	1145266	3.7	(3.6-3.8)	1150	1155083	1.0	(0.9-1.1)
	2008	12617	1136325	11.1	(10.9-11.3)	4417	1158047	3.8	(3.7-3.9)	1231	1169586	1.1	(1.0-1.1)
	2009	13075	1140819	11.5	(11.8-11.7)	4838	1164696	4.2	(4.0-4.3)	1333	1177993	1.1	(1.1-1.2)
	2010	13008	1148127	11.3	(11.1-11.5)	5217	1173956	4.4	(4.3-4.6)	1499	1189143	1.3	(1.2-1.3)
	2011	13346	1153072	11.6	(11.4-11.8)	5667	1180375	4.8	(4.7-4.9)	1642	1197542	1.4	(1.3-1.4)
	2012	13592	1163783	11.7	(11.5-11.9)	6341	1192327	5.3	(5.2-5.5)	1796	1211660	1.5	(1.4-1.5)
	2013	13498	1168671	11.6	(11.4-11.8)	6962	1197801	5.8	(5.7-6.0)	1883	1219270	1.5	(1.5-1.6)
	2014	13709	1177548	11.6	(11.5-11.8)	7657	1207120	6.3	(6.2-6.5)	1964	1231060	1.6	(1.5-1.7)
	2015	13733	1186678	11.6	(11.4-11.8)	8296	1216322	6.8	(6.7-7.0)	2083	1242920	1.7	(1.6-1.8)
	2016	14442	1198091	12.1	(11.9-12.3)	9207	1227687	7.5	(7.4-7.7)	2401	1257243	1.9	(1.8-2.0)
	2017	14145	1203972	11.8	(11.6-11.9)	9995	1232947	8.1	(8.0-8.3)	2632	1265430	2.1	(2.0-2.2)
	2018	13850	1211655	11.4	(11.2-11.6)	10767	1239534	8.7	(8.5-8.9)	2756	1275138	2.2	(2.1-2.2)

** N = Number of prescriptions*

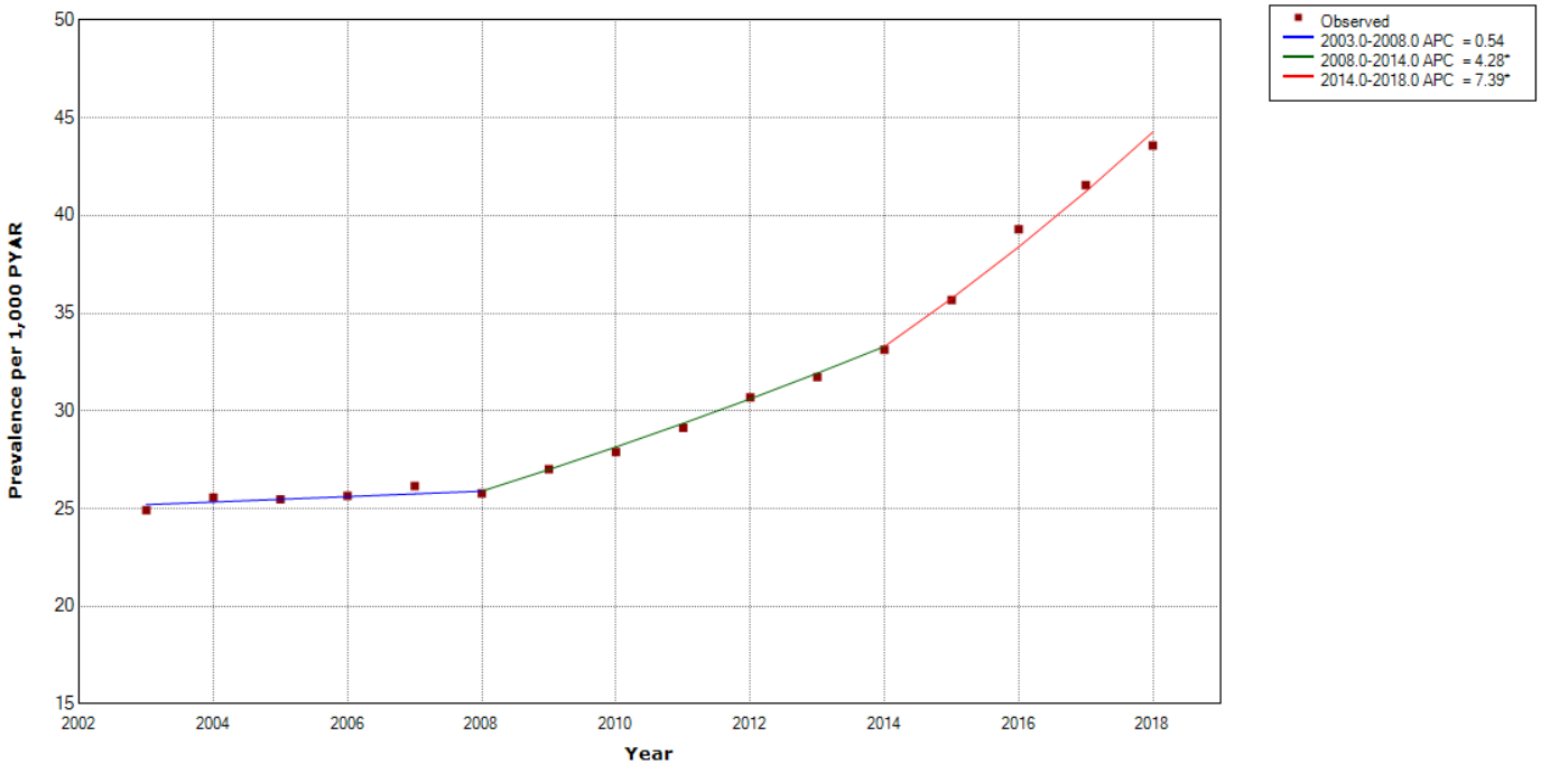
Table 20 Prevalence of prescriptions of anticonvulsants per 1000 person-years between 2003 and 2018

Variable		Anticonvulsants			
		N *	PYAR	Prevalence (1000PYAR)	(95%CI)
Year	2003	235	1111806	0.2	(0.2-0.2)
	2004	294	1128992	0.3	(0.2-0.3)
	2005	382	1134212	0.3	(0.3-0.4)
	2006	531	1146760	0.5	(0.4-0.5)
	2007	642	1156437	0.6	(0.5-0.6)
	2008	805	1170929	0.7	(0.6-0.7)
	2009	1101	1179208	0.9	(0.9-1.0)
	2010	1411	1190165	1.2	(1.1-1.3)
	2011	1694	1198201	1.4	(1.4-1.5)
	2012	1968	1211957	1.6	(1.6-1.7)
	2013	2315	1219106	1.9	(1.8-2.0)
	2014	2691	1230326	2.2	(2.1-2.3)
	2015	3108	1241507	2.5	(2.4-2.6)
	2016	3610	1255069	2.9	(2.8-3.0)
	2017	3888	1262534	3.1	(3.0-3.2)
	2018	3926	1271576	3.1	(3.0-3.2)

** N = Number of prescriptions*

Changes in trends over time were examined formally using join point regression. The best fitting model for any anxiolytic included two join points - one in 2008 (95% CI 2006 - 2011), after which there was an increase in the prevalence of prescribing, and one in 2014 (95% CI 2011 - 2016), after which there was a substantial increase in the prevalence of anxiolytic prescriptions over the last four years of the study (Figure 14). For all antidepressants, and for the analysis of SSRIs and 'other' antidepressants, the join point model mirrored that of any anxiolytics, with two join points: one at 2008 (95% CI 2006 – 2010), and the second at 2014 (95% CI 2011 - 2016), with a substantial increase in the rate of prescribing over the last four years of the study period. These models are presented in the Appendix A.13 - Figure 60 and A.14 - Figure 61.

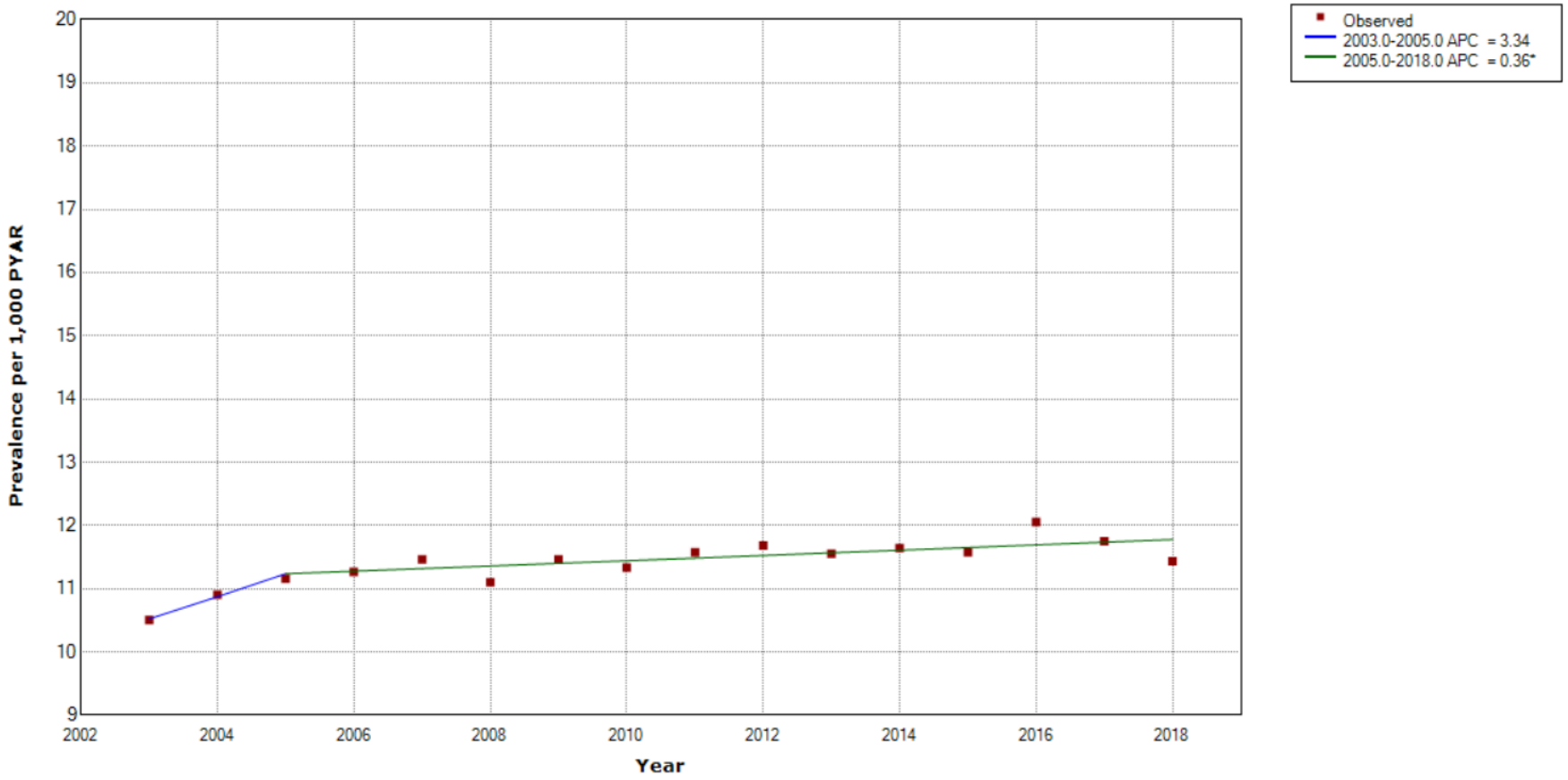
Figure 14 Best fitting join point model of prevalence of any anxiolytic prescription per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 2 Joinpoints.

For prescriptions of benzodiazepines, the best fitting model had one join point in 2005 (95% CI 2005-2016) after which there was a reduction in the rate of increase in prescribing and prevalence levelled off (Figure 15).

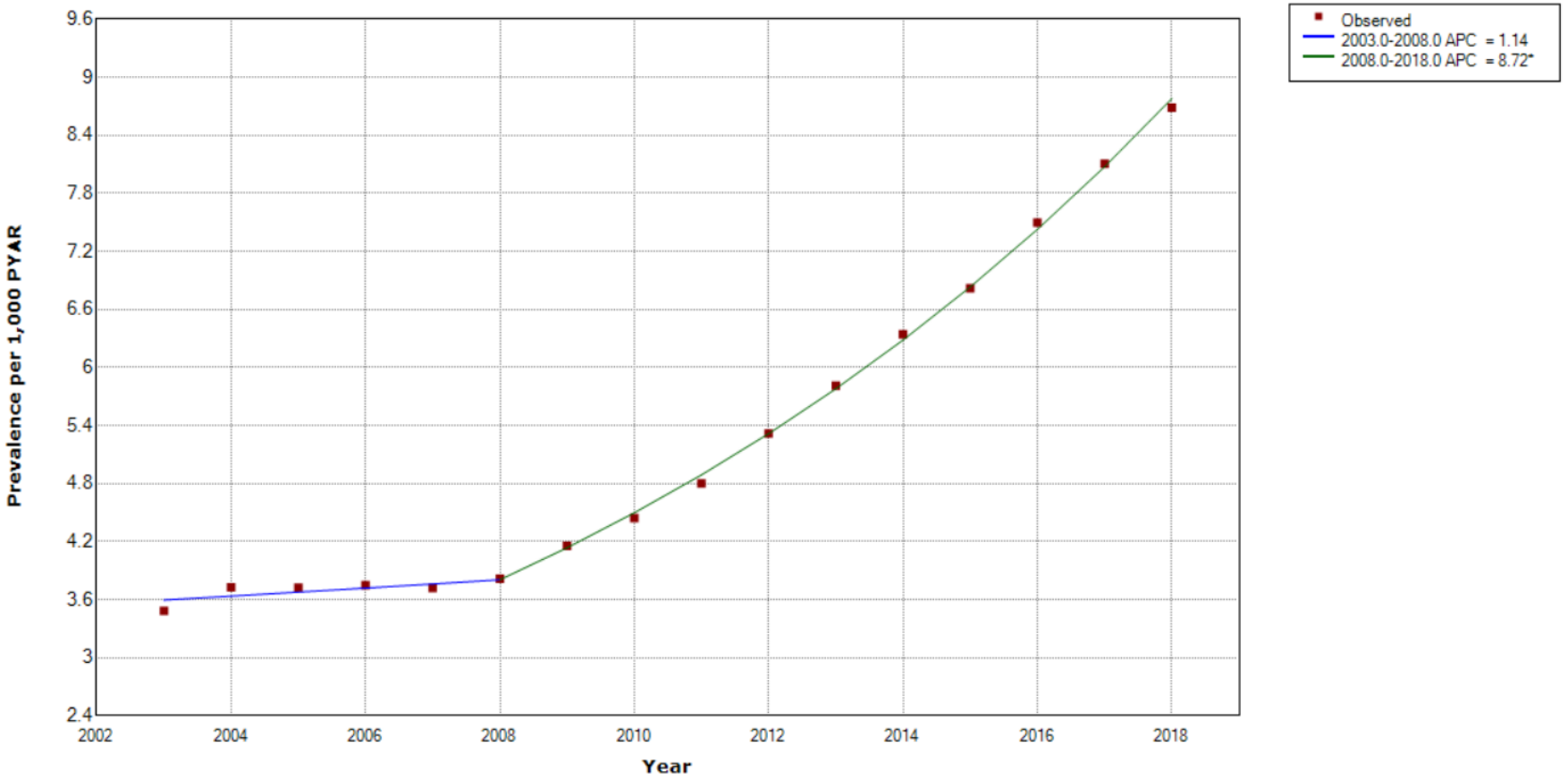
Figure 15 Best fitting join point model of prevalence of benzodiazepine prescriptions per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 1 Joinpoint.

For prescriptions of beta-blockers (propranolol), the best fitting model had one join point in 2008 (95% CI 2007-2009), after which the rate of prescribing increased substantially (Figure 16).

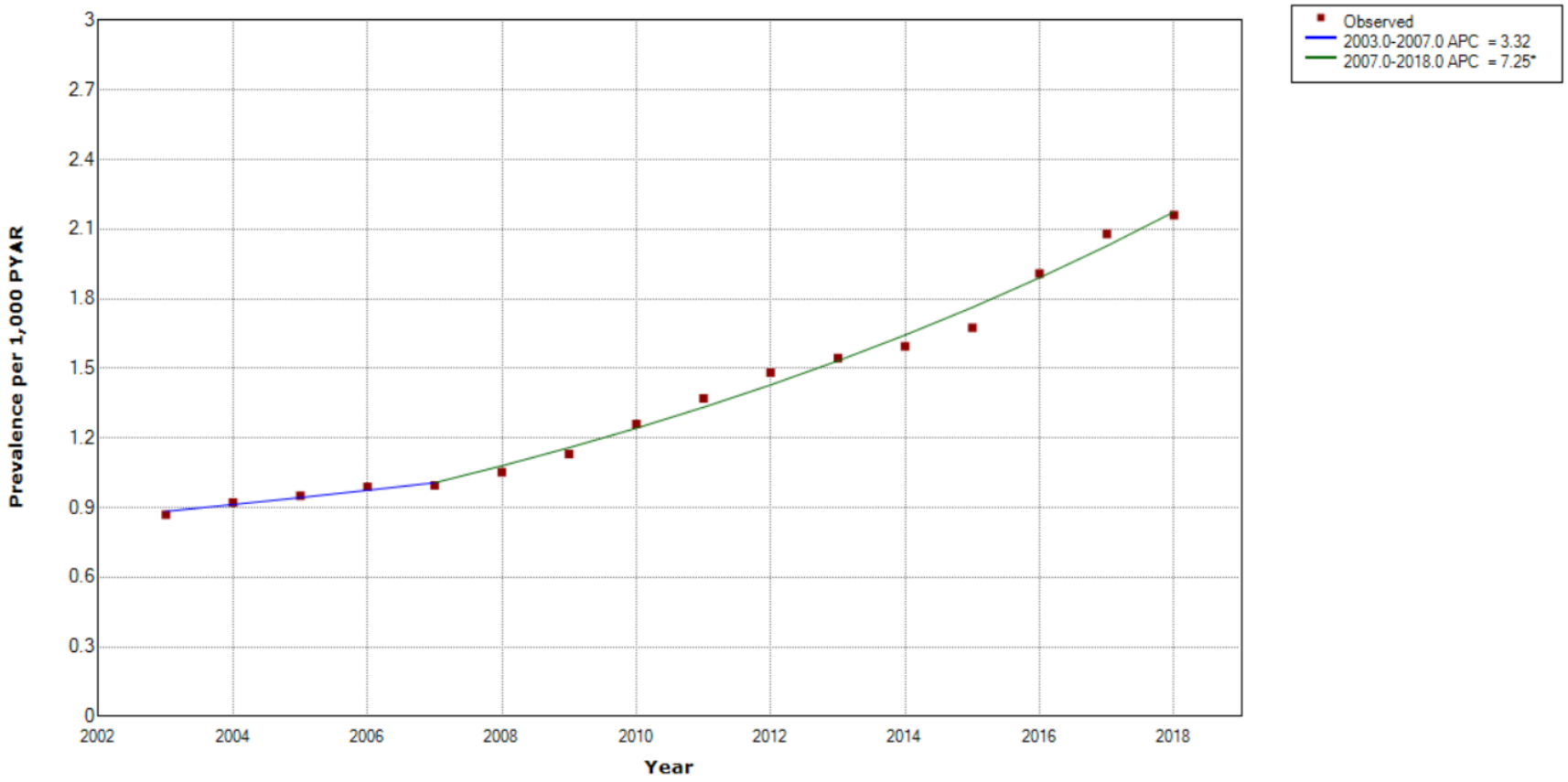
Figure 16 Best fitting join point model of prevalence of beta-blocker prescriptions per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 1 Joinpoint.

The best fitting model for prescriptions of antipsychotics also had one join point, at 2007 (95% CI 2005-2010), after which the prevalence of prescribing increased (Figure 17).

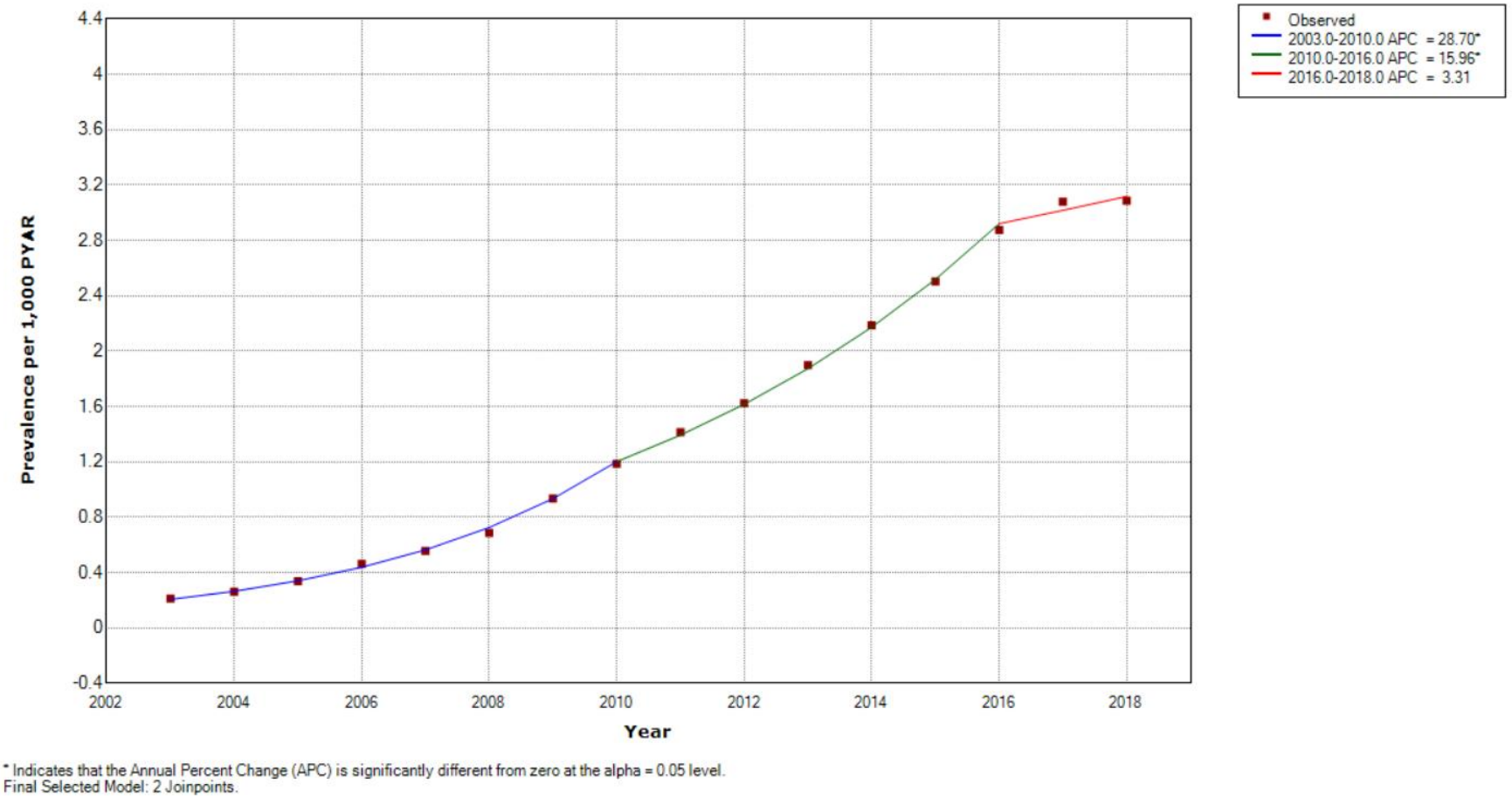
Figure 17 Best fitting join point model of prevalence of antipsychotic prescriptions per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 1 Joinpoint.

The best fitting model for prescriptions of anticonvulsants (pregabalin and gabapentin) included two join points: one at 2010 (95% CI 2009-2012), when there was a reduction in the rate of increase in prescribing, and a second in 2016 (95% CI 2015-2016), when there was a further reduction in the rate of increase in prescribing (Figure 18).

Figure 18 Best fitting join point model of prevalence of anticonvulsant prescriptions per 1000 person-years



Prevalence rate ratios (PRRs) for year, gender and age group, for prescriptions of any anxiolytic, and for each drug (all antidepressants, SSRI & 'other' antidepressants, benzodiazepines, beta-blockers, antipsychotics, and anticonvulsants) are shown in Table 21 and Table 22, and in the Appendix A.15 - Table 35, A.16 - Table 36 and A.17 - Table 37.

After adjusting for age and gender, in 2018 the prevalence of any anxiolytic, all antidepressant and SSRI and 'other' antidepressant prescriptions was nearly twice that of 2003 (adjusted PRR comparing 2018 with 2013: any anxiolytic 1.81 (95% CI 1.78-1.83); all antidepressants 1.94 (1.90-1.97); SSRIs and 'other' antidepressants 2.19 (95% CI 2.15-2.23)) (Table 21 and Appendix A.15 - Table 35). In contrast, there was only a modest increase in the prevalence of prescriptions of benzodiazepines in 2018 compared with 2003 (Table 22: adjusted PRR 1.10 (95% CI 1.07-1.12)). The adjusted PRR comparing prevalence in 2018 with 2003 for beta-blockers was 2.61 (95% CI 2.51-2.70), for antipsychotics it was 2.53 (95% CI 2.35-2.72), and for anticonvulsants it was 14.62 (95% CI 12.82-16.68) (Table 22 and Appendix A.16 - Table 36 and A.17 - Table 37).

Prescribing of anxiolytics in women was over twice that of men. This was consistent across any anxiolytic (Table 21: adjusted PRR comparing women to men: 2.23 (95% CI 2.22-2.25), and each drug class (all antidepressants (Table 21); SSRI & 'other' antidepressant (Appendix A.15 - Table 35); benzodiazepines (Table 22); beta-blockers (Table 22); and anticonvulsants (Appendix A.17 - Table 37), with the exception of prescriptions of antipsychotics where the prevalence of prescribing was around 50% higher for women compared to men (Appendix A.16 - Table 36: PR: 1.46 (95% CI 1.42-1.49)).

Prescribing of any anxiolytic was less prevalent in the older age groups, with the prevalence of prescribing for those aged 85+ years being around 30% lower (adjusted PRR: 0.71 (95%CI 0.69-0.72)) than for the youngest age group (<25 years) (Table 21). Prescribing of antidepressants, SSRIs and 'other antidepressants' and beta-blockers was similarly less prevalent in the older age groups (Table 21, Table 22 and Appendix A.15 - Table 35).

In contrast, for benzodiazepines and anticonvulsants, the prevalence of prescriptions in those aged 25+ was two to three times that of the youngest age group (<25 years). For example, the prevalence of prescriptions in those aged 85+ years was around twice that of the under 25-year olds for benzodiazepines (Table 22: adjusted PRR: 1.91 (95% CI 1.86-1.97)), and anticonvulsants (Appendix A.17 - Table 37: adjusted PPR: 2.08 (95% CI 1.89-2.30)). For antipsychotics, the prevalence of prescribing for those aged 25-54 years was around 40% higher than the youngest age group (<25 years) (Appendix A.16 - Table 36).

For any anxiolytic, and for each drug class (all antidepressants, benzodiazepines, beta-blockers, antipsychotics, and anticonvulsants), sensitivity analyses were conducted to examine the potential impact of clustering within GP practices on findings. Whilst confidence intervals were wider, findings were consistent with the results that did not allow for clustering (Appendix A.18 - Table 38 and A.19 - Table 39).

Table 21 Prevalence rate ratios for prescriptions of any anxiolytic, and all antidepressants

		Any anxiolytic						All antidepressants					
Variable		Univariable PRR	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value	Univariable PRR	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	1.03	(1.01-1.04)		1.03	(1.01-1.05)		1.02	(1.00-1.04)		1.02	(1.00-1.04)	
	2005	1.02	(1.01-1.04)		1.03	(1.01-1.05)		1.00	(0.98-1.02)		1.00	(0.98-1.02)	
	2006	1.03	(1.01-1.05)		1.04	(1.02-1.06)		1.01	(0.99-1.02)		1.01	(0.99-1.03)	
	2007	1.05	(1.03-1.07)		1.06	(1.04-1.08)		1.03	(1.01-1.05)		1.04	(1.02-1.06)	
	2008	1.03	(1.02-1.05)		1.05	(1.03-1.06)		1.02	(1.00-1.04)		1.03	(1.01-1.05)	
	2009	1.08	(1.07-1.10)		1.10	(1.08-1.12)		1.07	(1.05-1.09)		1.09	(1.07-1.11)	
	2010	1.12	(1.10-1.14)		1.14	(1.12-1.16)		1.13	(1.11-1.15)		1.15	(1.12-1.17)	
	2011	1.17	(1.15-1.19)		1.19	(1.17-1.21)		1.19	(1.17-1.21)		1.21	(1.19-1.23)	
	2012	1.23	(1.21-1.25)		1.26	(1.24-1.28)		1.26	(1.24-1.28)		1.28	(1.26-1.31)	
	2013	1.27	(1.25-1.29)		1.30	(1.28-1.32)		1.30	(1.28-1.33)		1.33	(1.31-1.35)	
	2014	1.33	(1.31-1.35)		1.36	(1.34-1.38)		1.38	(1.35-1.40)		1.41	(1.38-1.43)	
	2015	1.43	(1.41-1.45)		1.47	(1.45-1.49)		1.49	(1.47-1.52)		1.53	(1.50-1.56)	
	2016	1.58	(1.55-1.60)		1.62	(1.60-1.65)		1.66	(1.63-1.69)		1.71	(1.68-1.74)	
	2017	1.67	(1.64-1.69)		1.72	(1.69-1.74)		1.77	(1.74-1.80)		1.82	(1.79-1.85)	
	2018	1.75	(1.72-1.78)		1.81	(1.78-1.83)		1.87	(1.84-1.90)		1.94	(1.90-1.97)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.19	(2.18-2.21)		2.23	(2.22-2.25)		2.21	(2.19-2.22)		2.26	(2.24-2.27)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	1.29	(1.27-1.30)		1.28	(1.27-1.29)		1.32	(1.31-1.34)		1.31	(1.30-1.33)	
	35-44	1.26	(1.24-1.27)		1.28	(1.26-1.29)		1.30	(1.29-1.32)		1.33	(1.31-1.34)	
	44-54	1.19	(1.17-1.20)		1.18	(1.17-1.20)		1.22	(1.21-1.24)		1.22	(1.20-1.23)	
	55-64	1.01	(1.00-1.03)		1.01	(1.00-1.02)		1.02	(1.01-1.03)		1.01	(1.00-1.03)	
	65-74	0.87	(0.86-0.88)		0.84	(0.83-0.85)		0.82	(0.81-0.83)		0.79	(0.78-0.80)	
	75-84	0.91	(0.90-0.92)		0.85	(0.84-0.87)		0.83	(0.82-0.85)		0.78	(0.77-0.79)	
	85+	0.82	(0.80-0.84)		0.71	(0.69-0.72)		0.73	(0.72-0.75)		0.63	(0.62-0.65)	

**Multivariable model adjusted for year, gender, and age band*

Table 22 Prevalence rate ratios for prescriptions of benzodiazepines, and beta-blockers

		Benzodiazepine						Beta-blockers (Propranolol)					
Variable		Univariable PRR	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value	Univariable PRR	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	1.04	(1.01-1.06)		1.04	(1.01-1.07)		1.07	(1.02-1.12)		1.07	(1.03-1.12)	
	2005	1.06	(1.04-1.09)		1.07	(1.04-1.09)		1.07	(1.02-1.12)		1.07	(1.03-1.12)	
	2006	1.07	(1.05-1.10)		1.08	(1.05-1.10)		1.08	(1.03-1.12)		1.08	(1.04-1.13)	
	2007	1.09	(1.06-1.12)		1.10	(1.07-1.13)		1.07	(1.02-1.12)		1.08	(1.03-1.13)	
	2008	1.06	(1.03-1.08)		1.06	(1.04-1.09)		1.09	(1.05-1.14)		1.11	(1.06-1.16)	
	2009	1.09	(1.06-1.12)		1.10	(1.07-1.13)		1.19	(1.14-1.24)		1.21	(1.16-1.26)	
	2010	1.08	(1.05-1.11)		1.09	(1.06-1.12)		1.28	(1.22-1.33)		1.30	(1.24-1.35)	
	2011	1.10	(1.07-1.13)		1.11	(1.08-1.14)		1.38	(1.32-1.44)		1.40	(1.35-1.46)	
	2012	1.11	(1.08-1.14)		1.12	(1.09-1.15)		1.53	(1.47-1.59)		1.56	(1.50-1.63)	
	2013	1.10	(1.07-1.13)		1.11	(1.08-1.14)		1.67	(1.60-1.73)		1.71	(1.65-1.78)	
	2014	1.11	(1.08-1.14)		1.12	(1.09-1.15)		1.82	(1.75-1.89)		1.87	(1.80-1.95)	
	2015	1.10	(1.07-1.13)		1.11	(1.08-1.14)		1.96	(1.88-2.03)		2.02	(1.95-2.10)	
	2016	1.15	(1.12-1.18)		1.16	(1.13-1.19)		2.15	(2.07-2.23)		2.23	(2.15-2.32)	
	2017	1.12	(1.09-1.15)		1.13	(1.10-1.16)		2.33	(2.24-2.41)		2.42	(2.33-2.51)	
	2018	1.09	(1.06-1.12)		1.10	(1.07-1.12)		2.49	(2.40-2.59)		2.61	(2.51-2.70)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.23	(2.21-2.25)		2.22	(2.2-2.24)		2.23	(2.2-2.26)		2.33	(2.3-2.36)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	1.73	(1.70-1.77)		1.72	(1.68-1.76)		1.13	(1.11-1.16)		1.12	(1.10-1.15)	
	35-44	1.98	(1.94-2.02)		1.98	(1.94-2.02)		0.98	(0.96-1.00)		1.00	(0.98-1.02)	
	44-54	2.04	(2.00-2.08)		2.04	(2.00-2.08)		0.84	(0.82-0.86)		0.82	(0.81-0.84)	
	55-64	1.96	(1.92-2.00)		1.95	(1.91-1.99)		0.58	(0.57-0.60)		0.57	(0.56-0.59)	
	65-74	2.05	(2.01-2.10)		2.01	(1.96-2.05)		0.36	(0.35-0.38)		0.34	(0.33-0.36)	
	75-84	2.32	(2.26-2.37)		2.19	(2.14-2.24)		0.25	(0.24-0.26)		0.23	(0.22-0.24)	
	85+	2.19	(2.12-2.25)		1.91	(1.86-1.97)		0.13	(0.12-0.14)		0.11	(0.10-0.12)	

**Multivariable model adjusted for year, gender, and age band*

5.3.3 Trends in the prevalence of anxiolytic prescriptions over time by gender and age

As outlined above, prescribing in women was nearly twice that of men for any anxiolytic, and most drug classes (Figure 19 to Figure 25). Estimates of prevalence rates of anxiolytic prescriptions for men and women between 2003 and 2018 (for any anxiolytic, and each drug class) are provided in the Appendix A.19 - Table 40, A.21 - Table 41, and A.22 - Table 42, and presented graphically in Figure 19 to Figure 25.

In order to formally test whether prevalence varied over time according to gender, the multivariable Poisson regression model was repeated including an interaction between year and gender. There was evidence of an interaction by gender for any anxiolytic (p value for interaction 0.02); all antidepressants (p=0.007); SSRIs & 'other' antidepressants (p=0.006); benzodiazepines (p=0.03); and beta-blockers (propranolol) (p=0.009). There was weak evidence of an interaction for anticonvulsants (p=0.07), and no evidence of an interaction for antipsychotics (p=0.44).

Whilst visual inspection of the graphs that presented prevalence data by gender suggested that these interaction effects may be driven by differences in the prevalence of prescribing in later years of the study, inspection of the interaction parameters in the models indicated this was not always the case. The interaction parameters are the ratios of the rate ratios for women compared with men for the individual years of the study. For any anxiolytic, all antidepressants, and SSRIs & 'other' antidepressants, the interaction parameters for 2005 to 2008 were driving the interaction effect (for example, for any anxiolytic: Appendix A.23 - Table 43). These results need to be interpreted with some caution. For these years (compared with 2003), there was little temporal increase in prescribing for men (Appendix A.24 - Table 44) such that the slight increase in women represented a large relative increase and it was this relative difference which the interaction terms were estimating (Appendix A.23 - Table 43 and A.24 Table 44), Similarly, for benzodiazepines, the interaction effect should be interpreted with caution as it was driven by a single interaction parameter (2008) (data not shown). For beta-blockers, the interaction parameters for 2004-2007 and 2011-2018 were driving the interaction effect (data not shown). Again, there was little temporal increase in prescribing for men between 2004 and 2007 (compared with 2003) (Appendix A.21 - Table 41) such that the slight increase in women represented a large relative increase in the early years that may not be meaningful (data not shown). The increase in prevalent prescribing of beta-blockers in women in later years (2011-2018) compared with men was more apparent but again should be interpreted with caution (Appendix A.21 - Table 41).

Figure 19 Prevalence of any anxiolytic prescription per 1000PYAR by gender

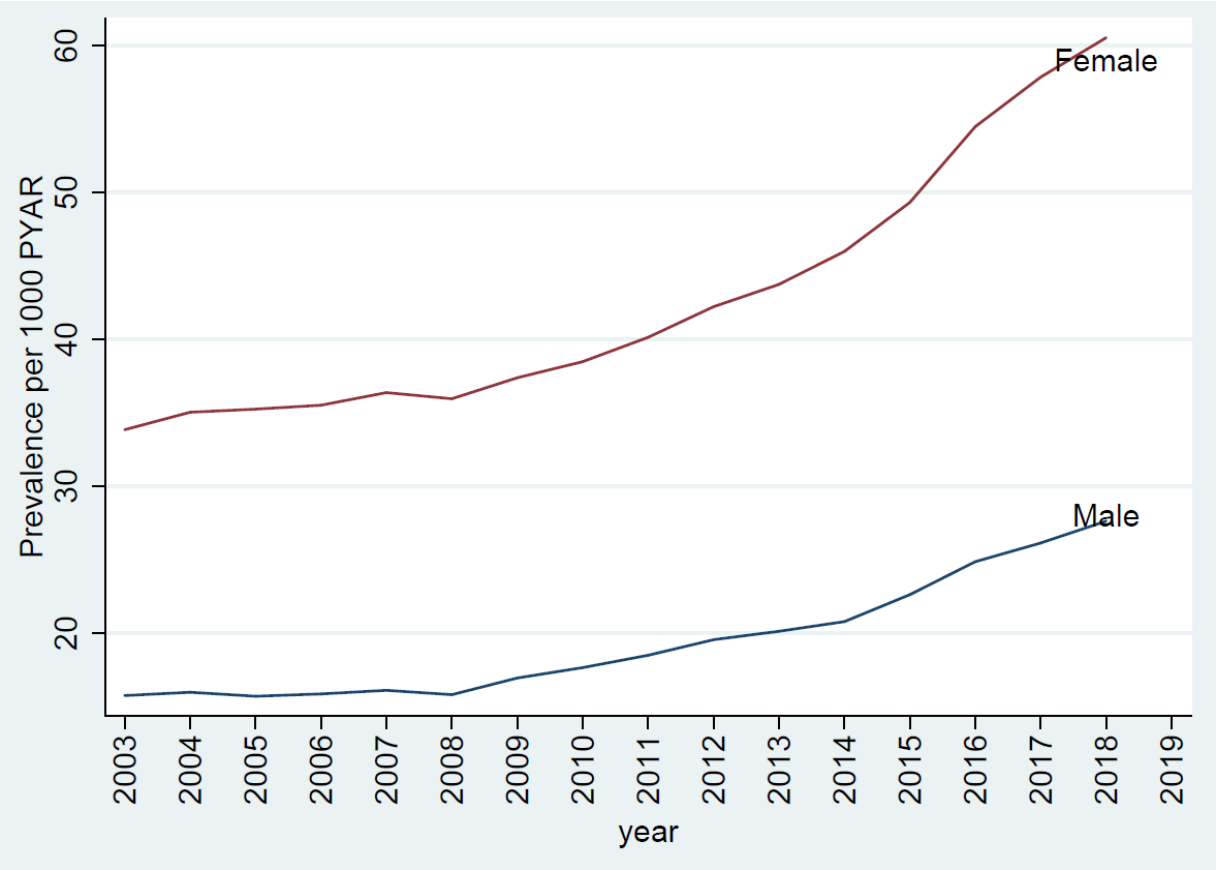


Figure 20 Prevalence of all antidepressant prescriptions per 1000PYAR by gender

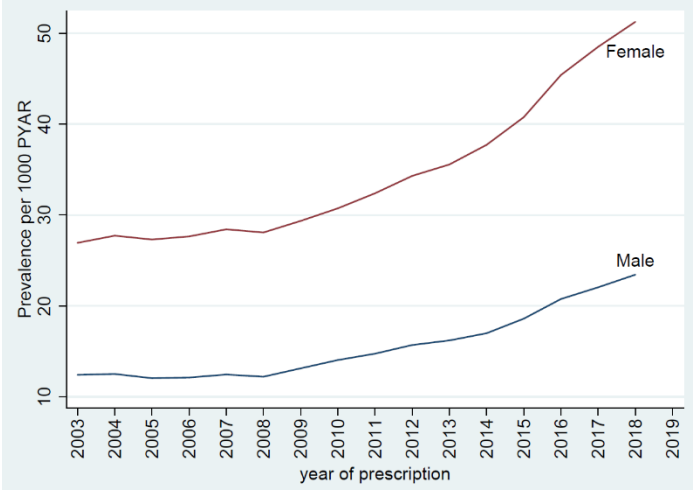


Figure 21 Prevalence of SSRI & 'other' antidepressant prescription per 1000PYAR by gender

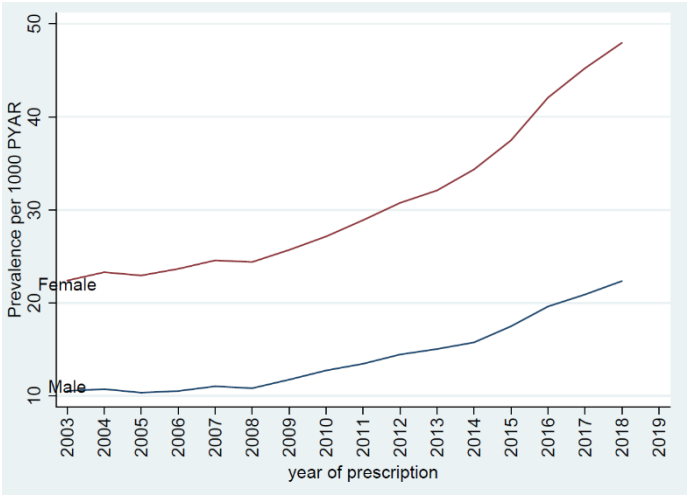


Figure 22 Prevalence of benzodiazepine prescriptions per 1000PYAR by gender

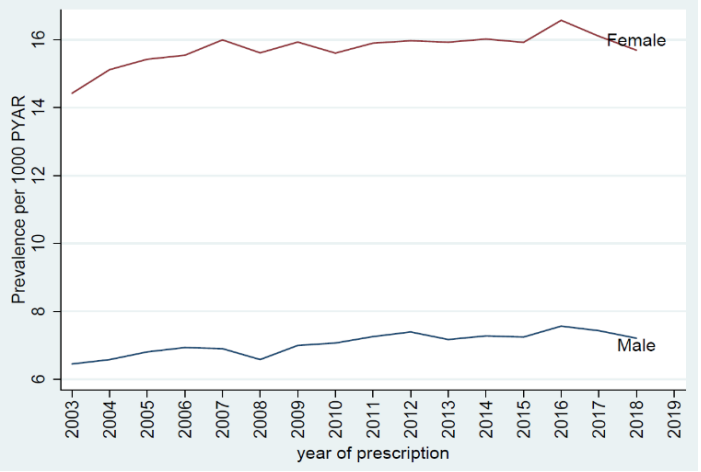


Figure 23 Prevalence of beta-blocker prescriptions per 1000PYAR by gender

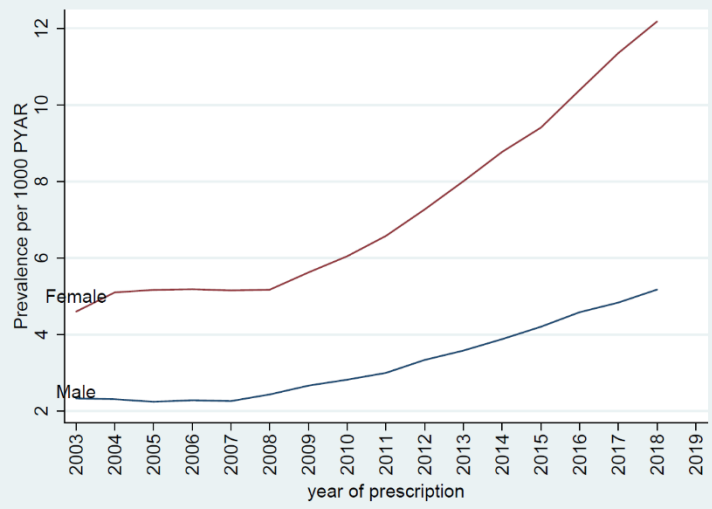


Figure 24 Prevalence of antipsychotic prescriptions per 1000PYAR by gender

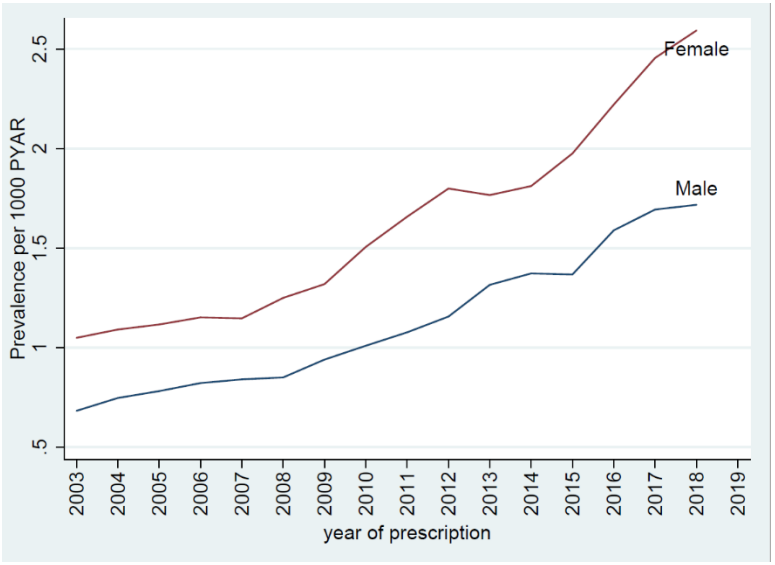
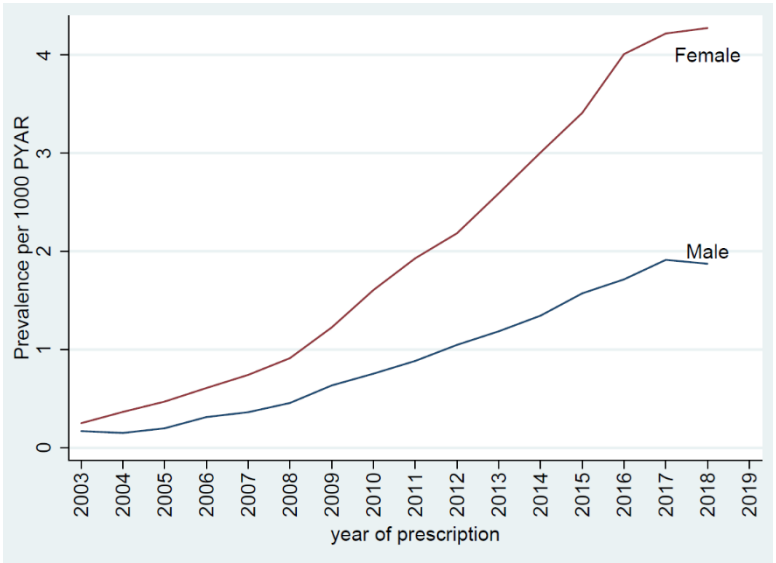


Figure 25 Prevalence of anticonvulsant prescriptions per 1000PYAR by gender



Estimates of the prevalence of anxiolytic prescriptions were stratified by age and are presented in Figure 26 to Figure 32, for any anxiolytic and by drug class, with the underlying data on incidence rates by age presented in the Appendix A.25 - Table 45, A.26 - Table 46 and A.27 - Table 47. Prevalence increased substantially in the younger age groups in the later years of the study, across all drug classes. In order to formally test whether incidence varied over time according to age, the multivariable Poisson regression model was repeated including an interaction between year and age. There was strong evidence of an interaction by age in all models (any anxiolytic: p value for interaction <0.001; all antidepressants: p<0.001; SSRIs & 'other' antidepressants: p<0.001; benzodiazepines: p<0.001; beta-blockers (propranolol): p<0.001; antipsychotics: p<0.001; anticonvulsants: p<0.001).

There were similar trends seen across any anxiolytic, all antidepressants, SSRIs & 'other' antidepressants, and beta-blockers (propranolol), with a marked increase in the prevalence of prescribing in the three youngest age groups (<25, 25-34, 35-44 years) particularly in later years (Appendix A.25 - Table 45 and A.26 - Table 46; Figure 26, Figure 27, Figure 28, and Figure 30). For any anxiolytic, the prevalence of prescriptions rose from 17.2/1000PYAR in 2003 to 59.1/1000PYAR in 2018 for those aged under 25 years, compared with a more gradual increase from 25.4/1000PYAR in 2003 to 33.7/1000PYAR in 2018 for 55-64 year olds (Appendix A.25 - Table 45, Figure 26). In contrast, for the older age groups (65-74, 75-84 and 85+ years), the prevalence of prescriptions was fairly constant across the 16-year period (Appendix A.25 - Table 45, Figure 26).

A similar trend was also seen for antipsychotics, with an increase in prescribing over time in the younger age bands, most notable in those aged 25-34 years - with nearly a three-fold increase in prescribing from 0.9/1000PYAR in 2003 to 2.9/1000PYAR in 2018 (Appendix A.27 - Table 47 and Figure 31).

There was an increase in the prevalence of prescriptions for anticonvulsants between 2003 and 2018 across all age bands, but it was most notable in age groups 35-44 years (0.2/1000PYAR to 3.9/1000PYAR), 45-54 years (0.2/1000PYAR to 4.0/1000PYAR), and 55-64 years (0.3/1000PYAR to 3.5/1000PYAR) (Appendix A.27 - Table 47, Figure 32).

In contrast with all other drug classes, there was a decrease in the prevalence of prescriptions for benzodiazepines in the four older age groups (55-64; 65-74; 75-84; 85+ years), with a fairly constant level of prescribing over time in those aged 44-54 (Appendix A.26 - Table 46, Figure 29). However, there was an increase in the prevalence of prescriptions for benzodiazepines in the youngest three age bands between 2003 and 2018 (<25 years (4.9/1000PYAR to 7.2/1000PYAR), 25-34 years

(8.4/1000PYAR to 13.5/1000PYAR), and 35-44 years (10.5/1000PYAR to 13.6/1000PYAR) (Appendix A.26 - Table 46, Figure 29).

Figure 26 Prevalence of any anxiolytic prescription per 1000PYAR by age

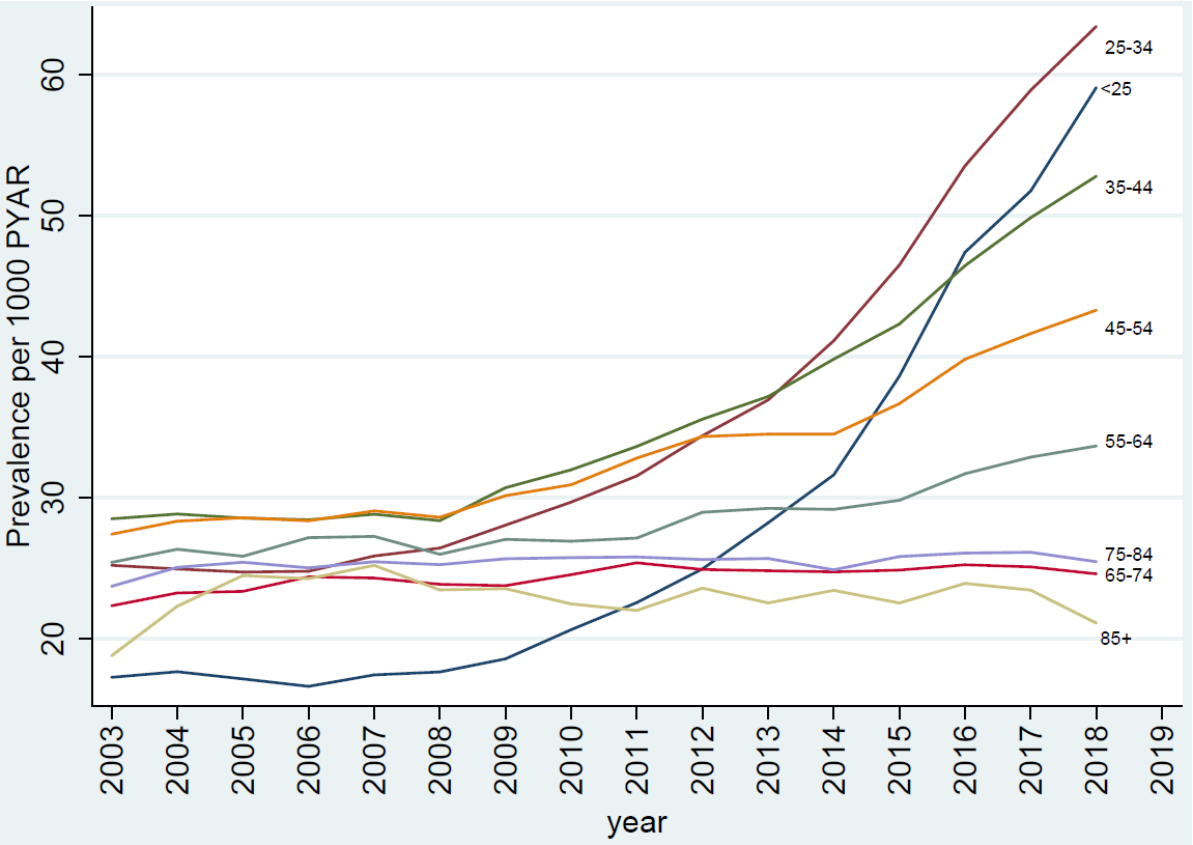


Figure 27 Prevalence of all antidepressant prescriptions per 1000PYAR by age

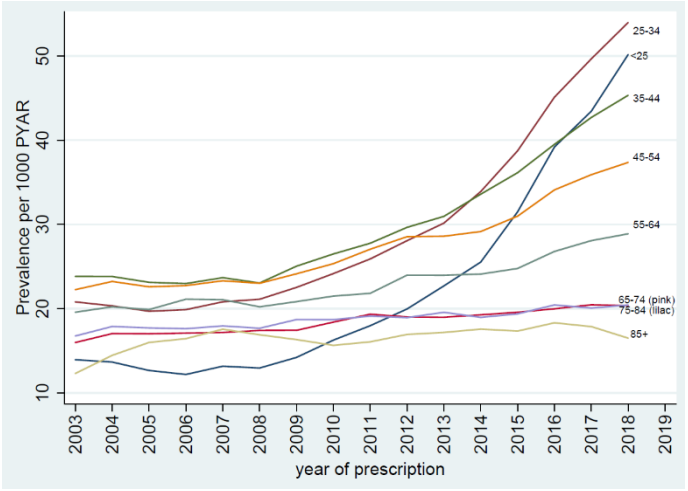


Figure 28 Prevalence of SSRI & 'other' antidepressant prescriptions per 1000PYAR by age

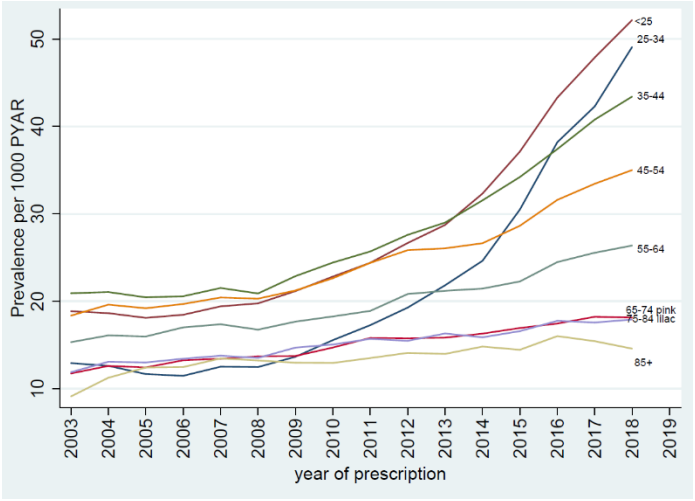


Figure 29 Prevalence of benzodiazepine prescriptions per 1000PYAR by age

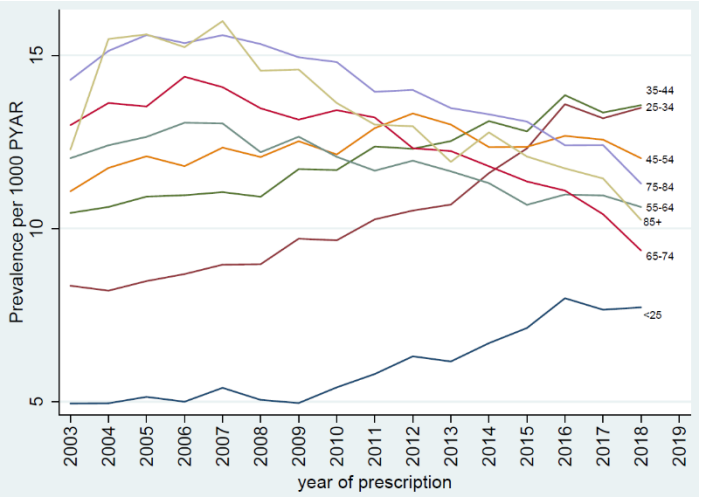


Figure 30 Prevalence of beta-blocker prescriptions per 1000PYAR by age

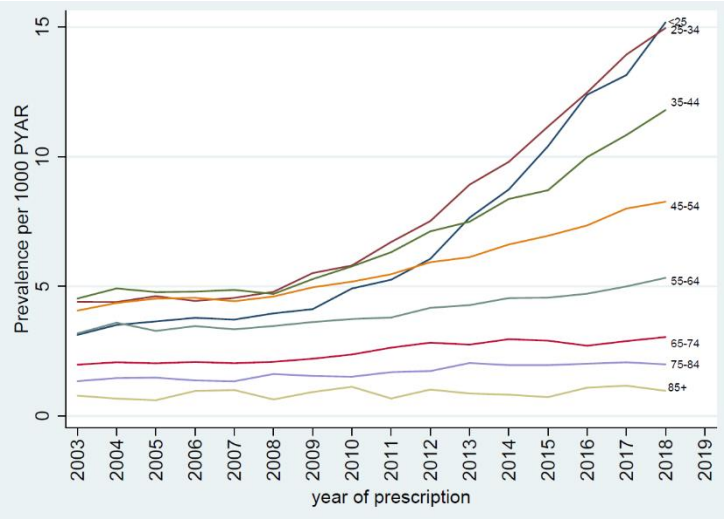


Figure 31 Prevalence of antipsychotic prescriptions per 1000PYAR by age

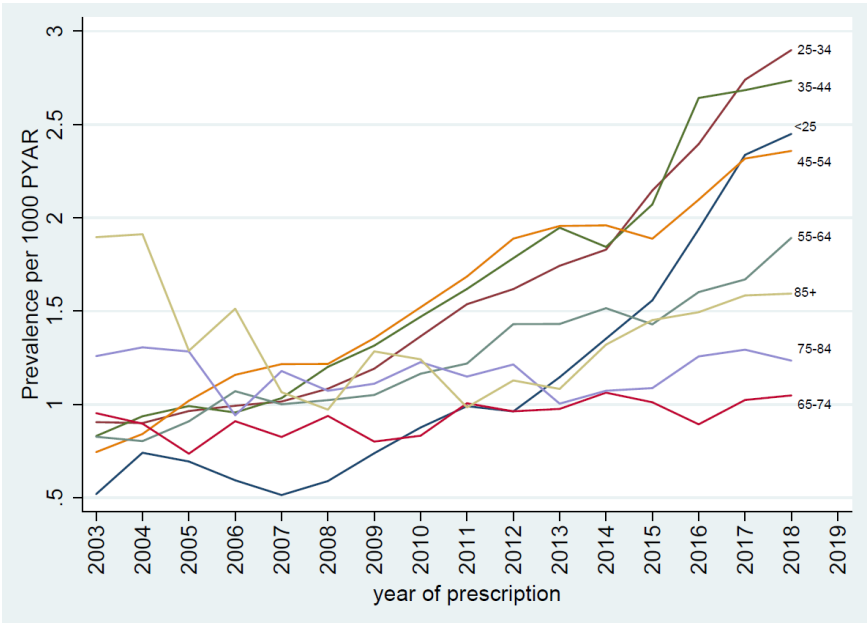
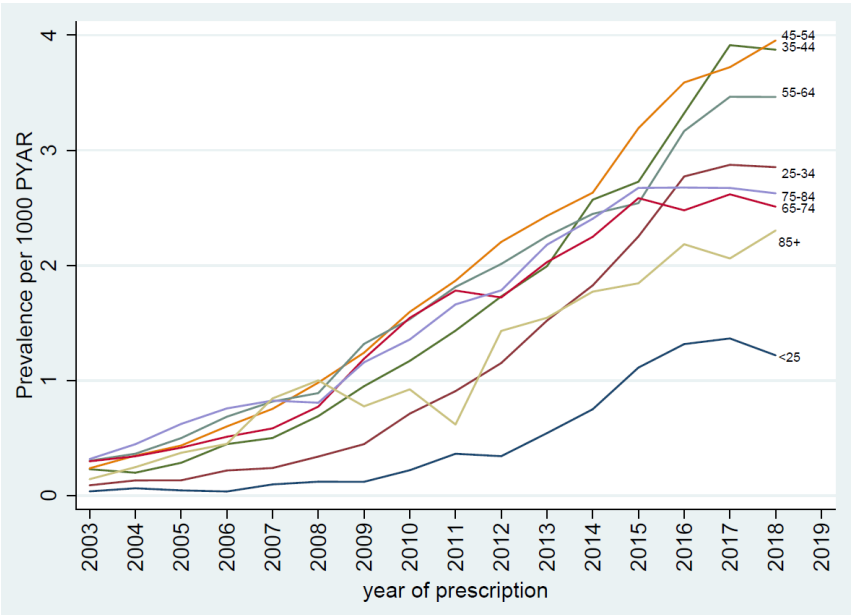


Figure 32 Prevalence of anticonvulsant prescriptions per 1000PYAR by age



5.3.4 Trends in the prevalence of anxiolytic prescriptions: sensitivity analyses

Sensitivity analyses were conducted to examine the impact on findings when prescriptions were restricted to the time frame of one month either side of an anxiety READ code, or when low-dose amitriptyline was excluded.

Restricting prescription and READ code time frame

In the main analysis prescriptions had to have occurred in the three months prior, or the six months after, a recording of an anxiety READ code. The sensitivity analysis restricted the prescriptions of interest to those that occurred within the one month prior, or the one month after, the READ code. Analyses were repeated for the prevalence of prescriptions of any anxiolytic, and for the two largest drug classes: all antidepressants and benzodiazepines.

Overall trends were comparable to the main analysis (Appendix A.28 - Figure 62), however, as would be expected, estimates of prevalence were lower.

Excluding patients prescribed low-dose amitriptyline

Prescriptions for low doses of amitriptyline (<75 mg) were excluded for the analysis looking at trends in the prevalence of any anxiolytic, and all antidepressants. Overall trends were comparable to the main analysis with, as expected, estimates of prevalence being lower (Appendix A.29 - Figure 63).

5.3.5 Trends in the incidence of anxiolytic prescriptions

The number of patients starting anxiolytics (any anxiolytic and by drug class) per 1000PYAR for each year of the study are shown in Figure 33, with the underlying data shown in Table 23, Table 24 and Table 25. Between 2003 and 2008, the incidence of a prescription for an anxiolytic decreased from 12.8/1000PYAR to 10.0/1000PYAR in 2006, after which the incidence remained fairly constant before rising to 13.1/1000PYAR in 2018 (Table 23, Figure 33). A similar trend was seen for all antidepressants, and for SSRI and 'other' antidepressants (Table 23, Figure 33). For benzodiazepines, the incidence of prescribing declined from 6.4/1000PYAR in 2003 to 4.6/1000PYAR in 2018 (Table 24, Figure 33). In contrast, the incidence of prescribing of beta-blockers (propranolol) rose over the study period (from 2.3/1000PYAR in 2003 to 4.1/1000PYAR in 2018) (Table 24, Figure 33). The incidence of antipsychotic prescriptions was between 0.5 to 0.7/1000PYAR across the 16 year period (Table 24, Figure 33). Between 2003 to 2018, the incidence of prescriptions of anticonvulsants slightly increased from 0.1/1000PYAR to 1.3/1000PYAR (Table 25, and Figure 33).

Figure 33 Incidence of anxiolytic prescriptions (any anxiolytic and by drug class) per 1000 person years between 2003 and 2018

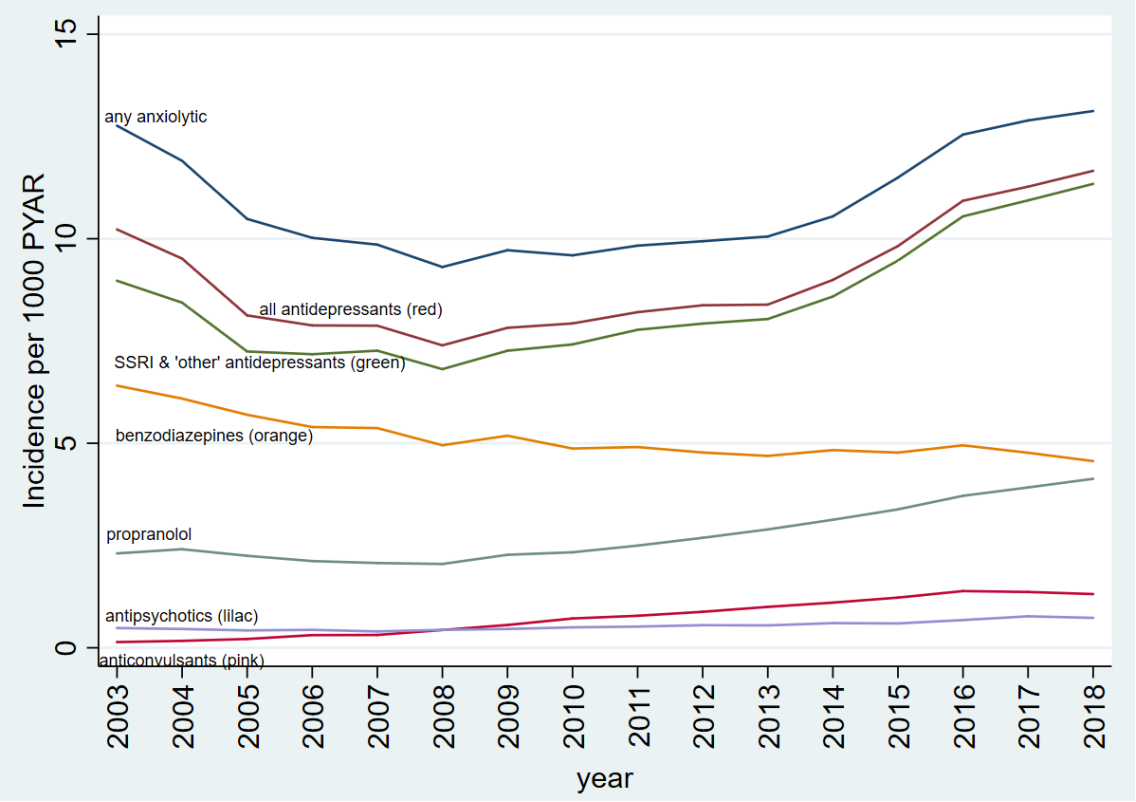


Table 23 Incidence rates of prescriptions for any anxiolytic, all antidepressants, and SSRIs and 'other' antidepressants per 1000 person years between 2003 and 2018

Variable		Any anxiolytic				All antidepressants				SSRI's and 'other' antidepressants			
		N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
Year	2003	14090	1103950	12.8	(12.6-13.0)	11305	1105492	10.2	(10.0-10.4)	9926	1106297	9.0	(8.8-9.2)
	2004	13174	1106589	11.9	(11.7-12.1)	10570	1110962	9.5	(9.3-9.7)	9392	1113145	8.4	(8.3-8.6)
	2005	11531	1099866	10.5	(10.3-10.7)	8993	1106826	8.1	(8.0-8.3)	8041	1110054	7.2	(7.1-7.4)
	2006	11045	1102031	10.0	(9.8-10.2)	8758	1111291	7.9	(7.7-8.1)	8004	1115328	7.2	(7.0-7.3)
	2007	10863	1102262	9.9	(9.7-10.0)	8768	1113456	7.9	(7.7-8.0)	8121	1118087	7.3	(7.1-7.4)
	2008	10315	1108099	9.3	(9.1-9.5)	8288	1121051	7.4	(7.2-7.6)	7672	1126154	6.8	(6.7-7.0)
	2009	10772	1108310	9.7	(9.5-9.9)	8783	1122833	7.8	(7.7-8.0)	8195	1128369	7.3	(7.1-7.4)
	2010	10661	1111207	9.6	(9.4-9.8)	8938	1127197	7.9	(7.8-8.1)	8404	1133130	7.4	(7.3-7.6)
	2011	10929	1111783	9.8	(9.7-10.0)	9263	1128978	8.2	(8.0-8.4)	8825	1135190	7.8	(7.6-7.9)
	2012	11109	1117740	9.9	(9.8-10.1)	9512	1136057	8.4	(8.2-8.5)	9055	1142511	7.9	(7.8-8.1)
	2013	11240	1117912	10.1	(9.9-10.2)	9540	1137187	8.4	(8.2-8.6)	9193	1143811	8.0	(7.9-8.2)
	2014	11833	1121964	10.6	(10.4-10.7)	10272	1142237	9.0	(8.8-9.2)	9867	1149036	8.6	(8.4-8.8)
	2015	12939	1125639	11.5	(11.3-11.7)	11262	1146843	9.8	(9.6-10.0)	10920	1153716	9.5	(9.3-9.6)
	2016	14178	1130091	12.6	(12.3-12.8)	12593	1152330	10.9	(10.7-11.1)	12227	1159319	10.6	(10.4-10.7)
	2017	14554	1128948	12.9	(12.7-13.1)	12986	1151996	11.3	(11.1-11.5)	12677	1159060	10.9	(10.8-11.1)
	2018	14816	1129131	13.1	(12.9-13.3)	13442	1152835	11.7	(11.5-11.9)	13155	1159966	11.3	(11.2-11.5)

** N = Number of prescriptions*

Table 24 Incidence rates of prescriptions for benzodiazepines, beta-blockers (propranolol) and antipsychotics per 1000 person-years between 2003 and 2018

Variable		Benzodiazepines				Beta-blockers (propranolol)				Antipsychotics			
		N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
Year	2003	7102	1108130	6.4	(6.3-6.6)	2563	1110524	2.3	(2.2-2.4)	537	1111642	0.5	(0.4-0.5)
	2004	6812	1118225	6.1	(6.0-6.2)	2712	1125085	2.4	(2.3-2.5)	519	1128419	0.5	(0.4-0.5)
	2005	6365	1117369	5.7	(5.6-5.8)	2537	1127885	2.3	(2.2-2.3)	482	1133381	0.4	(0.4-0.5)
	2006	6068	1124470	5.4	(5.3-5.5)	2413	1138323	2.1	(2.0-2.2)	503	1145747	0.4	(0.4-0.5)
	2007	6065	1129297	5.4	(5.2-5.5)	2375	1146186	2.1	(2.0-2.2)	462	1155333	0.4	(0.4-0.4)
	2008	5642	1139333	5.0	(4.8-5.1)	2375	1158949	2.1	(2.0-2.1)	514	1169822	0.4	(0.4-0.5)
	2009	5929	1143711	5.2	(5.1-5.3)	2651	1165575	2.3	(2.2-2.4)	542	1178222	0.5	(0.4-0.5)
	2010	5606	1150901	4.9	(4.7-5.0)	2743	1174814	2.3	(2.3-2.4)	595	1189363	0.5	(0.5-0.5)
	2011	5672	1155708	4.9	(4.8-5.0)	2952	1181220	2.5	(2.4-2.6)	621	1197752	0.5	(0.5-0.6)
	2012	5568	1166328	4.8	(4.7-4.9)	3208	1193150	2.7	(2.6-2.8)	670	1211862	0.6	(0.5-0.6)
	2013	5493	1171102	4.7	(4.6-4.8)	3469	1198599	2.9	(2.8-3.0)	668	1219466	0.6	(0.5-0.6)
	2014	5702	1179887	4.8	(4.7-5.0)	3781	1207894	3.1	(3.0-3.2)	743	1231247	0.6	(0.6-0.7)
	2015	5673	1188918	4.8	(4.7-4.9)	4118	1217065	3.4	(3.3-3.5)	741	1243096	0.6	(0.6-0.6)
	2016	5941	1200246	5.0	(4.8-5.1)	4564	1228403	3.7	(3.6-3.8)	854	1257413	0.7	(0.6-0.7)
	2017	5750	1206016	4.8	(4.7-4.9)	4836	1233646	3.9	(3.8-4.0)	974	1265593	0.8	(0.7-0.8)
	2018	5539	1213610	4.6	(4.4-4.7)	5124	1240214	4.1	(4.0-4.3)	933	1275294	0.7	(0.7-0.8)

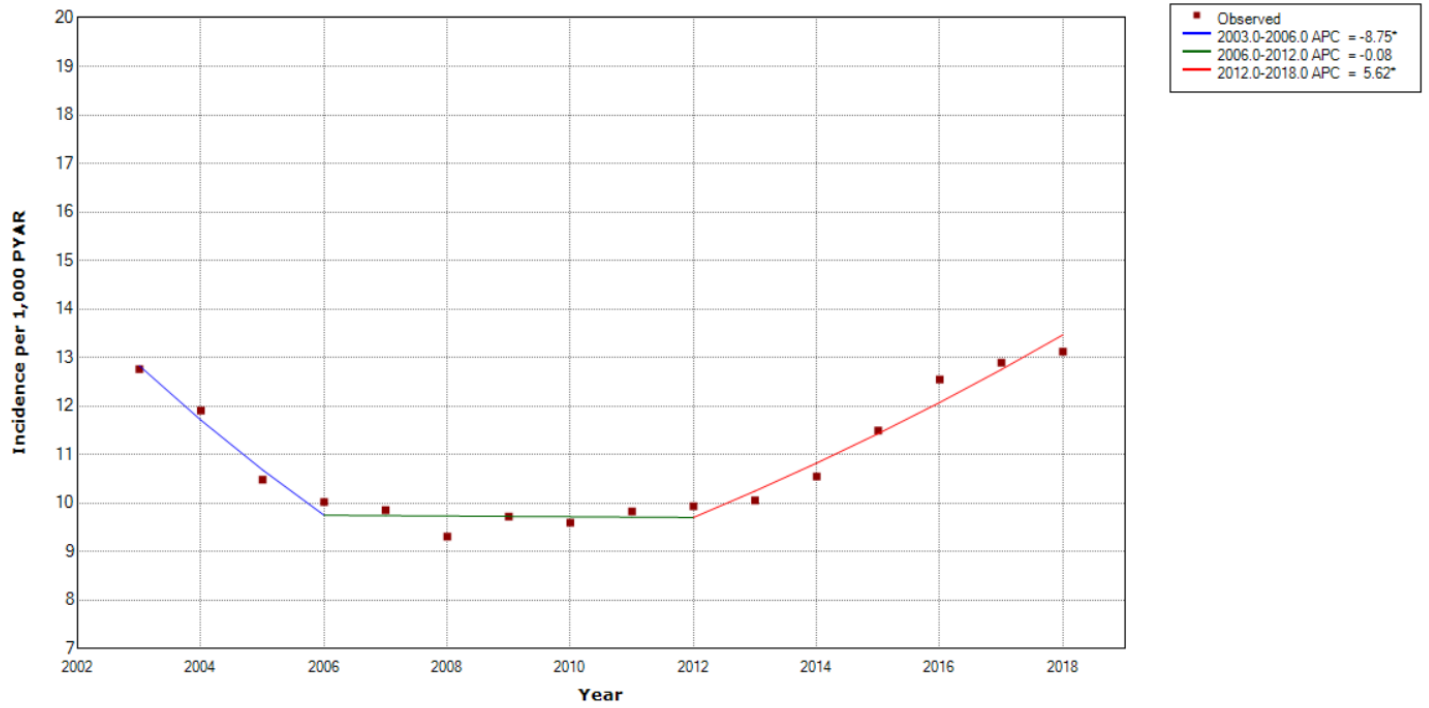
** N = Number of prescriptions*

Table 25 Incidence rates of prescriptions for anticonvulsants per 1000 person-years between 2003 and 2018

Variable		Anticonvulsants			
		N*	PYAR	Incidence (1000PYAR)	(95%CI)
Year	2003	156	1111863	0.1	(0.1-0.2)
	2004	191	1129052	0.2	(0.2-0.2)
	2005	244	1134272	0.2	(0.2-0.2)
	2006	356	1146818	0.3	(0.3-0.3)
	2007	363	1156494	0.3	(0.3-0.4)
	2008	510	1170985	0.4	(0.4-0.5)
	2009	658	1179263	0.6	(0.5-0.6)
	2010	853	1190217	0.7	(0.7-0.8)
	2011	938	1198250	0.8	(0.7-0.8)
	2012	1067	1212006	0.9	(0.8-0.9)
	2013	1220	1219152	1.0	(1.0-1.1)
	2014	1358	1230371	1.1	(1.1-1.2)
	2015	1523	1241551	1.2	(1.2-1.3)
	2016	1741	1255110	1.4	(1.3-1.5)
	2017	1723	1262573	1.4	(1.3-1.4)
	2018	1671	1271614	1.3	(1.3-1.4)
** N = Number of prescriptions*					

Changes in trends over time were examined formally using join point regression. The best fitting model for prescriptions of any anxiolytic included two joint points: there was an initial decline in incidence rates from 2003 to the first join point at 2006 (95% CI 2005 - 2009), after which incident prescriptions plateaued until the second join point in 2012 (95% CI 2009 - 2015) after which there was a substantial increase in the rate of prescribing of any anxiolytic over the last six years of the study period (Figure 34). For all antidepressant prescriptions, and for the analysis focusing on prescriptions of SSRIs and 'other' antidepressants, again, the join point model included two join points: one at 2006 (95% CI 2005 – 2009), after which there was a gradual increase in incidence rates, and a second join point at 2013 (95% CI 2008 - 2016), after which there was a substantial increase in incidence rates over the last five years of the study period. These models are presented in the Appendix A.30 - Figure 64 and A.31 - Figure 65 .

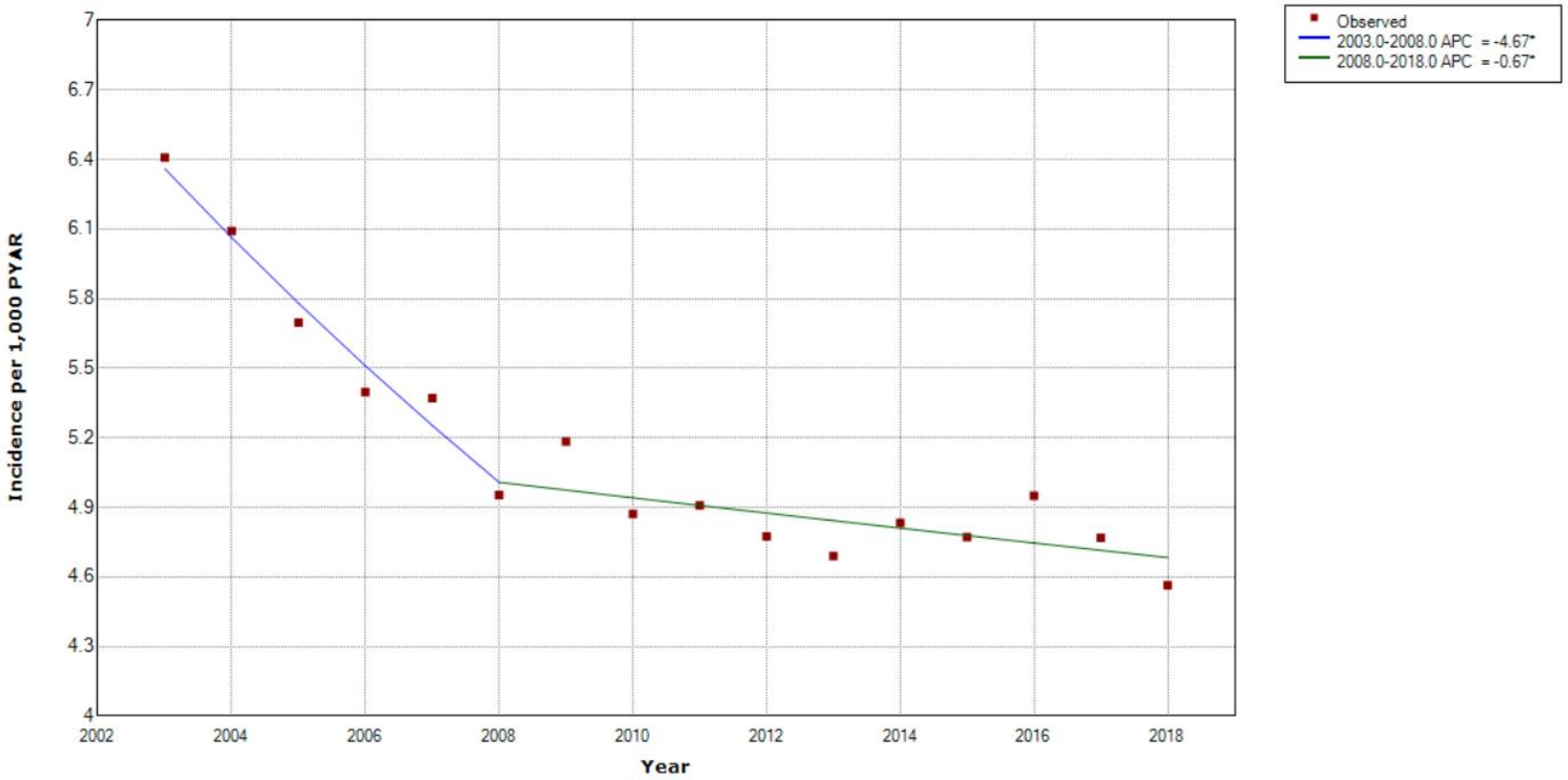
Figure 34 Best fitting join point model of the incidence of prescriptions of any anxiolytic per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 2 Joinpoints.

For prescriptions of benzodiazepines, the best fitting joint point model had a single join point. Incidence rates decreased substantially from 2003 to the join point in 2008 (95% CI 2006-2011), after which incidence rates decreased more gradually (Figure 35).

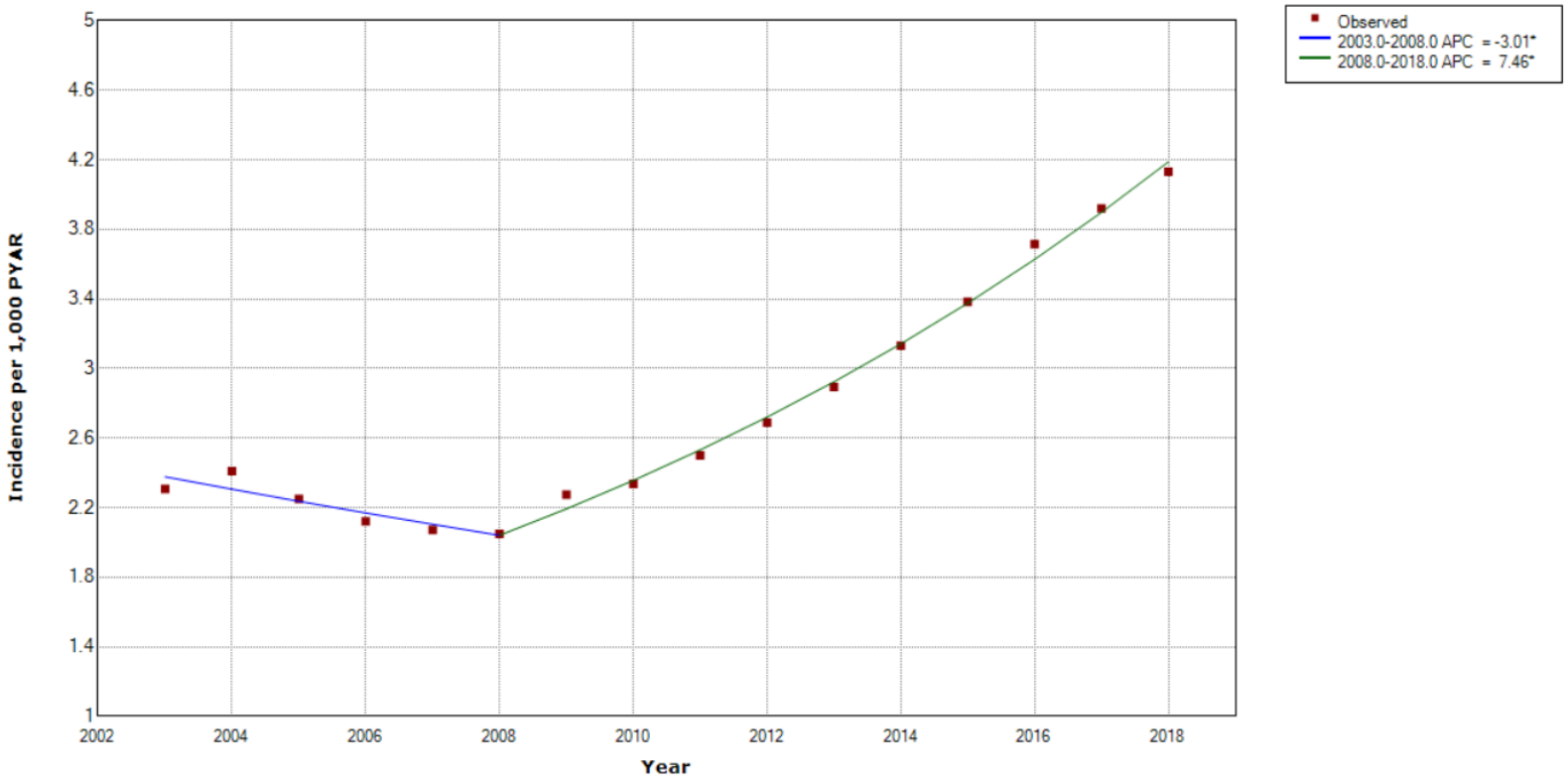
Figure 35 Best fitting join point model of the incidence of prescriptions of benzodiazepines per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 1 Joinpoint.

For prescriptions of beta-blockers (propranolol), after an initial decline in incidence rates from the start of the study period, the best fitting join point model had one join point at 2008 (95% CI 2007-2009), after which incidence rates increased substantially (Figure 36).

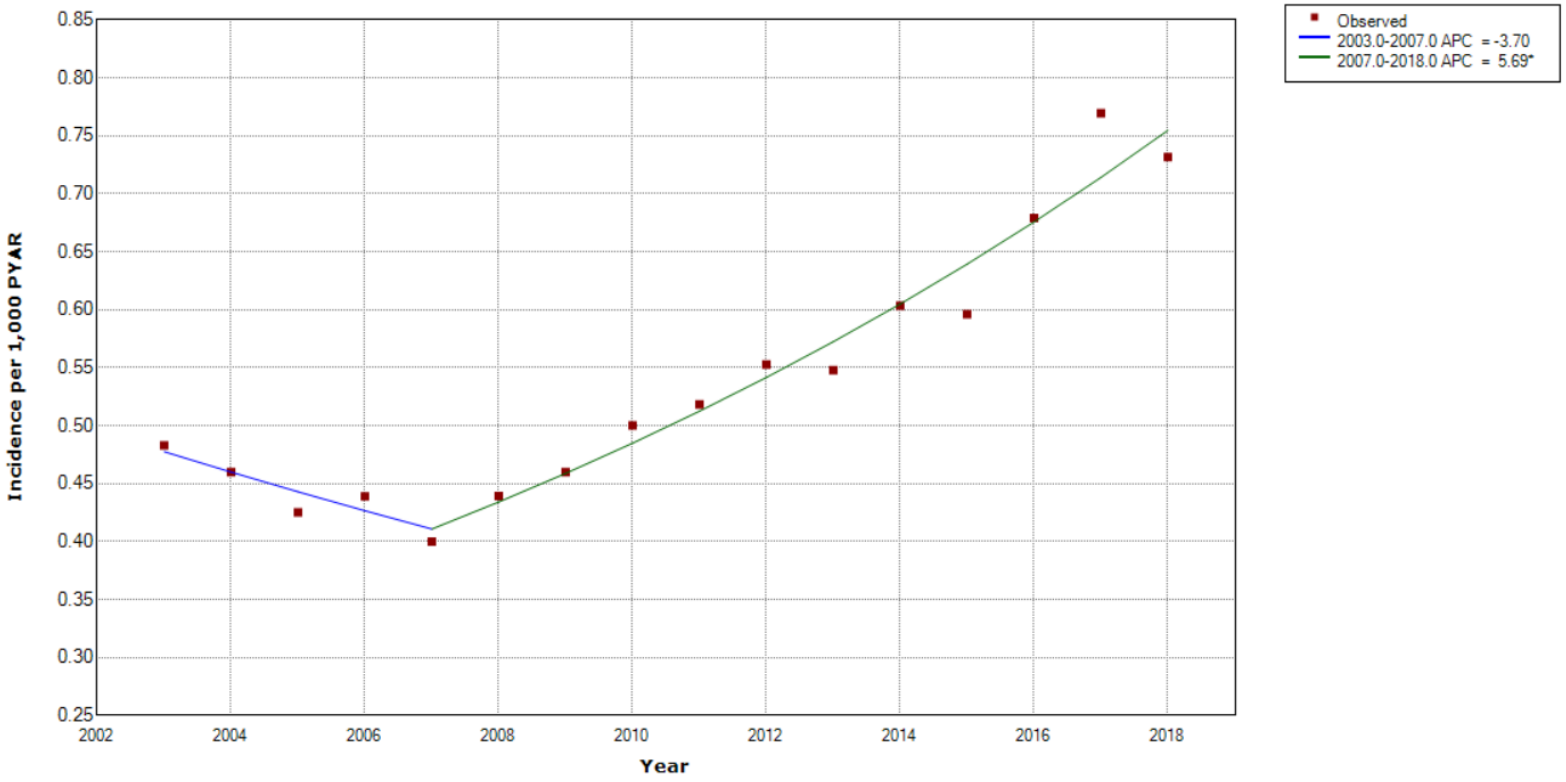
Figure 36 Best fitting join point model of the incidence of prescriptions of beta-blockers per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 1 Joinpoint.

The best fitting join point model for prescriptions of antipsychotics also had one join point. Incidence rates decreased over the first four years of the study to a join point in 2007 (95% CI 2005-2009), after which there was an increase in incidence rates (Figure 37).

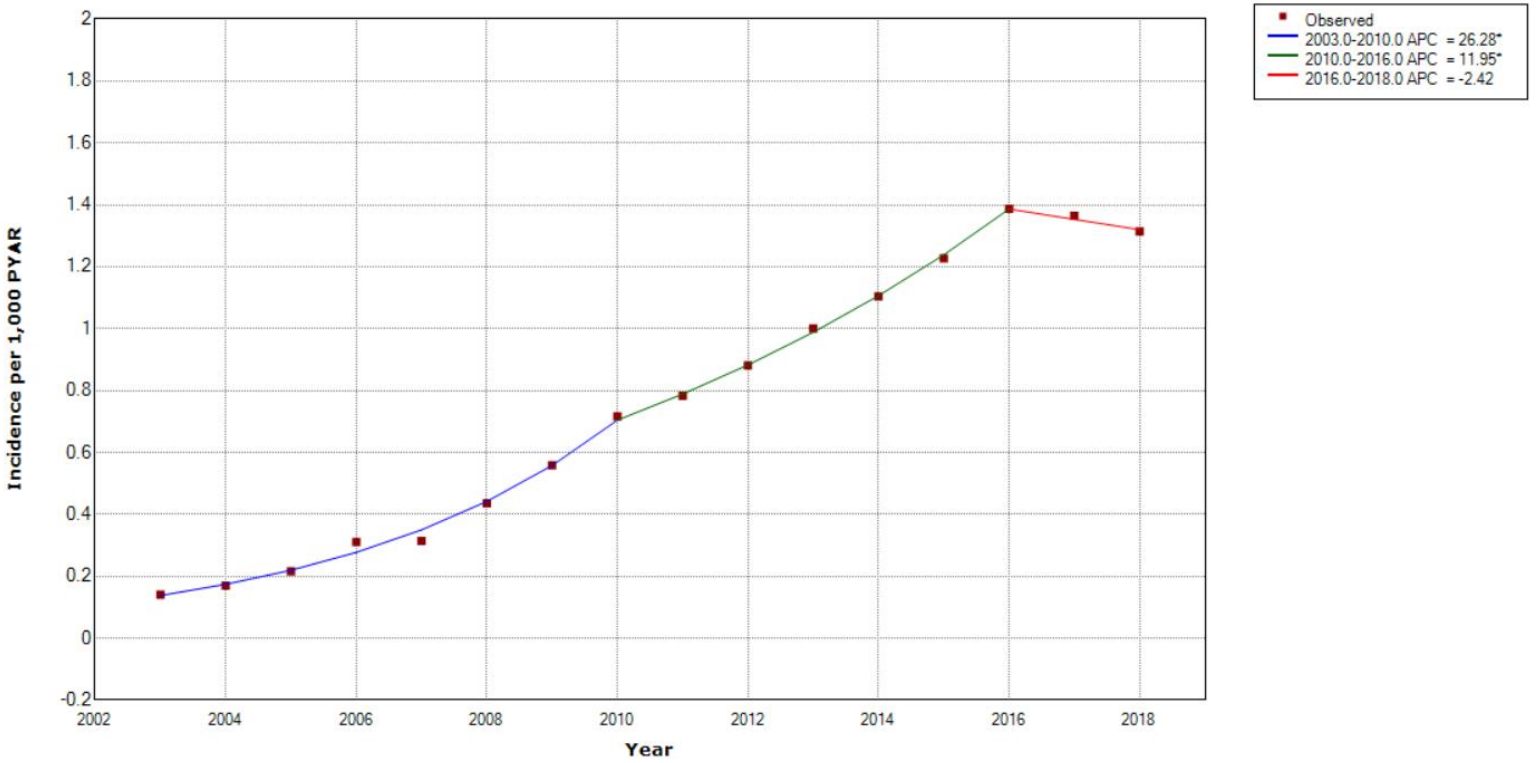
Figure 37 Best fitting join point model of the incidence of prescriptions of antipsychotics per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 1 Joinpoint.

The best fitting model for prescriptions of anticonvulsants included two join points. Incidence rates increased to the first join point in 2010 (95% CI 2009-2011), after which incidence rates increased more slowly to the second join point in 2016 (95% CI 2015-2016). After this time there was a decrease in the incidence rate over the last two years of the study period (Figure 38).

Figure 38 Best fitting join point model of the incidence of prescriptions of anticonvulsants per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 2 Joinpoints.

Incidence rate ratios (IRRs) for year, gender and age group for prescriptions of any anxiolytic, and for each class of anxiolytic (all antidepressants, SSRI & 'other' antidepressants, benzodiazepines, beta-blockers, antipsychotics, and anticonvulsants) are shown in Table 26 and Table 27, and in the Appendix A.32 - Table 48, A.33 - Table 49 and A.34 - Table 50.

After adjusting for age and gender, the IRR for prescriptions of any anxiolytic was 1.06 (95% CI 1.04-1.09) when comparing 2018 with 2003 (Table 26). For all antidepressants, for the same comparison, the adjusted IRR was 1.18 (95% CI 1.15-1.21), for SSRIs and 'other' antidepressants it was 1.31 (95% CI 1.27-1.34), and for benzodiazepines it was 0.72 (95% CI 0.70-0.75) (Table 26, Table 27, and Appendix A.32 - Table 48). The adjusted IRR for beta-blockers (propranolol) was 1.88 (95% CI 1.79-1.97), for antipsychotics it was 1.12 (95% CI 1.38-1.71), and for anticonvulsants it was 9.35 (95% CI 7.94-11.02) (Table 27, and Appendix A.33 - Table 49 and A.34 - Table 50).

The incidence of anxiolytic prescriptions in women was twice that of men. This was consistent across any anxiolytic, and each drug class (adjusted IRR comparing women to men: any anxiolytic 2.02 (95% CI 2.00-2.04); all antidepressants 2.04 (95% CI 2.02-2.06); SSRI & 'other' antidepressant 2.02 (95% CI 2.00-2.04); benzodiazepines 2.06 (95% CI 2.03-2.08); beta-blockers (propranolol) 2.29 (95% CI 2.24-2.33); anticonvulsants 2.21 (95% CI 2.14-2.29), except for antipsychotics where the incidence rate of prescriptions was 44% higher in women compared with men (adjusted IRR: 1.44 (95% CI 1.39-1.50)) (Table 26 and Table 27, and Appendix A.32 - Table 48, A.33 - Table 49 and A.34 - Table 50).

Incidence of prescriptions of any anxiolytic decreased with age, with the incidence for those aged 85+ years being around half (Table 26: adjusted IRR: 0.49 (95%CI 0.47-0.5)) that of the youngest age group (18-24 years). A similar pattern of decreasing incidence of prescribing with age was seen for all antidepressants, SSRIs and 'other antidepressants' and beta-blockers (propranolol) (adjusted IRR 85+ years compared with 18-24 years: antidepressants 0.48 (95% CI 0.46-0.50); SSRI & 'other' antidepressant 0.44 (95% CI 0.42-0.46); and beta-blockers 0.08 (95% CI 0.07-0.09) (Table 26, Table 27, and Appendix A.32 - Table 48). Incidence of prescriptions for antipsychotics was slightly lower in older individuals compared with younger individuals, although the confidence interval for the IRR for the oldest group included the null (Appendix A.33 - Table 49: adjusted IRR 85+years compared with 18-24 years: 0.95 (95% CI 0.83-1.07)).

In contrast, those aged 25 or older had between a 16% to 48% increased rate of incident benzodiazepine prescription compared with those aged less than 25 years (Table 27). Whereas, incidence of prescriptions of anticonvulsants in those aged 25 years or older was two to three times that of the youngest age group (Appendix A.34 - Table 50: e.g. adjusted IRR 44-54 years compared with 18-24 years 3.23 (95% CI 2.95-3.53)).

Sensitivity analyses were conducted to examine the potential impact of clustering within GP practices on findings for any anxiolytic, and for each class of anxiolytic (all antidepressants, benzodiazepines, beta-blockers, antipsychotics, and anticonvulsants). Whilst confidence intervals were wider, findings were consistent with the results that did not allow for clustering (Appendix A.35 - Table 51 and A.36 - Table 52).

Table 26 incidence rate ratios for prescriptions of any anxiolytic, and all antidepressants

		Any anxiolytic						All antidepressants					
Variable		Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value	Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	0.93	(0.91-0.96)		0.94	(0.91-0.96)		0.93	(0.91-0.96)		0.93	(0.91-0.96)	
	2005	0.82	(0.80-0.84)		0.83	(0.81-0.85)		0.79	(0.77-0.82)		0.80	(0.78-0.82)	
	2006	0.79	(0.77-0.81)		0.79	(0.77-0.81)		0.77	(0.75-0.79)		0.78	(0.75-0.80)	
	2007	0.77	(0.75-0.79)		0.78	(0.76-0.80)		0.77	(0.75-0.79)		0.78	(0.76-0.80)	
	2008	0.73	(0.71-0.75)		0.74	(0.72-0.76)		0.72	(0.70-0.74)		0.73	(0.71-0.75)	
	2009	0.76	(0.74-0.78)		0.77	(0.75-0.79)		0.76	(0.74-0.79)		0.77	(0.75-0.80)	
	2010	0.75	(0.73-0.77)		0.76	(0.74-0.78)		0.78	(0.75-0.80)		0.79	(0.76-0.81)	
	2011	0.77	(0.75-0.79)		0.78	(0.76-0.80)		0.80	(0.78-0.82)		0.81	(0.79-0.84)	
	2012	0.78	(0.76-0.80)		0.79	(0.77-0.81)		0.82	(0.80-0.84)		0.83	(0.81-0.86)	
	2013	0.79	(0.77-0.81)		0.80	(0.78-0.82)		0.82	(0.80-0.84)		0.84	(0.81-0.86)	
	2014	0.83	(0.81-0.85)		0.84	(0.82-0.86)		0.88	(0.86-0.90)		0.90	(0.87-0.92)	
	2015	0.90	(0.88-0.92)		0.92	(0.90-0.94)		0.96	(0.94-0.99)		0.98	(0.96-1.01)	
	2016	0.98	(0.96-1.01)		1.01	(0.98-1.03)		1.07	(1.04-1.10)		1.10	(1.07-1.12)	
	2017	1.01	(0.99-1.03)		1.04	(1.02-1.06)		1.10	(1.07-1.13)		1.13	(1.11-1.16)	
	2018	1.03	(1.00-1.05)		1.06	(1.04-1.09)		1.14	(1.11-1.17)		1.18	(1.15-1.21)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	1.98	(1.96-2.00)		2.02	(2.00-2.04)		2.00	(1.98-2.02)		2.04	(2.02-2.06)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	0.95	(0.93-0.96)		0.94	(0.92-0.95)		1.00	(0.99-1.02)		0.99	(0.98-1.01)	
	35-44	0.88	(0.87-0.90)		0.88	(0.87-0.90)		0.94	(0.92-0.96)		0.94	(0.93-0.96)	
	44-54	0.80	(0.79-0.81)		0.80	(0.79-0.81)		0.85	(0.84-0.87)		0.85	(0.83-0.86)	
	55-64	0.69	(0.68-0.70)		0.68	(0.67-0.70)		0.71	(0.70-0.73)		0.71	(0.69-0.72)	
	65-74	0.59	(0.58-0.60)		0.57	(0.56-0.58)		0.59	(0.57-0.60)		0.57	(0.56-0.58)	
	75-84	0.63	(0.62-0.65)		0.60	(0.58-0.61)		0.64	(0.62-0.65)		0.60	(0.59-0.62)	
	85+	0.55	(0.54-0.57)		0.49	(0.47-0.50)		0.55	(0.53-0.57)		0.48	(0.46-0.50)	

**Multivariable model adjusted for year, gender, and age band*

Table 27 Incidence rate ratios for prescriptions of benzodiazepines, and beta-blockers

		Benzodiazepine						Beta-blockers (propranolol)					
Variable		Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value	Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	0.95	(0.92-0.98)		0.95	(0.92-0.98)		1.04	(0.99-1.10)		1.05	(0.99-1.11)	
	2005	0.89	(0.86-0.92)		0.89	(0.86-0.92)		0.97	(0.92-1.03)		0.98	(0.93-1.04)	
	2006	0.84	(0.81-0.87)		0.85	(0.82-0.88)		0.92	(0.87-0.97)		0.93	(0.88-0.98)	
	2007	0.84	(0.81-0.87)		0.84	(0.81-0.87)		0.90	(0.85-0.95)		0.91	(0.86-0.96)	
	2008	0.77	(0.75-0.80)		0.78	(0.75-0.81)		0.89	(0.84-0.94)		0.90	(0.85-0.95)	
	2009	0.81	(0.78-0.84)		0.82	(0.79-0.84)		0.99	(0.93-1.04)		1.00	(0.95-1.06)	
	2010	0.76	(0.73-0.79)		0.77	(0.74-0.79)		1.01	(0.96-1.07)		1.03	(0.98-1.09)	
	2011	0.77	(0.74-0.79)		0.77	(0.75-0.80)		1.08	(1.03-1.14)		1.10	(1.05-1.16)	
	2012	0.74	(0.72-0.77)		0.75	(0.73-0.78)		1.16	(1.11-1.23)		1.19	(1.13-1.26)	
	2013	0.73	(0.71-0.76)		0.74	(0.71-0.77)		1.25	(1.19-1.32)		1.29	(1.22-1.35)	
	2014	0.75	(0.73-0.78)		0.76	(0.74-0.79)		1.36	(1.29-1.43)		1.40	(1.33-1.47)	
	2015	0.74	(0.72-0.77)		0.75	(0.73-0.78)		1.47	(1.40-1.54)		1.52	(1.44-1.59)	
	2016	0.77	(0.75-0.80)		0.78	(0.75-0.81)		1.61	(1.53-1.69)		1.67	(1.59-1.75)	
	2017	0.74	(0.72-0.77)		0.75	(0.73-0.78)		1.70	(1.62-1.78)		1.77	(1.69-1.86)	
	2018	0.71	(0.69-0.74)		0.72	(0.70-0.75)		1.79	(1.71-1.88)		1.88	(1.79-1.97)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.05	(2.03-2.08)		2.06	(2.03-2.08)		2.19	(2.15-2.23)		2.29	(2.24-2.33)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	1.38	(1.34-1.42)		1.37	(1.33-1.40)		0.94	(0.91-0.97)		0.93	(0.90-0.95)	
	35-44	1.50	(1.45-1.54)		1.48	(1.44-1.52)		0.79	(0.76-0.81)		0.80	(0.77-0.82)	
	44-54	1.44	(1.40-1.48)		1.44	(1.40-1.48)		0.64	(0.62-0.66)		0.63	(0.61-0.65)	
	55-64	1.37	(1.33-1.41)		1.36	(1.32-1.40)		0.44	(0.43-0.46)		0.43	(0.42-0.45)	
	65-74	1.35	(1.31-1.39)		1.33	(1.29-1.37)		0.27	(0.26-0.28)		0.25	(0.24-0.27)	
	75-84	1.50	(1.45-1.55)		1.42	(1.37-1.47)		0.19	(0.18-0.20)		0.18	(0.17-0.19)	
	85+	1.31	(1.25-1.37)		1.16	(1.11-1.22)		0.10	(0.08-0.11)		0.08	(0.07-0.09)	

**Multivariable model adjusted for year, gender, and age band*

5.3.6 Trends in the incidence of anxiolytic prescriptions over time by gender and age

As outlined above, incident prescribing in women was nearly twice that of men for any anxiolytic, and most drug classes. Incidence rates were stratified by gender and are presented in Figure 39 to Figure 45 for any anxiolytic and each drug class, with the underlying data on incidence rates for males and females presented in the Appendix A.36 - Table 53, A.38 - Table 54 and A.39 - Table 55.

In order to formally test whether incidence varied over time according to gender, the multivariable Poisson regression model was repeated including an interaction between year and gender. There was strong evidence of an interaction by gender for any anxiolytic (p value for interaction <0.001); all antidepressants (p<0.001); SSRIs & 'other' antidepressants (p<0.001); and benzodiazepines (p<0.001). There was no evidence of interaction for propranolol (p= 0.40) and antipsychotics (p=0.53); and only weak evidence of an interaction for anticonvulsants (p= 0.11).

In both men and women, there was a decline in incidence of prescriptions of any anxiolytic from 2003 to 2008 after which incidence remained stable until about 2014 when it began increasing again (Figure 39). In the period from 2004 to 2008 there were greater absolute reductions in incidence (compared with 2003) for women than with men (Appendix A.36 - Table 53). Given the higher incidence in 2003 in women than in men, the relative differences were comparable as demonstrated by the interaction terms for those years which were very close to one (Appendix A.40 - Table 56). Between 2009 and 2013 when the incidence was relatively stable for both genders, this represented a greater absolute reduction in incidence (compared with 2003) as well as a greater relative reduction (compared with 2003) for women than with men (Appendix A.41 - Table 57). This was also evident from the interaction terms in the model where the evidence of interaction was strong. By 2016, incidence was higher than in 2003 for men and the modest increases in incidence translated into greater relative increases than among women (Appendix A.41 - Table 57). Similar findings were seen in the patterns for prescriptions of all antidepressants and SSRIs and 'other' antidepressants for men and women (data not shown). However, in all analyses (any anxiolytic, all antidepressants and SSRIs and 'other' antidepressants), the differences were small and should be interpreted with caution.

In contrast, in both men and women, there was a decline in incidence of benzodiazepine prescriptions over the duration of the study. Again, there were greater absolute reductions in incidence (compared with 2003) for women than with men (Appendix A.38 - Table 54). Given the higher incidence in 2003 in women than in men, again, the relative differences were broadly comparable as demonstrated by the interaction terms for those years that were close to one (data not shown). Between 2010 and 2016, when the incidence was relatively stable for both genders, this

represented a greater absolute reduction in incidence (compared with 2003) as well as a greater relative reduction (compared with 2003) for women than with men. This was also evident from the interaction terms in the model where the evidence for an interaction was moderate (data not shown). Again, however, these differences were small and should be interpreted with caution.

Figure 39 Incidence of prescriptions of any anxiolytic per 1000PYAR, by gender

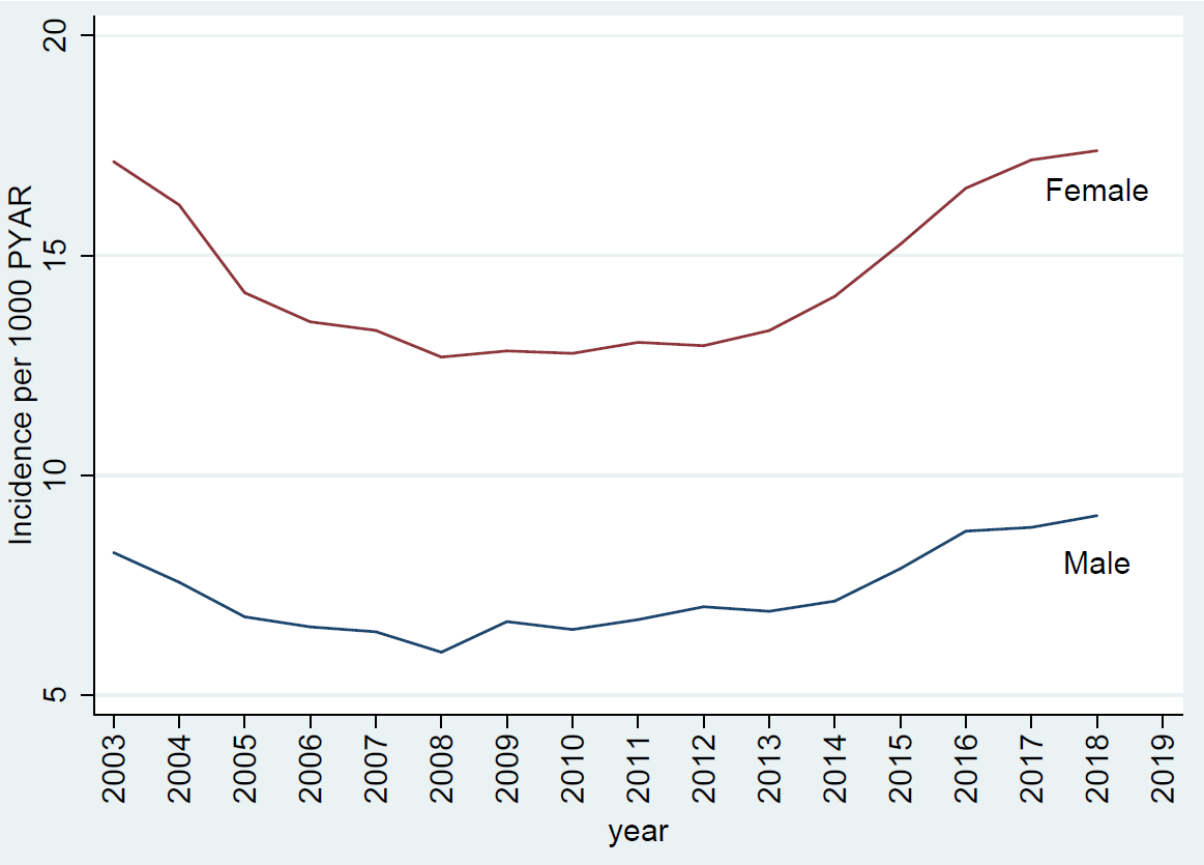


Figure 40 Incidence of prescriptions of all antidepressants per 1000PYAR, by gender

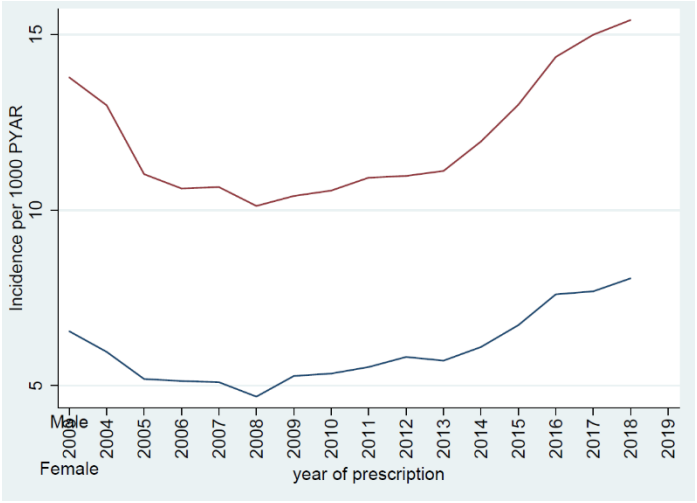


Figure 41 Incidence of prescriptions of SSRIs & 'other' antidepressants per 1000PYAR, by gender

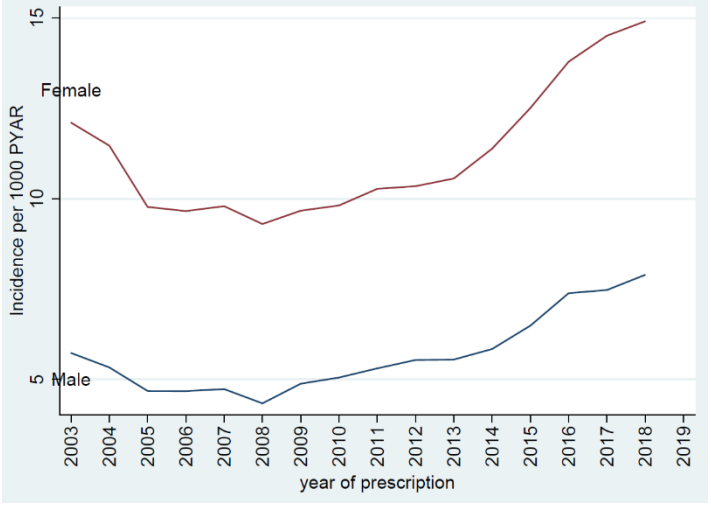


Figure 42 Incidence of prescriptions of benzodiazepines per 1000PYAR, by gender

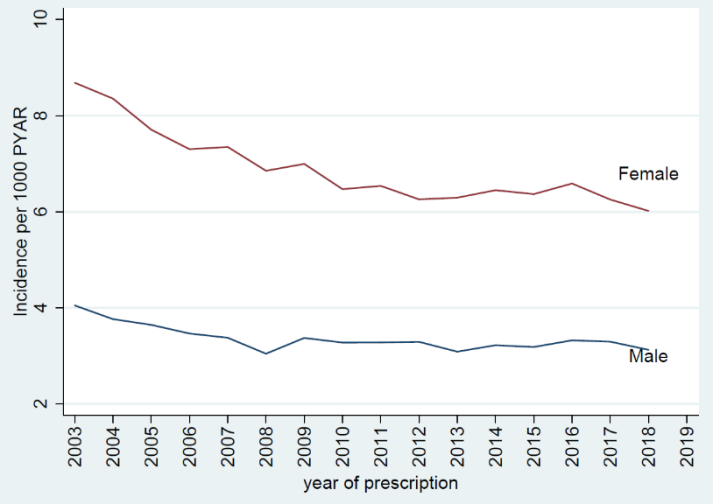


Figure 43 Incidence of prescriptions of beta-blockers per 1000PYAR, by gender

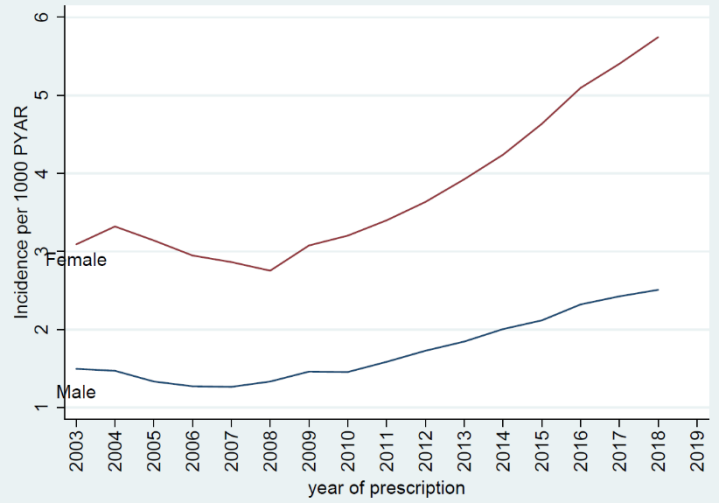


Figure 44 Incidence of prescriptions of antipsychotics per 1000PYAR, by gender

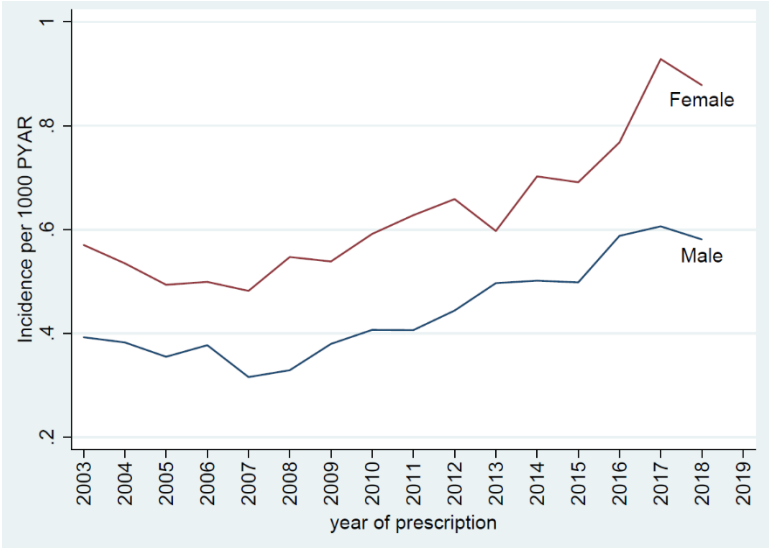
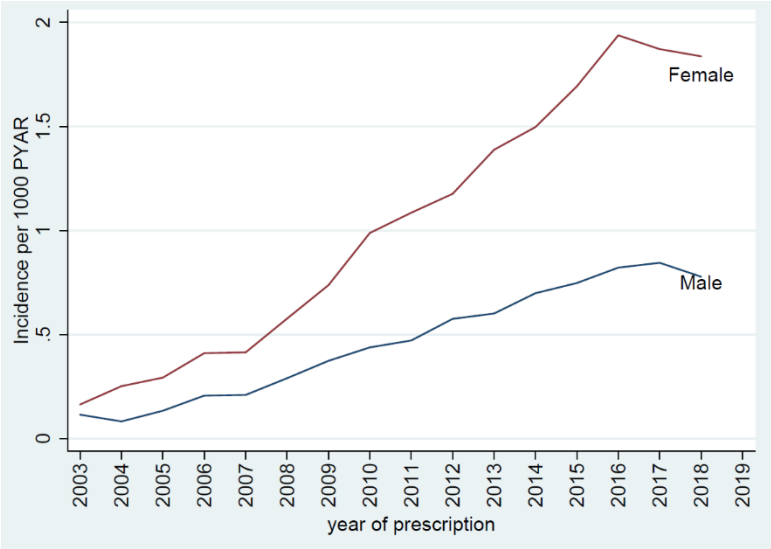


Figure 45 Incidence of prescriptions of anticonvulsants per 1000PYAR, by gender



Incidence rates were stratified by age and are presented in Figure 46 to Figure 51 for any anxiolytic and each drug class, respectively, with the underlying data on incidence rates by age presented in the Appendix A.42 - Table 58, A.43 - Table 59 and A.44 - Table 60. Incidence rates increased in the younger age groups in the later years of the study for prescriptions of any anxiolytic, all antidepressants, SSRIs and 'other' antidepressants, benzodiazepines, beta-blockers, antipsychotics, and anticonvulsants. In order to formally test whether incidence varied over time according to age, the multivariable Poisson regression model was repeated including an interaction between year and age. There was strong evidence of an interaction by age for all models (p value for interaction <0.001 for any anxiolytic and for all drug groups).

There was a marked increase in the incidence of prescribing of any anxiolytic in the two youngest age groups (<25 and 25-34 years) between 2013/2014 and 2018 (Appendix A.42 - Table 58, Figure 46). The increase in incidence of prescribing for those aged 35-44 and 45-54 was more gradual over this period. In contrast, the incidence of prescribing of any anxiolytic remained stable or slightly decreased over this period for the older age groups (55+ years). A similar trend was also seen across all antidepressants, SSRIs & 'other' antidepressants, and beta-blockers (propranolol), with a marked increase in the prevalence of prescribing in the two youngest age groups between 2013/2014 and 2018 (<25, 25-34 years), a more gradual increase for those aged 35-44 and 45-54 years, and prescribing for those aged over 55 years slightly decreasing or remaining stable (Appendix A.42 - Table 58, A.43 - Table 59, Figure 47, Figure 48 and Figure 49).

A similar trend was seen for the two youngest age groups (<25 and 25-34 years) for prescriptions of antipsychotics, with an increase in prescribing over time. For those aged 35-44 and 45-54 years, the increase was more gradual. For those aged 55-64, incident prescribing over time was variable. In contrast, for the three oldest age groups (65+ years) incident prescriptions of antipsychotics decreased over the study, particularly amongst those aged 85+ years (Appendix A.44 - Table 60, Figure 51). However, incident prescriptions of antipsychotics for anxiety were infrequent and, as such, the differences between age groups must be interpreted with caution.

For prescriptions of anticonvulsants, there was an increase in incident prescribing between 2003 and 2018 across all age bands, with emerging differences in the rate of increase around 2014) (Appendix A.44 - Table 60, Figure 52). However, again incident prescriptions of anticonvulsants for anxiety were infrequent and differences between age groups must therefore be interpreted with caution.

In contrast to all other drug classes, there was a decrease in the incidence of prescriptions of benzodiazepines for individuals aged 45+ years throughout the duration of the study. There was also

a decrease in incidence of prescribing for those aged 35-44 years, but the level of prescribing increased toward the second half of the study period. For the two youngest two bands (<25 and 25-34 years), there was a fairly constant level of prescribing in the first half of the study, followed by an increase in incident prescribing between 2010 and 2018 (Appendix A.43 - Table 59, Figure 49).

Figure 46 Incidence of prescriptions of any anxiolytic per 1000PYAR by age

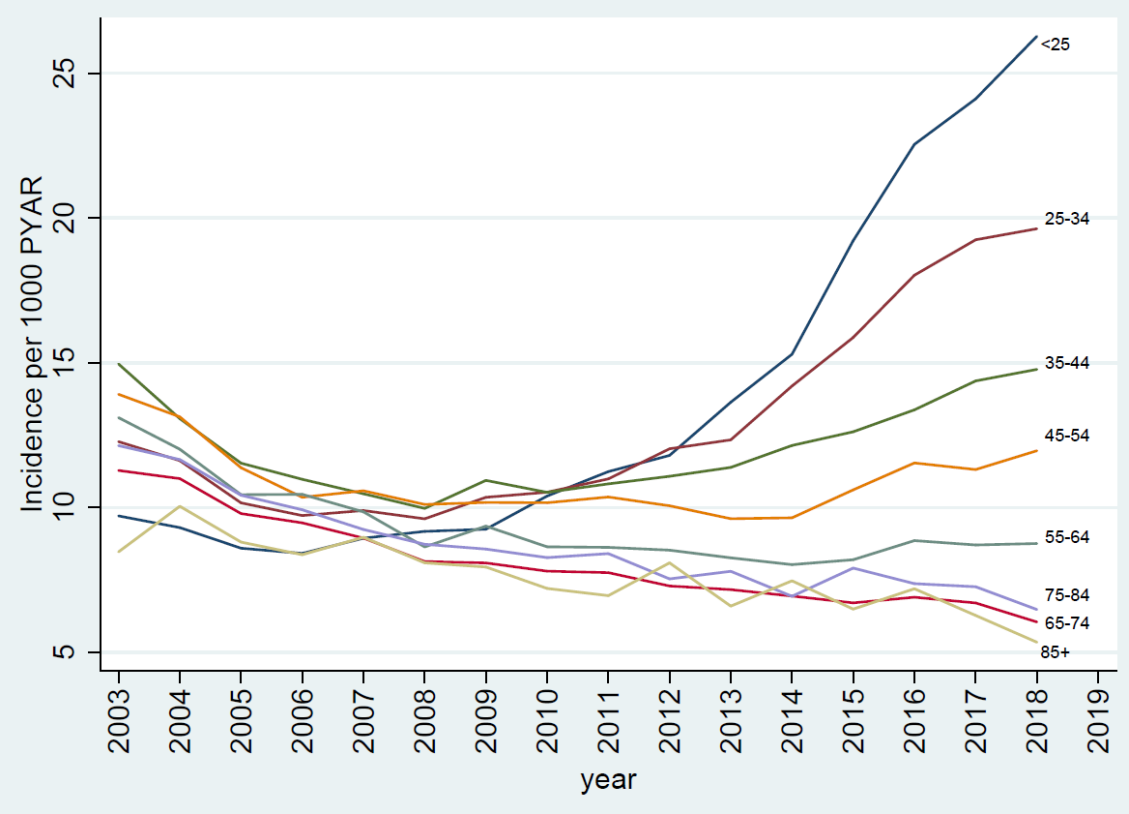


Figure 47 Incidence of prescriptions of all antidepressants per 1000PYAR by age

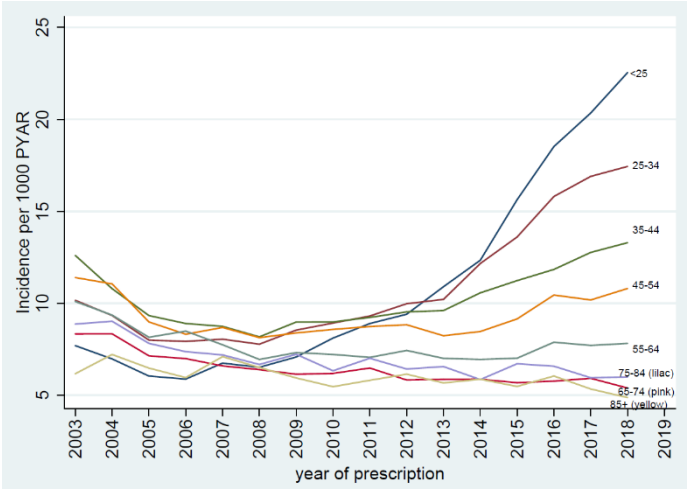


Figure 48 Incidence of prescriptions of SSRIs & 'other' antidepressants per 1000PYAR by age

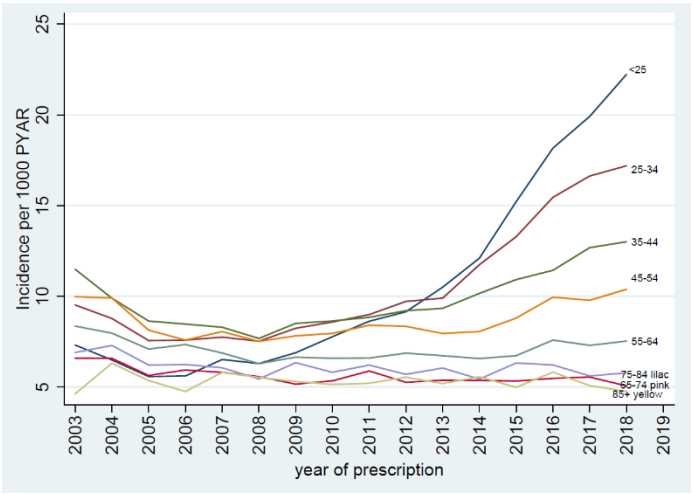


Figure 49 Incidence of prescriptions of benzodiazepines per 1000PYAR per by age

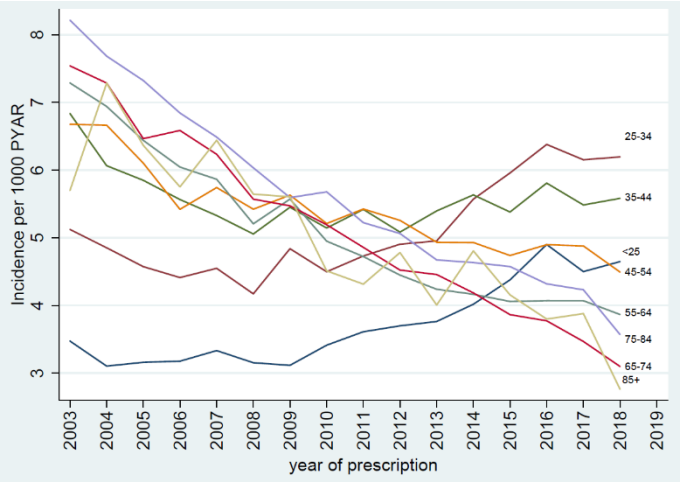


Figure 50 Incidence of prescriptions of beta-blockers per 1000PYAR by age

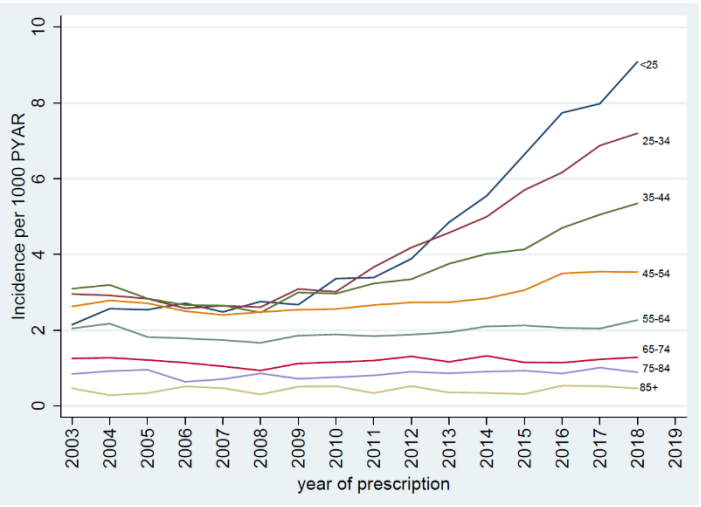


Figure 51 Incidence of prescriptions of antipsychotics per 1000PYAR by age

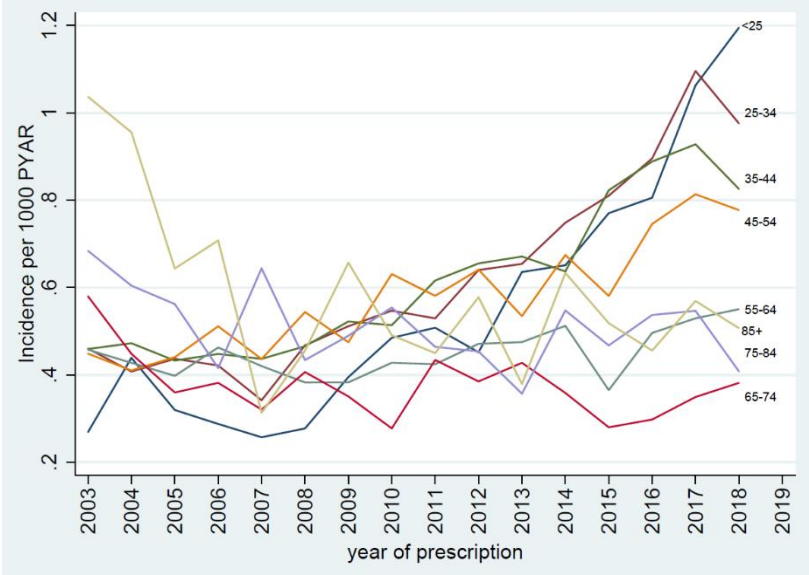
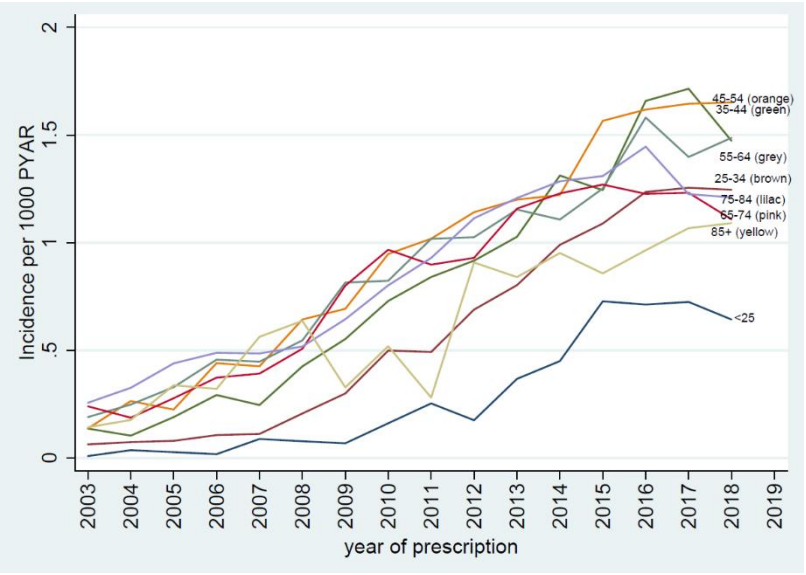


Figure 52 Incidence of prescriptions of anticonvulsants per 1000PYAR by age



5.3.7 Trends in the incidence of anxiolytic prescriptions: sensitivity analyses

Sensitivity analyses were conducted to examine the impact on findings when prescriptions were restricted to the time frame of one month either side of an anxiety READ code, or when low-dose amitriptyline was excluded.

Restricting prescription and READ code time frame

As previously outlined, in the main analysis prescriptions had to have occurred in the three months prior, or the six months after, an anxiety READ code. The sensitivity analysis restricted the prescriptions of interest to those that occurred within the one month prior, or the one month after, the READ code. Analyses were repeated for the incidence of any anxiolytic, and the two largest drug classes: all antidepressants and benzodiazepines. Overall trends were comparable to the main analysis (Appendix A.45 - Figure 66), however, as expected, incidence rates were lower.

Excluding patients prescribed low-dose amitriptyline

Prescriptions for low doses of amitriptyline (<75 mg) were excluded for the analysis looking at trends in the incidence of prescriptions for any anxiolytic, and all antidepressants. The overall trends were comparable with the findings of the main analysis (Appendix A.46 - Figure 67).

5.3.8 Trends in the incidence of anxiolytic prescriptions – combination therapies

Any anxiolytic prescription that commenced on the same date as another anxiolytic prescription was defined as a combination therapy. The frequency of combination therapy was examined for each year of the study (Table 28). Combination therapy was uncommon, comprising just 9-11% of any incident anxiolytic prescriptions between 2003 and 2018. NICE and BAP recommend a combination of an SSRI (or 'other' antidepressant) with a benzodiazepine in certain clinical situations (NICE, 2011b; Baldwin et al., 2014), and this combination accounted for around 5-6% of all incident prescriptions for any anxiolytic (Table 28).

Table 28 Frequency of prescriptions for any anxiolytic monotherapy, combination therapy (of any combination of anxiolytics), and combination therapy of SSRI & 'other' antidepressant with a benzodiazepine, between 2003 and 2018

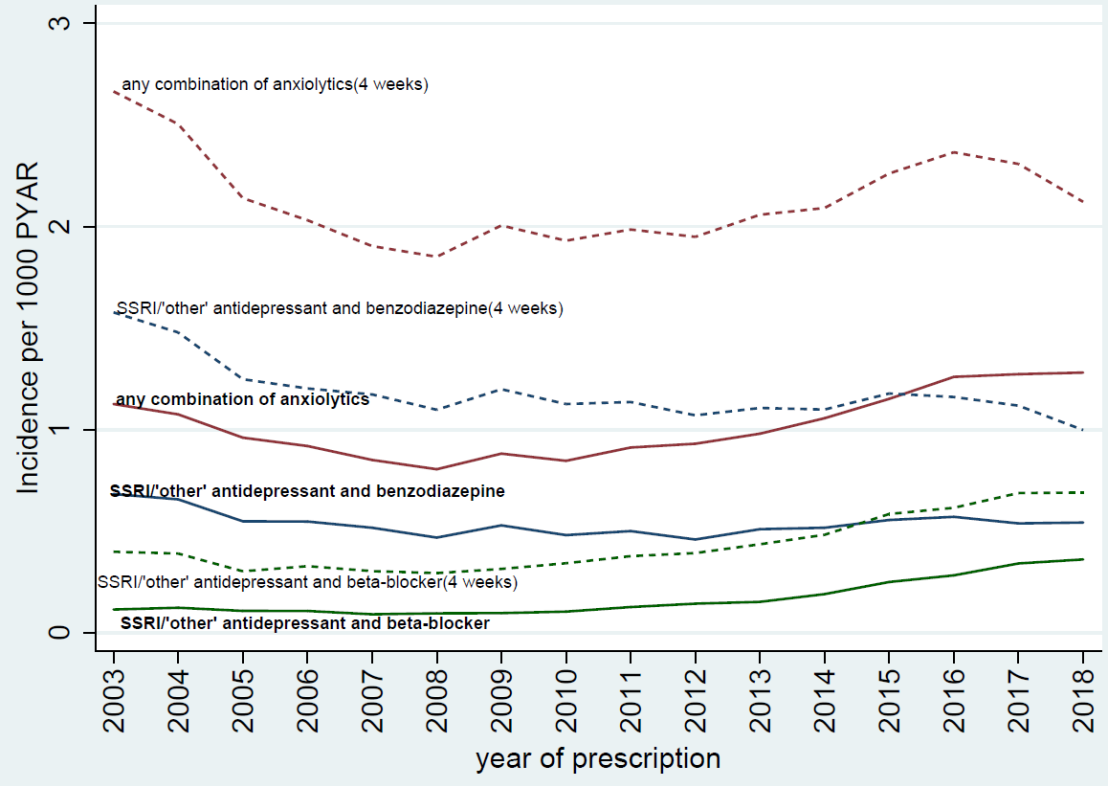
Year	Total incident prescriptions - any anxiolytic	Monotherapy – any anxiolytic		Combination therapy – any combination of anxiolytics		Combination therapy – SSRI & 'other' antidepressant with benzodiazepine	
		Freq.	%*	Freq.	%*	Freq.	%*
2003	14090	12838	91.1	1252	8.9	760	5.4
2004	13174	11960	90.8	1214	9.2	742	5.6
2005	11531	10441	90.5	1090	9.5	623	5.4
2006	11045	9990	90.4	1055	9.6	629	5.7
2007	10863	9878	90.9	985	9.1	599	5.5
2008	10315	9371	90.8	944	9.2	550	5.3
2009	10772	9730	90.3	1042	9.7	625	5.8
2010	10661	9651	90.5	1010	9.5	574	5.4
2011	10929	9833	90.0	1096	10.0	602	5.5
2012	11109	9977	89.8	1132	10.2	559	5.0
2013	11240	10633	89.2	1200	10.8	625	5.6
2014	11833	10527	89.0	1306	11.0	640	5.4
2015	12939	11501	88.9	1438	11.1	694	5.4
2016	14178	12586	88.8	1592	11.2	722	5.1
2017	14554	12558	88.9	1620	11.1	686	4.7
2018	14816	13173	89.0	1643	11.0	687	4.6
Total	**194,049**	**174,430**	**89.9**	**19, 619**	**10.1**	**10,327**	**5.3**
**Percentage of total incident prescriptions for any anxiolytic*							

Trends in the incidence rates of prescriptions for any combination therapy were consistent with the pattern seen in incidence rates for prescriptions of any anxiolytic, as monotherapy or combination therapy. Incidence declined from 1.1/1000PYAR to 0.8/1000PYAR in 2008, rising to 1.3/1000PYAR in 2018 (Figure 53). Incidence of SSRI/'other' antidepressant plus a benzodiazepine as combination therapy declined slightly over the study period, from 0.7/1000PYAR in 2003 to 0.5/1000PYAR in 2018 (Figure 53). The underlying data on incidence rates for these two analysis groups are presented in the Appendix A.47 - Table 61.

In addition, whilst beta-blockers (propranolol) are not specified in the NICE or BAP guidelines, and the evidence for their effectiveness in the treatment of anxiety is poor (Baldwin et al., 2014), they were the remaining largest drug class prescribed over the study period (Table 17). Therefore, incidence rates were calculated for when a beta-blocker (propranolol) was prescribed with an SSRI/'other' antidepressant. The underlying incidence rates for this combination are presented in the Appendix A.47 - Table 61. The combination of an incident SSRI/'other' antidepressant plus beta-blockers (propranolol) was steady for the first half the study, and then rose from 0.1/1000PYAR in 2010 to 0.4/1000PYAR in 2018 (Figure 53).

A sensitivity analysis was conducted to examine the impact on findings when a later prescription for an anxiolytic medication, issued within 4 weeks of the original prescription, was defined as a combination therapy. The overall trend was similar to the main analysis for the incidence of any combination therapy and for the specific combination therapies (SSRI/'other' antidepressant plus a benzodiazepine, SSRI/'other' antidepressant plus beta-blocker) (Figure 53).

Figure 53 Incidence of combination therapies (any anxiolytic combination, SSRI/'other' antidepressant & benzodiazepine, and SSRI/'other' antidepressant & beta-blocker) per 1000 person years between 2003 and 2018 – prescribed on the same date, or prescribed within 4 weeks (sensitivity analysis)



5.3.9 Trends in the duration of incident anxiolytic prescriptions

Trends in the duration of treatment were examined for patients starting anxiolytics between 2003 and 2018. Figure 54 to

Figure 59 show the proportion of patients with different treatment lengths for each year of the study for each drug class. It should be noted that there is an apparent reduction in the proportion of patients who are on medication in the longest duration categories in the final year of the study. However, as data were extracted in July 2019, it is likely that the figures for 2018 for the longer duration categories are an underestimate and should be interpreted with caution.

For all antidepressants, prescription duration remained relatively stable between 2003 and 2018 (Figure 54). For SSRI & 'other' antidepressants, there was a small increase in the proportion of longer use (181+days) in more recent starting years, with a corresponding decrease in shorter-term use (<181 days) (Figure 55). In contrast, the proportion of short-term benzodiazepine prescriptions increased with time, with a resultant decrease in long-term use (Figure 56). For beta-blockers (propranolol), prescription duration remained relatively stable between 2003 and 2018 (Figure 57). For the remaining drug classes (antipsychotics, and anticonvulsants), proportions of short-term and long-term prescriptions fluctuated over time, but there was no clear trend of an increase or decrease in treatment duration (Figure 58 and Figure 59).

Figure 54 Changes in the proportion of patients with different treatment lengths for all antidepressants, between 2003 and 2018

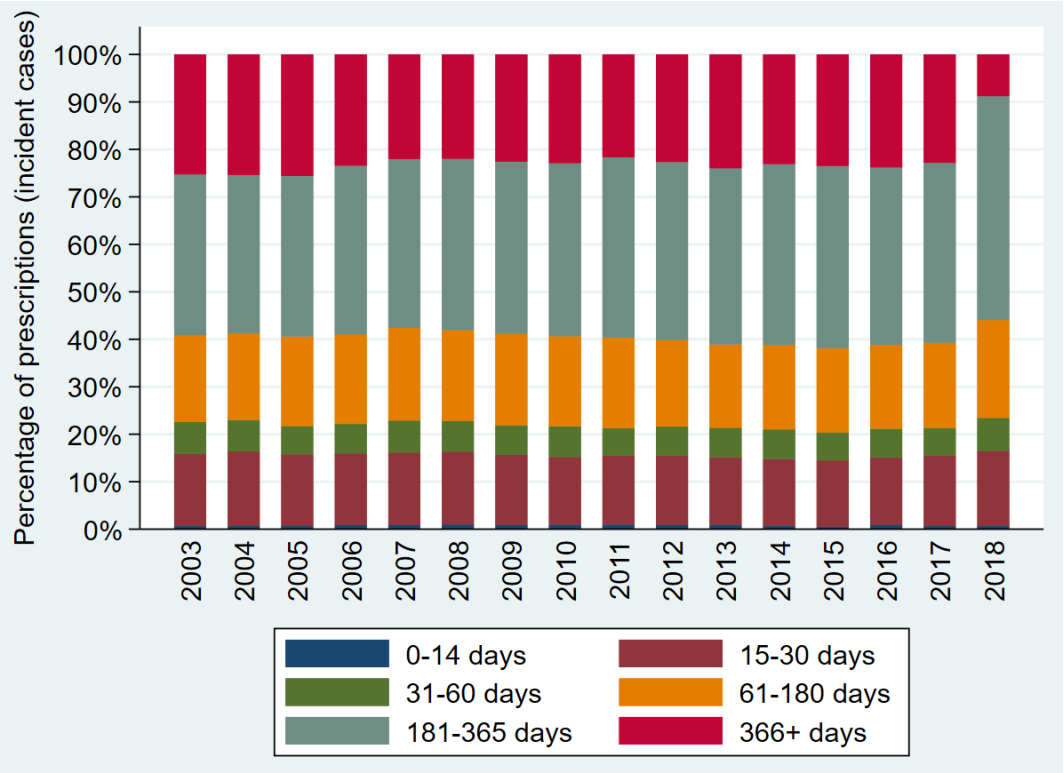


Figure 55 Changes in the proportion of patients with different treatment lengths for SSRI & 'other' antidepressants, between 2003 and 2018

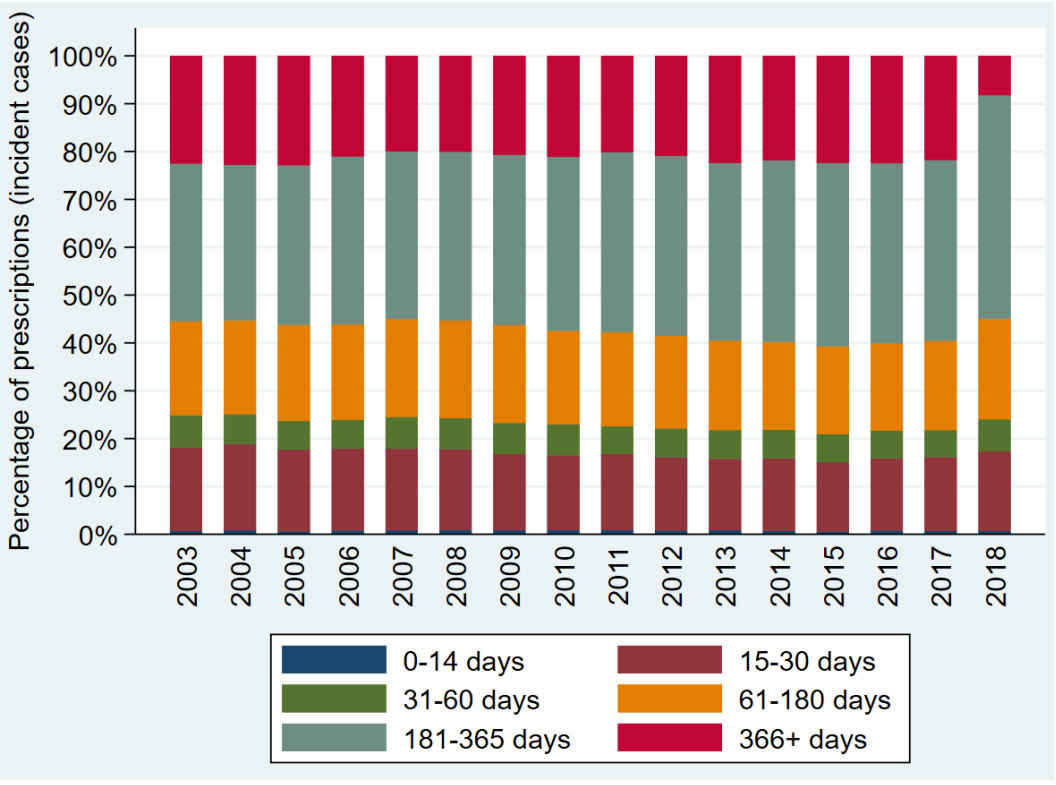


Figure 56 Changes in the proportion of patients with different treatment lengths for benzodiazepines, between 2003 and 2018

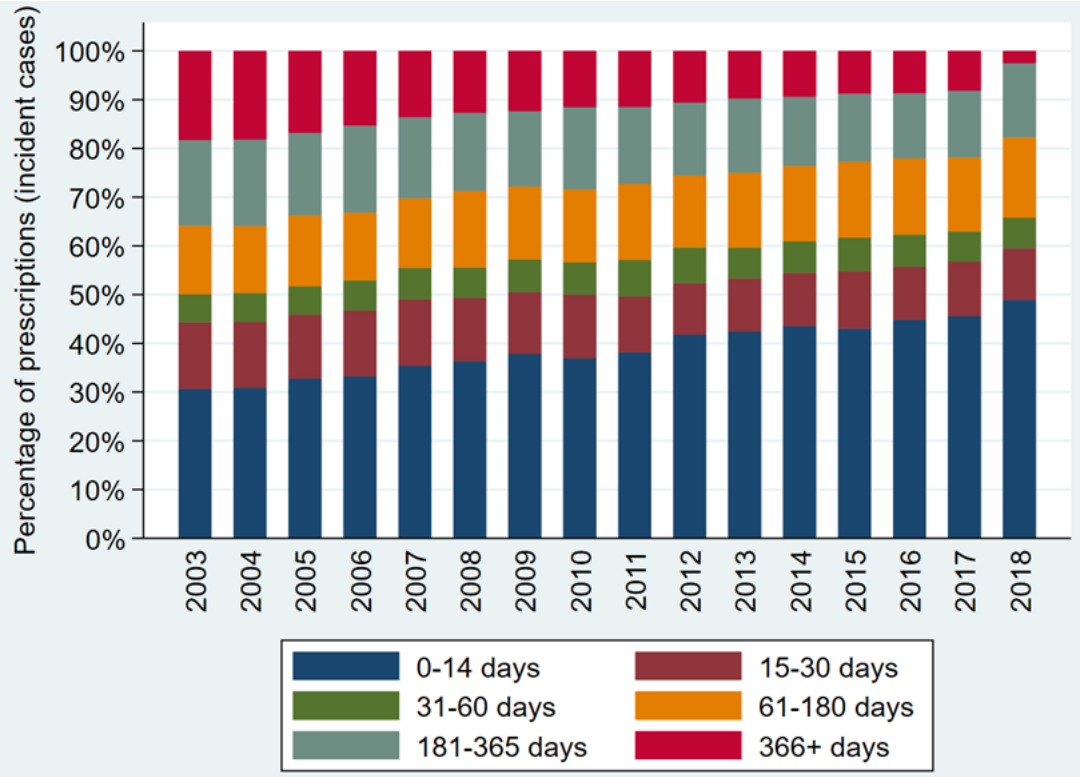


Figure 57 Changes in the proportion of patients with different treatment lengths for beta-blockers (propranolol), between 2003 and 2018

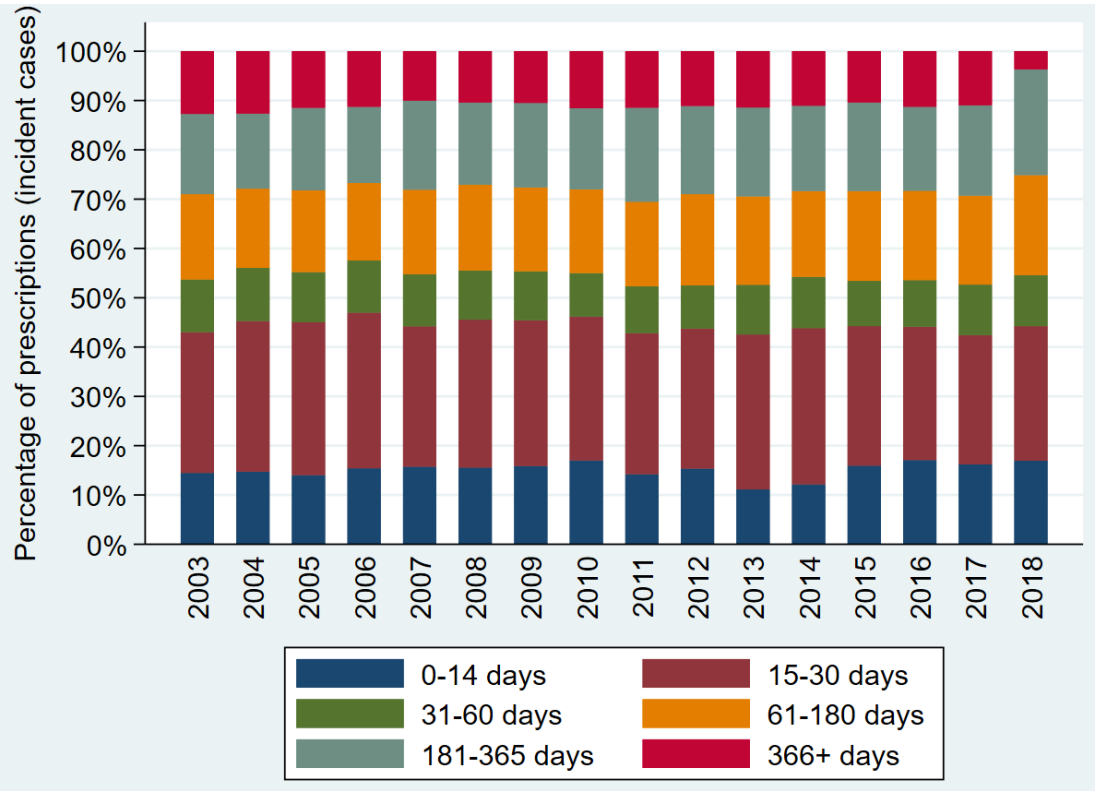


Figure 58 Changes in the proportion of patients with different treatment for antipsychotics, between 2003 and 2018

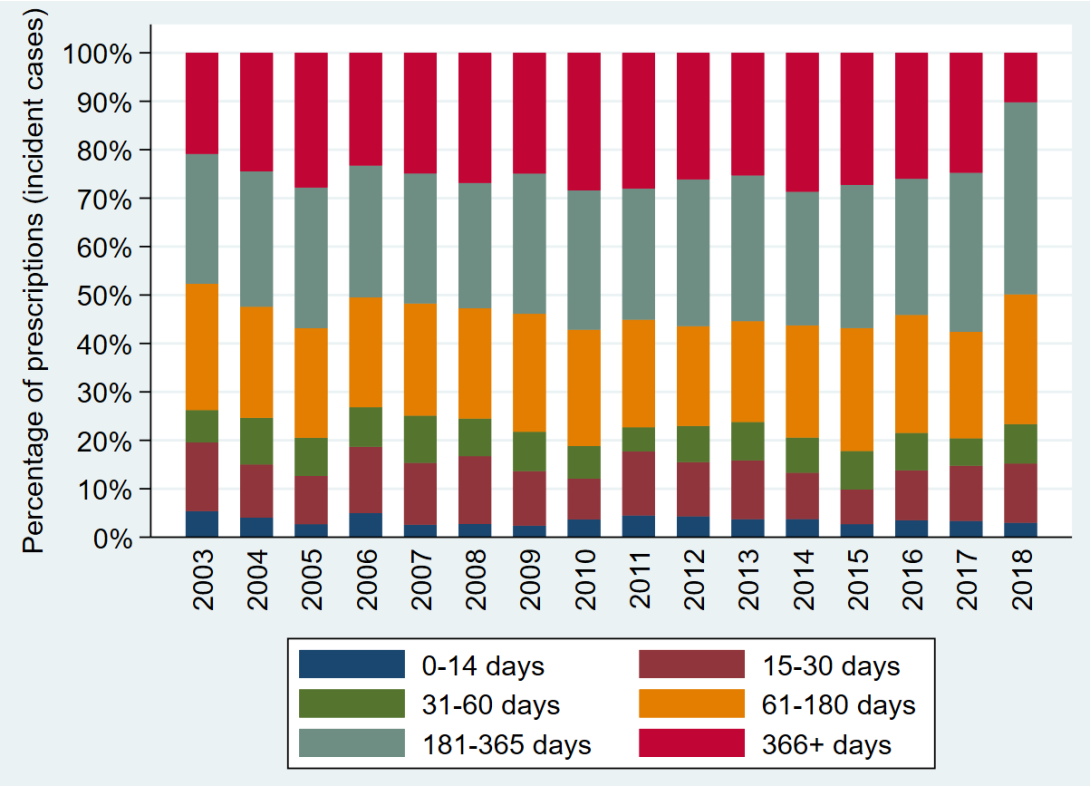
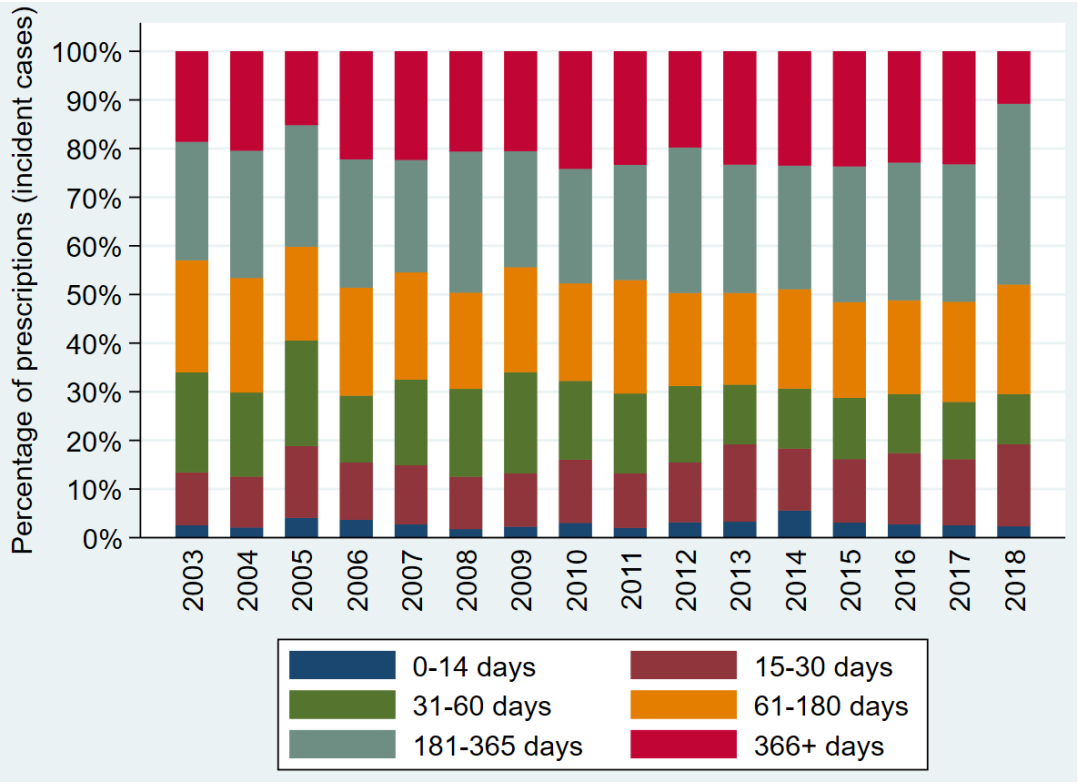


Figure 59 Changes in the proportion of patients with different treatment lengths for anticonvulsants, between 2003 and 2018



5.3.10 Patterns of dosing for incident antidepressant prescriptions

Others have suggested that doses of antidepressant medication may be higher for the treatment of anxiety (compared with depression) (Cassano et al., 2002). In order to investigate this, the median dose was calculated for each incident drug substance within the antidepressant class across all years of the study (2003 to 2018). These data are presented in Table 29, along with the recommended doses for comparison.

Citalopram (36%) was the most frequently prescribed incident antidepressant, with the median dose (20mg [IQR: 10, 20]) corresponding with the recommended starting dose for both anxiety and depression. This was followed by sertraline (17%), where the median dose (50mg [IQR: 50, 50]) was also within the recommended doses, however it was at the lower end of the recommended dosing range for both disorders. For the two other antidepressants that were frequently prescribed, no BNF guidance is available on the recommended daily dose for anxiety. However, in general, the doses prescribed were in the lower to mid range of the recommended range for depression. For example, for the third most frequently prescribed antidepressant - fluoxetine (16%), the median dose (20mg [IQR: 20, 20]) was at the lower end of the dosing range for depression. Amitriptyline was prescribed in 8.7% of antidepressant prescriptions, with a median dose of 15mg [IQR: 10, 25], which is lower than the recommended starting dose for depression. However, when prescriptions of <75mg amitriptyline were excluded, the median dose (100mg [IQR: 100, 150]) was well within the dosing range (50-150mg) for depression.

The remainder of the most frequently prescribed substances were also within the usual starting dose (mirtazapine (5.8%): 15 [IQR: 15, 30]; escitalopram (4.6%): 10 [IQR: 5, 10]; paroxetine (3.0%): 20 [IQR: 20, 20]; venlafaxine (2.9%): 75 [IQR: 75, 150]), but all at the lower end of the dosing range for depression (and for anxiety, where stated).

Table 29 Median dose per drug substance for all incident antidepressant prescriptions

Drug substance	Number of prescriptions		Median Dose [IQR] (mg)	Recommended daily dose for an adult for depression (mg)∞	Recommended daily dose for an adult for anxiety (mg)∞
	Freq.	%			
Citalopram	58,957	36.1	20 [10, 20]	20, up to 40	20-30, up to 40
Sertraline	27,711	17.0	50 [50, 50]	50, up to 200	50, up to 200
Fluoxetine	26,000	16.0	20 [20, 20]	20, up to 60	Not stated
Amitriptyline	14,198	8.7	15 [10,25]~	50, up to 150	Not stated
Mirtazapine	9,480	5.8	15 [15, 30]	15-30, up to 45	Not stated
Escitalopram	7,444	4.6	10 [5, 10]	10, up to 20	10, up to 20
Paroxetine	4,841	3.0	20 [20, 20]	20, up to 50	10-40, up to 60
Venlafaxine	4,736	2.9	75 [75, 150]	75-375	75-225
Dosulepin	3,624	2.2	75 [37.5, 75]	75-150, up to 225	Not stated
Trazodone	1,566	1.0	75 [50, 150]	150-300, up to 300	75, up to 300
Duloxetine	1,135	0.7	60 [30, 60]	60	30-60, up to 120
Clomipramine	909	0.6	25 [10, 50]	10-150, up to 250	Not stated
Lofepramine	781	0.5	140 [105, 140]	140-210	Not stated
Flupentixol	614	0.4	1 [1, 1.5]	1-2, up to 3	Not stated
Nortriptyline	400	0.2	75 [75, 100]	75-100, up to 150	Not stated
Imipramine	225	0.1	50 [25-75]	75, up to 150-200	Not stated
Trimipramine	194	0.1	50 [25, 50]	50-75, up to 150-300	Not stated
Doxepin	191	0.1	37.5 [25, 50]	25-300	Not stated
Reboxetine	83	0.1	8 [4, 8]	4-10, up to 12	Not stated
Moclobemide	47	<0.1	300 [300, 600]	150-600	300, up to 600
Fluvoxamine	43	<0.1	100 [50, 100]	50-100, up to 300	Not stated
Phenelzine	34	<0.1	15 [15, 20]	45-60, up to 90	Not stated
Nefazodone	16	<0.1	200 [200, 400]	200, up to 300-600	Not stated
Tranylcypromine	15	<0.1	20 [20, 30]	10-30	Not stated
Mianserin	9	<0.1	20 [10, 45]	30-40, up to 90	Not stated
Agomelatine	8	<0.1	37.5 [25, 50]	25, up to 50	Not stated
Tryptophan	5	<0.1	3 [1.5, 3]^	3, up to 6^	Not stated
Isocarboxazid	4	<0.1	30 [25, 30]	10-60	Not stated
Vortioxetine	2	<0.1	15 [10, 20]	10-20	Not stated
Amoxapine	1	<0.1	300 [300, 300]	50-100, up to 600	Not stated
Total	**163,273**	**100**			
~Amitriptyline <75mg excluded	*13,508*	-	*100 [100, 150]*	*50, up to 150*	*N/A*
**BNF recommended daily dose for an adult for anxiety (GAD, social anxiety disorder, panic disorder) or depression (Royal Pharmaceutical Society of Great Britain, 2020)*					
∞BNF recommended doses, except for Amoxapine & Nefazodone (both discontinued in the UK), whereby recommended dose sourced from 'drugs.com' (drugs.com, 2020a, 2020b)					
^Dose in grams					

5.3.11 Qualitative data

Some of the findings detailed in Chapter 3 and based on analysis of the qualitative interviews with GPs, gave insight into when specific drugs might be prescribed, and therefore indicated some possible reasons for the trends observed in the quantitative data on prescribing for anxiety. These findings are expanded upon below.

Views on prescribing antidepressants

GPs reported antidepressants as the main medication they used to treat anxiety, which is reflected in the quantitative findings. They talked about being reluctant to prescribe antidepressants because they did not want to rush into treating anxiety with medication, and because of the potential increased risk of suicide in younger patients. They used follow-up appointments to delay prescribing where appropriate, to provide time for the patient to consider their options, and see if symptoms improved without the need for medication.

> *"I'm trying to give other suggestions other than medications, so socially isolated people trying to get more either exercise or sort of group stuff, that is probably what they need rather than medication, but it has been quite limited what you can offer. I think it is sometimes a bit too easy just to prescribe and I think I would try and move away from doing that or particularly in younger people, with the risk of suicide and things on SSRIs, so that's another trigger for me to sort of 'I'll see you again in a couple of weeks and let's reassess'."* GP 1

GPs also commented that despite a potential reluctance to use antidepressants, they thought that *"where warranted it can be a useful tool"* (GP 12). GPs reported that this was also the case for younger patients, despite the previously acknowledged risk of suicide.

> *"Younger, well sort of 17, 18 year olds who've actually responded very well to antidepressants, especially if they've had some issues with underlying anxiety disorders like Asperger's, syndromic patients who've got a lot of anxiety, they can be quite helpful as well."* GP 12

There was a mix of responses given by GPs when asked about the proportion of patients with anxiety that were prescribed medication. Some GPs estimated it would be about 75% and suggested this might be because "*people come to us wanting a prescription, that's often why they come"* (GP 2). However, other GPs thought it would only be about 25%, and that often in those cases it will be patients with co-morbid depression.

GPs consistently reported that patient choice was the main trigger for an antidepressant prescription, particularly if the patient had previously tried medication and found it helpful. GPs also

commented that they would be considering severity of the anxiety, and that some patients might need anxiolytics in the short-term to help them with symptoms, whilst they wait for a more long-term strategy such as talking therapies.

> *"I: What would trigger a prescription?*
> *GP: Patients' choice probably mainly. I mean there are some people that just seem really, I'd say they're struggling and that it's becoming a functional problem more than others, and then I might sort of perhaps talk a little bit more about the antidepressants and how 'they might allow you to cope a little bit better day to day but with the idea that they'll help in the short-term while you're waiting for something long, you know, more longer term strategy to be put in place like through CBT'." GP 3*

Some GPs commented on being able to prescribe higher doses of SSRIs for anxiety, compared with depression, although there was a sense they were conservative with their prescribing, or that patients responded well to lower doses, and therefore they did not use the higher doses.

> *"I guess with the anxiety you do have the licence to go up to much higher doses of SSRIs than what you would do normally." GP 7*

<u>Experiences of prescribing benzodiazepines</u>

All the GPs reported that they would avoid prescribing benzodiazepines to patients the first time they consulted for anxiety. GPs gave several reasons for this: benzodiazepines were addictive, and *"we have a real addiction problem in my population"* (GP 13); that they could have unwanted side effects and could negatively affect an individual's ability to drive or work; and that they were not long-term solution, but rather an *"emergency measure"* (GP 2). However, GPs acknowledged that benzodiazepines could be beneficial, particularly in acute crises to "*get them down off the ceiling so that you can then begin to address things"* (GP 8), in patients whose *"anxiety [is] contributing with depression, suicidal ideation"* (GP 11), or in instances where a lack of sleep was contributing to the anxiety state.

> *"Sometimes it can be helpful in the short-term if you think that the primary problem is like sleep deprivation and sometimes normalising sleep will actually improve that person's symptoms and often…it can be very helpful to give one to two weeks of Benzodiazepines and get the person back, just a way of discussing the information they provide and reviewing the diagnosis, see how they're feeling, sometimes often with some, maybe a break from work for a couple of weeks along with some sleep, and see if that helps to resolve the issues." GP 12*

Benzodiazepines were also cited as being useful as a short-term adjunctive therapy, when introducing an SSRI. GPs reported they did this less in the last few years, but that they "*used to do it more, whenever I started a SSRI I'd often say 'you might have trouble in the first two weeks, I'll give you some Diazepam for those symptoms"* (GP 6).

GPs said they if they did prescribe them, either at that first consultation or during a later follow-up appointment, then it would be a small dose for a couple of days, and not for regular use, with the risks explained clearly to the patient. GPs also spoke about prior patient experiences as being a factor in whether they prescribed benzodiazepines. They stated that if a patient consulted for a second episode of anxiety, and they had found benefit beforehand in using them to manage their symptoms, then they might be more inclined to reissue a prescription. However, GPs also commented that there were several patients who were already on benzodiazepines long-term, despite it no longer being recognised practice, and it was *"quite difficult to try and get them to stop taking them"* (GP 3). Most GPs spoke about these patients as being patients who had come from other practices, and therefore they were likely to continue to prescribe benzodiazepines for these patients, if these patients had strong preferences to continue taking them. However, some GPs also acknowledged that some patients did cope with their symptoms better when taking them, and therefore they might not "*rush"* (GP 6) to get these patients off them.

> *"There's no doubt that there are some people who seem to do better with Benzos, so if people have had them for ever and ever, I probably wouldn't be in a huge rush to try and get them off." GP 6*

In addition, some of the GPs explained that in the past, benzodiazepines were prescribed for long-term use. As such, GPs reported that a proportion of their current patients who were on long-term benzodiazepines were elderly and had been originally prescribed benzodiazepines when it was routine practice to do so.

> *"So we've still got some older, some ladies in their seventies that were prescribed - I've got one here, what is she now, in her eighties, was prescribed Librium in the Seventies and that was the treatment." GP 1*

There were also some instances where GPs stated they might prescribe benzodiazepines on a long-term basis if the patient was under the care of a mental health team, or if they had been asked by the mental health team to prescribe *"a tiny bit of Diazepam to tide [them] over, or a sleeping tablet"'* (GP 15). GPs clearly stated that they felt long-term medication of these drugs should only be continued with secondary care support and review.

Specific drugs used

GPs stated that they used propranolol quite often, *"for the physical kind of side of it, if it's more panicky type of things"* (GP 2). They said they were more likely to prescribe propranolol when a patient first presented with anxiety, as it was not addictive, and patients could choose whether to take it or not. They said that it could be useful for patients in the short-term, and that they could stop the progression of the physical sensations into a panic attack.

> *"Sometimes, people are so anxious they can't even concentrate to engage, so I sometimes use beta-blockers if it's appropriate. Just to give them something to stop the progression of the anxiety into panic attacks. If you can just slow the heart rate down a little bit, sometimes it stops the precipitation of the physical symptoms, which often make the anxiety worse, and then they become anxious about panic attacks, so I use beta-blockers quite a lot." GP 13*

GPs commented that SSRIs were the antidepressants they were most likely to use. About two thirds of the GPs reported starting patients with anxiety on citalopram, compared with sertraline for those with depression. Several GPs explained that this was because they thought citalopram was better for anxiety, and "*it seems to have quite a good calming effect on them, gives them a sense of control so that they can manage their stress a little bit more easily"* (GP 3). Some GPs said they preferred to prescribe citalopram as the tablets can be broken in half easily, and therefore they were able to start patients on lower doses to begin with.

> *"With Citalopram 'cos it's quite easy, you can break them in half easily enough, is actually if ever I'm starting someone on something like that I always start on a small dose initially and then ask them to increase it after a week or two because I'll certainly warn them that the anxiety element of their illness may well increase in the short-term." GP 8*

The remainder of the GPs reported using sertraline as the first-line treatment for anxiety, particularly if it was co-morbid with depression. They stated that they thought it *"is slightly better with anxiety"* (GP 7), or because with *"citalopram there's been more talk about kind of issues around QT intervals" (GP 8)* [prolonged QT intervals can cause abnormal heart rhythms, which can lead to more serious issues such as cardiac arrest (Jasiak & Bostwick, 2014)].

There were some GPs that talked about using escitalopram or venlafaxine if the first-line SSRIs had not resulted in improvement. They said they might be less likely to use a sedating antidepressant, such as mirtazapine, in patients with anxiety, particularly when compared to those with depression. However, there was also sense from some GPs that they *"just end up just working [their] way through"* (GP 5) various antidepressants to find one that works for a particular patient.

When patients had severe anxiety and had not responded well to antidepressants, some GPs reported prescribing pregabalin. They stated that this was the type of patient who would be referred to secondary care and might have other mental health comorbidities.

> *"Sometimes things like pregabalin have a place in anxiety. I have some patients who have been really struggling with anxiety and that sort of medications helped. They tend to be people who are probably seeing a psychiatrist, but they may help, and sometimes they've got other mental health issues." GP 8*

In addition, two GPs mentioned using antipsychotics for patients with very severe symptoms, who had not responded to an antidepressant or pregabalin.

> *"I guess the only other thing is very occasionally with severe anxiety sometimes we might use things such as risperidone or small doses of antipsychotics to try and help manage symptoms." GP 12*

5.4 Discussion

5.4.1 Summary of findings

There was an increase in the prevalence of prescriptions of any anxiolytic, and antidepressants, over the 16 years, between 2003 and 2018. This increase in prevalence was also seen in prescriptions of beta-blockers (propranolol), and for antipsychotics and anticonvulsants, but at a more gradual rate. The prevalence of prescriptions of benzodiazepines remained fairly constant. The incidence of prescriptions of any anxiolytic, driven by prescribing of antidepressants, decreased between 2003 and 2006, after which the incidence remained fairly constant, before increasing substantially between 2012 to 2018. There was a gradual increase in the incidence of prescriptions of beta-blockers (propranolol), antipsychotics, and anticonvulsants between 2003 to 2018. The incidence of benzodiazepine prescriptions gradually declined across the entire 16-year period (2003 to 2018). The increases in incident prescriptions are more likely to explain the increases in prevalence, rather than longer treatment duration. However, for benzodiazepines, the decline in incident prescriptions, with a corresponding reduction in long-term use over time, may be why the prevalence of prescriptions remained reasonably steady from 2003 to 2018.

Prevalence and incidence of prescriptions for anxiolytic medication in women were nearly twice that of men, in terms of any anxiolytic, and each drug class, with the exception of antipsychotics where

prescriptions were 50% higher in women. Whilst there was some statistical evidence of an interaction between year and gender, the effects observed were unlikely to be meaningful.

There was evidence of an interaction between year and age. Prevalence of prescriptions of any anxiolytic, and each drug class, increased substantially in the later years of the study in the younger age groups (<25s, 25-34, and 35-44 year olds). Prevalence of prescriptions for 44-54 and 55-64 year olds increased more gradually, except for benzodiazepines where they declined in those aged 55-64 years old. The other exception to this was for prescriptions of anticonvulsants, where the increase seen in prevalence was most notable for 35-44, 44-54 and 55-64 year olds, although numbers were small.

There was a marked increase in the incidence of prescribing of any anxiolytic, and each drug class, in the two youngest age groups (<25s and 25-34 year olds) in recent years. Incident prescriptions for those aged 35-44 and 45-54 years old increased more gradually, except for benzodiazepines where there was a decrease in prescribing for 35-44 year olds, followed by an increase toward the second half of the study, and a decline seen in prescribing for those aged 45-54. Again, the other exception to this was for prescriptions of anticonvulsants, where the increase seen in incidence was most notable for 35-44, 44-54 and 55-64 year olds but again numbers were small.

Prevalent and incident prescriptions were steady, or decreased, for any anxiolytic, and each drug class, for the older age groups (55-64, 65-74, 75-84, and 85 year olds). The only exception to this was anticonvulsants, where there was an increase in prevalence and incidence in these age groups. However, this may be due to co-incidental use of these drugs for other indications in older individuals, such as neuropathic pain (Haslam & Nurmikko, 2008). Nonetheless, both prevalent and incident prescriptions of anticonvulsants and antipsychotics were infrequent, and therefore differences between age groups must be interpreted with caution.

Combination therapy – where more than one anxiolytic was prescribed on the same date – was relatively uncommon, comprising around 9-11% of any incident anxiolytic prescriptions. The combination of an incident prescription of an SSRI (or 'other' antidepressant) and a benzodiazepine, which is recommended in the NICE guidelines, was less frequent comprising around 5-6% of incident prescriptions.

Interview data from GPs indicated that antidepressants, and in particular citalopram and sertraline, were the primary medications used to treat anxiety, and this is certainly consistent with the quantitative data. However, GP interviews did not provide insight into why a decline was seen in the incidence of antidepressant prescriptions at the start of the quantitative study. It is possible that this

could be related to the decrease in recorded anxiety diagnoses at the start of the study period reported in the previous chapter (section 4.3.2). Accounts from the GPs interviewed highlighted that, if a patient has a diagnosis of anxiety, they may be more likely to prescribe an anxiolytic. Therefore, a reduction in recorded anxiety disorders may account for the reduction in incident prescribing seen in the early years of the study.

The increase seen in prescribing (of any anxiolytic, and all drug classes) in the youngest age groups (<25 years, 25-34-and 35-44 year olds) in the later years of the quantitative study period, is consistent with the GP interview data. As reported in the previous chapter (section 4.3.5), GPs suggested that there has been an increase in anxiety in younger patients in recent years. GPs also said that diagnosing an anxiety disorder and prescribing medication were linked (section 4.3.5). Therefore, increases in anxiety diagnoses in later years, especially in younger adults, may explain increases in anxiolytic prescriptions. This may also explain why prescriptions for beta-blockers (propranolol) have increased for younger individuals, as GPs described the drug as non-addictive and therefore a medication that they might prescribe more readily. In addition, the GPs' accounts suggested there has been a change in practice in terms of the drugs used to treat anxiety in primary care, in that benzodiazepines are no longer prescribed routinely or for the long term. This could explain why the overall incidence of benzodiazepines decreased during the study period and the reduction in long-term prescribing of these drugs.

Some GPs mentioned that they may use higher doses of SSRIs for anxiety, compared with depression, but this was not evidenced in the quantitative data. It is possible that this is because the doses examined were those of incident prescriptions, and therefore any potential increase in dosage for repeat prescriptions, for patients who have not improved (Strawn et al., 2018), were not captured in this analysis. However, the NICE (NICE, 2011b) and BAP (Baldwin et al., 2014) guidelines do not specify a need for higher doses of antidepressants prescribed for anxiety, compared with those prescribed for depression. In addition, the BNF recommended doses for anxiety do not differ substantially from those recommended for depression (Royal Pharmaceutical Society of Great Britain, 2020).

5.4.2 Strengths and limitations

The use of a large, nationally representative dataset, with a sample size of more than 250,000 patients, enabled analysis of trends in terms of the prevalence and incidence of prescriptions of any anxiolytic, and by drug class. It also facilitated further analysis by age and gender, and provided insight into trends over a 16-year period. In addition, an extensive list of anxiolytic medication was

included within the analysis, ensuring all potential prescriptions for anxiety were captured. This list was comprised of drugs recommended in the current NICE guidelines (NICE, 2011b), and the British Association for Psychopharmacology's recommendations for pharmacological treatment for anxiety disorders (Baldwin et al., 2014). It is therefore likely to capture the most frequently prescribed medications that GPs may use for anxiety. In addition, the requirement for a prescription to have occurred within the defined time period of three months prior, or six months after, an anxiety READ code, ensures that patients who may have received an anxiolytic prescription before or after their anxiety has been recorded, are included within the analysis. Findings from sensitivity analyses restricting prescriptions to four weeks either side of the READ code were consistent with the overall trends seen.

Regarding the limitations of the study, the sample is limited to patients who have a recorded anxiety READ code and anxiolytic prescription. There will be some patients who have been prescribed an anxiolytic medication, but do not have an anxiety READ code, that are not captured within this study. It is also restricted to medications that are prescribed in primary care, so those receiving anxiolytic drugs prescribed in a secondary care setting will be excluded. Such patients may differ from those visiting their GP for prescriptions (e.g. more chronic or severe anxiety, more co-morbidities, more likely to be treatment resistant), meaning findings may not be generalisable to the wider population. However, only a very small number of individuals with anxiety are likely to be seen in secondary care and hence prescriptions issued in this setting would account for a very small proportion of the total medications prescribed for anxiety. In addition, most medium- and longer-term prescriptions started in secondary care are shifted to primary care.

The study focuses on medications that are prescribed by the GP, but there is no additional information available on dispensing, adherence to recommended treatment, or access to other treatments. Therefore, it is not known if patients that are prescribed these drugs are collecting their prescriptions, and if they are taking them on a regular basis, infrequently or not at all. Furthermore, whilst prescriptions must have occurred within the three months prior or the six months after an anxiety READ code, it is possible that some of these drugs may have been prescribed for other indications. For example, benzodiazepines may have been prescribed for insomnia, antipsychotics for psychosis, or anticonvulsants for neuropathic pain (Haslam & Nurmikko, 2008; Riemann & Perlis, 2009; Zhang et al., 2013). Patients may have had recorded READ codes for these conditions, in addition to an anxiety READ code, and it could not be known with certainty which indication the anxiolytic medication was prescribed for. This is further compounded by the frequent co-morbidity of anxiety and depression, and the use of antidepressants to treat depression. Consequently, some

of these drugs may have been prescribed for co-morbid depression, or other indications, and therefore the reported figures may be an overestimate.

Finally, as previously discussed in Chapter 4 (section 4.4.2), only practices who provided data to CPRD Gold across the entire study period (2003-2018) were included in the analysis, in order to allow greater confidence in interpreting trends over time. It is possible that there may be differences between practices with complete or partial data over the study period, and one reason for this may be related to a switch in the practice software being used. Whilst it is unlikely that the practice choice of software would be linked to prescribing habits, it is possible that greater opportunity to use free-text recording may mean that there are differences in the coding of anxiety symptoms or diagnoses between practices with complete or partial data that may impact on the estimates obtained. However, it is difficult to quantify this and Moore et al. (2009) did not find differences when comparing complete and partial data from contributing practices in a different CPRD dataset.

The strengths and limitations of the qualitative interviews discussed in Chapter 3 (section 3.7.2) and Chapter 4 (section 4.4.2) are also relevant here.

5.4.3 Comparison with previous studies

Previous research into trends in the prescribing of the anxiolytics examined in this study are limited to those in children (John et al., 2015), or those in adults but reported trends over a short time period (2002-2004) (Martin-Merino et al., 2010). Whilst there are several studies that have looked at trends in antidepressant prescriptions for any indication (Lockhart & Guthrie, 2011; Mars et al., 2017), or for depression (Moore et al., 2009), there are no data on trends in prevalence or incidence in recent years. It is important to understand how prescribing has changed, particularly in view of the increasing incidence of anxiety reported in the previous chapter (section 4.3.2), and recent data from the general population (Stansfeld et al., 2016; Pitchforth et al., 2019). Furthermore, there have been several changes in recent years that may have impacted on prescribing: the introduction of the depression QOF in 2006; the introduction of the IAPT service in 2007; the economic recession in 2008; and the NICE anxiety guidelines in 2011 (NICE, 2011b). Regarding the introduction of IAPT, it is unlikely that this impacted on prescription rates, as all drug classes, bar benzodiazepines, increased in incidence the year after its' inception. Prevalence of prescriptions for most drug classes also increased after 2008. However, as there are limited numbers of patients with anxiety accessing treatment through IAPT, it is perhaps not surprising that rates of prescribing have increased, particularly as there are few alternative treatments (Baker, 2020). In addition, 2008 was also the year of the economic recession, and it is possible that the recession may have negated any potential

reduction in prescribing rates from the introduction of IAPT. A previous systematic review reporting studies published up to 2014 found increases in mental health symptoms in the years following the recession, and this may be why prevalence and incidence of prescriptions increased (Frasquilho et al., 2016). In 2011 the NICE anxiety guidelines were updated to explicitly state – *"Do not offer an antipsychotic for the treatment of GAD in primary care"* (page 18) (NICE, 2011b). However, prescriptions for antipsychotics did not decline after this recommendation was introduced, with both prevalence and incidence rates of antipsychotic prescribing continuing to increase from 2007 to 2018. Whilst it is possible that some of the antipsychotics in this study were prescribed for indications other than anxiety, this trend should still be noted as it is not in line with the clinical guideline.

Previous research established that there has been a substantial increase in the prescribing of antidepressants in the past two decades, with the greatest increase being observed for SSRIs and 'other' antidepressants, which account for the majority of antidepressants prescribed (Lockhart & Guthrie, 2011; Mars et al., 2017). Whilst these studies looked at antidepressant prescribing for all indications (Lockhart & Guthrie, 2011; Mars et al., 2017), or for depression (Moore et al., 2009), the results from this study are consistent with their findings, in that prevalence of prescriptions of antidepressants for patients with anxiety increased over the 16-year period. The earlier studies identified an increase in the long-term use of antidepressants, rather than an increase in those starting the medication (Moore et al., 2009; Lockhart & Guthrie, 2011; Mars et al., 2017). However, the present study did not find a similar trend, except for SSRI & 'other' antidepressants, but it was much less noticeable. This may because GPs are less likely to prescribe antidepressants for anxiety long-term, or because they have the option of using other anxiolytics for the treatment of anxiety.

The same studies (Moore et al., 2009; Lockhart & Guthrie, 2011; Mars et al., 2017) also found that the incidence of prescriptions of antidepressants has remained relatively stable over time, although when Mars et al. (2017) conducted a sensitivity analysis including only those patients with depression, they identified a decrease between 2002 and 2005, followed by a very gradual rise to the end of their study period (2011). Moore et al. (2009) also revealed a drop in the same three years. The present study also found a decrease in incident prescriptions from the start of the study (2003) through to 2006, where thereafter incidence gradually rose, followed by a steeper rise from 2012 to 2018. The reasons for this upward trend may be due to the increase in the incidence of patients presenting with anxiety, as reported in the GP interview data (section 4.3.5), or the introduction of the NICE guidelines for anxiety in 2011 (NICE, 2011b).

Prior research regarding trends in the prevalence of prescribing of benzodiazepines (for all indications), identified that primary care prescribing was relatively constant between 2008 and 2012 (MHRA, 2015). The findings of the present study are consistent with the earlier research, in that prevalence of prescribing of benzodiazepines for anxiety remained stable over the same time period, and extend this previous research by an additional six years, to 2018. More recent evidence suggests prevalence of benzodiazepine prescriptions (for any indication) has started to decline in recent years, between mid-2015 to mid-2018 (Public Health England, 2019). However, the present study did not find a clear decrease in prevalence in this same time period, but this may be because prescriptions were for anxiety, rather than for any indication.

Whilst there are no published data on patients starting benzodiazepine treatment for anxiety, the decrease in incidence over time seen in this study is in line with clinical guidelines, and reinforced by the data from the GP interviews. The present study is also consistent with data from PHE, that suggests the number of patients starting benzodiazepine medication, for any indication, declined between mid-2015 to mid-2018 (Public Health England, 2019). However, whilst duration of benzodiazepine treatment declined over time, 20% of prescriptions in 2017 were for longer than six months, despite clinical guidelines recommending a maximum of four weeks treatment (NICE, 2011b). Recent research has also shown that there are still large proportion of patients in the UK that are taking these drugs on a long-term basis, and that this is a concern for public health (Davies et al., 2017).

The rise in the prevalence of beta-blockers (propranolol) prescriptions in this study is consistent with the data reported on openprescribing.net (2020), which reports prescribing trends for all indications. However, there are no published data on trends for beta-blockers, specific to anxiety. This may be due to the inconclusive evidence for the therapeutic benefit of this drug in the treatment of anxiety (Steenen et al., 2016; Brudkowska et al., 2018), particularly as there is no clinical guidance concerning when and how it should be used within the NICE guidelines, despite being licenced for the treatment of anxiety symptoms (Royal Pharmaceutical Society of Great Britain, 2020). However, a recently published report has highlighted a potential under-recognised risk of harm in the use of propranolol for patients with depression or anxiety, and recommends BNF and NICE guidance should be reviewed and updated (Healthcare Safety Investigation Branch, 2020). Therefore, knowledge that there is increasing use of this drug for anxiety is important.

Regarding the remaining drug classes (antipsychotics and anticonvulsants), there has been limited research in trends in prescribing specific to anxiety. In previous research, between 1998 and 2010, antipsychotic prescriptions increased, for all indications, by 5.1% per year (95% CI 4.3–5.9) (Ilyas &

Moncrieff, 2012). A similar trend was seen in this study in prescriptions for anxiety in the seven overlapping years, with prevalence rising from 0.9/1000PYAR in 2003, to 1.3/1000PYAR in 2010. Likewise, in previous research, between 2007 and 2017, the incidence of patients starting gabapentin treatment increased from 230 to 679 per 100 000 persons per year, and from 128 to 379 per 100 000 persons per year for pregabalin, again for any indication (Montastruc et al., 2018), which is similar to the rise seen in this study.

Previous studies have shown anxiolytic use in women to be twice that of men, for both depression and anxiety (Martin-Merino et al., 2010; Mars et al., 2017). Whilst this study also found the prevalence and incidence of prescriptions for antidepressants in women to be twice that of men, it also found a similar pattern for all other drug classes (with the exception of antipsychotics). This is consistent with data from Public Health England (2019) that reports the prevalence of antidepressant, benzodiazepine and anticonvulsant prescriptions in women to be at least 1.5 times higher than prescriptions of the same drugs for men in 2017/2018. In the present study, compared with all other drug classes, the prevalence and incidence of prescriptions for antipsychotics in women was only 50% higher than that of men. Prior research suggests prescriptions for atypical antipsychotics in primary care may have increased at a greater rate in men, compared with women (Kaye et al., 2003; Chan et al., 2006). This may reflect increased severity of illness in men who do consult their GP, or a greater willingness to try antipsychotic medication, particularly if men experience less side effects than women (Seeman, 2004).

Previous research has shown that the level of prescribing of antidepressants, benzodiazepines, and anticonvulsants, for any indication, increased with age (Mars et al., 2017; Public Health England, 2019). In contrast, the present study found that prescribing for anxiety of all drug classes increased most in the youngest patients, with prescriptions remaining constant or decreasing in older adults in all drug classes, bar anticonvulsants. This may be due to a difference in the age patients present to their GPs with anxiety or depression, with patients thought to be at risk for anxiety at a younger age (Lijster et al., 2017). The present study findings, of increased benzodiazepine prescriptions in younger adults, are consistent with another study that looked at prescribing specifically for anxiety in children (John et al., 2015). Using a primary care database, they found that between 2003 and 2011, there was an increase in benzodiazepine prescriptions for those aged 15-18 years (John et al., 2015). Similarly, a Swedish study using a national database also found increasing prescriptions of benzodiazepines for those aged 18-24 years between 2006 and 2013 (Sidorchuk et al., 2018). Whilst this latter study was for any indication, 20% of patients had a recorded anxiety disorder.

5.4.4 Implications and future work

There was an increase in incident prescribing for anxiety in recent years in terms of all antidepressants, beta-blockers, antipsychotics, and anticonvulsants, and this was most notable in young adults. This increase in prescribing may reflect better detection of anxiety, and increasing acceptability of the diagnosis and of pharmacological treatment. However, some of this prescribing is not based on robust evidence of effectiveness, such as the use of beta-blockers, and some may contradict guidelines, such as the prescribing of antipsychotics. Importantly, there is limited evidence on the effect of taking antidepressants long-term and, as such, there may be unintended harm.

Overall, there was fall in benzodiazepine prescribing over time, but a rise in use was seen in those under 35 years of age. In addition, in 2017, just under 50% of incident prescriptions for benzodiazepines were prescribed for longer than the recommended maximum of four weeks, and over 20% were prescribed for longer than six months. These patients are potentially at risk of dependency, and protracted withdrawal, and this is a public health concern. To reduce harm, it is important that future research focuses on understanding why patients are prescribed these drugs long-term and the factors influencing initiation of such treatment. This is discussed in more depth in Chapter 6 (section 6.5).

Chapter 6 Discussion

6.1 Chapter overview

This thesis aimed to gain an understanding of how anxiety is diagnosed and managed in UK primary care. This final chapter discusses the key findings. Firstly, key findings across each of the three studies conducted are summarised, followed by a discussion of the overall strengths and weaknesses of the thesis. Individual strengths and limitations of the three studies have been discussed in detail in Chapters 3, 4, and 5, and are not repeated in this chapter. The implications of the findings and potential future work are outlined.

6.2 Key findings

The individual research objectives and key findings from each of the three studies are summarised in Table 30 and discussed below.

Findings presented in this thesis indicate that patients might be reluctant to seek medical help for anxiety. As reported in Chapter 3, the reasons for this included concerns around what others would think, a lack of understanding among patients about what anxiety is, and a perception that anxiety is not a legitimate reason to consult, or take up a GP's time. However, GPs and therapists commented on a rise in the number of patients presenting with anxiety in recent years, and there was a corresponding increase over time in the recording of any anxiety code between 2003 and 2018. GPs and therapists suggested that increasing internet and social media use, greater social isolation, and a greater awareness of anxiety in society could be a possible reason for this increase. It might also be that despite being reluctant to seek help for symptoms of anxiety, patients are becoming more willing to do so over time, potentially as a result of increasing mental health promotion and willingness to talk about mental health (Henderson et al., 2017; Schnyder et al., 2017). It may also reflect greater awareness amongst GPs of anxiety and its' importance, and an increasing tendency for them to recognise the symptoms of anxiety, and anxiety disorders.

Table 30 A brief summary of the research objectives and key findings from each study

Study and chapter	Research objectives	Key findings
Practitioners' and patients' views on detecting, diagnosing, and managing anxiety in Primary Care, Chapter 3.	To understand how patients and practitioners view and experience the identification, diagnosis, and management of anxiety. Specifically, to: • Understand how GPs conceptualise, diagnose and discuss anxiety. • Explore patient experiences of help-seeking, diagnosis and management. • Explore IAPT therapists' views on how diagnostic labels influence management within the service and patient engagement with treatment.	• Patients are reluctant to seek help, but generally find GPs to be supportive when they do. GPs and therapists view anxiety as arising from internal and external factors, and report an increase in anxiety in recent years, particularly in young adults. Social media, internet use, and pressure to succeed are suggested as potential causes. • Patients want anxiety and depression to be considered separately, and view diagnosis as important for acceptance/engagement with treatment. However, GPs do not generally distinguish between them, and tend to focus more on discussion of symptoms than the diagnosis itself. Therapists viewed labels as helpful for patient engagement with treatment, but do not formally diagnose anxiety disorders. • GPs view patients as preferring medication, whereas patients do not view medication as a positive choice and are often averse to taking it.
Trends in the recording of anxiety diagnoses and symptoms in UK primary care, Chapter 4.	• To investigate trends in the incident recording of anxiety diagnoses and symptoms in UK primary care between 2003 and 2018, and to examine potential differences in recording of anxiety over time according to age and gender.	• Recorded incidence of anxiety symptoms increased over time. In contrast, recorded incidence of anxiety diagnoses decreased between 2003 to 2008, before markedly increasing between 2013 and 2018. • Recorded incidence of symptoms and diagnoses in women was nearly twice that of men. • Recorded incidence of symptoms and diagnoses increased substantially in later years in younger adults, whereas the recorded incidence for older adults declined in later years.
Trends in prescribing for anxiety in UK primary care, Chapter 5.	To investigate trends in prescribing for anxiety in UK primary care between 2003 and 2018, and to examine factors that may be associated with these trends. The specific objectives were to: • Examine trends in prescribing overall, and by drug class. • Examine potential differences in prescribing over time according to age and gender. • Determine whether any changes in prescribing over time are due to: (i) an increase in the number of new patients receiving medication; and/or (ii) changes in the duration of treatment over the study period.	• Between 2003-2018, the prevalence of prescriptions in all drug classes increased, except for benzodiazepines where prevalence of prescriptions remained fairly constant. • Incidence of antidepressant prescriptions decreased between 2003 to 2006, and was then steady, before increasing substantially from 2012 to 2018. Between 2003-2018 incident prescriptions of beta-blockers (propranolol), antipsychotics, and anticonvulsants gradually increased, and incident benzodiazepine prescriptions gradually declined. • Increases in prevalence were driven by an increase in incident prescriptions rather than increasing treatment duration, except for benzodiazepines where there was a reduction in long-term use over time. • Prevalence and incidence of prescriptions in women were nearly twice that of men. • Incidence of prescriptions increased substantially in later years in younger adults, and were steady or decreased in older adults. The only exception to this was for prescriptions of anticonvulsants, where the increase was most notable for middle-aged adults.

Once consulting, patients want anxiety and depression to be considered as two separate conditions, both in terms of the diagnosis and the management of symptoms. In terms of providing insight into the diagnosis of anxiety disorders, patients reported that they viewed the diagnosis itself as important in their acceptance of having anxiety, and in being ready to engage with treatment. However, GPs do not necessarily distinguish between anxiety and depression, and for valid reasons may be reluctant to diagnose an anxiety disorder, for example, because they think it could be unhelpful or potentially stigmatising for the patient. GPs may also not be in a position to do so due to short appointments and a lack of continuity of care, both of which mean they have limited information on which to make a decision. Therefore, GPs tend to focus more on the management of the symptoms rather than the diagnosis itself. Quantitative data indicated that diagnostic codes are being used more in recent years (presented in Chapter 4). This increase in the number of patients being given diagnoses of anxiety disorders may be due to an increase in the presentations of anxiety, and greater awareness of anxiety among patients, as discussed above. It may also suggest a change in GP coding behaviour, potentially as a result of the introduction of the NICE anxiety guidelines in 2011, which state practitioners should *"identify and communicate the diagnosis of GAD as early as possible to help people understand the disorder and start effective treatment promptly"* (page 7) (NICE, 2011b).

However, whilst the incidence of recorded diagnostic codes increased in later years, GP interview data suggested that they are using these codes in a non-specific way. Codes such as 'anxiety states' were used to cover a general sense of anxiety, rather than making a formal diagnosis of, for example, generalised anxiety disorder. This may be reflective of the historical trend of referring to anxiety as a 'neurosis', or a psychosocial problem, rather than the biomedical subtypes introduced in the DSM-3 (Crocq, 2017). Indeed, in the interviews many GPs stated that they do not use the diagnostic subtypes of anxiety, viewing it as the role of a psychiatrist to make that distinction. Yet GPs also said that they rarely referred patients with anxiety to secondary care, due to the high threshold. Hence many patients do not receive a specific anxiety diagnosis. This directly contrasts with the views of patients, who value having a clear diagnosis, and do not find non-specific terminology helpful. Further, even if a GP has used a diagnostic code, this does not necessarily mean GPs are discussing diagnoses in depth with patients, particularly if consultation time is limited. In contrast, therapists have more time to discuss diagnoses with patients, and stated that a label could be helpful, but were clear the IAPT system does not encourage them to formally diagnose anxiety.

GPs recognised that elderly patients were at risk of anxiety, but that they might not consult for mental health symptoms. Both GPs and therapists viewed young adults as being at increasing risk of anxiety, especially in recent years. Quantitative data on trends over time in GP recorded codes aligns

with this, with an increased incidence of any anxiety code, symptom codes, and diagnosis codes in the younger age groups (presented in Chapter 4). GPs and therapists suggested recent increases may be due to increasing pressure on this age group, and greater social media use, with both factors also reported in previous research (Hargreaves, 2018; Keles et al., 2020). In the quantitative data on trends over time for prescriptions, there was also a substantial increase in prescriptions of any anxiolytic in this age group, as well as for each drug class (presented in Chapter 5). This increase in prescribing may therefore indicate increased presentation of anxiety in young adults, with better detection by GPs, and increasing acceptability of the diagnosis and of pharmacological treatment.

In terms of the management of anxiety, GPs held the view that patients often prefer to take medication, whereas patients reported that they were reluctant to take medication, but felt that it was the only option they had due to the long wait times for talking therapy and the perceived lack of other treatment options. There was evidence that the incidence of prescriptions for any anxiolytic is increasing and this is primarily driven by increases in antidepressant prescriptions (quantitative data reported in Chapter 5). This is in contrast to the rise in the prescribing of antidepressants for depression, which in recent years has largely been driven by longer duration of established prescriptions (Moore et al., 2009; Mars et al., 2017). With the exception of benzodiazepines, there were also increases in the incidence of prescriptions for each drug class. However, there are concerns within the medical community that some of this prescribing is not based on robust evidence of effectiveness, such as the use of beta-blockers (Steenen et al., 2016; Brudkowska et al., 2018), and is not in line with clinical guidelines, such as the use of antipsychotics for anxiety (NICE, 2011b). There is also limited evidence on the effect of taking antidepressants on a long-term basis, with GPs commenting on concerns around the possibility of an increased risk of suicide in patients treated with SSRIs (Healy et al., 2003). In addition, incident prescriptions of benzodiazepines increased in those under 35 years of age between 2003 and 2018, despite interviews with GPs suggesting they infrequently prescribed this medication.

The introduction of IAPT for the psychological management of anxiety does not appear to have influenced rates of medication prescribing, as all drug classes, bar benzodiazepines, increased in incidence the year after its' inception (2007/2008) - an increase which contrasts with patient preferences. GPs, patients, and therapists commented that, as discussed above, the waiting time to access talking therapy could be too long. However, 2008 was also the year of the economic recession and it is possible that the recession may have negated any potential reduction in prescribing rates. Indeed, incident prescriptions of both antidepressants and beta-blockers increased from 2008 onwards, after a previous decrease.

6.3 Strengths and Limitations

The strengths and limitations of each individual study were discussed in Chapters 3, 4, and 5.

As outlined in Chapter 3 (section 3.2.1), quantitative and qualitative methods differ in their underlying ontological and epistemological assumptions, usually from a positivist and interpretivist paradigm, respectively. If treated as distinct paradigms, this can cause complexities and confusion around the theoretical stance when both qualitative and quantitative methods are used within a research study (Bishop, 2015). McEvoy and Richards (2006) suggest adopting a critical realist perspective may circumvent these issues, and state that a pragmatic standpoint may also be acceptable. Pragmatists argue that the research methods used in a study should be those most appropriate to answer the research question, even if researchers have to 'switch' between different paradigms to do this (Johnson & Onwuegbuzie, 2004; Bishop, 2015). The rationale of this position is that neither the use of quantitative methods or of qualitative methods alone is adequate to conduct a comprehensive analysis (Creswell et al., 2004). Therefore, they should be used alongside each other in a complementary way.

To fully understand the management of anxiety disorders in primary care, a pragmatic approach was taken to achieve the aims of this thesis and multiple methods used. Multi-methods research is defined as entailing two or more separate projects answering different research questions, with each project considered less dependent on the other projects than would be the case in a mixed methods research study (Morse & Cheek, 2014). Employing different methods in this thesis meant the most appropriate methods were used to address individual research objectives. Employing qualitative methods allowed an in-depth understanding of how anxiety is being identified, diagnosed and managed in primary care, from the perspective of GPs, patients, and therapists. Analysis of a large quantitative data set (CPRD Gold) provided insight into how trends in recorded anxiety codes and anxiolytic prescriptions have changed over time. As practitioners' views on coding of anxiety and prescribing had been explored during the qualitative study, some of the qualitative data indicated possible reasons for the trends seen. Therefore, together, the methods used allowed for an investigation at two different levels, providing both an overview and detailed insight into the identification, diagnosis and management of anxiety disorders in UK primary care. However, a limitation of this thesis is that patients' and practitioners' views on the trends observed in the quantitative data are not known, as the qualitative interviews were conducted prior to the CPRD analysis. An alternative approach to this would have been to use a mixed-methods design, rather than multi-methods, in which further qualitative data could have been collected after the findings of the quantitative studies had been established. Interviews, or focus groups, could have been held to

understand patients' and practitioners' views on the increase in recorded anxiety in young adults seen in recent years. GPs' views toward the increase in anxiolytic prescribing could also have been explored, particularly that of benzodiazepines, beta-blockers, and antipsychotics. The findings generated from this approach would have been different to that of the current design, although from a pragmatic stance, may not have been feasible within the constraints of the three-year PhD.

Within a qualitative framework and an interpretivist stance, the qualitative study aimed to understand anxiety through participants' own background and experiences. Interviewing both GPs and therapists gave insight from two different perspectives – those that commonly manage anxiety in a general community setting, and those that are trained in the specific psychological management of anxiety. Throughout the analysis it was acknowledged that each participant's account would be based on their experiences, their interpretation and understanding of those experiences, and the context in which each account was given. As such, there may be differences in understanding between, and within, practitioners and patients.

It was also acknowledged that, within qualitative research, the researcher is part of the data collection process and part of the social situation they are investigating (Darawsheh et al., 2014). They bring their own assumptions, biases, and experiences to the data collection and analysis process. During this thesis, the researcher wrote field notes and reflexive analytic memos to capture personal thoughts on her role within this process. This included comments on participant behaviour during the interview, and acknowledging that the interview situation can in itself be an anxiety provoking situation for interviewees. Some participants may have found it difficult to disclose sensitive information to a researcher, whilst this may have put others more at ease. Participants may have also altered their responses to what they thought the researcher would expect to hear, or what they felt they should say. To address some of these factors, the researcher presented herself as a research student with an interest in anything that the participants felt was important to share, and spent time prior to the interviews establishing rapport. Interviewees were reassured there were no right or wrong answers, that it was their views the researcher wanted to hear, and that the data would be treated as confidential. In addition, conducting a large number of interviews by phone may have reduced the extent to which the researcher influenced participants' accounts.

In the qualitative interviews, patients indicated that they were reluctant to seek help for their anxiety, and some only did so after many years. As not all patients seek help for their symptoms, the results reported in this thesis are not capturing the views and experiences of patients who have not consulted their GP for anxiety. This also includes patients who may have sought help directly from an IAPT service, or other talking therapy provider. Therefore, we do not know how these patients

manage their anxiety, or if they have the condition diagnosed. On reflection, the qualitative study could have recruited patients for interview though other services, such as charities or support groups, or through the IAPT service, rather than just though GP practices. This may have provided additional perspectives from patients who have not yet sought help from their GP and an understanding of how they are managing their anxiety symptoms. However, whilst this would have provided those additional perspectives, this was not done as the focus of this thesis was on the management of anxiety within the primary care setting.

Patients, GPs, and therapists described a significant overlap in the symptoms of anxiety and depression. GPs also reported a tendency to use a code for depression rather than code for anxiety if both were present and the latter was not clearly the primary problem. Both quantitative studies – the coding study and the prescribing study – would not have captured patients that had symptoms of anxiety but did not have a recorded anxiety code. Similarly, for both studies, it is not known how many patients also had a depression code as well as an anxiety code, and therefore were potentially prescribed anxiolytic medication for depression, rather than for anxiety. This is also applicable to other indications, such as insomnia, or neuropathic pain. On reflection, in the case of depression, it may have been useful to conduct sensitivity analyses to exclude patients that had ever received a depression code. However, due to the symptom overlap between anxiety and depression, and their frequent co-morbidity, it is likely this would have excluded a large proportion of the study population. Additionally, the trends seen over time during the 16 years of the quantitative studies may reflect other factors, rather than, or as well as, changes in incidence. This may include changes in how symptoms and diagnostic codes are used by GPs, perhaps as a result of the introduction of the NICE anxiety guidelines in 2011 (NICE, 2011b), as discussed in the previous section (section 6.2). It may also reflect increasing awareness and detection of anxiety by GPs, and therefore treatment with anxiolytic medication.

Both quantitative studies found a clear increase in the incidence of recorded anxiety codes, and of anxiolytic prescriptions, in young adults (18-34 years) in recent years. During the interviews, GPs and therapists also talked about the increasing presentation of anxiety in younger adults. However, only five patients in this age group were interviewed, of which only two were under 30, and both were female. Therefore, we do not have multiple perspectives from which to draw insights to help us understand the trends seen in young adults. Whilst GPs and therapists talked about social media use and increasing pressure on young adults, there was limited data on these factors from the perspective of patients themselves.

In addition, in both quantitative studies, an interaction between age and year, and gender and year, was included in all the multivariable poisson regression models in order to examine whether trends (in the recording of anxiety/prescribing of anxiolytics) varied according to age, and to gender. This was formally tested using a likelihood-ratio test that compared models with and without the interaction term, and was repeated for: the recorded incidence of any anxiety code, symptom and diagnosis codes; the prevalence of prescriptions of any anxiolytic, and each drug class; and the incidence of prescriptions of any anxiolytic, and each drug class. Given this multiple testing (34 tests of interaction), there is an increased likelihood of finding evidence against the null hypothesis (of no interaction) that is due to chance, and therefore incorrectly rejecting the null hypothesis (a Type I error). Therefore, it is important to interpret the evidence of an interaction between year and gender/age with caution as some of the differences identified may be due to chance. Moreover, the large size of the dataset means that it is possible to identify small differences that may not be meaningful. This was particularly apparent in terms of the interaction parameters related to year and gender as previously discussed (section 5.3.3 and 5.3.6).

In the quantitative studies, whilst the potential influence of age and gender on findings was examined, no adjustment was made for level of deprivation when investigating trends in recording of anxiety or anxiolytic prescriptions. Previous research in this area has indicated that adjustment for deprivation does not materially affect the reported trends in coding of anxiety (Walters et al., 2012), and evidence for the relationship between deprivation and prescribing of antidepressants is mixed (Spence et al., 2014).

Finally, the quantitative analyses in this thesis were of CPRD Gold data. It is possible that if another primary care database had been used, such as THIN or QResearch, then differing trends may have been identified. CPRD Gold, THIN and QResearch differ in terms of the practice software they are derived from (discussed in Chapter 4, section 4.2.1), with only a 60% overlap in the practices providing data to both CPRD Gold and THIN databases (Carbonari et al., 2015). When comparing some of the results reported in Chapter 4 to existing research (section 4.4.3), incidence rates of coding were higher than rates found in previous similar studies which used the THIN database (Walters et al., 2012). Therefore, it is possible that the incidence and prevalence rates reported in the present studies may not be generalisable to THIN, or other primary care databases, due to the differences in the populations of the contributing practices. Nonetheless, the CPRD Gold database is considered to be representative of the UK population (Walley & Mantgani, 1997). In addition, it is possible that variation in the READ codes used may also account for differences between the results of the present study and the results of research using other databases.

6.4 Implications of findings

This study found that patients value being given a diagnosis of anxiety in primary care, and that doing so can create an opportunity to educate patients about this specific condition. The Royal College of General Practitioners (RCGP) GP undergraduate training syllabus explicitly refers to anxiety, and states that *"there is an increasing recognition of the need to have more focus on…improving people's understanding of mental health*" (page 206) (Royal College of General Practitioners, 2019). Patients' accounts support this statement. Patients highlighted that the diagnosis itself is important, as it improved their understanding of their mental health and could lead to them accepting anxiety as a medical condition. For these reasons, diagnosis was an important step towards patients being ready to engage with treatment. The qualitative data also indicated that it can be important for patients that GPs discuss anxiety as a distinct disorder, alongside depression. Patients want anxiety and depression to be considered separately because of the greater impact anxiety has on their daily lives, and because it can be a cause of, or at least precede, depression. However, GPs often do not distinguish between anxiety and depression when discussing mental health with patients and tend to focus more on the management of the symptoms than the diagnosis itself. GPs gave valid reasons for why they may not diagnose an anxiety disorder, including short appointments and a lack of continuity of care which mean they have limited information on which to make a decision. Therefore, continuity of care and follow-up appointments should be encouraged for patients presenting with poor mental health. Additionally, despite GPs concerns that an anxiety disorder 'label' may feel stigmatising, a diagnosis is important for many patients. GPs need to be aware that using diagnostic codes in specific way can be helpful for patients' understanding of their mental health. At a wider societal level, patients reported less 'caring' treatment toward anxiety by other people, compared with depression, with anxiety viewed as 'just worry'. It seems important for both GPs and researchers to consider the discussion of anxiety as a distinct disorder from depression. This in turn may help to reduce stigma around anxiety and increase understanding of this condition.

There has been a clear increase in anxiety – in symptoms and diagnoses - in recent years in the UK, that was driven by a rise in younger adults. Whilst this may indicate that this group appears to be seeking help from GPs, we also need interventions to reduce the risk of developing anxiety, and reduce severity of symptoms, that are acceptable and effective for young adults. The need is for interventions that are an alternative to pharmacological treatment. Whilst interviews with GPs suggested that they think patients often prefer to take medication, this was at odds with patients' views. Despite this, analyses of CPRD Gold data found that the number of new patients prescribed

anxiolytic medication had increased, particularly prescriptions of antidepressants. The long-term effects of taking these drugs are not known, and it can be difficult for patients to discontinue treatment, despite the drugs being considered 'non-addictive' (Rogers et al., 2007). Additionally, some of the prescribing is not based on robust evidence of effectiveness, or is contrary to clinical guidelines, and may even be harmful. There is no NICE clinical guidance for the use of beta-blockers in anxiety, and a recently published report has highlighted a potential under-recognised risk of harm in the use of propranolol for patients with depression or anxiety (Healthcare Safety Investigation Branch, 2020). Considering this thesis found evidence for increasing incident beta-blocker prescribing in recent years, it is important that the BNF and NICE guidance in relation to anxiety is reviewed and updated accordingly. Incident prescriptions for antipsychotics also increased, and this is not in line with NICE clinical guidelines, in which the 2011 update specified that antipsychotics should no longer be prescribed for GAD (NICE, 2011b). There may be a need for greater awareness of this recommendation among GPs, or to understand why this drug has continued to be prescribed for anxiety. Furthermore, a rise in benzodiazepine prescribing in young adults, along with lengthy duration of prescriptions, is at odds with the NICE clinical guidelines for the management of anxiety (NICE, 2011b). It could be important for GPs to reflect on when they are prescribing this drug in young adults, and for how long. Future work that could be conducted to investigate this is discussed below.

6.5 Future work

The overall aim of this thesis was to gain an understanding of how anxiety is being diagnosed and managed within UK primary care. Whilst this aim has been achieved, further work is needed to understand and address some of the findings and the related gaps in our knowledge.

Research is needed to understand why there has been a rise in anxiety amongst young adults in recent years. Whilst we have data on why practitioners think there has been an increase, we need to understand why this is happening from young adults themselves. A limitation of this thesis, and specifically the qualitative study, is that only five of those interviewed were under the age of 35 and clearly this is the age group in which anxiety has risen most notably. Whilst there is previous research on help-seeking for mental distress in young adults in the form of interviews (16-24years) (Biddle et al., 2006), and survey data (18-25 years) (Salaheddin & Mason, 2016), there is a lack of such data in more recent years, particularly with a focus on anxiety. Future qualitative research could also explore the views and experiences of anxiety in young adults in terms of causes and treatment. Participants could be recruited though GP practices, and advertising through support

groups or charities. The latter may enable recruitment of individuals who have not yet sought help for their symptoms. In addition, a longitudinal cohort study investigating the impact of the use of the internet and social media (referred to by practitioners as possible causes of the rise in anxiety), may aid understanding of the role of such factors in the aetiology of anxiety in young adults. Whilst there have been previous studies on the relationship between mental health and social media use, a recent systematic review concluded that much of the research has methodological limitations, and that a longitudinal study, along with qualitative data, is needed (Keles et al., 2020). Such findings may help inform the development of interventions for patients with anxiety, particularly for young adults, as we know patients are most at risk of anxiety at this age. The Millennium Cohort Study, which is an ongoing UK prospective cohort study, has followed a cohort of young people since their birth in 2000/2002 (UCL, 2020b). Data has been collected most recently in 2018, at age 17, with measures of anxiety and depression, and of social media use (UCL, 2020b), and it may be possible to utilise data collected to undertake secondary analyses to answer this question within this or similar cohorts..

In addition, as discussed in the previous section (section 6.4), it is important to understand why young adults are being prescribed benzodiazepines. Previous qualitative research has been undertaken with GPs to understand when they prescribe benzodiazepines, but it was conducted with GPs in America around 2006, and was in relation to prescribing in elderly patients (Cook et al., 2007b). Other qualitative research has been synthesised to understand GPs' experiences of prescribing this drug, but this was in relation to prescribing in patients of all ages (Sirdifield et al., 2013). Clearly there is a need for more recent research, particularly in the case of the former study which was conducted over ten years ago, as prescribing habits and attitudes may have changed in recent years (Mehdi, 2012). It is currently unclear at what point benzodiazepines are being prescribed for anxiety in younger adults in terms of severity and chronicity, and how long they are being prescribed for. In addition, as discussed previously, it may also be important to understand when GPs are prescribing antipsychotics for anxiety. Qualitative research, perhaps in the form of semi-structured interviews using vignettes, may help to answer this. Vignettes have been shown to be useful in studying attitudes and perceptions, particularly for potentially sensitive topics (Hughes & Huby, 2002). It would be important to interview GPs from practices that varied in terms of the socio-demographic characteristics of their patient populations, and particularly from practices where the rate of benzodiazepine prescribing for anxiety has remained steady over time, rather than decreased.

Finally, it is important to acknowledge the current global pandemic that has been ongoing during the write-up of this thesis – COVID-19. It is likely that the pandemic and 'lockdown' will have had

substantial mental health impact on many individuals. Some of the causes of anxiety identified by practitioners and patients in the interviews will have intensified. These include social isolation, increased use of the internet and social media, increase in pressure on young adults in terms of their future, and a general sense of uncertainty. Therefore, these factors may have contributed to increasing levels of anxiety that have been reported since the start of the pandemic (March 2020), particularly in young people (Kwong et al., 2020). The pandemic has also indicated the importance of, for example, socialising with other people, and highlighted the number of individuals who are living on their own. Any future work will need to take this period of uncertainty into account, and research should be undertaken to understand if there has been a lasting impact of COVID-19 on levels of anxiety, or on prescribing of treatments for anxiety.

6.6 Closing remarks

It is clear that the incidence of anxiety symptoms, and anxiety diagnoses, is increasing in UK primary care. This was particularly notable in young adults and tackling this is a major public health challenge. There has also been a corresponding increase in the number of new patients prescribed anxiolytic medication, despite patients reporting a reluctance to take it. Importantly, there is a lack of evidence for some of the anxiolytics being prescribed for anxiety, some of this prescribing practice is contrary to clinical guidelines, and some may even cause patients harm.

The key focus for future research is in understanding the rise in anxiety and prescribing in young adults. There are effective psychological interventions for the treatment of anxiety but there is a need to increase access to such therapies, and look at adapting them to increase acceptability to young adults.

Appendices

A.1 GP interview topic guide

Topic Guide - GP

Read through consent form including agreement to audio recording. Reassure confidentiality

We are interested in your views on how anxiety, both alongside depression and alone, is diagnosed and discussed with patients, and managed in primary care. Thinking here in terms of patients with general anxiety, and those with more formal anxiety disorders. There are no right or wrong answers. I just want to know what you think and what your clinical experiences have been.

Just so you know something about the structure of the interview, first I am going to ask some questions covering anxiety labels, followed by some questions on treatment, and then focus on comparing depression and anxiety.

Anxiety Labels and Patients with Anxiety

1. Thinking about anxiety, what do you think the causes are?
    A. Do patients present with anxiety, or do they present with another condition or problem?
    B. When they present with anxiety, how do you respond? What do you say, what do you do?
        i. What about when they present with another problem?
    C. What labels do you use?
    D. How do you record anxiety in their medical notes? Do you use free text, or codes?
        i. If codes, what codes do you use?
        ii. Do these codes differ from the labels you use with patients? If so, why?
        iii. What factors influence your choice of codes/text to record?

2. Do you think there is a distinction between 'anxiety' and 'anxiety disorder', and if so, in what way is this this reflected in what you say, record and do? (Prompt – how do you define an anxiety disorder; do you use generalised anxiety disorder/phobia/panic disorder or just anxiety disorder).
    A. Do you differentiate between the sub-types of anxiety?
    B. Do you think within society in general, anxiety is normalised or over-medicalised?
    C. Do you think within primary care anxiety is normalised or over-medicalised?

3. How often do you see patients with anxiety or anxiety disorders?
    A. Who do you think is most at risk of anxiety?
    B. Who tends to consult about it?
    C. When seeing such patients, how often do you diagnose anxiety disorders?
        i. And when do you make a diagnosis? So, thinking here in terms of symptoms, duration, and knowledge of patient.
        ii. Having made a diagnosis, do you then communicate this to the patient? If so, when; if not, why not. (Prompts – patient opinion, value of doing so, stigma, any other factors)

4. How do patients react to being given a label/diagnosis?
    A. What do you think is the value of giving a diagnosis? (Prompt – is recognition important?)
    B. Are there any negative implications to giving a label/diagnosis?

Anxiety Treatment [if not already covered in above questions]

5. Thinking about treatment, how do you normally manage patients with anxiety?
    A. How often do you prescribe, and what would trigger a prescription? E.g. Severity? Chronicity? Patient preference? Comorbidity with depression?
    B. What medication do you usually prescribe?
        i. Has that always been the case?
        ii. When do you use benzodiazepines? (Prompt – acute crisis, start SSRIs, second line treatment)
    C. Do you currently refer patients with anxiety to IAPT services?
        i. What do you think the role of IAPT is?
        ii. What are your reasons for referring/not referring patients to IAPT?
    D. What do you think the role of secondary care is? (Prompt – sub-types)
        i. What are your reasons for referring/not referring patients to secondary care?

Comparing Anxiety and Depression

6. So, in what ways do you think depression and anxiety are similar or different, in terms of causes, symptoms, chronicity and how they play out in terms of the patient's life?
7. And how do you think they are similar or different in terms of management?
    A. [If not already covered] And how do you think they are similar or different in terms of medication specifically?

B. [If not already covered] And how do you think they are similar or different in terms of therapy accessed through IAPT? (or other support or therapies accessed)

Comorbid Anxiety and Depression

8. Thinking about patients that present with both anxiety and depression, are you more likely to diagnose one before the other? If yes, why? (Prompt - It is more common, more easily diagnosed, more important to manage)
    A. How do you manage these patients? Do you treat them separately?
    B. What labels do you use with these patients? (is depression used a label for both? Is it a more acceptable term?)
    C. What codes and notes do you record in their medical notes?
    D. Do you distinguish anxiety from depression? If so, do you explain this comorbidity to the patient?
        i. How do you do that?
        ii. Why/Why not? (Prompt – value in distinguishing)
        iii. Do you prioritise treating one over the other?
        iv. What treatment, support and advice to you offer?
    E. Evidence shows that patients with a comorbid diagnosis of anxiety and depression have a worse prognosis than those with a single mood disorder. Why do you think that is?

9. Do you have any other points you would like to mention about managing patients with anxiety disorders or comorbid anxiety and depression?

END OF TOPIC GUIDE

A.2 Example participant information sheet – patient

University of BRISTOL

NHS National Institute for Health Research

School for Primary Care Research
Increasing the evidence base for primary care practice

Patients' and Practitioners' views on detecting, diagnosing and managing Anxiety Disorders in Primary Care

Patient Information Sheet

We would like to invite you to take part in a research study. Before you decide whether to take part, it is important you understand why the research is being done and what it would involve for you. Please take the time to read the following information carefully. Please ask us if there is anything that is not clear or if you would like more information.

What is the purpose of the study?

Researchers at the University of Bristol are interested in the views and experiences of patients who have symptoms of anxiety, or have been diagnosed with an anxiety disorder. Research has shown that less people are being diagnosed with anxiety over time, despite reports of more people experiencing anxiety in the general population.

Studies have suggested that people with anxiety may be reluctant to seek help for their symptoms, they may find it difficult to talk about their mental health with their GP, or they may view their anxiety as just a normal part of life. To date, there has been very little research on how patients think about anxiety, why patients may or may not seek help, and how this may impact on whether they are given a diagnosis. In addition, very little is known about what treatments or support they find most helpful for managing their symptoms.

As part of this study we are asking patients to take part in an interview to explore their views and experiences of anxiety. We hope to interview 20 patients in total.

Why have I been contacted?

Having discussed symptoms of anxiety during a recent consultation with your GP, you will have been given an information leaflet about this study by your GP or been posted an invitation letter and information about the study from your GP surgery. Your GP practice has not and will not pass on your details to the research team without your permission.

What is involved?

If you agree to take part in the study, you will be asked to take part in an interview with a member of the research team. First, the researcher would telephone you to discuss the study and answer any questions you may have. If you are willing to be interviewed, the researcher will agree a time and place to interview you. You can choose to be interviewed over the telephone, at your own home, or in a private room at your GP practice. The interview will last about 30-40minutes. Just before the interview, the researcher will answer any further questions you may have and ask you sign a consent form. With your permission, the interview would be audio-recorded and typed up. During the

interview you would be asked about your views and experiences of seeking help for anxiety, treatments for anxiety, and how you view anxiety compared with depression. After the interview you will be asked to complete some short questions about yourself and your mental health.

What do I need to do if I want to take part?

If you are interested in taking part, please ask your GP to refer you to the study. They will then pass your contact details to the study team.

If you have received the study invitation in the post, please complete the reply form enclosed with the invitation, and return this to the research team in the prepaid envelope provided. The researcher will then contact you (as described above).

We hope to interview people from a range of backgrounds. Therefore, we may not contact everyone who is willing to be interviewed.

Do I have to take part?

You do not have to take part in this research study. If you do decide to take part, you can withdraw from the interview at any stage or chose not to answer specific questions.

What are the possible benefits of taking part?

You may enjoy talking to a researcher about your views and experiences, and the information you provide will help inform patient care for people with anxiety. Those who take part in an interview will be given a £10 shopping voucher to thank them for their time.

What are the possible disadvantages to taking part?

Some people may find it difficult to talk about their experiences. However, the researcher will do their best to make you feel comfortable. If you experience any distress during the interview, this will be handled sensitively, and, if required, we will be able to contact a study clinician to offer support if necessary. Your participation is voluntary, and you do not have to answer any question if you do not want to. Also, you can stop the interview at any time, without giving a reason and without your medical care being affected.

What will happen to the information that I provide?

Any information that you give us will be treated as confidential, and audio recordings of the interviewed will be deleted as soon as possible after the interview, once they been typed up. In addition, once the interview is typed up, any names mentioned will be removed so that the written record is anonymous. When reporting the findings of the study, we may use direct quotes from you. If we do this, we will give you a false name so that your identity is protected. Anonymised transcripts will be archived for use in future research studies in the area of mental health.

If we have concerns about your safety or the safety of others, we may have to inform your GP. Wherever possible we would consult you before doing this. We would only pass information to your GP without first consulting you, if we had immediate concerns for your welfare (for example, if you told us that you were having thoughts of harming yourself) or the welfare of others.

We will keep your contact details for up to 7 years (in line with University of Bristol archiving policies); we will then destroy this information securely. We will keep anonymised, electronic research data indefinitely.

What will happen to the results of the interviews?

The results will be published in medical journals and presented at conferences to health care professionals and researchers. We will also send a summary of the findings to everyone who has taken part in an interview.

Who is organising and funding the study?

The study is being funded by the NIHR School for Primary Care Research as part of a PhD at the University of Bristol. The University of Bristol is the study's sponsor and is responsible for the research. Further information on the School can be found through this link - www.spcr.nihr.ac.uk.

Who has reviewed the study?

Ethical approval has been obtained from South West – Frenchay Research Ethics Committee.

Complaints

If you have a concern about any aspect of this study you can contact the researcher (charlotte.archer@bristol.ac.uk or 0117 331 0146), or one of the senior members of the research team based at the University of Bristol (nicola.wiles@bristol.ac.uk or 0117 331 3358).

You can also contact the Bristol Clinical Commissioning group (CCG) Patient Advice and Liaison Service (PALS) (bnssg.pals@nhs.net or 0117 947 4477). The PALS service is independent to the research project and will be able to help with any complaints or problems you may wish to report.

Contact for further information

If you have any questions about the study or require further information, please contact Charlotte Archer by writing to the Centre for Academic Mental Health, University of Bristol, Oakfield House, Oakfield Road, Bristol, BS8 2BN, telephoning her on 01173310146, or emailing her on charlotte.archer@bristol.ac.uk.

Thank you for considering taking part in this research.

A.3 Patient interview topic guide

Patient Topic Guide

Read through consent form including agreement to audio recording. Reassure confidentiality.

We are interested in your views on how anxiety disorders, both alongside depression and alone, are diagnosed and talked about. There are no right or wrong answers. I just want to know what you think and what your experience has been.

Just so you know something about the structure of the interview, first I am going to ask some questions about yourself and your mental health, followed by some questions on labels and treatment of anxiety, and then compare anxiety with depression.

The individual

1. So just to give me some context, please can you tell me a bit about yourself, for example, your age, who you live with, and what you do?
    A. Can you now tell me a bit about your mental health? What has it been like for you, what symptoms do you experience and how long have you had them?
    B. How has it impacted on you and your life? How frequent or severe are your symptoms?
    C. Would you say you are someone who tend to be anxious a lot of the time? If so, what in particular made you seek help?
    D. What do you think is the cause of your symptoms/mental health/anxiety? (*use patients descriptive*)

Help seeking and Diagnosis

2. In the past you have discussed symptoms of anxiety with your GP, do you remember who brought it up? Was it yourself or your GP?
    A. [*If GP*] What did you think to that? Did you find it helpful?
    B. [*If self*] When did you first seek help for your symptoms/mental health/anxiety from your GP and why did you seek it then? (*use patients descriptive*)
        i. Why had you not sought help earlier? Were there any factors that made you reluctant to seek help?
        ii. And when you brought it up with your GP, how did they respond to you?
    C. How do you feel talking to your GP about how your symptoms/mental health/anxiety? How easy or difficult is it to discuss with your GP? Prompt – duration, training, continuity of care, relationship with GP. (*use patients descriptive*)

3. Has your GP discussed with you any diagnoses or labels for your symptoms?
    A. [*If have label/diagnosis*] How long after seeking help from your GP/your GP brought up your symptoms of anxiety did s/he give you a diagnosis or label?
        i. How easy was it to understand and accept the diagnosis or label?
        ii. Was having a diagnosis or label for your symptoms important to you?
        iii. In what way did receiving a diagnosis or label change or affect you, if at all?

Treatment

4. Have you ever received any treatment for your symptoms/anxiety/mental health? (*use patients descriptive*)
    A. Thinking about when you were first given a label or explanation for your symptoms, can you remember what treatment or support options your GP discussed with you? Which did you choose, if any? Why or why didn't you choose those options? Prompt - medication, talking therapy, other
    B. *[If chose medication],* What medication were you prescribed? Did you find this the medication helpful? If yes, why? If not, why not?
        i. How long did you take this medication for, or are you still taking it? If you stopped taking it, why have you stopped?
        ii. Did you experience any side effects?
    C. *[If chose therapy or other support]* What therapy/support did you receive? Who provided it?
        i. Did you find this therapy/support helpful? If yes, why? If not, why not?
        ii. How long did you receive this therapy for?

5. Since then, what other treatments or support have you had for your mental health/symptoms/anxiety? (*use patients descriptive*) Prompt - medication, talking therapy, other
    A. What do you or did you find helpful?
    B. What do you or did you find less helpful?
    C. *[If taking medication]* How long did you take this medication for, or are you still taking it? If you stopped taking it, why have you stopped?
        i. Did you experience any side effects?
    D. *[If receiving therapy or other support]* Who provides this therapy/support? How long have you been receiving it?

6. Do you think anxiety is 'treated' or 'managed'?
    A. What do you want from your GP in terms of support?
    B. What do you want from a treatment?
    C. What do you think about the support and treatment you have been given?

7. Thinking more generally, is there anything else you have found helpful or unhelpful in terms of treatment or management of your mental health/symptoms/anxiety? (*use patients descriptive*).

Comparing anxiety to depression

8. So now thinking about depression, have you ever had, or do you currently have, depression?

    A. Thinking about anxiety and depression as separate diagnoses, what do you think the differences are between them, in terms of causes, symptoms, and the impact they can have on people's lives?

    B. Do you think there is more, or less, awareness and understanding of anxiety compared with depression?

    C. Sometimes depression can be seen as an illness, do you see anxiety in the same way, or as a normal part of life?

    D. *[For patients that mention co-morbid depression]* Having been diagnosed with depression and anxiety, do you find one easier to manage or talk about than the other?

    E. [*For patients that mention co-morbid depression]* In terms of the medication/therapy/support that you have tried, did the GP/therapist explain they were treating just the anxiety or just the depression, or treating both together? Prompt – helpful, appropriate

9. Is there anything you want to talk about in relation to the diagnosis and management of anxiety disorders?

END OF TOPIC GUIDE

A.4 Example consent form – Therapist

University of BRISTOL

NHS National Institute for Health Research

School for Primary Care Research
Increasing the evidence base for primary care practice

IAPT Therapist Consent Form

Patients' and Practitioners' views on detecting, diagnosing and managing Anxiety Disorders in Primary Care

		Please initial the box
Participant Study ID:	_____	
1.	I have read and understood the information sheet dated 14/05/2018 (version 2.0) for the above study, and been given a copy to keep.	☐
2.	I have had the opportunity to consider the information and ask any questions. I have had satisfactory answers to all of my questions.	☐
3.	I understand that my participation is voluntary and that I am free to stop the interview at any time, without giving any reason, and without my legal rights being affected.	☐
4.	I understand I will be asked to complete a short questionnaire about my background and professional experience.	☐
5.	I understand that all the information I give will be treated as confidential by the study team, unless there are concerns for my safety or the safety of others.	☐
6.	I understand that the interview will be audio taped and the recording will be stored on a secure computer at the University	☐
7.	I understand that the interview will be typed up and that parts of what I say may be quoted anonymously when results of the research are reported	☐
8.	I agree that all the information collected can be stored and analysed by the research team	☐
9.	I understand that all the information collected (including the transcript of my interview) will be stored for use in future studies in the area of mental health, and may be shared anonymously with other researchers.	☐

10.	I understand that relevant sections of the data collected during the study may be looked at by individuals from the University of Bristol, from regulatory authorities, or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.	☐
11.	I agree to take part in an interview	☐

_____	_____	_____
Name of Therapist (BLOCK CAPITALS)	Date	Signature

~~**Telephone Verbal Consent Only**~~ ~~*tick box if researcher signs on behalf of participant*~~ ☐

_____	_____	_____
Name of Researcher (BLOCK CAPITALS)	Date	Signature

2 copies of form to be completed: 1 for therapist to keep; 1 for researcher site file. *If verbal consent obtained, a copy of the form will be posted to the participant.*

A.5 Therapist interview topic guide

Topic Guide – IAPT Therapist

Read through consent form and agree to audio recording. Reassure confidentiality

We are interested in your views on how anxiety, both alongside depression and alone, is managed within IAPT services. Thinking in terms of patients with general anxiety, and those with more formal disorders. There are no right or wrong answers. I just want to know what you think and what your clinical experiences have been.

Just so you know something about the structure of the interview, first I am going to ask some questions covering patients with anxiety, followed by some questions on treatment approaches, and then focus on comorbid anxiety and depression.

Anxiety Labels and Patients with Anxiety, and links with GP

2. Just starting off, please could you give me a little bit of information on your professional background, so how long you have worked in IAPT, the types of therapy you deliver, and the types of patient you see.
3. Thinking about anxiety, what do you think the causes are?
    E. What symptoms do patients with anxiety discuss with you or present to you?
    F. How do you respond and discuss that with them?
    G. What labels do you use?
        i. [If use anxiety label] How do patients respond to being labelled with anxiety?
    H. How do you record anxiety in their IAPTUS notes? Do you use free text, or codes?
        iv. If codes, what codes do you use?
        v. Do these codes differ from the labels you use with patients? If so, why?
        vi. What factors influence your choice of codes/text to record?

10. Do you think there is a distinction between 'anxiety' and 'anxiety disorder', and if so, in what way is this reflected in the therapies offered within IAPT services? (Prompt – how do you define an anxiety disorder; do you use generalised anxiety disorder/phobia/panic disorder or just anxiety disorder).
    A. What do you think comes under the umbrella of anxiety disorder, in terms of sub-types?
    B. Do you differentiate between the sub-types of anxiety? If yes, when do you?
    C. Do you think within society in general, anxiety is normalised or over medicalised?
    D. Do you think within IAPT anxiety is normalised or over medicalised?

11. How often do you see patients with just anxiety or anxiety disorders? How does this compare to how many people you see with mixed anxiety and depression?
    D. Who do you think is most at risk of anxiety?
    E. Who do you think is most likely to present to you?

F. Who tends to self-refer, rather than be referred by their GP?
G. What do you think is the value of patients being given a diagnosis? (Prompt – Is recognition important?)
    i. Does having a diagnosis or label prior to IAPT therapy impact on engagement with treatment? (Prompt: from a GP or other professional)
    ii. What codes do GPs tend to use when referring patients to you?
    iii. Do you think GPs are able to appropriately diagnose and manage anxiety?

Treatment and the IAPT service

12. At what point during the patient's engagement with the IAPT service is their problem identified, and how is this done?
    A. What screening questionnaires do you use?
    B. Once the problem has been identified as anxiety, how do you usually manage these patients in terms of treatment? How do you go about deciding what the patient wants to work on?
        i. Is this different from their original hopes or ideas for therapy?

13. Where within IAPT's stepped care model is treatment for patients with anxiety provided?
    A. Why here? What do you think of this in terms of appropriateness?
    B. Do you think IAPT therapists are able to appropriately diagnose and manage anxiety?
    C. Who mainly works with these patients? (Probe - High intensity workers vs. low intensity workers).

Comparing Anxiety and Depression

14. So, in what ways do you think depression and anxiety are similar or different, in terms of causes, symptoms, chronicity and how they play out in terms of the patient's life?

15. And how do you think they are similar or different in terms of management?
    A. [If not already covered] How do you think they are similar or different in terms of therapy accessed through and management in IAPT? (Prompt: aims, focus, content, structure, order).
    B. [If not already covered] And how do you think they are similar or different in terms of other support or advice?

C. How do you think anxiety and depression be managed, and where?

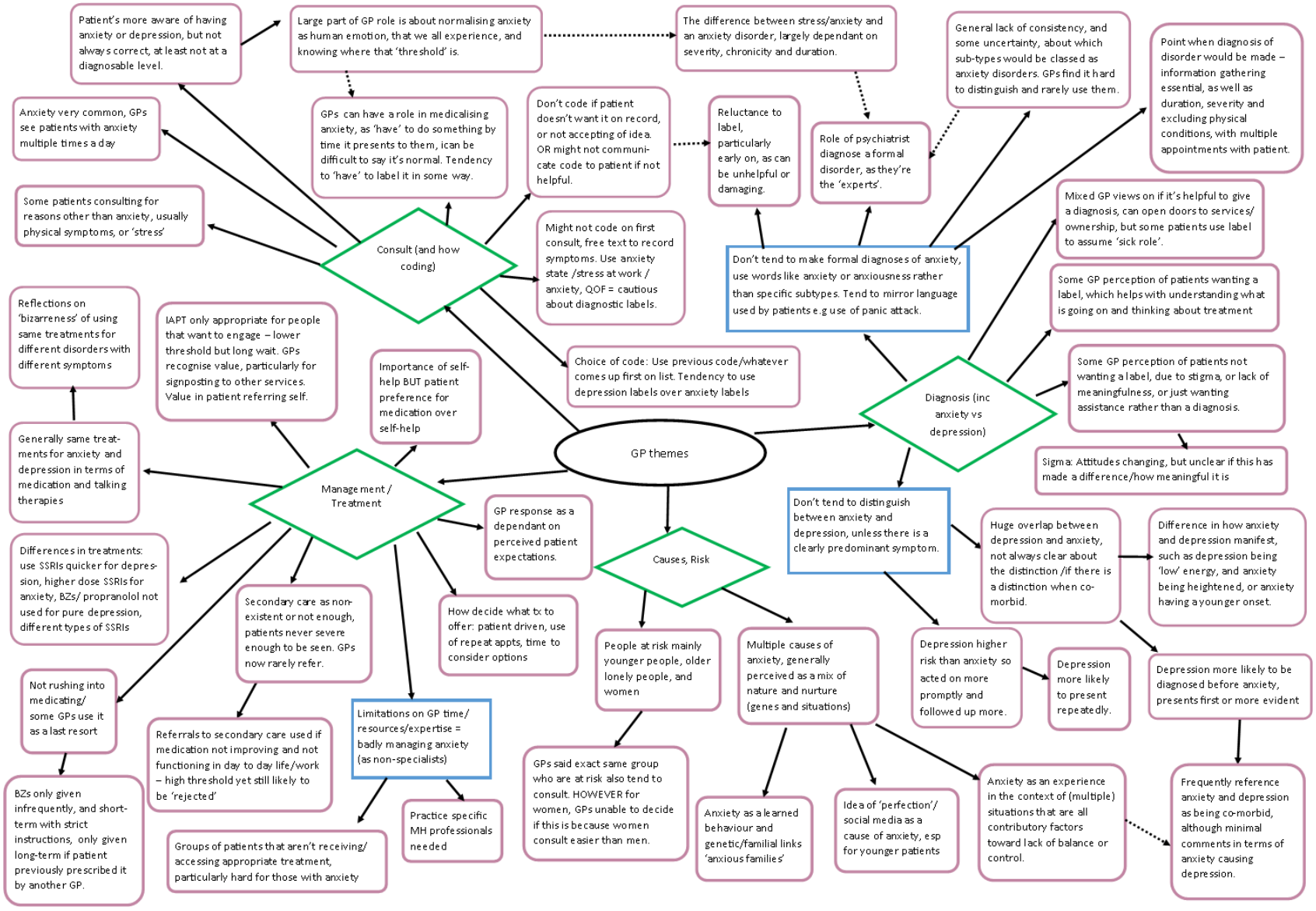
Comorbid Anxiety and Depression

16. Thinking about patients that present with both anxiety and depression, how do you manage these patients?
    A. Is the depression and anxiety treated together or separately? How important is it to treat together/separately?
        i. If treated together, do you distinguish anxiety from depression when talking to the patient?
        ii. How do you do that?
        iii. Why/Why not? (Prompt – value in distinguishing)
    B. Do these patients tend to choose to deal with their anxiety or depression first?
    C. i. Does this treatment tend to improve symptoms of both diagnoses?
    ii. If not, do patients tend to return for therapy for the un-treated disorder? What labels do you use with these patients?
    D. What codes and notes do you record in their IAPTUS notes?
        i. How do these codes influence the treatment pathway?
    E. Evidence shows that patients with a comorbid diagnosis of anxiety and depression have a worse prognosis than those with a single mood disorder. Why do you think that is?

17. Do you have any other points you would like to mention about managing patients with anxiety in IAPT services?

END OF TOPIC GUIDE

A.6 Example thematic mind map – GP



A.7 List of read codes

Anxiety codes

1B13.11 Anxiousness symptom

1B12.11 Nerves

1B12.12 Tension - nervous

1B13.00 Anxiousness

1Bk.00 Worried

1B12.00 Nerves - nervousness

1B13.12 - Anxious

2258.00 O/E - anxious

225J.00 O/E panic attack

E200.00 Anxiety states [parent]

E200000 Anxiety state unspecified

E200100 Panic disorder

E200111 Panic attack

E200200 Generalised anxiety disorder

E200300 Anxiety with depression

E200400 Chronic anxiety

E200500 Recurrent anxiety

E200z00 Anxiety state NOS

E202100 Agoraphobia with panic attacks

E202.11 Social phobic disorders

E202200 Agoraphobia without mention of panic attacks

Eu34114 [X] Persistent anxiety depression

Eu40000 [X] Agoraphobia

Eu40011 [X] Agoraphobia without history of panic disorder

Eu40012 [X] Panic disorder with agoraphobia

Eu40100 [X] Social phobias

Eu40112 [X] Social neurosis

Eu41.00 [X] Other anxiety disorders

Eu41000 [X] Panic disorder [episodic paroxysmal anxiety]

Eu41011 [X] Panic attack

Eu41012 [X] Panic state

Eu41100 [X] Generalised anxiety disorders

Eu41111 [X] Anxiety neurosis

Eu41113 [X] Anxiety state

Eu41200 [X] Mixed anxiety and depressive disorder

Eu41211 [X] Mild anxiety depression

Eu41300 [X] Other mixed anxiety disorders

Eu41y00 [X] Other specified anxiety disorders

Eu41z00 [X] Anxiety disorder, unspecified

Eu41z11 [X] Anxiety NOS

A.8 Incidence rate ratios for GP recorded anxiety - diagnosis and symptom codes, accounting for clustering by general practice

Table 31 Incidence rate ratios for GP recorded anxiety - diagnosis and symptom codes, accounting for clustering by general practice

Variable		Any anxiety code			Diagnosis			Symptom		
		Multivariable IRR*	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	1.03	(1.00-1.07)		0.96	(0.92-1.00)		1.20	(1.08-1.33)	
	2005	1.04	(0.99-1.10)		0.93	(0.88-0.99)		1.25	(1.12-1.41)	
	2006	1.04	(0.98-1.10)		0.89	(0.82-0.96)		1.34	(1.20-1.50)	
	2007	1.05	(0.98-1.13)		0.84	(0.76-0.93)		1.47	(1.29-1.67)	
	2008	1.04	(0.97-1.12)		0.78	(0.70-0.86)		1.56	(1.35-1.79)	
	2009	1.12	(1.04-1.20)		0.83	(0.74-0.92)		1.65	(1.43-1.90)	
	2010	1.10	(1.01-1.19)		0.79	(0.70-0.89)		1.67	(1.43-1.95)	
	2011	1.14	(1.06-1.24)		0.80	(0.71-0.90)		1.77	(1.53-2.06)	
	2012	1.21	(1.11-1.31)		0.84	(0.74-0.94)		1.89	(1.60-2.23)	
	2013	1.24	(1.14-1.34)		0.84	(0.75-0.95)		1.96	(1.69-2.27)	
	2014	1.27	(1.17-1.38)		0.87	(0.77-0.98)		2.01	(1.72-2.35)	
	2015	1.36	(1.26-1.48)		0.93	(0.83-1.05)		2.12	(1.81-2.49)	
	2016	1.51	(1.39-1.64)		1.08	(0.95-1.22)		2.28	(1.92-2.69)	
	2017	1.58	(1.45-1.72)		1.12	(0.99-1.27)		2.38	(1.99-2.83)	
	2018	1.65	(1.52-1.81)		1.20	(1.06-1.36)		2.41	(2.02-2.88)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.13	(2.09-2.16)		2.07	(2.03-2.11)		2.12	(2.06-2.17)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	1.08	(1.05-1.12)		1.08	(1.05-1.12)		1.07	(1.04-1.11)	
	35-44	1.05	(1.01-1.09)		1.06	(1.02-1.10)		1.00	(0.95-1.04)	
	44-54	0.97	(0.93-1.02)		0.96	(0.92-1.00)		0.93	(0.88-0.99)	
	55-64	0.84	(0.80-0.88)		0.80	(0.76-0.84)		0.83	(0.78-0.89)	
	65-74	0.72	(0.68-0.76)		0.64	(0.60-0.67)		0.78	(0.72-0.84)	
	75-84	0.73	(0.69-0.78)		0.62	(0.58-0.66)		0.83	(0.76-0.92)	
	85+	0.58	(0.53-0.64)		0.48	(0.44-0.52)		0.67	(0.59-0.76)	

**Multivariable model adjusted for year, gender, and age band*

A.9 Incidence rates for GP recorded any anxiety code between 2003 and 2018 by gender

Table 32 Incidence rates for GP recorded any anxiety code between 2003 and 2018 by gender

Variable		**Any anxiety code**			
Gender	Year	N of events	PYAR	Incidence (1000PYAR)	(95%CI)
Male	2003	6304	543552.7	11.6	(11.3-11.9)
	2004	6560	545658.2	12.0	(11.7-12.3)
	2005	6535	544270.4	12.0	(11.7-12.3)
	2006	6539	546649.9	12.0	(11.7-12.3)
	2007	6545	548228.9	11.9	(11.7-12.2)
	2008	6515	552185.9	11.8	(11.5-12.1)
	2009	7066	553369.5	12.8	(12.5-13.1)
	2010	6899	555542.8	12.4	(12.1-12.7)
	2011	7236	555648.8	13.0	(12.7-13.3)
	2012	7778	558733.4	13.9	(13.6-14.2)
	2013	7860	558795.8	14.1	(13.8-14.4)
	2014	8029	562217.3	14.3	(14.0-14.6)
	2015	8591	565304.3	15.2	(14.9-15.5)
	2016	9756	569055.1	17.1	(16.8-19.5)
	2017	10035	570041.4	17.6	(17.3-18.0)
	2018	10581	571285.7	18.5	(18.2-18.9)
Female	2003	13349	561287.3	23.8	(23.4-24.2)
	2004	13614	555435.5	24.5	(24.1-24.9)
	2005	13604	546254.9	24.9	(24.5-25.3)
	2006	13430	542955.5	24.7	(24.3-25.2)
	2007	13620	539418.2	25.3	(24.8-25.7)
	2008	13494	539335.4	25.0	(24.6-25.5)
	2009	14257	536586.6	26.6	(26.1-27.0)
	2010	14107	536094.4	26.3	(25.9-26.8)
	2011	14572	535672.9	27.2	(26.8-27.7)
	2012	15336	537700.5	28.5	(28.1-29.0)
	2013	15785	537306.6	29.4	(28.9-29.8)
	2014	16291	537438.6	30.3	(29.9-30.8)
	2015	17497	537874.8	32.5	(32.1-33.0)
	2016	19196	538701.5	35.6	(35.1-36.1)
	2017	20217	536615.3	37.7	(37.2-38.2)
	2018	21001	535485.4	39.2	(38.7-39.8)

A.10 Incidence rates for GP recorded anxiety –anxiety diagnoses and anxiety symptoms – between 2003 and 2018 by gender

Table 33 Incidence rates for GP recorded anxiety –anxiety diagnoses and anxiety symptoms – between 2003 and 2018 by gender

Variable		**Diagnoses**				**Symptoms**			
Gender	Year	N of events	PYAR	Incidence (1000PYAR)	(95%CI)	N of events	PYAR	Incidence (1000PYAR)	(95%CI)
Male	2003	4635	544350.3	8.5	(8.3-8.8)	2221	545599.9	4.1	(3.9-4.2)
	2004	4499	548188.7	8.2	(8.0-8.5)	2671	551347.3	4.8	(4.7-5.0)
	2005	4358	548466.8	8.0	(7.7-8.2)	2761	552893.2	5.0	(4.8-5.2)
	2006	4135	552412.6	7.5	(7.3-7.7)	3054	557670.6	5.5	(5.3-5.7)
	2007	3900	555506.7	7.0	(6.8-7.2)	3304	561012.4	5.9	(5.7-6.1)
	2008	3670	561067.7	6.5	(6.3-6.8)	3505	566396.5	6.2	(6.0-6.4)
	2009	3938	563874.4	7.0	(6.8-7.2)	3829	568816.7	6.7	(6.5-7.0)
	2010	3834	567609.2	6.8	(6.5-7.0)	3787	572203.5	6.6	(6.4-6.8)
	2011	3942	569122.8	6.9	(6.7-7.2)	4011	573363.1	7.0	(6.8-7.2)
	2012	4200	573727	7.3	(7.1-7.6)	4414	577532.3	7.6	(7.4-7.9)
	2013	4251	575153.7	7.4	(7.2-7.6)	4435	578626.9	7.7	(7.4-7.9)
	2014	4358	579977.6	7.5	(7.3-7.7)	4606	582997.1	7.9	(7.7-8.1)
	2015	4648	584412.9	8.0	(7.7-8.2)	4881	587058.3	8.3	(8.1-8.6)
	2016	5476	589574.6	9.3	(9.0-9.5)	5400	592054.6	9.1	(8.9-9.4)
	2017	5730	591884.4	9.7	(9.4-9.9)	5424	594415.2	9.1	(8.9-9.4)
	2018	6169	594429.1	10.4	(10.1-10.6)	5559	597261.7	9.3	(9.1-9.6)
Female	2003	9925	562974.3	17.6	(17.3-18.0)	4684	565671.2	8.3	(8.0-8.5)
	2004	9458	560647.1	16.9	(16.5-17.2)	5624	567469.7	9.9	(9.7-10.2)
	2005	9118	554856.7	16.4	(16.1-16.8)	5907	564257.5	10.5	(10.2-10.7)
	2006	8673	554631.6	15.6	(15.3-16.0)	6247	565530.9	11.1	(10.8-11.3)
	2007	8272	553988.2	14.9	(14.6-15.3)	6911	565566.6	12.2	(11.9-12.5)
	2008	7654	556878.8	13.7	(13.4-14.1)	7379	568120.3	13.0	(12.7-13.3)
	2009	8098	557063.6	14.5	(14.2-14.9)	7696	567679.7	13.6	(13.3-13.9)
	2010	7748	559247.4	13.9	(13.6-14.2)	7936	569284.6	13.9	(13.6-14.3)
	2011	7743	561546.1	13.8	(13.5-14.1)	8454	570493.4	14.8	(14.5-15.1)
	2012	8118	566365.2	14.3	(14.0-14.7)	8958	574077	15.6	(15.3-15.9)
	2013	8205	568338.9	14.4	(14.1-14.8)	9411	575007.1	16.4	(16.0-16.7)
	2014	8552	571015.8	15.0	(14.7-15.3)	9644	576475.4	16.7	(16.4-17.1)
	2015	9259	573988.8	16.1	(15.8-16.5)	10256	578389.1	17.7	(17.4-18.1)
	2016	10661	577522.2	18.5	(18.1-18.8)	10905	581342.2	18.8	(18.4-19.1)
	2017	11105	577582.9	19.2	(18.9-19.6)	11607	581258.9	20.0	(19.6-20.3)
	2018	11794	578652	20.4	(20.0-20.8)	11736	582254.8	20.2	(19.8-20.5)

A.11 Incidence rates for GP recorded anxiety – any anxiety code, anxiety diagnoses and anxiety symptoms – between 2003 and 2018 by age

Table 34 Incidence rates for GP recorded anxiety – any anxiety code, anxiety diagnoses and anxiety symptoms – between 2003 and 2018 by age

Variable		Any anxiety code				Diagnosis				Symptom			
Age band	Year	N of events	PYAR	Incidence (1000PYAR)	(95%CI)	N of events	PYAR	Incidence (1000PYAR)	(95%CI)	N of events	PYAR	Incidence (1000PYAR)	(95%CI)
<25	2003	1582	107319.9	14.7	(14.0-15.5)	1225	107503.1	11.4	(10.8-12.1)	492	107868.6	4.6	(4.2-5.0)
	2004	1618	107411.1	15.1	(14.3-15.8)	1147	107910	10.6	(10.0-11.3)	616	108747.7	5.7	(5.2-6.1)
	2005	1662	106761.4	15.6	(14.8-16.3)	1131	107586.6	10.5	(9.9-11.1)	690	108521.4	6.4	(5.9-6.9)
	2006	1647	107927.9	15.3	(14.5-16.0)	1067	109003.2	9.8	(9.2-10.4)	729	109943.8	6.6	(6.2-7.1)
	2007	1696	109077.5	15.6	(14.8-16.3)	1042	110390.8	9.4	(8.9-10.0)	807	111189	7.3	(6.8-7.8)
	2008	1791	111442.7	16.1	(15.3-16.8)	1045	112921.7	9.3	(8.7-9.8)	897	113614.5	7.9	(7.4-8.4)
	2009	1887	112236.1	16.8	(16.1-17.6)	1123	113917.3	9.9	(9.3-10.5)	955	114465.8	8.3	(7.8-8.9)
	2010	1992	113160.3	17.6	(16.8-18.4)	1134	114968	9.9	(9.3-10.5)	1084	115355.6	9.4	(8.9-10.0)
	2011	2150	113537.3	18.9	(18.1-19.8)	1251	115496.5	10.8	(10.2-11.5)	1116	115742.8	9.6	(9.1-10.2)
	2012	2294	114650.5	20.0	(19.2-20.8)	1269	116750.3	10.9	(10.3-11.5)	1313	116930.6	11.2	(10.6-11.9)
	2013	2585	114512	22.6	(21.7-23.5)	1381	116756.8	11.8	(11.2-12.5)	1474	116807.2	12.6	(12.0-13.3)
	2014	2899	114271.1	25.4	(24.5-26.3)	1615	116761.2	13.8	(13.2-14.5)	1629	116769.2	14.0	(13.3-14.6)
	2015	3436	113289.3	30.3	(29.3-31.4)	1868	116072.3	16.1	(15.4-16.8)	1929	116027	16.6	(15.9-17.4)
	2016	4058	111990.4	36.2	(35.1-37.4)	2253	115250.3	19.6	(18.8-20.4)	2292	115144.9	19.9	(19.1-20.7)
	2017	4274	110473.8	38.7	(37.5-39.9)	2393	114138.8	21.0	(20.1-21.8)	2371	114009.7	20.8	(20.0-21.7)
	2018	4712	109112.6	43.2	(42.0-44.4)	2755	113059.8	24.4	(23.5-25.3)	2506	113089.2	22.2	(21.3-23.0)
25-34	2003	3347	187876.1	17.8	(17.2-18.4)	2563	188252.3	13.6	(13.1-14.2)	1080	189013.5	5.7	(5.4-6.1)
	2004	3362	184527.9	18.2	(17.6-18.9)	2387	185668.2	12.9	(12.4-13.4)	1293	187532.8	6.9	(6.5-7.3)
	2005	3228	181083.1	17.8	(17.2-18.5)	2222	182896.2	12.2	(11.7-12.7)	1312	185423.1	7.1	(6.7-7.5)
	2006	3251	179018.3	18.2	(17.5-18.8)	2160	181463.4	11.9	(11.4-12.4)	1436	184289.3	7.8	(7.4-8.2)

	2007	3368	177331.2	19.0	(18.4-19.7)	2148	180297.2	11.9	(11.4-12.4)	1606	183253	8.8	(8.3-9.2)
	2008	3381	176953.3	19.1	(18.5-19.8)	2020	180548.2	11.2	(10.7-11.7)	1751	183384.1	9.6	(9.1-10.0)
	2009	3684	177128.9	20.8	(20.1-21.5)	2178	181362.3	12.0	(11.5-12.5)	1904	183963.5	10.4	(9.9-10.8)
	2010	3591	178077.8	20.2	(19.5-20.8)	2074	182940.6	11.3	(10.9-11.8)	1920	185365.4	10.4	(9.9-10.8)
	2011	3907	179423.6	21.8	(21.1-22.5)	2143	184977.2	11.6	(11.1-12.1)	2188	187020.8	11.7	(11.2-12.2)
	2012	4427	181854.2	24.3	(23.6-25.1)	2414	188128.3	12.8	(12.3-13.4)	2516	189826.7	13.3	(12.7-13.8)
	2013	4567	182407.8	25.0	(24.3-25.8)	2480	189373.4	13.1	(12.6-13.6)	2646	190728	13.9	(13.4-14.4)
	2014	5036	182770	27.6	(26.8-28.3)	2816	190384.7	14.8	(14.3-15.4)	2871	191311.7	15.0	(14.5-15.6)
	2015	5664	183326.6	30.9	(30.1-31.7)	3102	191652.1	16.2	(15.6-16.8)	3274	192182.2	17.0	(16.5-17.6)
	2016	6337	183383	34.6	(33.7-35.4)	3630	192478.9	18.9	(18.3-19.5)	3582	192851.5	18.6	(18.0-19.2)
	2017	6970	182359.7	38.2	(37.3-39.1)	3999	192097.7	20.8	(20.2-21.5)	3933	192518.5	20.4	(19.8-21.1)
	2018	7427	181263.3	41.0	(40.1-41.9)	4346	191706.6	22.7	(22.0-23.4)	4072	192145.1	21.2	(20.6-21.9)
35-44	2003	4459	224848.8	19.8	(19.3-20.4)	3476	225313.2	15.4	(14.9-16.0)	1416	226414.2	6.3	(5.9-6.6)
	2004	4486	224455.6	20.0	(19.4-20.6)	3261	226015.3	14.4	(13.9-14.9)	1701	228721.8	7.4	(7.1-7.8)
	2005	4458	221398.7	20.1	(19.6-20.7)	3154	223923.4	14.1	(13.6-14.6)	1780	227765.9	7.8	(7.5-8.2)
	2006	4371	219522.7	19.9	(19.3-20.5)	2947	222966.7	13.2	(12.7-13.7)	1909	227477.6	8.4	(8.0-8.8)
	2007	4317	216356.2	20.0	(19.4-20.6)	2724	220654.4	12.4	(11.9-12.8)	2103	225412.5	9.3	(8.9-9.7)
	2008	4169	213051.6	19.6	(9.0-20.2)	2497	218118.9	11.5	(11.0-11.9)	2154	222769.3	9.7	(9.3-10.1)
	2009	4546	207588.5	21.9	(21.3-22.6)	2735	213412.3	12.8	(12.3-13.3)	2291	217764.5	10.5	(10.1-11.0)
	2010	4344	202138.5	21.5	(20.9-22.1)	2544	208598.2	12.2	(11.7-12.7)	2279	212774	10.7	(10.3-11.2)
	2011	4320	196676.1	22.0	(21.3-22.6)	2419	203698.8	11.9	(11.4-12.4)	2395	207543.8	11.5	(11.1-12.0)
	2012	4514	191800.1	23.5	(22.9-24.2)	2573	199494.3	12.9	(12.4-13.4)	2450	202750	12.1	(11.6-12.6)
	2013	4542	187467.1	24.2	(23.5-24.9)	2492	195692.1	12.7	(12.2-13.2)	2586	198469.3	13.0	(12.5-13.5)
	2014	4706	185154.5	25.4	(24.7-26.2)	2580	193971.5	13.3	(12.8-13.8)	2645	196288.1	13.5	(13.0-14.0)
	2015	4956	184271.4	26.9	(26.2-27.7)	2717	193674.4	14.0	(13.5-14.6)	2813	195608.3	14.4	(13.9-14.9)
	2016	5470	183387.5	29.8	(29.0-30.6)	3156	193371.1	16.3	(15.8-16.9)	2984	194957.4	15.3	(14.8-15.9)

	2017	5786	181743.5	31.8	(31.0-32.7)	3294	192247.3	17.1	(16.6-17.7)	3212	193685.9	16.6	(16.0-17.2)
	2018	6059	180598.8	33.6	(32.7-34.4)	3503	191689.7	18.3	(17.7-18.9)	3275	193061.2	17.0	(16.4-17.6)
45-54	2003	3592	188212.3	19.1	(18.5-19.7)	2694	188657.4	14.3	(13.8-14.8)	1218	189413.4	6.4	(6.1-6.8)
	2004	3791	187401	20.2	(19.6-20.9)	2671	188791.6	14.2	(13.6-14.7)	1539	190802.7	8.1	(7.7-8.5)
	2005	3681	186911.9	19.7	(19.1-20.3)	2533	189263.5	13.4	(12.9-13.9)	1515	192187.6	7.9	(7.5-8.3)
	2006	3680	188372.4	19.5	(18.9-20.2)	2435	191568.9	12.7	(12.2-13.2)	1629	195232.4	8.3	(7.9-8.8)
	2007	3754	190363.3	19.7	(19.1-20.4)	2258	194490.5	11.6	(11.1-12.1)	1911	198486	9.6	(9.2-10.1)
	2008	3834	193353.2	19.8	(19.2-20.5)	2214	198496.9	11.2	(10.7-11.6)	2033	202558.2	10.0	(9.6-10.5)
	2009	4056	196082.1	20.7	(20.1-21.3)	2315	202236.6	11.5	(11.0-11.9)	2163	206346.3	10.5	(10.1-10.9)
	2010	4130	199206.5	20.7	(20.1-21.4)	2323	206293.4	11.3	(10.8-11.7)	2233	210465	10.6	(10.2-11.1)
	2011	4306	200340.4	21.5	(20.9-22.2)	2320	208379.5	11.1	(10.7-11.6)	2438	212442.6	11.5	(11.0-11.9)
	2012	4555	202124.8	22.5	(21.9-23.2)	2501	211177.4	11.8	(11.4-12.3)	2569	214961.7	12.0	(11.5-12.4)
	2013	4569	202494.1	22.6	(21.9-23.2)	2476	212253.8	11.7	(11.2-12.1)	2593	216051.8	12.0	(11.5-12.5)
	2014	4447	203392.2	21.9	(21.2-22.5)	2413	213979	11.3	(10.8-11.7)	2563	217424.8	11.8	(11.3-12.2)
	2015	4756	203127.2	23.4	(22.8-24.1)	2617	214428.1	12.2	(11.7-12.7)	2671	217626.2	12.3	(11.8-12.8)
	2016	5239	203234.6	25.8	(25.1-26.5)	3027	215230.6	14.1	(13.6-14.6)	2830	218387	13.0	(12.5-13.5)
	2017	5327	200620.6	26.6	(25.8-27.3)	3031	213048	14.2	(13.7-14.7)	2882	216245.1	13.3	(12.9-13.8)
	2018	5444	197390.5	27.6	(26.9-28.3)	3065	210318.4	14.6	(14.1-15.1)	2924	213424.7	13.7	(13.2-14.2)
55-64	2003	3023	167206.2	18.1	(17.4-18.7)	2207	167608.7	13.2	(12.6-13.7)	1088	168182.3	6.5	(6.1-6.9)
	2004	3078	168682.9	18.3	(17.6-18.9)	2096	169945.3	12.3	(11.8-12.9)	1288	171508.4	7.5	(7.1-7.9)
	2005	3119	168982.9	18.5	(17.8-19.1)	2092	171112.3	12.2	(11.7-12.8)	1346	173320.8	7.8	(7.4-8.2)
	2006	3141	169883.5	18.5	(17.9-19.2)	1959	172875.9	11.3	(10.8-11.8)	1514	175516.4	8.6	(8.2-9.1)
	2007	3199	169210.3	18.9	(18.3-19.6)	1923	172989.8	11.1	(10.6-11.6)	1594	175952.9	9.1	(8.6-9.5)
	2008	3029	169214.5	17.9	(17.3-18.6)	1630	173790.1	9.4	(8.9-9.9)	1727	176773.2	9.8	(9.3-10.2)
	2009	3182	167312.8	19.0	(18.4-19.7)	1715	172674.9	9.9	(9.5-10.4)	1786	175539.4	10.2	(9.7-10.7)
	2010	3098	167414.6	18.5	(17.9-19.2	1699	173548.2	9.8	(9.3-10.3)	1730	176276.1	9.8	(9.4-10.3)

	2011	2953	165133.8	17.9	(17.2-18.5)	1583	171914.2	9.2	(8.8-9.7)	1666	174448.9	9.6	(9.1-10.0)
	2012	3163	162635	19.5	(18.8-20.1)	1635	169937.6	9.6	(9.2-10.1)	1832	172350.6	10.6	(10.2-11.1)
	2013	3152	161855	19.5	(18.8-20.2)	1619	169828	9.5	(9.1-10.0)	1859	171968.4	10.8	(10.3-11.3)
	2014	3041	162643.7	18.7	(18.0-19.4)	1555	171187.9	9.1	(8.6-9.6)	1800	173294.9	10.4	(9.9-10.9)
	2015	3159	164643.3	19.2	(18.5-19.9)	1624	173811.1	9.3	(8.9-9.8)	1874	175813.3	10.7	(10.2-11.2)
	2016	3470	167386	20.7	(20.1-21.4)	1926	177224.2	10.9	(10.4-11.4)	1925	179319.1	10.7	(10.3-11.2)
	2017	3560	170152.8	20.9	(20.2-21.6)	1935	180733.7	10.7	(10.2-11.2)	2004	182819.1	11.0	(10.5-11.5)
	2018	3710	173340.6	21.4	(20.7-22.1)	2088	184636.1	11.3	(10.8-11.8)	2046	186835.5	11.0	(10.5-11.4)
65-74	2003	1936	120073.2	16.1	(15.4-16.9)	1299	120390.3	10.8	(10.2-11.4)	828	120632.4	6.9	(6.4-7.4)
	2004	1967	119994.3	16.4	(15.7-17.1)	1252	120957	10.4	(9.8-10.9)	929	121560.8	7.6	(7.2-8.2)
	2005	2008	118020.5	17.0	(16.3-17.8)	1233	119555.6	10.3	(9.8-10.9)	969	120460.4	8.0	(7.6-8.6)
	2006	2023	117357.3	17.2	(16.5-18.0)	1185	119469.3	9.9	(9.4-10.5)	1063	120500.3	8.8	(8.3-9.4)
	2007	1995	117646.3	17.0	(16.2-17.7)	1128	120298	9.4	(8.8-9.9)	1085	121440.1	8.9	(8.4-9.5)
	2008	1941	119312.3	16.3	(15.6-17.0)	992	122599.3	8.1	(7.6-8.6)	1172	123679.9	9.5	(8.9-10.0)
	2009	2060	121128.9	17.0	(16.3-17.8)	1074	124995.4	8.6	(8.1-9.1)	1223	126096.8	9.7	(9.2-10.3)
	2010	2060	121956.3	16.9	(16.2-17.6)	981	126458.2	7.8	(7.3-8.3)	1305	127446.2	10.2	(9.7-10.8)
	2011	2217	125257.5	17.7	(17.0-18.5)	1106	130375.3	8.5	(8.0-9.0)	1364	131294.7	10.4	(9.8-11.0)
	2012	2216	130685.8	17.0	(16.3-17.7)	1054	136522.1	7.7	(7.3-8.2)	1408	137414.1	10.3	(9.7-10.8)
	2013	2290	133466.9	17.2	(16.5-17.9)	1070	139939.1	7.7	(7.2-8.1)	1440	140719.8	10.2	(9.7-10.8)
	2014	2301	135829.1	16.9	(16.3-17.7)	1062	142925	7.4	(7.0-7.9)	1504	143551	10.5	(10.0-11.0)
	2015	2230	138268.7	16.1	(15.5-16.8)	1106	145967.9	7.6	(7.1-8.0)	1386	146471.6	9.5	(9.0-10.0)
	2016	2434	141041.4	17.3	(16.6-18.0)	1216	149242.7	8.2	(7.7-8.6)	1469	149634.1	9.8	(9.3-10.3)
	2017	2368	141881.6	16.7	(16.0-17.4)	1215	150517.5	8.1	(7.6-8.5)	1413	150884.3	9.4	(8.9-9.9)
	2018	2337	142668.8	16.4	(15.7-17.0)	1228	151638.7	8.1	(7.7-8.6)	1356	152157	8.9	(8.4-9.4)
75-84	2003	1356	81430.34	16.7	(15.8-17.6)	861	81670.02	10.5	(9.9-11.3)	636	81774.7	7.8	(7.2-8.4)
	2004	1445	80885.01	17.9	(17.0-18.8)	894	81604.11	11.0	(10.3-11.7)	717	81892.6	8.8	(8.1-9.4)

	2005	1479	78819.3	18.8	(17.8-19.8)	844	80030.16	10.6	(9.9-11.3)	775	80402.41	9.6	(9.0-10.3)
	2006	1394	77794.72	17.9	(17.0-18.9)	796	79398.55	10.0	(9.3-10.8)	768	79821.07	9.6	(9.0-10.3)
	2007	1355	77446.36	17.5	(16.6-18.5)	714	79413.96	9.0	(8.3-9.7)	808	79803.81	10.1	(9.4-10.9)
	2008	1364	77326.82	17.6	(16.7-18.6)	680	79684.17	8.5	(7.9-9.2)	849	79925.85	10.6	(9.9-11.4)
	2009	1424	77362.89	18.4	(17.5-19.4)	678	80130.29	8.5	(7.8-9.1)	898	80163.8	11.2	(10.5-12.0)
	2010	1315	77737.17	16.9	(16.0-17.9)	606	80858.78	7.5	(6.9-8.1)	862	80727.87	10.7	(10.0-11.4)
	2011	1446	78323.32	18.5	(17.5-19.4)	642	81822.65	7.9	(7.3-8.5)	969	81561.76	11.9	(11.1-12.7)
	2012	1405	79603.21	17.7	(16.7-18.6)	629	83441.21	7.5	(7.0-8.2)	925	83060.86	11.1	(10.4-11.9)
	2013	1438	80492.91	17.9	(17.0-18.8)	712	84551.17	8.4	(7.8-9.1)	927	84192.29	11.0	(10.3-11.7)
	2014	1363	81553.54	16.7	(15.8-17.6)	630	85899.45	7.3	(6.8-7.9)	887	85430.37	10.4	(9.7-11.1)
	2015	1415	81743.02	17.3	(16.4-18.2)	647	86352.49	7.5	(6.9-8.1)	900	85743.17	10.5	(9.8-11.2)
	2016	1415	82163.47	17.2	(16.3-18.1)	690	87070.82	7.9	(7.3-8.5)	885	86371.06	10.3	(9.6-10.9)
	2017	1440	83575.17	17.2	(16.4-18.1)	718	88674.82	8.1	(7.5-8.7)	877	88039.27	10.0	(9.3-10.6)
	2018	1426	85670.39	16.7	(15.8-17.5)	742	91110.94	8.1	(7.6-8.8)	834	90402.99	9.2	(8.6-9.9)
85+	2003	358	27873.18	12.8	(11.6-14.3)	235	27929.67	8.4	(7.4-9.6)	147	27971.99	5.3	(4.4-6.2)
	2004	427	27735.88	15.4	(14.0-16.9)	249	27944.32	8.9	(7.8-10.1)	212	28050.12	7.6	(6.6-8.7)
	2005	504	28547.61	17.7	(16.2-19.3)	267	28955.7	9.2	(8.2-10.4)	281	29069.08	9.7	(8.6-10.9)
	2006	462	29728.66	15.5	(14.2-17.0)	259	30298.23	8.6	(7.5-9.7)	253	30420.54	8.3	(7.3-9.4)
	2007	481	30215.97	15.9	(14.5-17.4)	235	30960.21	7.6	(6.7-8.6)	301	31041.59	9.7	(8.6-10.9)
	2008	500	30866.85	16.2	(14.8-17.7)	246	31787.23	7.7	(6.8-8.8)	301	31811.69	9.5	(8.4-10.6)
	2009	484	31115.84	15.6	(14.2-17.0)	218	32209	6.8	(5.9-7.7)	305	32156.38	9.5	(8.5-10.6)
	2010	476	31945.97	14.9	(13.6-16.3)	221	33191.33	6.7	(5.8-7.6)	310	33077.92	9.4	(8.4-10.5)
	2011	509	32629.64	15.6	(14.3-17.0)	221	34004.71	6.5	(5.7-7.4)	329	33801.21	9.7	(8.7-10.8)
	2012	540	33080.46	16.3	(15.0-17.8)	243	34640.97	7.0	(6.2-8.0)	359	34314.68	10.5	(9.4-11.6)
	2013	502	33406.57	15.0	(13.7-16.4)	226	35098.21	6.4	(5.6-7.3)	321	34697.13	9.3	(8.3-10.3)
	2014	527	34041.81	15.5	(14.2-16.9)	239	35884.62	6.7	(5.8-7.6)	351	35402.52	9.9	(8.9-11.0)

	2015	472	34509.73	13.7	(12.5-15.0)	226	36443.28	6.2	(5.4-7.1)	290	35975.87	8.1	(7.2-9.0)
	2016	529	35170.29	15.0	(13.8-16.4)	239	37228.24	6.4	(5.6-7.3)	338	36731.64	9.2	(8.3-10.2)
	2017	527	35849.45	14.7	(13.5-16.0)	250	38009.54	6.6	(5.8-7.5)	339	37472.1	9.1	(8.1-10.1)
	2018	467	36726.18	12.7	(11.6-13.9)	236	38920.82	6.1	(5.3-6.9)	282	38400.88	7.3	(6.5-8.3)

A.12 List of BNF codes

2.4: Beta-Adrenoceptor Blocking Drugs – propranolol

4.1.1: Hypnotics

4.1.2: Anxiolytics

4.2.1: Antipsychotic Drugs – quetiapine, risperidone, olanzapine, aripiprazole

4.3: Antidepressant Drugs

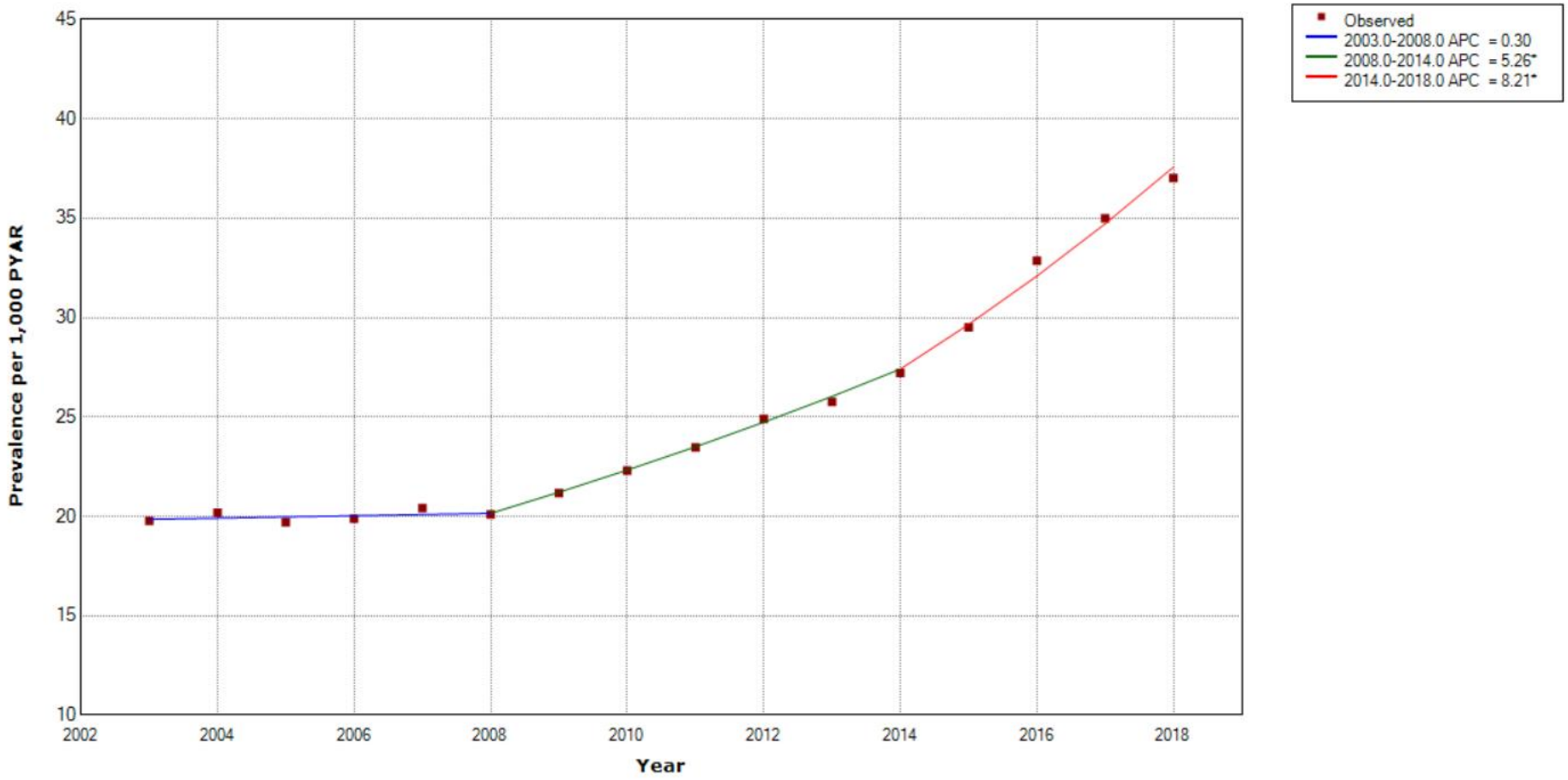
- 4.3.1: Tricyclic & Related Antidepressant Drugs
- 4.3.2: Monoamine-Oxidase Inhibitors (MAOIs)
- 4.3.3: Selective Serotonin Re-Uptake Inhibitors
- 4.3.4: Other Antidepressant Drugs

4.7.3: Neuropathic Pain – gabapentin

4.8.1: Control of epilepsy - pregabalin

A.13 Best fitting join point model of prevalence of all antidepressant prescriptions per 1000 person-years

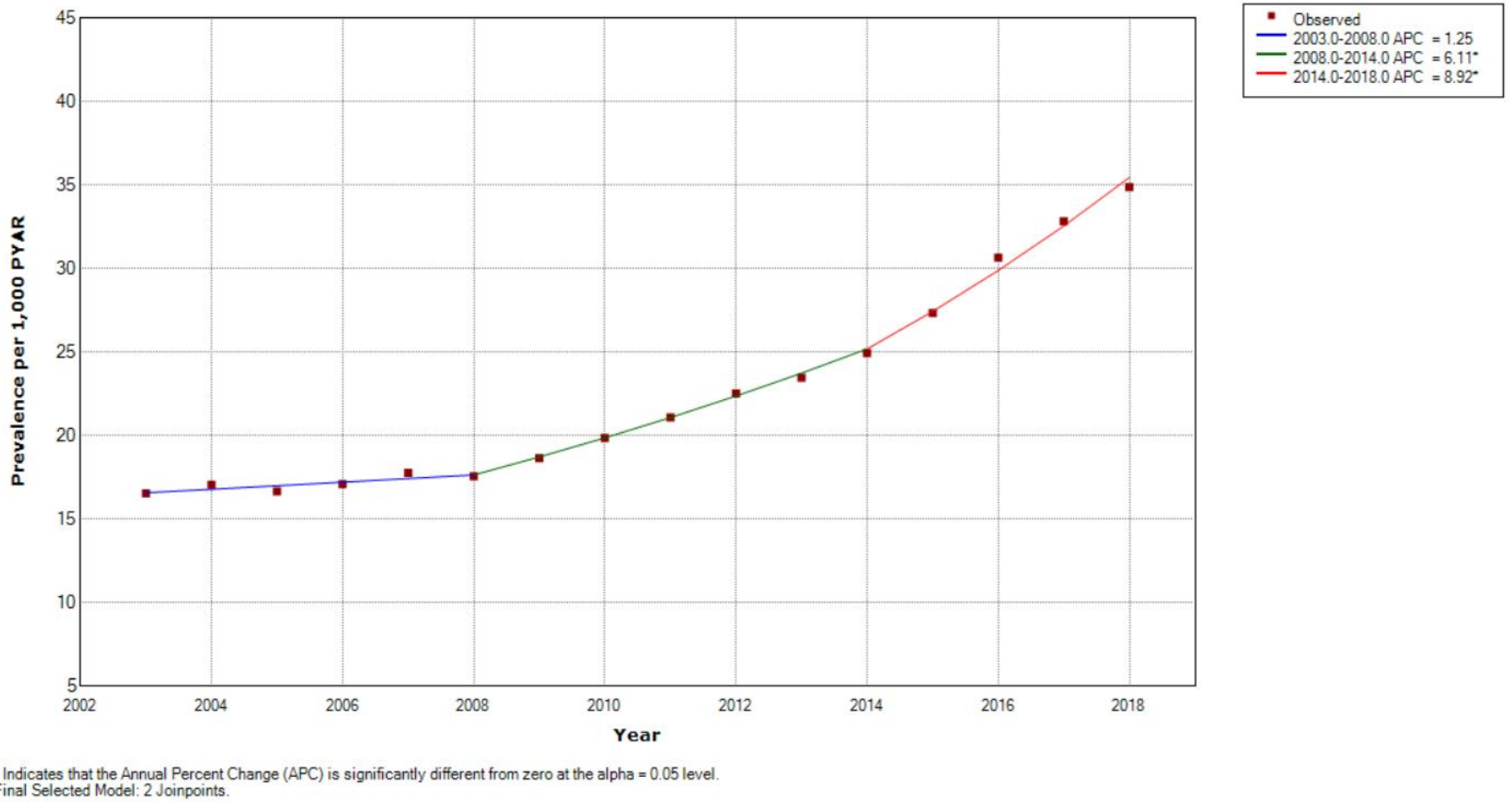
Figure 60 Best fitting join point model of prevalence of all antidepressant prescriptions per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 2 Joinpoints.

A.14 Best fitting join point model of prevalence of SSRI & 'other' antidepressant prescriptions per 1000 person-years

Figure 61 Best fitting join point model of prevalence of SSRI & 'other' antidepressant prescriptions per 1000 person-years



A.15 Prevalence rate ratio for prescriptions of SSRI & 'other' antidepressants

Table 35 Prevalence rate ratios for prescriptions of SSRI & 'other' antidepressants

SSRI & 'other' antidepressants							
Variable		Univariable PRR	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	1.03	(1.01-1.05)		1.03	(1.01-1.06)	
	2005	1.01	(0.99-1.03)		1.01	(0.99-1.03)	
	2006	1.03	(1.01-1.05)		1.04	(1.02-1.06)	
	2007	1.07	(1.05-1.10)		1.09	(1.06-1.11)	
	2008	1.06	(1.04-1.08)		1.08	(1.05-1.10)	
	2009	1.13	(1.11-1.15)		1.14	(1.12-1.17)	
	2010	1.20	(1.18-1.22)		1.22	(1.20-1.25)	
	2011	1.28	(1.25-1.30)		1.30	(1.27-1.32)	
	2012	1.36	(1.34-1.39)		1.39	(1.36-1.42)	
	2013	1.42	(1.39-1.45)		1.45	(1.43-1.48)	
	2014	1.51	(1.48-1.54)		1.55	(1.52-1.58)	
	2015	1.65	(1.62-1.68)		1.70	(1.67-1.73)	
	2016	1.85	(1.82-1.89)		1.91	(1.88-1.94)	
	2017	1.98	(1.95-2.02)		2.05	(2.02-2.09)	
	2018	2.11	(2.07-2.15)		2.19	(2.15-2.23)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	2.16	(2.14-2.17)		2.22	(2.2-2.23)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	1.30	(1.29-1.32)		1.29	(1.28-1.31)	
	35-44	1.25	(1.24-1.27)		1.28	(1.26-1.29)	
	44-54	1.14	(1.13-1.15)		1.13	(1.12-1.15)	
	55-64	0.91	(0.90-0.92)		0.90	(0.89-0.92)	
	65-74	0.70	(0.69-0.71)		0.67	(0.66-0.68)	
	75-84	0.70	(0.69-0.71)		0.65	(0.64-0.67)	
	85+	0.63	(0.61-0.64)		0.54	(0.52-0.55)	
**Multivariable model adjusted for year, gender, and age band*							

A.16 Prevalence rate ratio for prescriptions of antipsychotics

Table 36 Prevalence rate ratios for prescriptions of antipsychotics

		Antipsychotic					
Variable		Univariable PRR	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	1.06	(0.97-1.16)		1.06	(0.97-1.16)	
	2005	1.09	(1.00-1.19)		1.10	(1.00-1.19)	
	2006	1.14	(1.04-1.24)		1.14	(1.05-1.24)	
	2007	1.15	(1.05-1.25)		1.15	(1.05-1.25)	
	2008	1.21	(1.11-1.32)		1.21	(1.12-1.32)	
	2009	1.30	(1.20-1.41)		1.31	(1.20-1.42)	
	2010	1.45	(1.34-1.57)		1.46	(1.34-1.58)	
	2011	1.58	(1.46-1.71)		1.59	(1.47-1.72)	
	2012	1.71	(1.58-1.84)		1.72	(1.59-1.86)	
	2013	1.78	(1.64-1.92)		1.79	(1.66-1.94)	
	2014	1.84	(1.70-1.98)		1.86	(1.72-2.00)	
	2015	1.93	(1.79-2.08)		1.95	(1.81-2.11)	
	2016	2.20	(2.04-2.37)		2.23	(2.07-2.40)	
	2017	2.39	(2.22-2.58)		2.43	(2.25-2.61)	
	2018	2.49	(2.31-2.68)		2.53	(2.35-2.72)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	1.44	(1.41-1.48)		1.46	(1.42-1.49)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	1.41	(1.34-1.48)		1.40	(1.33-1.47)	
	35-44	1.41	(1.34-1.48)		1.43	(1.36-1.51)	
	44-54	1.42	(1.35-1.49)		1.40	(1.33-1.47)	
	55-64	1.11	(1.05-1.17)		1.10	(1.04-1.16)	
	65-74	0.82	(0.77-0.87)		0.79	(0.75-0.84)	
	75-84	1.03	(0.96-1.10)		0.99	(0.93-1.05)	
	85+	1.19	(1.10-1.30)		1.09	(1.00-1.18)	

**Multivariable model adjusted for year, gender, and age band*

A.17 Prevalence rate ratios for prescriptions of anticonvulsants

Table 37 Prevalence rate ratios for prescriptions of anticonvulsants

		Anticonvulsant					
Variable		Univariable PRR	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	1.23	(1.04-1.46)		1.23	(1.04-1.46)	
	2005	1.59	(1.35-1.87)		1.59	(1.35-1.87)	
	2006	2.19	(1.88-2.55)		2.19	(1.88-2.55)	
	2007	2.63	(2.26-3.05)		2.63	(2.26-3.05)	
	2008	3.25	(2.81-3.76)		3.25	(2.81-3.76)	
	2009	4.42	(3.84-5.09)		4.42	(3.84-5.09)	
	2010	5.61	(4.89-6.44)		5.61	(4.89-6.44)	
	2011	6.69	(5.84-7.67)		6.69	(5.84-7.67)	
	2012	7.68	(6.71-8.80)		7.70	(6.72-8.81)	
	2013	8.98	(7.86-10.27)		9.00	(7.87-10.29)	
	2014	10.35	(9.06-11.82)		10.37	(9.07-11.85)	
	2015	11.84	(10.37-13.52)		11.86	(10.39-13.55)	
	2016	13.61	(11.93-15.53)		13.62	(11.94-15.54)	
	2017	14.57	(12.77-16.62)		14.58	(12.79-16.64)	
	2018	14.61	(12.81-16.66)		14.62	(12.82-16.68)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	2.18	(2.13-2.24)		2.19	(2.14-2.25)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	2.40	(2.23-2.58)		2.37	(2.20-2.54)	
	35-44	3.18	(2.96-3.41)		3.32	(3.10-3.56)	
	44-54	3.92	(3.66-4.20)		3.80	(3.55-4.07)	
	55-64	3.56	(3.32-3.82)		3.50	(3.26-3.75)	
	65-74	3.16	(2.94-3.40)		2.93	(2.72-3.15)	
	75-84	3.24	(3.00-3.50)		3.01	(2.79-3.25)	
	85+	2.49	(2.26-2.75)		2.08	(1.89-2.30)	
**Multivariable model adjusted for year, gender, and age band*							

A.18 Prevalence ratios for prescriptions of any anxiolytic, all antidepressants, and benzodiazepines between 2003 and 2013 - accounting for clustering

Table 38 Prevalence rate ratios for prescriptions of any anxiolytic, all antidepressants, and benzodiazepines between 2003 and 2018 – account for clustering

		Any anxiolytic			All antidepressants			Benzodiazepines		
Variable		Multivariable PRR*	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	1.03	(1.00-1.06)		1.02	(0.99-1.06)		1.04	(1.01-1.07)	
	2005	1.03	(0.99-1.07)		1.00	(0.96-1.04)		1.07	(1.02-1.11)	
	2006	1.04	(0.99-1.09)		1.01	(0.96-1.07)		1.08	(1.02-1.14)	
	2007	1.06	(1.00-1.13)		1.04	(0.97-1.11)		1.10	(1.03-1.17)	
	2008	1.05	(0.98-1.12)		1.03	(0.96-1.11)		1.06	(1.00-1.14)	
	2009	1.10	(1.03-1.18)		1.09	(1.01-1.17)		1.10	(1.02-1.18)	
	2010	1.14	(1.06-1.23)		1.15	(1.06-1.24)		1.09	(1.01-1.18)	
	2011	1.19	(1.11-1.28)		1.21	(1.12-1.31)		1.11	(1.03-1.20)	
	2012	1.26	(1.17-1.35)		1.28	(1.19-1.39)		1.12	(1.04-1.21)	
	2013	1.30	(1.21-1.40)		1.33	(1.23-1.44)		1.11	(1.03-1.20)	
	2014	1.36	(1.26-1.47)		1.41	(1.30-1.53)		1.12	(1.03-1.21)	
	2015	1.47	(1.36-1.58)		1.53	(1.41-1.66)		1.11	(1.02-1.21)	
	2016	1.62	(1.50-1.75)		1.71	(1.57-1.86)		1.16	(1.06-1.26)	
	2017	1.72	(1.59-1.86)		1.82	(1.68-1.99)		1.13	(1.03-1.23)	
	2018	1.81	(1.66-1.96)		1.94	(1.77-2.11)		1.10	(1.00-1.20)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.23	(2.19-2.28)		2.26	(2.21-2.30)		2.22	(2.16-2.27)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	1.28	(1.24-1.32)		1.31	(1.26-1.36)		1.72	(1.65-1.79)	
	35-44	1.28	(1.23-1.33)		1.33	(1.27-1.39)		1.98	(1.88-2.08)	
	44-54	1.18	(1.13-1.25)		1.22	(1.15-1.29)		2.04	(1.93-2.16)	
	55-64	1.01	(0.96-1.07)		1.01	(0.95-1.08)		1.95	(1.83-2.08)	
	65-74	0.84	(0.79-0.90)		0.79	(0.74-0.84)		2.01	(1.85-2.17)	
	75-84	0.85	(0.79-0.92)		0.78	(0.73-0.84)		2.19	(1.99-2.41)	
	85+	0.71	(0.64-0.78)		0.63	(0.58-0.69)		1.91	(1.70-2.16)	

**Multivariable model adjusted for year, gender, and age band*

A.19 Prevalence rate ratios for prescriptions of beta-blockers, anticonvulsants and antipsychotics between 2003 and 2018 - accounting for clustering

Table 39 Prevalence rate ratios for prescriptions of beta-blockers, anticonvulsants, and antipsychotics between 2003 and 2013 - accounting for clustering

		Beta-blockers (propranolol)			Anticonvulsants			Antipsychotics		
Variable		Multivariable PRR*	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value	Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	1.07	(1.02-1.13)		1.23	(1.08-1.40)		1.06	(0.98-1.15)	
	2005	1.07	(1.00-1.15)		1.59	(1.36-1.87)		1.10	(1.00-1.20)	
	2006	1.08	(1.01-1.17)		2.19	(1.85-2.59)		1.14	(1.03-1.26)	
	2007	1.08	(0.99-1.17)		2.63	(2.21-3.12)		1.15	(1.03-1.28)	
	2008	1.11	(1.02-1.21)		3.25	(2.74-3.87)		1.21	(1.09-1.36)	
	2009	1.21	(1.10-1.33)		4.42	(3.74-5.22)		1.31	(1.16-1.48)	
	2010	1.30	(1.18-1.43)		5.61	(4.77-6.60)		1.46	(1.29-1.64)	
	2011	1.40	(1.27-1.55)		6.69	(5.73-7.82)		1.59	(1.40-1.80)	
	2012	1.56	(1.42-1.72)		7.70	(6.60-8.98)		1.72	(1.52-1.94)	
	2013	1.71	(1.55-1.89)		9.00	(7.68-10.55)		1.79	(1.59-2.02)	
	2014	1.87	(1.69-2.08)		10.37	(8.84-12.16)		1.86	(1.62-2.13)	
	2015	2.02	(1.83-2.24)		11.86	(10.05-14.00)		1.95	(1.73-2.20)	
	2016	2.23	(2.00-2.48)		13.62	(11.42-16.24)		2.23	(1.98-2.51)	
	2017	2.42	(2.17-2.71)		14.58	(12.30-17.29)		2.43	(2.13-2.77)	
	2018	2.61	(2.34-2.90)		14.62	(12.30-17.38)		2.53	(2.21-2.88)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.33	(2.26-2.4)		2.19	(2.10-2.28)		1.46	(1.39-1.53)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	1.12	(1.08-1.17)		2.37	(2.11-2.65)		1.40	(1.32-1.56)	
	35-44	1.00	(0.95-1.05)		3.32	(2.91-3.78)		1.43	(1.28-1.52)	
	44-54	0.82	(0.78-0.87)		3.80	(3.30-4.39)		1.40	(0.99-1.22)	
	55-64	0.57	(0.54-0.61)		3.50	(3.03-4.03)		1.10	(0.71-0.88)	
	65-74	0.34	(0.32-0.38)		2.93	(2.51-3.41)		0.79	(0.87-1.12)	
	75-84	0.23	(0.21-0.26)		3.01	(2.57-3.53)		0.99	(0.92-1.29)	
	85+	0.11	(0.09-0.13)		2.08	(1.75-2.48)		1.09	(1.31-1.50)	

**Multivariable model adjusted for year, gender, and age band*

A.20 Prevalence rate of anxiolytic prescriptions - any anxiolytics, all antidepressants, and SSRIs and 'other' antidepressants – per 1000 person years by gender

Table 40 Prevalence rate of anxiolytic prescriptions - any anxiolytics, all antidepressants, and SSRIs and 'other' antidepressants – per 1000 person years by gender

Variable		**Any anxiolytic**				**All antidepressants**				**SSRIs and 'other' antidepressants**			
Gender	Year	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
Male	2003	8499	539948.5	15.7	(15.4-16.1)	6715	541088	12.4	(12.1-12.7)	5704	541764	10.5	(10.3-10.8)
	2004	8690	544370.9	16.0	(15.6-16.3)	6836	546508.5	12.5	(12.2-12.8)	5872	547656.6	10.7	(10.5-11.0)
	2005	8545	544415.8	15.7	(15.4-16.0)	6593	547386.2	12.0	(11.8-12.3)	5677	548823.9	10.3	(10.1-10.6)
	2006	8685	547927.9	15.9	(15.5-16.2)	6685	551687.3	12.1	(11.8-12.4)	5820	553379.8	10.5	(10.3-10.8)
	2007	8859	550394.8	16.1	(15.8-16.4)	6906	554803.8	12.5	(12.2-12.7)	6137	556661	11.0	(10.8-11.3)
	2008	8773	555196.9	15.8	(15.5-16.1)	6838	560186.6	12.2	(11.9-12.5)	6082	562172.5	10.8	(10.6-11.1)
	2009	9436	557164.8	16.9	(16.6-17.3)	7387	562676.2	13.1	(12.8-13.4)	6631	564792.7	11.7	(11.5-12.0)
	2010	9879	559924.1	17.6	(17.3-18.0)	7948	565978.4	14.0	(13.7-14.4)	7233	568201.9	12.7	(12.4-13.0)
	2011	10359	560450.8	18.5	(18.1-18.8)	8359	566942.8	14.7	(14.4-15.0)	7657	569221.5	13.5	(13.2-13.8)
	2012	11023	563974.6	19.6	(19.2-19.9)	8961	570882.9	15.7	(15.4-16.0)	8281	573196.6	14.5	(14.1-14.8)
	2013	11354	564409.9	20.1	(19.8-20.5)	9260	571665.9	16.2	(15.9-16.5)	8631	574014.2	15.0	(14.7-15.4)
	2014	11804	568154.3	20.8	(20.4-21.2)	9782	575765.4	17.0	(16.7-17.3)	9105	578159.2	15.8	(15.4-16.1)
	2015	12920	571441.6	22.6	(22.2-23.0)	10772	579350.8	18.6	(18.2-19.0)	10170	581762	17.5	(17.1-17.8)
	2016	14300	575257.4	24.9	(24.5-25.3)	12111	583488.6	20.8	(20.4-21.1)	11490	585929.8	19.6	(19.3-12.0)
	2017	15061	576383.7	26.1	(25.7-26.6)	12894	584934.3	22.0	(21.7-22.4)	12275	587387.8	20.9	(20.5-21.3)
	2018	15958	577774.9	27.6	(27.2-28.1)	13744	586570.2	23.4	(23.0-23.8)	13162	589024.9	22.4	(22.0-22.7)
Female	2003	18760	554313.1	33.8	(33.4-34.3)	14999	556838.8	26.9	(26.5-27.4)	12512	558629.5	22.4	(22.0-22.8)
	2004	19324	551609.9	35.0	(34.5-35.5)	15417	556139.4	27.7	(27.3-28.2)	13021	558995	23.3	(22.9-23.7)
	2005	19210	545048.5	35.2	(34.8-35.8)	15052	551307.2	27.3	(26.9-27.7)	12732	554882.1	23.0	(22.6-23.4)
	2006	19316	543927.7	35.5	(35.0-36.0)	15248	551654.9	27.6	(27.2-28.1)	13146	555725.7	23.7	(23.3-24.0)
	2007	19712	541957.3	36.4	(35.9-36.9)	15659	550910.7	28.4	(28.0-28.9)	13645	555366.2	24.6	(24.2-25.0)
	2008	19531	543288.6	36.0	(35.5-36.5)	15535	553342.3	28.1	(27.6-28.5)	13613	558099.4	24.4	(24.0-24.8)
	2009	20255	541853	37.4	(36.9-37.9)	16226	552887.2	29.4	(28.9-29.8)	14333	557888.2	25.7	(25.3-26.1)
	2010	20865	542248.2	38.5	(38.0-39.0)	17029	554136	30.7	(30.3-31.2)	15182	559382.5	27.1	(26.7-27.6)
	2011	21777	542569.5	40.1	(39.6-40.7)	17979	555154.6	32.4	(31.9-32.9)	16198	560567	28.9	(28.5-29.3)

	2012	23019	545243.2	42.2	(41.7-42.8)	19156	558484	34.3	(33.8-34.8)	17345	564049.8	30.8	(30.3-31.2)
	2013	23851	545273.5	43.7	(43.2-44.3)	19877	559053.5	35.6	(35.1-36.1)	18121	564702.9	32.1	(31.6-32.6)
	2014	25100	545835.7	46.0	(45.4-46.6)	21129	560203.1	37.7	(37.2-38.2)	19440	565931.6	34.4	(33.9-34.8)
	2015	26953	546502.4	49.3	(48.7-49.9)	22883	561426.6	40.8	(40.2-41.3)	21256	567159.1	37.5	(37.0-38.0)
	2016	29823	547379.6	54.5	(53.9-55.1)	25556	562956.4	45.4	(44.8-46.0)	23927	568722.6	42.1	(41.5-42.6)
	2017	31554	545392.5	57.9	(57.2-58.5)	27226	561400.1	48.5	(47.9-49.1)	25653	567168.8	45.2	(44.7-45.8)
	2018	32959	544422.1	60.5	(59.9-61.2)	28737	560777.7	51.2	(50.7-51.8)	27178	566566.5	48.0	(47.4-48.5)
** N = Number of prescriptions*													

A.21 Prevalence rate of benzodiazepines and beta-blockers (propranolol) prescriptions per 1000 person years by gender

Table 41 Prevalence rate of benzodiazepines and beta-blocker prescriptions per 1000 person years by gender

Variable		Benzodiazepines				Beta-blockers (propranolol)			
Gender	Year	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
Male	2003	3505	543279.9	6.5	(6.2-6.7)	1269	544587.6	2.3	(2.2-2.5)
	2004	3621	550364.7	6.6	(6.4-6.8)	1278	553051.7	2.3	(2.2-2.4)
	2005	3760	552291	6.8	(6.6-7.0)	1248	556078.5	2.2	(2.1-2.4)
	2006	3866	557447.9	6.9	(6.7-7.2)	1284	562341.2	2.3	(2.2-2.4)
	2007	3875	561415.7	6.9	(6.7-7.1)	1283	567223	2.3	(2.1-2.4)
	2008	3736	567636.7	6.6	(6.4-6.8)	1398	574227.3	2.4	(2.3-2.6)
	2009	3996	571042.2	7.0	(6.8-7.2)	1541	578231.4	2.7	(2.5-2.8)
	2010	4067	575319.7	7.1	(6.9-7.3)	1645	583133.6	2.8	(2.7-3.0)
	2011	4190	577319	7.3	(7.0-7.5)	1756	585693.6	3.0	(2.9-3.1)
	2012	4307	582470.4	7.4	(7.2-7.6)	1973	591353.5	3.3	(3.2-3.5)
	2013	4192	584534.1	7.2	(7.0-7.4)	2126	593679.1	3.6	(3.4-3.7)
	2014	4294	589943.7	7.3	(7.1-7.5)	2325	599273.3	3.9	(3.7-4.0)
	2015	4311	595070	7.2	(7.0-7.5)	2541	604475.9	4.2	(4.0-4.4)
	2016	4549	601229.4	7.6	(7.4-7.8)	2799	610720.6	4.6	(4.4-4.8)
	2017	4495	604817.9	7.4	(7.2-7.7)	2970	614250.9	4.8	(4.7-5.0)
	2018	4390	608911.1	7.2	(7.0-7.4)	3199	618156.7	5.2	(5.0-5.4)
Female	2003	8102	561676.9	14.4	(14.1-14.7)	2598	565080.2	4.6	(4.4-4.8)
	2004	8534	564378.7	15.1	(14.8-15.5)	2913	571064.4	5.1	(4.9-5.3)
	2005	8666	561701.9	15.4	(15.1-15.8)	2949	570855	5.2	(5.0-5.4)
	2006	8764	563755.3	15.6	(15.2-15.9)	2981	575043.7	5.2	(5.0-5.4)
	2007	9035	564742.5	16.0	(15.7-16.3)	2979	578042.9	5.2	(5.0-5.3)
	2008	8881	568687.9	15.6	(15.3-15.9)	3019	583819.8	5.2	(5.0-5.4)
	2009	9079	569776.8	15.9	(15.6-16.3)	3297	586464.6	5.6	(5.4-5.8)
	2010	8941	572806.8	15.6	(15.3-15.9)	3572	590822.4	6.1	(5.9-6.3)
	2011	9156	575752.6	15.9	(15.6-16.2)	3911	594681.7	6.6	(6.4-6.8)
	2012	9285	581312.5	16.0	(15.7-16.3)	4368	600973.4	7.3	(7.1-7.5)
	2013	9306	584136.8	15.9	(15.6-16.3)	4836	604121.9	8.0	(7.8-8.2)
	2014	9415	587604.2	16.0	(15.7-16.4)	5332	607846.6	8.8	(8.5-9.0)
	2015	9422	591608.2	15.9	(15.6-16.3)	5755	611845.6	9.4	(9.2-9.7)
	2016	9893	596861.8	16.6	(16.3-16.9)	6408	616966.1	10.4	(10.1-10.6)
	2017	9650	599153.7	16.1	(15.8-16.4)	7025	618696	11.4	(11.1-11.6)
	2018	9460	602744.1	15.7	(15.4-16.0)	7568	621377	12.2	(11.9-12.5)

** N = Number of prescriptions*

A.22 Prevalence rate of antipsychotic and anticonvulsant prescriptions per 1000 person years by gender

Table 42 Prevalence rate of antipsychotic and anticonvulsant prescriptions per 1000 person years by gender

Variable		**Antipsychotics**				**Anticonvulsants**			
Gender	Year	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
Male	2003	372	545114	0.7	(0.6-0.8)	93	545275.6	0.2	(0.1-0.2)
	2004	414	554247.4	0.8	(0.7-0.8)	84	554604.7	0.2	(0.1-0.2)
	2005	436	557861.6	0.8	(0.7-0.9)	111	558346.3	0.2	(0.2-0.2)
	2006	464	564627.5	0.8	(0.8-0.9)	177	565223.4	0.3	(0.3-0.4)
	2007	479	569962.4	0.8	(0.8-0.9)	207	570620.5	0.4	(0.3-0.4)
	2008	491	577468.6	0.9	(0.8-0.9)	264	578171.1	0.5	(0.4-0.5)
	2009	547	582030.4	0.9	(0.9-1.0)	370	582684	0.6	(0.6-0.7)
	2010	593	587522.1	1.0	(0.9-1.1)	444	588160.5	0.8	(0.7-0.8)
	2011	636	590652.3	1.1	(1.0-1.2)	523	591237.6	0.9	(0.8-1.0)
	2012	690	596906.4	1.2	(1.1-1.3)	626	597445.8	1.1	(1.0-1.1)
	2013	789	599834	1.3	(1.2-1.4)	712	600304.8	1.2	(1.1-1.3)
	2014	832	606149.1	1.4	(1.3-1.5)	816	606537.8	1.4	(1.3-1.4)
	2015	837	612128.9	1.4	(1.3-1.5)	963	612385.1	1.6	(1.5-1.7)
	2016	984	619206.6	1.6	(1.5-1.7)	1062	619322.3	1.7	(1.6-1.8)
	2017	1056	623537.4	1.7	(1.6-1.8)	1193	623537.1	1.9	(1.8-2.0)
	2018	1079	628340.7	1.7	(1.6-1.8)	1177	628218	1.9	(1.8-2.0)
Female	2003	594	566232.5	1.1	(1.0-1.1)	142	566530.8	0.3	(0.2-0.3)
	2004	626	573873.9	1.1	(1.0-1.2)	210	574386.9	0.4	(0.3-0.4)
	2005	642	575239.4	1.1	(1.0-1.2)	271	575866.2	0.5	(0.4-0.5)
	2006	669	580854.4	1.2	91.1-1.2)	354	581536.6	0.6	(0.6-0.7)
	2007	671	585120.9	1.2	(1.1-1.2)	435	585816.6	0.7	(0.7-0.8)
	2008	740	592117.5	1.3	(1.2-1.3)	541	592758.1	0.9	(0.8-1.0)
	2009	786	595962.6	1.3	(1.2-1.4)	731	596524.5	1.2	(1.1-1.3)
	2010	906	601621.1	1.5	(1.4-1.6)	967	602004.8	1.6	(1.5-1.7)
	2011	1006	606889.5	1.7	(1.6-1.8)	1171	606963.5	1.9	(1.8-2.0)
	2012	1106	614753.8	1.8	(1.7-1.9)	1342	614510.8	2.2	(2.1-2.3)
	2013	1094	619435.7	1.8	(1.7-1.9)	1603	618801	2.6	(2.5-2.7)
	2014	1132	624911.2	1.8	(1.7-1.9)	1875	623788.4	3.0	(2.9-3.2)
	2015	1246	630791.2	2.0	(1.9-2.1)	2145	629122.1	3.4	(3.3-3.6)
	2016	1417	638036	2.2	(2.1-2.3)	2548	635746.4	4.0	(3.9-4.2)
	2017	1576	641892.7	2.5	(2.3-2.6)	2695	638996.9	4.2	(4.1-4.4)
	2018	1677	646797.3	2.6	(2.5-2.7)	2749	643357.9	4.3	(4.1-4.4)

** N = Number of prescriptions*

A.23 Prevalence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 - test for interaction between year and gender

Table 43 Prevalence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 - test for interaction between year and gender

Variable		Multivariable PRR*	(95%CI)	P value
Year	2003	1.00		<0.001
	2004	1.01	(0.99-1.05)	
	2005	1.00	(0.97-1.03)	
	2006	1.01	(0.98-1.04)	
	2007	1.03	(1.00-1.06)	
	2008	1.01	(0.98-1.04)	
	2009	1.08	(1.05-1.11)	
	2010	1.13	(1.10-1.16)	
	2011	1.18	(1.15-1.22)	
	2012	1.26	(1.22-1.29)	
	2013	1.29	(1.26-1.33)	
	2014	1.34	(1.30-1.38)	
	2015	1.46	(1.42-1.50)	
	2016	1.61	(1.56-1.65)	
	2017	1.69	(1.65-1.74)	
	2018	1.79	(1.74-1.84)	
Gender	Male	1.00		<0.001
	Female	2.19	(2.13-2.25)	
Year X Gender	2003	1.00		
	2004	1.02	(0.98-1.06)	0.270
	2005	1.04	(1.01-1.08)	0.019
	2006	1.04	(1.00-1.08)	0.027
	2007	1.05	(1.01-1.09)	0.007
	2008	1.06	(1.02-1.10)	0.003
	2009	1.02	(0.99-1.06)	0.172
	2010	1.01	(0.98-1.05)	0.498
	2011	1.01	(0.97-1.04)	0.686
	2012	1.00	(0.97-1.04)	0.944
	2013	1.01	(0.97-1.04)	0.685
	2014	1.02	(0.99-1.06)	0.152
	2015	1.01	(0.98-1.04)	0.562
	2016	1.01	(0.98-1.05)	0.389
	2017	1.02	(0.99-1.06)	0.137
	2018	1.01	(0.98-1.05)	0.382
Age Band (years)	18-24	1.00		<0.001
	25-34	1.28	(1.27-1.29)	
	35-44	1.28	(1.26-1.29)	
	44-54	1.18	(1.17-1.20)	
	55-64	1.01	(1.00-1.02)	
	65-74	0.84	(0.83-0.85)	
	75-84	0.85	(0.84-0.87)	
	85+	0.71	(0.69-0.72)	

A.24 Prevalence rates, absolute differences, and prevalence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 by gender - test for interaction between year and gender

Table 44 Prevalence rates, absolute differences, and prevalence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 by gender - test for interaction between year and gender

		Male			Female			Interaction parameter	P value for interaction parameter
Variable		Prevalence (1000PYAR)	Absolute difference	PRR	Prevalence (1000PYAR)	Absolute difference	PRR		
Year	2003	15.7	-	1.00	33.8	-	1.00	1.00	
	2004	16.0	0.3	1.01	35.0	1.2	1.04	1.02	0.270
	2005	15.7	0	1.00	35.2	1.4	1.04	1.04	0.019
	2006	15.9	0.2	1.01	35.5	1.7	1.05	1.04	0.027
	2007	16.1	0.4	1.00	36.4	2.6	1.05	1.05	0.007
	2008	15.8	0.1	1.00	36.0	2.2	1.06	1.06	0.003
	2009	16.9	1.2	1.08	37.4	3.6	1.10	1.02	0.172
	2010	17.6	1.9	1.12	38.5	4.7	1.14	1.01	0.498
	2011	18.5	2.8	1.17	40.1	6.3	1.19	1.01	0.686
	2012	19.6	3.9	1.24	42.2	8.4	1.25	1.00	0.944
	2013	20.1	4.4	1.28	43.7	9.9	1.29	1.01	0.685
	2014	20.8	5.1	1.32	46.0	12.2	1.36	1.02	0.152
	2015	22.6	6.9	1.44	49.3	15.5	1.46	1.01	0.562
	2016	24.9	9.2	1.58	54.5	20.7	1.61	1.01	0.389
	2017	26.1	10.4	1.66	57.9	24.1	1.71	1.02	0.137
	2018	27.6	11.9	1.75	60.5	26.7	1.79	1.01	0.382

A.25 Prevalence rate of anxiolytic prescriptions - any anxiolytic, all antidepressants, and SSRIs and 'other' antidepressants – per 1000 person years by age

Table 45 Prevalence rate of anxiolytic prescriptions - any anxiolytic, all antidepressants, and SSRIs and 'other' antidepressants – per 1000 person years by age

Variable		Any anxiolytic				All antidepressants				SSRIs and 'other' antidepressants			
Age band	Year	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
<25	2003	1841	106772.9	17.2	(16.5-18.0)	1492	106990.3	13.9	(13.2-14.7)	1385	107057	12.9	(12.3-13.6)
	2004	1895	107419.6	17.6	(16.9-18.5)	1474	107836.5	13.7	(13.0-14.4)	1363	107943.9	12.6	(12.0-13.3)
	2005	1835	107126.9	17.1	(16.4-17.9)	1365	107722	12.7	(12-13.4)	1260	107852.2	11.7	(11.0-12.3)
	2006	1802	108536.8	16.6	(15.8-17.4)	1333	109285.1	12.2	(11.6-12.9)	1257	109425.6	11.5	(10.9-12.1)
	2007	1913	109838.3	17.4	(16.6-18.2)	1458	110661.8	13.2	(12.5-13.9)	1388	110803.5	12.5	(11.9-13.2)
	2008	1979	112299.6	17.6	(16.9-18.4)	1467	113188.6	13.0	(12.3-13.6)	1415	113313.4	12.5	(11.8-13.2)
	2009	2101	113244.4	18.6	(17.8-19.4)	1623	114155.8	14.2	(13.5-14.9)	1561	114262.9	13.7	(13.0-14.4)
	2010	2354	114144.4	20.6	(19.8-21.5)	1872	115080.4	16.3	(15.5-17.0)	1793	115192.3	15.6	(14.9-16.3)
	2011	2581	114471.1	22.5	(21.7-23.4)	2075	115406.4	18.0	(17.2-18.8)	1996	115522.6	17.3	(16.5-18.1)
	2012	2880	115494.4	24.9	(24.0-25.9)	2325	116444.9	20.0	(19.2-20.8)	2248	116562.6	19.3	(18.5-20.1)
	2013	3251	115260.2	28.2	(27.2-29.2)	2639	116228.9	22.7	(21.8-23.6)	2541	116368	21.8	(21.0-22.7)
	2014	3638	115082.1	31.6	(30.6-32.7)	2965	116109.2	25.5	(24.6-26.5)	2864	116248.4	24.6	(23.7-25.6)
	2015	4405	114065.8	38.6	(37.5-39.8)	3628	115199.1	31.5	(30.5-32.5)	3518	115337.3	30.5	(29.5-31.5)
	2016	5345	112721.1	47.4	(46.2-48.7)	4467	114001.4	39.2	(38.0-40.3)	4360	114149.7	38.2	(37.1-39.3)
	2017	5757	111231.5	51.8	(50.4-53.1)	4892	112626	43.4	(42.2-44.7)	4770	112776.9	42.3	(41.1-43.5)
	2018	6488	109764	59.1	(57.7-60.6)	5577	111192.9	50.2	(48.8-51.5)	5466	111349.2	49.1	(47.8-50.4)
25-34	2003	4690	186164	25.2	(24.5-25.9)	3884	186677.2	20.8	(20.2-21.5)	3528	186918.1	18.9	(18.3-19.5)
	2004	4579	183649.1	24.9	(24.2-25.7)	3755	184614.9	20.3	(19.7-21.0)	3450	184987.5	18.6	(18.0-19.3)
	2005	4468	180776.3	24.7	(24.0-25.5)	3587	182124.5	19.7	(19.1-20.4)	3306	182544.6	18.1	(17.5-18.7)
	2006	4438	179157.5	24.8	(24.0-25.5)	3596	180827.1	19.9	(19.2-20.5)	3347	181269.2	18.5	(17.8-19.1)
	2007	4599	177860.8	25.9	(25.1-26.6)	3742	179758.2	20.8	(20.2-21.5)	3501	180201.6	19.4	(18.8-20.1)
	2008	4698	177850.1	26.4	(25.7-27.2)	3802	180003	21.1	(20.5-21.8)	3567	180458.3	19.8	(19.1-20.4)
	2009	5000	178294.7	28.0	(27.3-28.8)	4070	180668.7	22.5	(21.8-23.2)	3835	181142.3	21.2	(20.5-21.9)

	2010	5325	179426.3	29.7	(28.9-30.5)	4399	182039.7	24.2	(23.5-24.9)	4168	182542.2	22.8	(22.1-23.5)
	2011	5706	180931.4	31.5	(30.7-32.4)	4760	183756.5	25.9	(25.2-26.7)	4499	184281.3	24.4	(23.7-25.1)
	2012	6312	183549.4	34.4	(33.5-35.2)	5238	186609.6	28.1	(27.3-28.8)	4991	187135.1	26.7	(25.9-27.4)
	2013	6803	184221.9	36.9	(36.1-37.8)	5654	187487	30.2	(29.4-31.0)	5403	188015.9	28.7	(28.0-29.5)
	2014	7589	184512.9	41.1	(40.2-42.1)	6371	187923.2	33.9	(33.1-34.7)	6092	188479	32.3	(31.5-33.1)
	2015	8603	184988	46.5	(45.5-47.5)	7303	188546.1	38.7	(37.8-39.6)	7022	189123.4	37.1	(36.3-38.0)
	2016	9898	184858.3	53.5	(52.5-54.6)	8506	188593	45.1	(44.1-46.1)	8192	189198.3	43.3	(42.4-44.2)
	2017	10819	183646.5	58.9	(57.8-60.0)	9309	187502.4	49.6	(48.6-50.7)	9006	188103.2	47.9	(46.9-48.9)
	2018	11577	182462.8	63.4	(62.3-64.6)	10059	186418.5	54.0	(52.9-55.0)	9756	186996.2	52.2	(51.1-53.2)
35-44	2003	6338	222439.9	28.5	(27.8-29.2)	5317	223118.6	23.8	(23.2-24.5)	4679	223573.5	20.9	(20.3-21.5)
	2004	6434	223114.8	28.8	(28.1-29.6)	5345	224374.2	23.8	(23.2-24.5)	4741	225085	21.1	(20.5-21.7)
	2005	6306	220913.5	28.5	(27.8-29.3)	5151	222687.4	23.1	(22.5-23.8)	4573	223564.9	20.5	(19.9-21.1)
	2006	6246	219733.4	28.4	(27.7-29.1)	5101	221940.9	23.0	(22.4-23.6)	4588	222908.6	20.6	(20.0-21.2)
	2007	6253	216981.5	28.8	(28.1-29.5)	5199	219528.1	23.7	(23.0-24.3)	4747	220528.2	21.5	(20.9-22.1)
	2008	6071	214050.1	28.4	(27.7-29.1)	4998	216830.3	23.1	(22.4-23.7)	4553	217833.2	20.9	(20.3-21.5)
	2009	6414	208927.7	30.7	(30.0-31.5)	5308	211964.6	25.0	(24.4-25.7)	4873	212986.8	22.9	(22.2-23.5)
	2010	6515	203759.8	32.0	(31.2-32.8)	5483	206943.7	26.5	(25.8-27.2)	5081	207945.8	24.4	(23.8-25.1)
	2011	6675	198474.6	33.6	(32.8-34.4)	5602	201759.9	27.8	(27.0-28.5)	5211	202727.4	25.7	(25.0-26.4)
	2012	6889	193700.2	35.6	(34.7-36.4)	5843	197061.6	29.7	(28.9-30.4)	5466	198034.5	27.6	(26.9-28.3)
	2013	7041	189423.8	37.2	(36.3-38.0)	5971	192888.3	31.0	(30.2-31.8)	5622	193818.5	29.0	(28.3-29.8)
	2014	7453	187142.2	39.8	(38.9-40.7)	6407	190737.2	33.6	(32.8-34.4)	6046	191637.3	31.5	(30.8-32.4)
	2015	7881	186226	42.3	(41.4-43.3)	6863	189921.6	36.1	(35.3-37.0)	6529	190806.6	34.2	(33.4-35.1)
	2016	8609	185294.8	46.5	(45.5-47.5)	7469	189065.4	39.5	(38.6-40.4)	7105	189920.8	37.4	(36.5-38.3)
	2017	9159	183668.4	49.9	(48.9-50.9)	8007	187542.8	42.7	(41.8-43.6)	7683	188396.2	40.8	(39.9-41.7)
	2018	9636	182455.9	52.8	(51.8-53.9)	8452	186475.6	45.3	(44.4-46.3)	8133	187321.9	43.4	(42.5-44.4)
45-54	2003	5102	186180.5	27.4	(26.7-28.2)	4158	186788.1	22.3	(21.6-22.9)	3440	187296.8	18.4	(17.8-19.0)
	2004	5278	186345	28.3	(27.6-29.1)	4355	187465	23.2	(22.5-23.9)	3694	188268.2	19.6	(19.0-20.3)
	2005	5331	186594.5	28.6	(27.8-29.3)	4252	188165.1	22.6	(21.9-23.3)	3634	189148.9	19.2	(18.6-19.8)
	2006	5349	188685.6	28.3	(27.6-29.1)	4337	190706.3	22.7	(22.1-23.4)	3778	191830.4	19.7	(19.1-20.3)
	2007	5554	191135.6	29.1	(28.3-29.8)	4513	193568.5	23.3	(22.6-24.0)	3982	194826.3	20.4	(19.8-21.1)
	2008	5566	194596.7	28.6	(27.9-29.4)	4542	197357.5	23.0	(22.3-23.7)	4035	198707.3	20.3	(19.7-20.9)
	2009	5958	197697.6	30.1	(29.4-30.9)	4848	200813.7	24.1	(23.5-24.8)	4296	202230.7	21.2	(20.6-21.9)

	2010	6214	201033.7	30.9	(30.1-31.7)	5183	204521.9	25.3	(24.7-26.0)	4665	206042.4	22.6	(22.0-23.3)
	2011	6640	202430.1	32.8	(32.0-33.6)	5580	206241.8	27.1	(26.4-27.8)	5070	207795.7	24.4	(23.7-25.1)
	2012	7020	204457	34.3	(33.5-35.1)	5951	208486.9	28.5	(27.8-29.3)	5431	210076.2	25.9	(25.2-26.5)
	2013	7074	205003.8	34.5	(33.7-35.3)	5982	209168.1	28.6	(27.9-29.3)	5493	210776.8	26.1	(25.4-26.8)
	2014	7110	206076.6	34.5	(33.7-35.3)	6136	210448.9	29.2	(28.4-29.9)	5650	212047.4	26.6	(26.0-27.3)
	2015	7550	205895.4	36.7	(35.8-37.5)	6518	210401.1	31.0	(30.2-31.7)	6072	211978	28.6	(27.9-29.4)
	2016	8205	206042.6	39.8	(39.0-40.7)	7185	210720.9	34.1	(33.3-34.9)	6710	212318.6	31.6	(30.9-32.4)
	2017	8474	203493.7	41.6	(40.8-42.5)	7475	208203.9	35.9	(35.1-36.7)	7016	209757.4	33.4	(32.7-34.2)
	2018	8677	200388.9	43.3	(42.4-44.2)	7663	205112.8	37.4	(36.5-38.2)	7236	206666.9	35.0	(34.2-35.8)
55-64	2003	4203	165478.4	25.4	(24.6-26.2)	3253	166112.3	19.6	(18.9-20.3)	2555	166621.2	15.3	(14.7-15.9)
	2004	4419	167806.5	26.3	(25.6-27.1)	3418	168995.1	20.2	(19.6-20.9)	2735	169812.8	16.1	(15.5-16.7)
	2005	4360	168744.8	25.8	(25.1-26.6)	3389	170353.7	19.9	(19.2-20.6)	2739	171404.1	16.0	(15.4-16.6)
	2006	4622	170202.4	27.2	(26.4-28.0)	3637	172153.1	21.1	(20.4-21.8)	2952	173412	17.0	(16.4-17.6)
	2007	4632	170003.1	27.2	(26.5-28.0)	3630	172276.1	21.1	(20.4-21.8)	3018	173678	17.4	(16.8-18.0)
	2008	4426	170390.7	26.0	(25.2-26.8)	3498	172969.4	20.2	(19.6-20.9)	2925	174468.5	16.8	(16.2-17.4)
	2009	4567	168913	27.0	(26.3-27.8)	3579	171737	20.8	(20.2-21.5)	3064	173299.3	17.7	(17.1-18.3)
	2010	4556	169334.9	26.9	(26.1-27.7)	3705	172364.1	21.5	(20.8-22.2)	3179	173989.6	18.3	(17.6-18.9)
	2011	4538	167283.5	27.1	(26.3-27.9)	3720	170451	21.8	(21.1-22.5)	3254	172115	18.9	(18.3-19.6)
	2012	4776	164920.7	29.0	(28.1-29.8)	4034	168225.1	24.0	(23.2-24.7)	3540	169883.7	20.8	(20.2-21.5)
	2013	4804	164317.4	29.2	(28.4-30.1)	4021	167749	24.0	(23.2-24.7)	3592	169383.8	21.2	(20.5-21.9)
	2014	4818	165205.9	29.2	(28.3-30.0)	4069	168790.3	24.1	(23.4-24.9)	3657	170443.2	21.5	(20.8-22.2)
	2015	4989	167369.6	29.8	(29.0-30.6)	4239	171111.9	24.8	(24.0-25.5)	3848	172760.3	22.3	(21.6-23.0)
	2016	5396	170247.9	31.7	(30.9-32.6)	4667	174173.8	26.8	(26.0-27.6)	4306	175836.6	24.5	(23.8-25.2)
	2017	5690	173099.4	32.9	(32.0-33.7)	4976	177225.1	28.1	(27.3-28.9)	4573	178931.3	25.6	(24.8-26.3)
	2018	5939	176429	33.7	(32.8-34.5)	5220	180713.2	28.9	(28.1-29.7)	4813	182449.9	26.4	(25.6-27.1)
65-74	2003	2655	118952.8	22.3	(21.5-23.2)	1910	119458.7	16.0	(15.3-16.7)	1408	119822	11.8	(11.1-12.4)
	2004	2777	119531.1	23.2	(22.4-24.1)	2052	120391.1	17.0	(16.3-17.8)	1527	121019.3	12.6	(12.0-13.3)
	2005	2754	117960.2	23.3	(22.5-24.2)	2028	119138.7	17.0	(16.3-17.8)	1492	119937.6	12.4	(11.8-13.1)
	2006	2868	117642	24.4	(23.5-25.3)	2038	119112.3	17.1	(16.4-17.9)	1592	120048.8	13.3	(12.6-13.9)
	2007	2872	118234.2	24.3	(23.4-25.2)	2060	119947.7	17.2	(16.4-17.9)	1626	121003.8	13.4	(12.8-14.1)
	2008	2866	120195.9	23.8	(23.0-24.7)	2128	122175	17.4	(16.7-18.2)	1692	123352.1	13.7	(13.1-14.4)
	2009	2904	122276.7	23.7	(22.9-24.6)	2170	124467.5	17.4	(16.7-18.2)	1729	125780.5	13.7	(13.1-14.4)

	2010	3027	123391.9	24.5	(23.7-25.4)	2316	125836.4	18.4	(17.7-19.2)	1873	127258.3	14.7	(14.1-15.4)
	2011	3220	126901.7	25.4	(24.5-26.3)	2506	129530.6	19.3	(18.6-20.1)	2073	131036.1	15.8	(15.1-16.5)
	2012	3301	132578.6	24.9	(24.1-25.8)	2577	135462.7	19.0	(18.3-19.8)	2163	137064.6	15.8	(15.1-16.5)
	2013	3364	135592.3	24.8	(24.0-25.7)	2633	138677.1	19.0	(18.3-19.7)	2224	140339.7	15.8	(15.2-16.5)
	2014	3418	138232.3	24.7	(23.9-25.6)	2726	141443	19.3	(18.6-20.0)	2335	143188.9	16.3	(15.7-17.0)
	2015	3502	140904.8	24.9	(24.0-25.7)	2824	144206.6	19.6	(18.9-20.3)	2475	145997.6	17.0	(16.3-17.6)
	2016	3629	143824.2	25.2	(24.4-26.1)	2943	147243.5	20.0	(19.3-20.7)	2602	149031.7	17.5	(16.8-18.1)
	2017	3632	144801.7	25.1	(24.3-25.9)	3035	148286.1	20.5	(19.7-21.2)	2736	150044.2	18.2	(17.6-18.9)
	2018	3582	145700.4	24.6	(23.8-25.4)	3041	149243.8	20.4	(19.7-21.1)	2739	150999.7	18.1	(17.5-18.8)
75-84	2003	1911	80630.53	23.7	(22.6-24.8)	1358	81011.65	16.8	(15.9-17.7)	967	81276.66	11.9	(11.2-12.7)
	2004	2016	80480.54	25.0	(24.0-26.2)	1451	81110.63	17.9	(17.0-18.8)	1068	81572.3	13.1	(12.3-13.9)
	2005	2002	78780.58	25.4	(24.3-26.6)	1411	79620.91	17.7	(16.8-18.7)	1044	80217.28	13.0	(12.2-13.8)
	2006	1953	78078.39	25.0	(23.9-26.1)	1394	79096.85	17.6	(16.7-18.6)	1072	79780.05	13.4	(12.6-14.3)
	2007	1983	77927.77	25.4	(24.3-26.6)	1421	79123.87	18.0	(17.0-18.9)	1101	79880.75	13.8	(13.0-14.6)
	2008	1968	77970.24	25.2	(24.1-26.4)	1403	79356.49	17.7	(16.8-18.6)	1085	80190.4	13.5	(12.7-14.4)
	2009	2007	78223.24	25.7	(24.5-26.8)	1492	79741.96	18.7	(17.8-19.7)	1186	80631.59	14.7	(13.9-15.6)
	2010	2027	78748.9	25.7	(24.6-26.9)	1503	80358.31	18.7	(17.8-19.7)	1224	81267.05	15.1	(14.2-15.9)
	2011	2049	79470	25.8	(24.7-26.9)	1553	81219.58	19.1	(18.2-20.1)	1291	82197.94	15.7	(14.9-16.6)
	2012	2072	80921.14	25.6	(24.5-26.7)	1567	82729.27	18.9	(18.0-19.9)	1297	83749.21	15.5	(14.7-16.4)
	2013	2103	81899.96	25.7	(24.6-26.8)	1640	83778.24	19.6	(18.6-20.5)	1385	84845.86	16.3	(15.5-17.2)
	2014	2067	83103.55	24.9	(23.8-26.0)	1614	85077.6	19.0	(18.1-19.9)	1369	86162.95	15.9	(15.1-16.8)
	2015	2152	83363.85	25.8	(24.7-26.9)	1656	85415.9	19.4	(18.5-20.3)	1435	86481.47	16.6	(15.7-17.5)
	2016	2184	83803.19	26.1	(25.0-27.2)	1757	85923.48	20.4	(19.5-21.4)	1546	86998.92	17.8	(16.9-18.7)
	2017	2228	85307.35	26.1	(25.0-27.2)	1756	87470.28	20.1	(19.1-21.0)	1558	88609.74	17.6	(16.7-18.5)
	2018	2228	87539.92	25.5	(24.4-26.5)	1835	89778.81	20.4	(19.5-21.4)	1630	90946.91	17.9	(17.1-18.8)
85+	2003	519	27642.65	18.8	(17.2-20.5)	342	27770	12.3	(11.0-13.7)	254	27828.2	9.1	(8.0-10.3)
	2004	616	27634.3	22.3	(20.6-24.1)	403	27860.59	14.5	(13.1-15.9)	315	27962.68	11.3	(10.1-12.6)
	2005	699	28567.51	24.5	(22.7-26.4)	462	28881.21	16.0	(14.6-17.5)	361	29036.36	12.4	(11.2-13.8)
	2006	723	29819.43	24.2	(22.5-26.1)	497	30220.67	16.4	(15.0-18.0)	380	30430.9	12.5	(11.3-13.8)
	2007	765	30370.79	25.2	(23.4-27.0)	542	30850.46	17.6	(16.1-19.1)	419	31105.15	13.5	(12.2-14.8)
	2008	730	31131.98	23.4	(21.8-25.2)	535	31648.62	16.9	(15.5-18.4)	423	31948.52	13.2	(12.0-14.6)
	2009	740	31440.32	23.5	(21.9-25.3)	523	32014.25	16.3	(15.0-17.8)	420	32346.92	13.0	(11.8-14.3)

	2010	726	32332.3	22.5	(20.9-24.1)	516	32969.78	15.7	(14.3-17.1)	432	33346.67	13.0	(11.8-14.2)
	2011	727	33057.76	22.0	(20.4-23.7)	542	33731.52	16.1	(14.7-17.5)	461	34112.43	13.5	(12.3-14.8)
	2012	792	33596.35	23.6	(22.0-25.3)	582	34346.73	16.9	(15.6-18.4)	490	34740.45	14.1	(12.9-15.4)
	2013	765	33964.14	22.5	(21.0-24.2)	597	34742.75	17.2	(15.8-18.6)	492	35168.58	14.0	(12.8-15.3)
	2014	811	34634.47	23.4	(21.8-25.1)	623	35439.16	17.6	(16.2-19.0)	532	35883.68	14.8	(13.6-16.1)
	2015	791	35130.62	22.5	(21.0-24.1)	624	35975.09	17.3	(16.0-18.8)	527	36436.5	14.5	(13.3-15.8)
	2016	857	35845.06	23.9	(22.3-25.6)	673	36723.46	18.3	(17.0-19.8)	596	37197.75	16.0	(14.8-17.4)
	2017	856	36527.53	23.4	(21.9-25.1)	670	37477.82	17.9	(16.5-19.3)	586	37937.77	15.4	(14.2-16.7)
	2018	790	37456.15	21.1	(19.6-22.6)	634	38412.4	16.5	(15.2-17.8)	567	38860.82	14.6	(13.4-15.8)
** N = Number of prescriptions*													

A.26 Prevalence rate of benzodiazepine and beta-blocker prescriptions – per 1000 person years by age

Table 46 Prevalence rate of benzodiazepine and beta-blocker (propranolol) prescriptions – per 1000 person years by age

Variable		Benzodiazepines				Beta-blockers (propranolol)			
Age band	Year	N*	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
<25	2003	532	107592.5	4.9	(4.5-5.4)	337	107677.1	3.1	(2.8-3.5)
	2004	539	108825.2	5.0	(4.5-5.4)	383	109004.3	3.5	(3.2-3.9)
	2005	559	108830.6	5.1	(4.7-5.6)	398	109013.2	3.7	(3.3-4.0)
	2006	552	110470.3	5.0	(4.6-5.4)	419	110626.1	3.8	(3.4-4.2)
	2007	604	111892.1	5.4	(5.0-5.8)	417	112073.1	3.7	(3.4-4.1)
	2008	578	114464.8	5.0	(4.6-5.5)	454	114630.7	4.0	(3.6-4.3)
	2009	573	115548.8	5.0	(4.6-5.4)	477	115670.9	4.1	(3.8-4.5)
	2010	631	116610.2	5.4	(5.0-5.9)	574	116663	4.9	(4.5-5.3)
	2011	679	117123.8	5.8	(5.4-6.3)	616	117142.3	5.3	(4.9-5.7)
	2012	747	118417.3	6.3	(5.9-6.8)	718	118408	6.1	(5.6-6.5)
	2013	730	118512	6.2	(5.7-6.6)	906	118371.6	7.7	(7.2-8.2)
	2014	794	118711.4	6.7	(6.2-7.2)	1035	118433.6	8.7	(8.2-9.3)
	2015	843	118300.6	7.1	(6.7-7.6)	1226	117788.2	10.4	(9.8-11.0)
	2016	942	117950.4	8.0	(7.5-8.5)	1453	117195.3	12.4	(11.8-13.1)
	2017	898	117326.9	7.7	(7.2-8.2)	1530	116304.1	13.2	(12.5-13.8)
	2018	902	116813.5	7.7	(7.2-8.2)	1755	115530.6	15.2	(14.5-15.9)
25-34	2003	1571	188209.4	8.3	(7.9-8.8)	831	188640.4	4.4	(4.1-4.7)
	2004	1536	187212.8	8.2	(7.8-8.6)	827	188047.4	4.4	(4.1-4.7)
	2005	1572	185346.9	8.5	(8.1-8.9)	862	186396.4	4.6	(4.3-4.9)
	2006	1602	184466.9	8.7	(8.3-9.1)	825	185753.5	4.4	(4.1-4.8)
	2007	1646	183798.2	9.0	(8.5-9.4)	844	185223.2	4.6	(4.3-4.9)
	2008	1654	184413.2	9.0	(8.5-9.4)	891	185959.6	4.8	(4.5-5.1)
	2009	1800	185456.6	9.7	(9.3-10.2)	1032	187128.3	5.5	(5.2-5.9)
	2010	1809	187300.3	9.7	(9.2-10.1)	1098	189072.1	5.8	(5.5-6.2)
	2011	1945	189499.8	10.3	(9.8-10.7)	1284	191284.3	6.7	(6.4-7.1)
	2012	2030	192995.5	10.5	(10.1-11.0)	1464	194654.3	7.5	(7.1-7.9)
	2013	2080	194551.3	10.7	(10.2-11.2)	1749	195938.6	8.9	(8.5-9.4)
	2014	2271	195793.5	11.6	(11.1-12.1)	1931	196929.7	9.8	(9.4-10.3)
	2015	2430	197350.3	12.3	(11.8-12.8)	2214	198237.8	11.2	(10.7-11.6)
	2016	2701	198738.4	13.6	(13.1-14.1)	2489	199355.1	12.5	(12.0-13.0)
	2017	2627	199242.6	13.2	(12.7-13.7)	2781	199409.1	13.9	(13.4-14.5)
	2018	2695	199815.3	13.5	(13.0-14.0)	2987	199493.1	15.0	(14.4-15.5)
35-44	2003	2353	225164.1	10.5	(10.0-10.9)	1024	225940.4	4.5	(4.3-4.8)
	2004	2421	227918.4	10.6	(10.2-11.1)	1130	229543.7	4.9	(4.6-5.2)
	2005	2481	227161.3	10.9	(10.5-11.4)	1097	229356.6	4.8	(4.5-5.1)
	2006	2490	227143.2	11.0	(10.5-11.4)	1103	229860.9	4.8	(4.5-5.1)
	2007	2491	225433.9	11.0	(10.6-11.5)	1112	228585.3	4.9	(4.6-5.2)
	2008	2437	223219.9	10.9	(10.5-11.4)	1068	226738.3	4.7	(4.4-5.0)
	2009	2563	218765.7	11.7	(11.3-12.2)	1175	222443.6	5.3	(5.0-5.6)
	2010	2504	214216	11.7	(11.2-12.2)	1259	218042.8	5.8	(5.5-6.1)

	2011	2591	209467.7	12.4	(11.9-12.9)	1348	213319	6.3	(6.0-6.7)
	2012	2525	205235.4	12.3	(11.8-12.8)	1490	209110	7.1	(6.8-7.5)
	2013	2524	201502.2	12.5	(12.0-13.0)	1539	205301.7	7.5	(7.1-7.9)
	2014	2618	199799.4	13.1	(12.6-13.6)	1705	203578.9	8.4	(8-8.8)
	2015	2558	199754.8	12.8	(12.3-13.3)	1771	203313.7	8.7	(8.3-9.1)
	2016	2766	199697.9	13.9	(13.3-14.4)	2029	203092.5	10.0	(9.6-10.4)
	2017	2658	199097.1	13.4	(12.8-13.9)	2193	202249.7	10.8	(10.4-11.3)
	2018	2702	199226.5	13.6	(13.1-14.1)	2384	201935.9	11.8	(11.3-12.3)
45-54	2003	2085	188262.4	11.1	(10.6-11.6)	769	189076.6	4.1	(3.8-4.4)
	2004	2233	190037.5	11.8	(11.3-12.2)	836	191673.4	4.4	(4.1-4.7)
	2005	2315	191530.3	12.1	(11.6-12.6)	878	193858.6	4.5	(4.2-4.8)
	2006	2298	194720.5	11.8	(11.3-12.3)	902	197660.6	4.6	(4.3-4.9)
	2007	2446	198268.2	12.3	(11.9-12.8)	894	201793.1	4.4	(4.1-4.7)
	2008	2447	202810.2	12.1	(11.6-12.6)	954	206863.9	4.6	(4.3-4.9)
	2009	2592	207012.3	12.5	(12.0-13.0)	1051	211645.5	5.0	(4.7-5.3)
	2010	2567	211466	12.1	(11.7-12.6)	1123	216645.9	5.2	(4.9-5.5)
	2011	2760	213953.3	12.9	(12.4-13.4)	1201	219542.9	5.5	(5.2-5.8)
	2012	2892	217064.8	13.3	(12.8-13.8)	1324	223058.4	5.9	(5.6-6.3)
	2013	2842	218572	13.0	(12.5-13.5)	1378	224838.2	6.1	(5.8-6.5)
	2014	2725	220599.2	12.4	(11.9-12.8)	1502	226955.7	6.6	(6.3-7.0)
	2015	2736	221359.9	12.4	(11.9-12.8)	1584	227832.6	7.0	(6.6-7.3)
	2016	2823	222727.6	12.7	(12.2-13.2)	1685	229131.6	7.4	(7.0-7.7)
	2017	2779	221140.7	12.6	(12.1-13.0)	1820	227349.6	8.0	(7.6-8.4)
	2018	2635	219055.2	12.0	(11.6-12.5)	1860	224924.5	8.3	(7.9-8.7)
55-64	2003	2010	167059	12.0	(11.5-12.6)	535	167961.7	3.2	(2.9-3.5)
	2004	2116	170590.6	12.4	(11.9-12.9)	621	172423.6	3.6	(3.3-3.9)
	2005	2181	172452.4	12.6	(12.1-13.2)	575	175080.2	3.3	(3.0-3.6)
	2006	2282	174797	13.1	(12.5-13.6)	618	178129.6	3.5	(3.2-3.8)
	2007	2287	175446.2	13.0	(12.5-13.6)	600	179368.2	3.3	(3.1-3.6)
	2008	2155	176590.1	12.2	(11.7-12.7)	629	181073.8	3.5	(3.2-3.8)
	2009	2224	175769.5	12.7	(12.1-13.2)	655	180673.5	3.6	(3.4-3.9)
	2010	2136	176958.3	12.1	(11.6-12.6)	682	182237	3.7	(3.5-4.0)
	2011	2049	175566.1	11.7	(11.2-12.2)	688	181042.7	3.8	(3.5-4.1)
	2012	2079	173844.4	12.0	(11.5-12.5)	749	179458.1	4.2	(3.9-4.5)
	2013	2027	173975.6	11.7	(11.1-12.2)	769	179768.4	4.3	(4.0-4.6)
	2014	1987	175681.6	11.3	(10.8-11.8)	827	181719.4	4.6	(4.2-4.9)
	2015	1908	178586.5	10.7	(10.2-11.2)	844	184830.1	4.6	(4.3-4.9)
	2016	2004	182484.9	11.0	(10.5-11.5)	892	188988.2	4.7	(4.4-5.0)
	2017	2043	186493.6	11.0	(10.5-11.4)	966	193214.5	5.0	(4.7-5.3)
	2018	2028	190931.1	10.6	(10.2-11.1)	1055	197897.6	5.3	(5.0-5.7)
65-74	2003	1555	119755.9	13.0	(12.3-13.6)	239	120585.5	2.0	(1.7-2.2)
	2004	1647	120879.9	13.6	(13.0-14.3)	254	122479.8	2.1	(1.8-2.3)
	2005	1620	119776.1	13.5	(12.9-14.2)	248	121986.1	2.0	(1.8-2.3)
	2006	1724	119848	14.4	(13.7-15.1)	256	122645.7	2.1	(1.8-2.4)
	2007	1702	120858.5	14.1	(13.4-14.8)	253	124213.7	2.0	(1.8-2.3)
	2008	1661	123302.4	13.5	(12.8-14.1)	266	127170.9	2.1	(1.8-2.4)
	2009	1655	125903.9	13.1	(12.5-13.8)	288	130264.1	2.2	(2.0-2.5)
	2010	1711	127508.7	13.4	(12.8-14.1)	314	132292.3	2.4	(2.1-2.7)
	2011	1738	131601.6	13.2	(12.6-13.8)	361	136850.3	2.6	(2.4-2.9)

	2012	1701	138080.4	12.3	(11.7-12.9)	407	143801.8	2.8	(2.6-3.1)
	2013	1734	141702.9	12.2	(11.7-12.8)	407	147765.9	2.8	(2.5-3.0)
	2014	1710	144937.5	11.8	(11.2-12.4)	448	151212	3.0	(2.7-3.3)
	2015	1684	148260	11.4	(10.8-11.9)	450	154775.2	2.9	(2.6-3.2)
	2016	1685	151871.1	11.1	(10.6-11.6)	430	158481.8	2.7	(2.5-3.0)
	2017	1598	153466.5	10.4	(9.9-10.9)	463	160164.1	2.9	(2.6-3.2)
	2018	1452	155073.8	9.4	(8.9-9.9)	493	161771.8	3.0	(2.8-3.3)
75-84	2003	1160	81148.47	14.3	(13.5-15.1)	110	81814.38	1.3	(1.1-1.6)
	2004	1232	81426.26	15.1	(14.3-16.0)	121	82670.05	1.5	(1.2-1.7)
	2005	1247	79997.58	15.6	(14.7-16.5)	121	81707.28	1.5	(1.2-1.8)
	2006	1221	79508.2	15.4	(14.5-16.2)	112	81620.93	1.4	(1.1-1.7)
	2007	1240	79568.16	15.6	(14.7-16.5)	110	82090.68	1.3	(1.1-1.6)
	2008	1223	79788.5	15.3	(14.5-16.2)	134	82694.66	1.6	(1.4-1.9)
	2009	1199	80222.25	14.9	(14.1-15.8)	129	83414.55	1.5	(1.3-1.8)
	2010	1199	80966.55	14.8	(14.0-15.7)	128	84418.78	1.5	(1.3-1.8)
	2011	1143	81936.99	13.9	(13.2-14.8)	145	85703.29	1.7	(1.4-2.0)
	2012	1170	83561.96	14.0	(13.2-14.8)	152	87615.97	1.7	(1.5-2.0)
	2013	1143	84800.82	13.5	(12.7-14.3)	182	89030.88	2.0	(1.8-2.4)
	2014	1146	86175.33	13.3	(12.5-14.1)	178	90590.56	2.0	(1.7-2.3)
	2015	1134	86638.37	13.1	(12.3-13.9)	179	91164.26	2.0	(1.7-2.3)
	2016	1084	87387.09	12.4	(11.7-13.2)	186	92163.87	2.0	(1.7-2.3)
	2017	1107	89198.1	12.4	(11.7-13.2)	195	94099.08	2.1	(1.8-2.4)
	2018	1037	91797.15	11.3	(10.6-12.0)	193	96842.39	2.0	(1.7-2.3)
85+	2003	341	27765.07	12.3	(11.0-13.7)	22	27971.65	0.8	(0.5-1.2)
	2004	431	27852.72	15.5	(14.0-17.0)	19	28273.82	0.7	(0.4-1.0)
	2005	451	28897.63	15.6	(14.2-17.1)	18	29535.13	0.6	(0.4-1.0)
	2006	461	30249.06	15.2	(13.9-16.7)	30	31087.38	1.0	(0.7-1.4)
	2007	494	30892.96	16.0	(14.6-17.5)	32	31918.72	1.0	(0.7-1.4)
	2008	462	31735.51	14.6	(13.3-15.9)	21	32915.3	0.6	(0.4-1.0)
	2009	469	32139.85	14.6	(13.3-16.0)	31	33455.55	0.9	(0.6-1.3)
	2010	451	33100.44	13.6	(12.4-14.9)	39	34584.21	1.1	(0.8-1.5)
	2011	441	33922.3	13.0	(11.8-14.3)	24	35490.44	0.7	(0.4-1.0)
	2012	448	34583.22	13.0	(11.8-14.2)	37	36220.16	1.0	(0.7-1.4)
	2013	418	35053.93	11.9	(10.8-13.1)	32	36785.7	0.9	(0.6-1.2)
	2014	458	35849.9	12.8	(11.6-14.0)	31	37700.1	0.8	(0.6-1.2)
	2015	440	36427.84	12.1	(11.0-13.3)	28	38379.55	0.7	(0.5-1.1)
	2016	437	37233.78	11.7	(10.7-12.9)	43	39278.32	1.1	(0.8-1.5)
	2017	435	38006.1	11.4	(10.4-12.6)	47	40156.7	1.2	(0.9-1.6)
	2018	399	38942.5	10.2	(9.3-11.3)	40	41137.75	1.0	(0.7-1.3)

** N = Number of prescriptions*

A.27 Prevalence rate of antipsychotic and anticonvulsant prescriptions – per 1000 person years by age

Table 47 Prevalence rate of antipsychotic and anticonvulsant prescriptions – per 1000 person years by age

Variable		Antipsychotics				Anticonvulsants			
Age band	Year	N *	PYAR	Prevalence (1000PYAR)	(95%CI)	N*	PYAR	Prevalence (1000PYAR)	(95%CI)
<25	2003	56	107840.4	0.5	(0.4-0.7)	4	107869.6	0.0	(0.0-0.1)
	2004	81	109343.1	0.7	(0.6-0.9)	7	109410.8	0.1	(0.0-0.1)
	2005	76	109521.1	0.7	(0.5-0.9)	5	109604.7	0.0	(0.0-0.1)
	2006	66	111262.8	0.6	(0.5-0.8)	4	111363.6	0.0	(0.0-0.1)
	2007	58	112795.4	0.5	(0.4-0.7)	11	112893.7	0.1	(0.0-0.2)
	2008	68	115440.2	0.6	(0.5-0.7)	14	115539.3	0.1	(0.1-0.2)
	2009	86	116505.2	0.7	(0.6-0.9)	14	116613.1	0.1	(0.1-0.2)
	2010	103	117576.3	0.9	(0.7-1.1)	26	117691.1	0.2	(0.1-0.3)
	2011	117	118135.6	1.0	(0.8-1.2)	43	118241	0.4	(0.3-0.5)
	2012	115	119500.5	1.0	(0.8-1.2)	41	119604.9	0.3	(0.2-0.5)
	2013	137	119579.7	1.1	(1.0-1.4)	65	119684	0.5	(0.4-0.7)
	2014	162	119817.1	1.4	(1.2-1.6)	90	119934	0.8	(0.6-0.9)
	2015	186	119433.7	1.6	(1.3-1.8)	133	119546.4	1.1	(0.9-1.3)
	2016	231	119144.6	1.9	(1.7-2.2)	157	119264.8	1.3	(1.1-1.5)
	2017	277	118517.2	2.3	(2.1-2.6)	162	118647.4	1.4	(1.2-1.6)
	2018	289	117983.6	2.4	(2.2-2.7)	144	118153.6	1.2	(1.0-1.4)
25-34	2003	171	188998.7	0.9	(0.8-1.1)	17	189091.9	0.1	(0.1-0.1)
	2004	170	188903.1	0.9	(0.8-1.0)	25	189075.9	0.1	(0.1-0.2)
	2005	181	187687.4	1.0	(0.8-1.1)	25	187922.4	0.1	(0.1-0.2)
	2006	186	187387.4	1.0	(0.9-1.1)	41	187676.1	0.2	(0.2-0.3)
	2007	190	187157.8	1.0	(0.9-1.2)	45	187476.8	0.2	(0.2-0.3)

	2008	204	188199.9	1.1	(0.9-1.2)	64	188545.8	0.3	(0.3-0.4)
	2009	226	189673.2	1.2	(1.0-1.4)	85	190026.7	0.4	(0.4-0.6)
	2010	262	191950.8	1.4	(1.2-1.5)	137	192333.4	0.7	(0.6-0.8)
	2011	299	194555.6	1.5	(1.4-1.7)	177	194929.2	0.9	(0.8-1.1)
	2012	321	198410.2	1.6	(1.4-1.8)	229	198790.2	1.2	(1.0-1.3)
	2013	349	200246.1	1.7	(1.6-1.9)	305	200591.4	1.5	(1.4-1.7)
	2014	369	201741.5	1.8	(1.6-2.0)	369	202037.3	1.8	(1.6-2.0)
	2015	437	203632.9	2.1	(1.9-2.4)	459	203860.7	2.3	(2.1-2.5)
	2016	492	205443.5	2.4	(2.2-2.6)	570	205587.9	2.8	(2.5-3.0)
	2017	565	206228	2.7	(2.5-3.0)	593	206347	2.9	(2.6-3.1)
	2018	600	206978.1	2.9	(2.7-3.1)	591	207107.3	2.9	(2.6-3.1)
35-44	2003	188	226410.6	0.8	(0.7-1.0)	52	226497.1	0.2	(0.2-0.3)
	2004	216	230687.6	0.9	(0.8-1.1)	46	230874.9	0.2	(0.1-0.3)
	2005	229	231079.3	1.0	(0.9-1.1)	66	231328.8	0.3	(0.2-0.4)
	2006	222	232115.8	1.0	(0.8-1.1)	104	232398.1	0.4	(0.4-0.5)
	2007	239	231274.8	1.0	(0.9-1.2)	116	231607.2	0.5	(0.4-0.6)
	2008	276	229761.1	1.2	(1.1-1.4)	159	230106.3	0.7	(0.6-0.8)
	2009	297	225893.2	1.3	(1.2-1.5)	215	226204.2	1.0	(0.8-1.1)
	2010	326	221829.9	1.5	(1.3-1.6)	260	222126.2	1.2	(1.0-1.3)
	2011	352	217467.3	1.6	(1.5-1.8)	312	217706	1.4	(1.3-1.6)
	2012	381	213625.2	1.8	(1.6-2.0)	370	213832.8	1.7	(1.6-1.9)
	2013	409	210076.1	1.9	(1.8-2.1)	419	210255.3	2.0	(1.8-2.2)
	2014	385	208801.7	1.8	(1.7-2.0)	537	208881.8	2.6	(2.4-2.8)
	2015	433	209026.9	2.1	(1.9-2.3)	570	209028.4	2.7	(2.5-3.0)
	2016	553	209303.4	2.6	(2.4-2.9)	695	209232.1	3.3	(3.1-3.6)
	2017	561	209015.3	2.7	(2.5-2.9)	817	208782	3.9	(3.6-4.2)

	2018	573	209472.4	2.7	(2.5-3.0)	810	209110.5	3.9	(3.6-4.1)
45-54	2003	141	189452.7	0.7	(0.6-0.9)	45	189510.2	0.2	(0.2-0.3)
	2004	162	192528.7	0.8	(0.7-1.0)	67	192653.1	0.3	(0.3-0.4)
	2005	199	195196.3	1.0	(0.9-1.2)	85	195373.5	0.4	(0.3-0.5)
	2006	231	199441.4	1.2	(1.0-1.3)	120	199663.7	0.6	(0.5-0.7)
	2007	248	203986.7	1.2	(1.1-1.4)	154	204235.7	0.8	(0.6-0.9)
	2008	255	209560.8	1.2	(1.1-1.4)	206	209789.1	1.0	(0.9-1.1)
	2009	291	214771.1	1.4	(1.2-1.5)	267	215033.4	1.2	(1.1-1.4)
	2010	335	220303.8	1.5	(1.4-1.7)	352	220541.9	1.6	(1.4-1.8)
	2011	377	223698	1.7	(1.5-1.9)	418	223865.6	1.9	(1.7-2.1)
	2012	430	227723.6	1.9	(1.7-2.1)	502	227766.3	2.2	(2.0-2.4)
	2013	450	230059.9	2.0	(1.8-2.1)	559	229989.5	2.4	(2.2-2.6)
	2014	456	232720.8	2.0	(1.8-2.1)	612	232529.9	2.6	(2.4-2.8)
	2015	442	234131.4	1.9	(1.7-2.1)	746	233733.5	3.2	(3.0-3.4)
	2016	495	236049.3	2.1	(1.9-2.3)	845	235441.9	3.6	(3.4-3.8)
	2017	544	234735.9	2.3	(2.1-2.5)	871	234022.7	3.7	(3.5-4.0)
	2018	549	232794.6	2.4	(2.2-2.6)	917	231920.4	4.0	(3.7-4.2)
55-64	2003	139	168198.3	0.8	(0.7-1.0)	51	168260.3	0.3	(0.2-0.4)
	2004	139	173030.7	0.8	(0.7-0.9)	63	173129.6	0.4	(0.3-0.5)
	2005	160	175979.1	0.9	(0.8-1.1)	88	176109.3	0.5	(0.4-0.6)
	2006	192	179340.1	1.1	(0.9-1.2)	123	179479.5	0.7	(0.6-0.8)
	2007	181	180873.2	1.0	(0.9-1.2)	148	181007.7	0.8	(0.7-1.0)
	2008	187	182840.7	1.0	(0.9-1.2)	163	182985	0.9	(0.8-1.0)
	2009	192	182777.2	1.1	(0.9-1.2)	241	182839.6	1.3	(1.2-1.5)
	2010	215	184653.6	1.2	(1.0-1.3)	283	184643.8	1.5	(1.4-1.7)
	2011	224	183773.6	1.2	(1.1-1.4)	333	183687.2	1.8	(1.6-2.0)

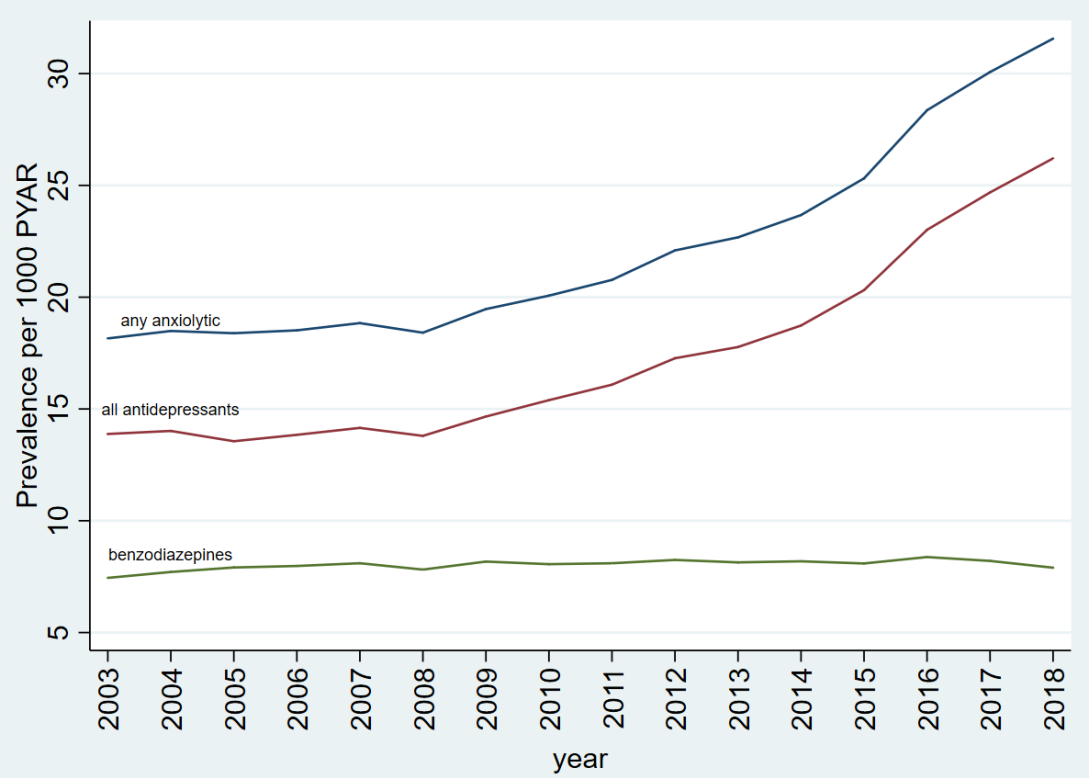
	2012	261	182510	1.4	(1.3-1.6)	367	182364.3	2.0	(1.8-2.2)
	2013	262	183095	1.4	(1.3-1.6)	412	182869.1	2.3	(2.0-2.5)
	2014	281	185416.6	1.5	(1.3-1.7)	453	185087.2	2.4	(2.2-2.7)
	2015	270	188935.9	1.4	(1.3-1.6)	479	188498.1	2.5	(2.3-2.8)
	2016	310	193524	1.6	(1.4-1.8)	611	192913.6	3.2	(2.9-3.4)
	2017	331	198256.6	1.7	(1.5-1.9)	684	197422.2	3.5	(3.2-3.7)
	2018	385	203421.7	1.9	(1.7-2.1)	701	202408.3	3.5	(3.2-3.7)
65-74	2003	115	120668.2	1.0	(0.8-1.1)	36	120718.6	0.3	(0.2-0.4)
	2004	110	122668.1	0.9	(0.7-1.1)	42	122756.3	0.3	(0.2-0.5)
	2005	90	122313.3	0.7	(0.6-0.9)	51	122411.3	0.4	(0.3-0.5)
	2006	112	123092.5	0.9	(0.7-1.1)	63	123208.5	0.5	(0.4-0.7)
	2007	103	124793.3	0.8	(0.7-1.0)	73	124903.2	0.6	(0.5-0.7)
	2008	120	127913.6	0.9	(0.8-1.1)	99	127995.3	0.8	(0.6-0.9)
	2009	105	131159.5	0.8	(0.7-1.0)	156	131201.9	1.2	(1.0-1.4)
	2010	111	133394.6	0.8	(0.7-1.0)	206	133378.4	1.5	(1.3-1.8)
	2011	139	138190	1.0	(0.8-1.2)	246	138094.5	1.8	(1.6-2.0)
	2012	140	145406	1.0	(0.8-1.1)	250	145228.2	1.7	(1.5-1.9)
	2013	146	149632.5	1.0	(0.8-1.1)	303	149364.8	2.0	(1.8-2.3)
	2014	163	153370.4	1.1	(0.9-1.2)	344	153001.2	2.2	(2.0-2.5)
	2015	159	157208.4	1.0	(0.9-1.2)	405	156709	2.6	(2.3-2.8)
	2016	144	161224.5	0.9	(0.8-1.1)	398	160580.2	2.5	(2.2-2.7)
	2017	167	163155	1.0	(0.9-1.2)	425	162368.8	2.6	(2.4-2.9)
	2018	173	165060.5	1.0	(0.9-1.2)	412	164150.1	2.5	(2.3-2.8)
75-84	2003	103	81824.52	1.3	(1.0-1.5)	26	81873.04	0.3	(0.2-0.5)
	2004	108	82715.41	1.3	(1.1-1.6)	37	82795.4	0.4	(0.3-0.6)
	2005	105	81808.11	1.3	(1.0-1.6)	51	81892.98	0.6	(0.5-0.8)

	2006	77	81769.36	0.9	(0.7-1.2)	62	81833.18	0.8	(0.6-1.0)
	2007	97	82285.06	1.2	(1.0-1.4)	68	82341.2	0.8	(0.6-1.0)
	2008	89	82942.09	1.1	(0.9-1.3)	67	83008.74	0.8	(0.6-1.0)
	2009	93	83724.48	1.1	(0.9-1.4)	97	83779.66	1.2	(0.9-1.4)
	2010	104	84796.55	1.2	(1.0-1.5)	115	84794.29	1.4	(1.1-1.6)
	2011	99	86156.17	1.1	(0.9-1.4)	143	86094.9	1.7	(1.4-2.0)
	2012	107	88144.55	1.2	(1.0-1.5)	157	88031.85	1.8	(1.5-2.1)
	2013	90	89643.08	1.0	(0.8-1.2)	195	89456.77	2.2	(1.9-2.5)
	2014	98	91317.46	1.1	(0.9-1.3)	219	91045.53	2.4	(2.1-2.7)
	2015	100	91975.53	1.1	(0.9-1.3)	245	91643.41	2.7	(2.3-3.0)
	2016	117	93063.08	1.3	(1.0-1.5)	248	92667.79	2.7	(2.4-3.0)
	2017	123	95111.62	1.3	(1.1-1.5)	253	94660.24	2.7	(2.4-3.0)
	2018	121	98014.67	1.2	(1.0-1.5)	256	97479.38	2.6	(2.3-3.0)
85+	2003	53	27953.13	1.9	(1.4-2.5)	4	27985.6	0.1	(0.0-0.4)
	2004	54	28244.59	1.9	(1.4-2.5)	7	28295.62	0.2	(0.1-0.5)
	2005	38	29516.32	1.3	(0.9-1.8)	11	29569.49	0.4	(0.2-0.7)
	2006	47	31072.57	1.5	(1.1-2.0)	14	31137.37	0.4	(0.2-0.8)
	2007	34	31917.01	1.1	(0.7-1.5)	27	31971.38	0.8	(0.6-1.2)
	2008	32	32927.7	1.0	(0.7-1.4)	33	32959.66	1.0	(0.7-1.4)
	2009	43	33489.2	1.3	(0.9-1.7)	26	33510.02	0.8	(0.5-1.1)
	2010	43	34637.53	1.2	(0.9-1.7)	32	34656.28	0.9	(0.6-1.3)
	2011	35	35565.47	1.0	(0.7-1.4)	22	35582.48	0.6	(0.4-0.9)
	2012	41	36340.19	1.1	(0.8-1.5)	52	36337.99	1.4	(1.1-1.9)
	2013	40	36937.49	1.1	(0.8-1.5)	57	36894.79	1.5	(1.2-2.0)
	2014	50	37874.79	1.3	(1.0-1.7)	67	37809.46	1.8	(1.4-2.3)
	2015	56	38575.25	1.5	(1.1-1.9)	71	38487.69	1.8	(1.4-2.3)

	2016	59	39490	1.5	(1.1-1.9)	86	39380.25	2.2	(1.7-2.7)
	2017	64	40410.48	1.6	(1.2-2.0)	83	40283.75	2.1	(1.6-2.6)
	2018	66	41412.41	1.6	(1.2-2.0)	95	41246.21	2.3	(1.9-2.8)
** N = Number of prescriptions*									

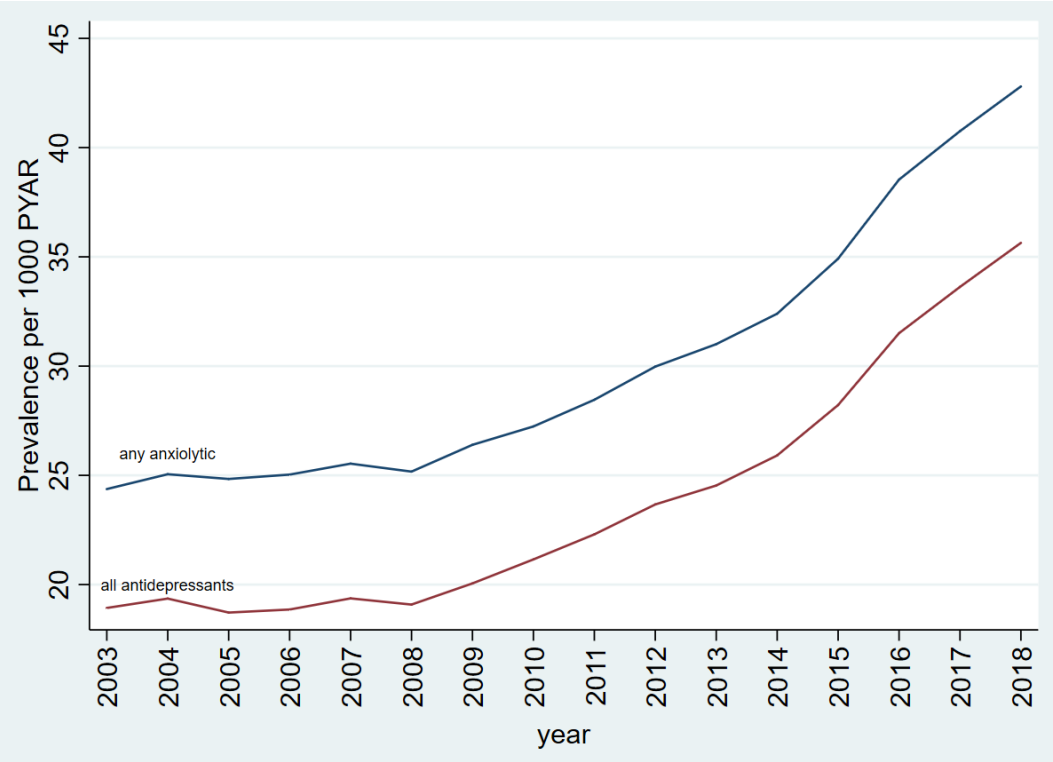
A.28 Prevalence of anxiolytic prescriptions (any anxiolytic, all antidepressants, and benzodiazepines) per 1000 person years between 2003 and 2018 - restricted time frame sensitivity analysis

Figure 62 Prevalence of anxiolytic prescriptions (any anxiolytic, all antidepressants, and benzodiazepines) per 1000 person years between 2003 and 2018 - restricted time frame sensitivity analysis



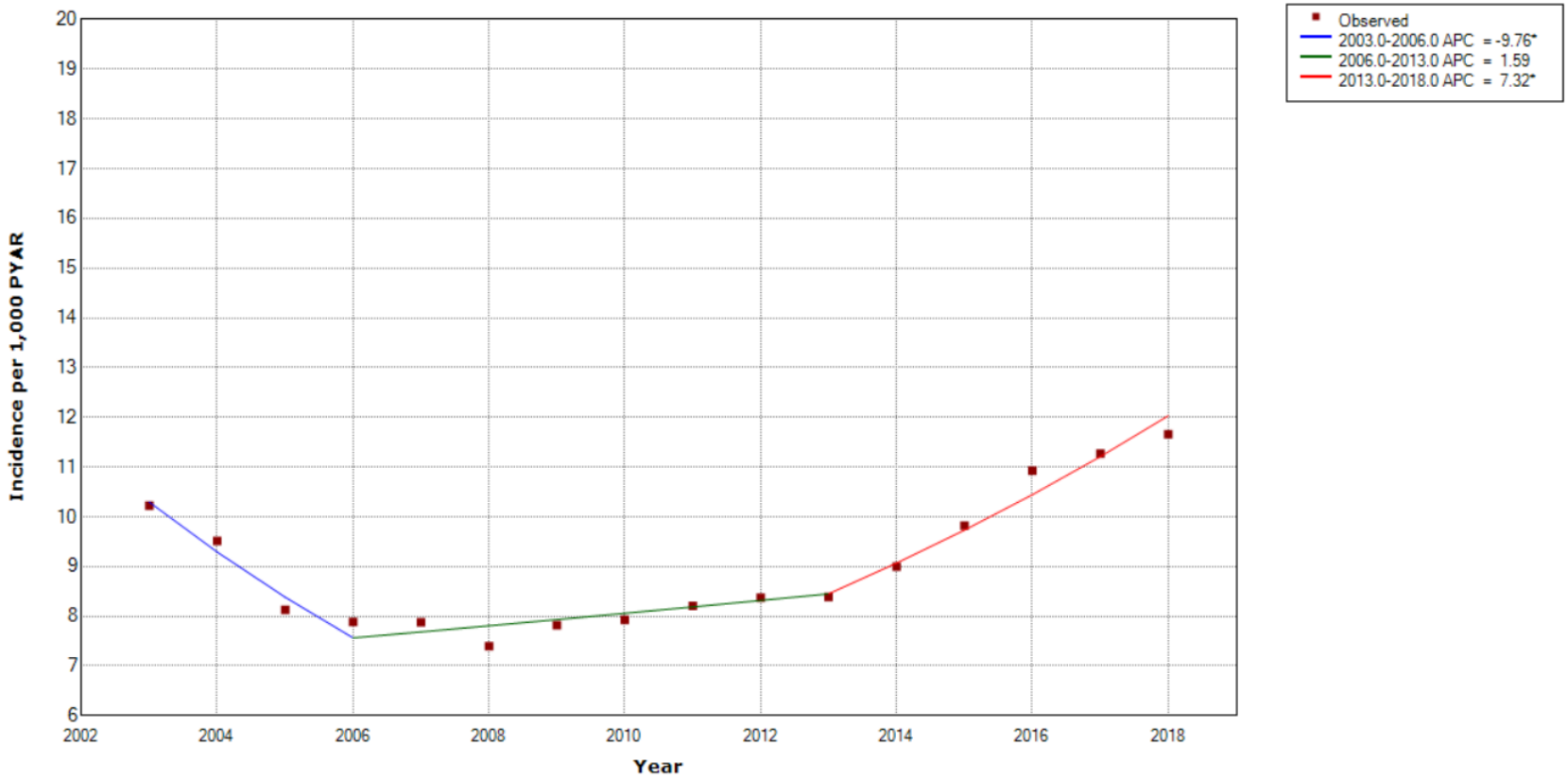
A.29 Prevalence of anxiolytic prescriptions (any anxiolytic and all antidepressants) per 1000 person years between 2003 and 2018 – excluded low dose amitriptyline sensitivity analysis

Figure 63 Prevalence of anxiolytic prescriptions (any anxiolytic and all antidepressants) per 1000 person years between 2003 and 2018 – excluded low dose amitriptyline sensitivity analysis



A.30 Best fitting join point model of the incidence of prescriptions of all antidepressants per 1000 person-years

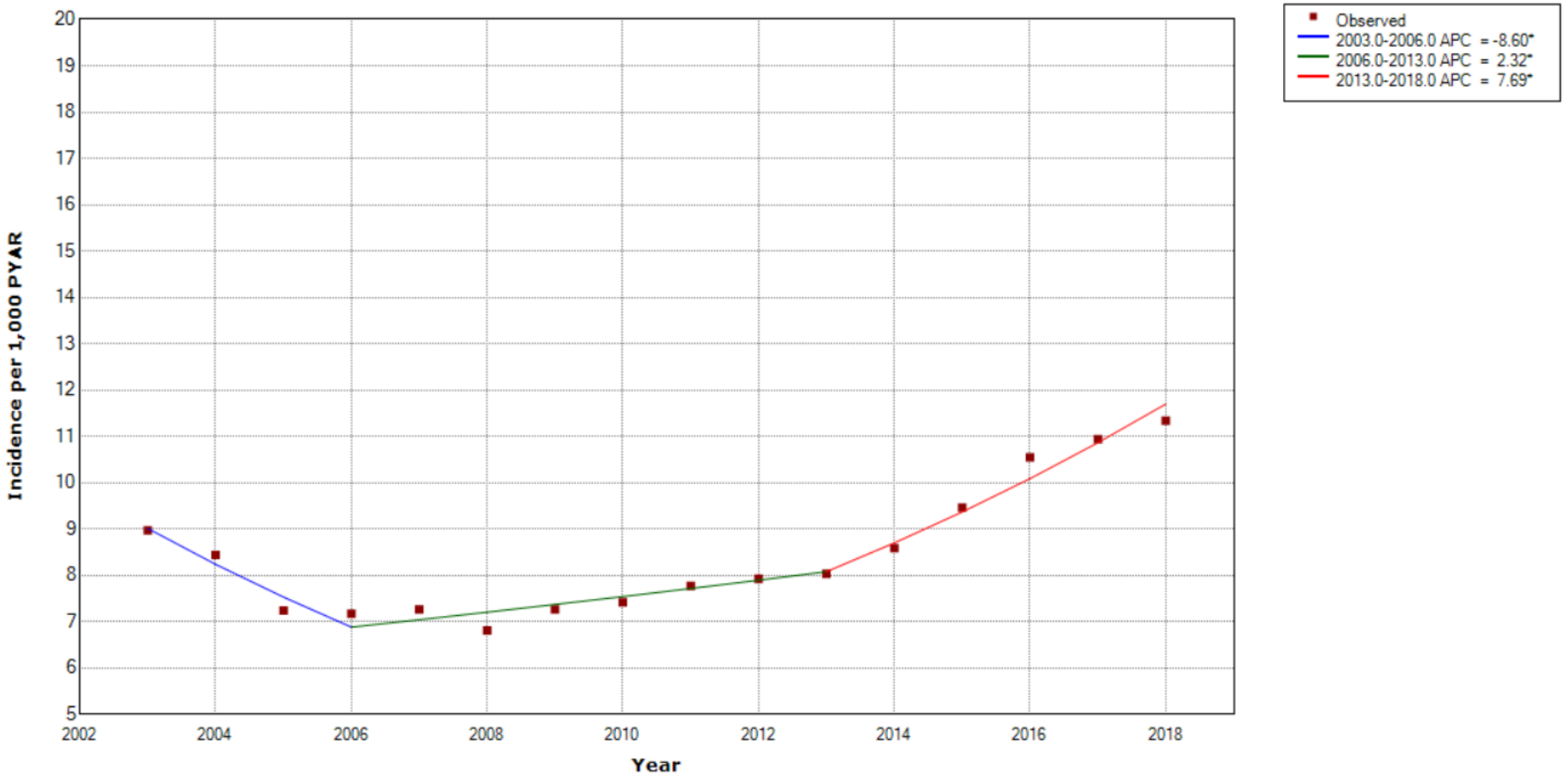
Figure 64 Best fitting join point model of the incidence of prescriptions of all antidepressants per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 2 Joinpoints.

A.31 Best fitting join point model of the incidence of prescriptions of SSRIs & 'other' antidepressant per 1000 person-years

Figure 65 Best fitting join point model of the incidence of prescriptions of SSRIs & 'other' antidepressant per 1000 person-years



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 2 Joinpoints.

A.32 Incidence rate ratios for prescriptions of SSRI & 'other' antidepressant

Table 48 incidence rate ratios for prescriptions of SSRI & 'other' antidepressant

		SSRI & 'other' antidepressant					
Variable		Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	0.94	(0.91-0.97)		0.94	(0.92-0.97)	
	2005	0.81	(0.78-0.83)		0.81	(0.79-0.84)	
	2006	0.80	(0.78-0.82)		0.81	(0.78-0.83)	
	2007	0.81	(0.79-0.83)		0.82	(0.79-0.84)	
	2008	0.76	(0.74-0.78)		0.77	(0.74-0.79)	
	2009	0.81	(0.79-0.83)		0.82	(0.80-0.84)	
	2010	0.83	(0.80-0.85)		0.84	(0.81-0.86)	
	2011	0.87	(0.84-0.89)		0.88	(0.86-0.91)	
	2012	0.88	(0.86-0.91)		0.90	(0.87-0.93)	
	2013	0.90	(0.87-0.92)		0.91	(0.89-0.94)	
	2014	0.96	(0.93-0.98)		0.98	(0.95-1.01)	
	2015	1.05	(1.03-1.08)		1.08	(1.05-1.11)	
	2016	1.18	(1.14-1.21)		1.21	(1.18-1.24)	
	2017	1.22	(1.19-1.25)		1.26	(1.22-1.29)	
	2018	1.26	(1.23-1.30)		1.31	(1.27-1.34)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	1.98	(1.95-2.00)		2.02	(2.00-2.04)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	1.00	(0.98-1.02)		0.99	(0.97-1.01)	
	35-44	0.92	(0.91-0.94)		0.93	(0.91-0.95)	
	44-54	0.82	(0.81-0.84)		0.82	(0.80-0.83)	
	55-64	0.67	(0.66-0.68)		0.66	(0.65-0.68)	
	65-74	0.53	(0.52-0.54)		0.51	(0.50-0.52)	
	75-84	0.58	(0.56-0.59)		0.54	(0.53-0.56)	
	85+	0.50	(0.48-0.52)		0.44	(0.42-0.46)	

**Multivariable model adjusted for year, gender, and age band*

A.33 Incidence rate ratios for prescriptions of antipsychotics

Table 49 incidence rate ratios for prescriptions of antipsychotics

		Antipsychotic					
Variable		Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	0.95	(0.84-1.07)		1.12	(0.84-1.08)	
	2005	0.88	(0.78-1.00)		1.10	(0.78-1.00)	
	2006	0.91	(0.80-1.03)		1.04	(0.81-1.03)	
	2007	0.83	(0.73-0.94)		0.80	(0.73-0.94)	
	2008	0.91	(0.81-1.03)		0.65	(0.81-1.03)	
	2009	0.95	(0.85-1.07)		0.88	(0.85-1.08)	
	2010	1.04	(0.92-1.16)		0.95	(0.93-1.17)	
	2011	1.07	(0.96-1.20)		1.12	(0.96-1.21)	
	2012	1.14	(1.02-1.28)		1.10	(1.03-1.29)	
	2013	1.13	(1.01-1.27)		1.04	(1.02-1.28)	
	2014	1.25	(1.12-1.40)		0.80	(1.13-1.41)	
	2015	1.23	(1.10-1.38)		0.65	(1.12-1.39)	
	2016	1.41	(1.26-1.57)		0.88	(1.28-1.59)	
	2017	1.59	(1.43-1.77)		0.95	(1.45-1.79)	
	2018	1.51	(1.36-1.68)		1.12	(1.38-1.71)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	1.43	(1.38-1.49)		1.44	(1.39-1.5)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	1.13	(1.05-1.22)		1.12	(1.04-1.21)	
	35-44	1.09	(1.01-1.17)		1.10	(1.02-1.18)	
	44-54	1.05	(0.98-1.13)		1.04	(0.97-1.12)	
	55-64	0.81	(0.75-0.88)		0.80	(0.74-0.87)	
	65-74	0.67	(0.61-0.74)		0.65	(0.60-0.72)	
	75-84	0.91	(0.83-1.01)		0.88	(0.80-0.97)	
	85+	1.03	(0.91-1.16)		0.95	(0.83-1.07)	
**Multivariable model adjusted for year, gender, and age band*							

A.34 Incidence rate ratios for prescriptions of anticonvulsants

Table 50 incidence rate ratios for prescriptions of anticonvulsants

		Anticonvulsant					
Variable		Univariable IRR	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001
	2004	1.21	(0.98-1.49)		1.21	(0.98-1.49)	
	2005	1.53	(1.25-1.87)		1.53	(1.25-1.87)	
	2006	2.21	(1.83-2.67)		2.21	(1.83-2.67)	
	2007	2.24	(1.85-2.70)		2.24	(1.85-2.70)	
	2008	3.10	(2.59-3.71)		3.10	(2.60-3.71)	
	2009	3.98	(3.34-4.74)		3.98	(3.34-4.74)	
	2010	5.11	(4.31-6.06)		5.11	(4.31-6.06)	
	2011	5.58	(4.71-6.61)		5.58	(4.71-6.61)	
	2012	6.27	(5.30-7.42)		6.28	(5.31-7.43)	
	2013	7.13	(6.04-8.43)		7.13	(6.04-8.43)	
	2014	7.87	(6.67-9.28)		7.87	(6.67-9.29)	
	2015	8.74	(7.41-10.31)		8.74	(7.41-10.31)	
	2016	9.89	(8.39-11.65)		9.88	(8.39-11.64)	
	2017	9.73	(8.26-11.46)		9.72	(8.25-11.45)	
	2018	9.37	(7.95-11.04)		9.35	(7.94-11.02)	
Gender	Male	1.00		<0.001	1.00		<0.001
	Female	2.21	(2.13-2.29)		2.21	(2.14-2.29)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001
	25-34	2.04	(1.86-2.25)		2.02	(1.83-2.22)	
	35-44	2.69	(2.45-2.95)		2.79	(2.55-3.06)	
	44-54	3.32	(3.03-3.63)		3.23	(2.95-3.53)	
	55-64	3.04	(2.77-3.34)		3.00	(2.73-3.29)	
	65-74	2.89	(2.62-3.18)		2.70	(2.45-2.97)	
	75-84	3.01	(2.72-3.33)		2.81	(2.54-3.11)	
	85+	2.26	(1.98-2.59)		1.91	(1.67-2.18)	

**Multivariable model adjusted for year, gender, and age band*

A.35 Incidence rate ratio for prescriptions of any anxiolytics, all antidepressants, and benzodiazepines - model accounting for clustering

Table 51 Incidence rate ratio for prescriptions of any anxiolytic, all antidepressants, and benzodiazepines - model accounting for clustering

		Any anxiolytic			All antidepressants			Benzodiazepines		
Variable		Multivariable IRR*	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	0.94	(0.90-0.97)		0.93	(0.89-0.98)		0.95	(0.91-0.99)	
	2005	0.83	(0.79-0.86)		0.80	(0.76-0.84)		0.89	(0.85-0.94)	
	2006	0.79	(0.74-0.84)		0.78	(0.72-0.83)		0.85	(0.79-0.90)	
	2007	0.78	(0.73-0.84)		0.78	(0.72-0.84)		0.84	(0.78-0.91)	
	2008	0.74	(0.68-0.80)		0.73	(0.67-0.80)		0.78	(0.71-0.85)	
	2009	0.77	(0.71-0.83)		0.77	(0.71-0.84)		0.82	(0.75-0.89)	
	2010	0.76	(0.70-0.83)		0.79	(0.72-0.86)		0.77	(0.70-0.84)	
	2011	0.78	(0.72-0.85)		0.81	(0.75-0.89)		0.77	(0.71-0.84)	
	2012	0.79	(0.73-0.86)		0.83	(0.76-0.91)		0.75	(0.69-0.82)	
	2013	0.80	(0.74-0.87)		0.84	(0.77-0.91)		0.74	(0.68-0.81)	
	2014	0.84	(0.78-0.91)		0.90	(0.83-0.98)		0.76	(0.69-0.84)	
	2015	0.92	(0.85-1.00)		0.98	(0.90-1.07)		0.75	(0.69-0.83)	
	2016	1.01	(0.93-1.09)		1.10	(1.00-1.20)		0.78	(0.71-0.86)	
	2017	1.04	(0.95-1.13)		1.13	(1.04-1.24)		0.75	(0.68-0.83)	
	2018	1.06	(0.97-1.16)		1.18	(1.07-1.29)		0.72	(0.66-0.79)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.02	(1.99-2.05)		2.04	(2.00-2.07)		2.06	(2.01-2.10)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	0.94	(0.91-0.97)		0.99	(0.96-1.03)		1.37	(1.30-1.43)	
	35-44	0.88	(0.85-0.92)		0.94	(0.91-0.98)		1.48	(1.40-1.56)	
	44-54	0.80	(0.77-0.83)		0.85	(0.81-0.89)		1.44	(1.36-1.52)	
	55-64	0.68	(0.66-0.71)		0.71	(0.68-0.74)		1.36	(1.28-1.44)	
	65-74	0.57	(0.55-0.60)		0.57	(0.54-0.60)		1.33	(1.24-1.43)	
	75-84	0.60	(0.57-0.63)		0.60	(0.57-0.64)		1.42	(1.32-1.53)	
	85+	0.49	(0.45-0.53)		0.48	(0.45-0.52)		1.16	(1.06-1.28)	

**Multivariable model adjusted for year, gender, and age band*

A.36 Incidence rate ratio for prescriptions of all beta-blockers, anticonvulsants, and antipsychotics - model accounting for clustering

Table 52 Incidence rate ratio for prescriptions of all beta-blockers, anticonvulsants, and antipsychotics – model accounting for clustering

		Beta-blockers (propranolol)			Anticonvulsants			Antipsychotics		
Variable		Multivariable IRR*	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value	Multivariable IRR*	(95%CI)	P value
Year	2003	1.00		<0.001	1.00		<0.001	1.00		<0.001
	2004	1.05	(0.98-1.12)		1.21	(0.98-1.48)		0.95	(0.83-1.10)	
	2005	0.98	(0.91-1.06)		1.53	(1.26-1.87)		0.88	(0.77-1.01)	
	2006	0.93	(0.85-1.01)		2.21	(1.80-2.72)		0.91	(0.78-1.06)	
	2007	0.91	(0.83-0.99)		2.24	(1.82-2.75)		0.83	(0.70-0.98)	
	2008	0.90	(0.81-0.99)		3.10	(2.51-3.84)		0.91	(0.79-1.06)	
	2009	1.00	(0.90-1.11)		3.98	(3.29-4.81)		0.96	(0.81-1.12)	
	2010	1.03	(0.92-1.15)		5.11	(4.20-6.22)		1.04	(0.90-1.21)	
	2011	1.10	(0.99-1.23)		5.58	(4.59-6.78)		1.08	(0.93-1.26)	
	2012	1.19	(1.08-1.32)		6.28	(5.21-7.56)		1.15	(0.99-1.34)	
	2013	1.29	(1.15-1.44)		7.13	(5.91-8.62)		1.14	(0.97-1.34)	
	2014	1.40	(1.26-1.56)		7.87	(6.50-9.52)		1.26	(1.06-1.50)	
	2015	1.52	(1.36-1.69)		8.74	(7.18-10.64)		1.25	(1.08-1.44)	
	2016	1.67	(1.50-1.87)		9.88	(8.03-12.14)		1.42	(1.23-1.64)	
	2017	1.77	(1.57-1.99)		9.72	(7.96-11.86)		1.62	(1.38-1.89)	
	2018	1.88	(1.68-2.10)		9.35	(7.63-11.47)		1.54	(1.33-1.78)	
Gender	Male	1.00		<0.001	1.00		<0.001	1.00		<0.001
	Female	2.29	(2.23-2.35)		2.21	(2.13-2.30)		1.44	(1.38-1.51)	
Age Band (years)	18-24	1.00		<0.001	1.00		<0.001	1.00		<0.001
	25-34	0.93	(0.89-0.97)		2.02	(1.81-2.24)		1.12	(1.04-1.21)	
	35-44	0.80	(0.75-0.84)		2.79	(2.48-3.15)		1.10	(1.00-1.21)	
	44-54	0.63	(0.60-0.67)		3.23	(2.85-3.65)		1.04	(0.95-1.14)	
	55-64	0.43	(0.41-0.46)		3.00	(2.64-3.41)		0.80	(0.72-0.89)	
	65-74	0.25	(0.23-0.28)		2.70	(2.36-3.09)		0.65	(0.58-0.73)	
	75-84	0.18	(0.16-0.20)		2.81	(2.42-3.27)		0.88	(0.77-1.01)	
	85+	0.08	(0.07-0.10)		1.91	(1.59-2.28)		0.95	(0.80-1.13)	

**Multivariable model adjusted for year, gender, and age band*

A.37 Incidence rate for prescriptions of any anxiolytic, all antidepressants, and SSRIs and 'other' antidepressants between 2003 and 2018, by gender

Table 53 Incidence rate for prescriptions of any anxiolytic, all antidepressants, and SSRIs and 'other' antidepressants between 2003 and 2018, by gender

Variable		**Any anxiolytic**				**All antidepressants**				**SSRIs and 'other' antidepressants**			
Gender	Year	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
Male	2003	4474	542784.8	8.2	(8.0-8.5)	3558	543285.9	6.5	(6.3-6.8)	3113	543534.9	5.7	(5.5-5.9)
	2004	4143	547443	7.6	(7.3-7.8)	3272	548896.4	6.0	(5.8-6.2)	2928	549582.5	5.3	(5.1-5.5)
	2005	3712	547407.9	6.8	(6.6-7.0)	2852	549714.6	5.2	(5.0-5.4)	2575	550696.1	4.7	(4.5-4.9)
	2006	3609	550840.8	6.6	(6.3-6.8)	2842	553950.9	5.1	(4.9-5.3)	2594	555201.7	4.7	(4.5-4.9)
	2007	3563	553213.4	6.4	(6.2-6.7)	2839	556988.4	5.1	(4.9-5.3)	2640	558421.1	4.7	(4.5-4.9)
	2008	3334	557922.1	6.0	(5.8-6.2)	2635	562299	4.7	(4.5-4.9)	2443	563873.4	4.3	(4.2-4.5)
	2009	3735	559785.9	6.7	(6.5-6.9)	2978	564711.9	5.3	(5.1-5.5)	2762	566430.9	4.9	(4.7-5.1)
	2010	3652	562478	6.5	(6.3-6.7)	3035	567957.9	5.3	(5.2-5.5)	2876	569792	5.0	(4.9-5.2)
	2011	3781	562926.9	6.7	(6.5-6.9)	3145	568861.1	5.5	(5.3-5.7)	3026	570766.4	5.3	(5.1-5.5)
	2012	3970	566381.6	7.0	(6.8-7.2)	3331	572745.3	5.8	(5.6-6.0)	3180	574696.5	5.5	(5.3-5.7)
	2013	3914	566724.1	6.9	(6.7-7.1)	3275	573456.6	5.7	(5.5-5.9)	3191	575458.3	5.5	(5.4-5.7)
	2014	4072	570401.7	7.1	(6.9-7.4)	3522	577505	6.1	(5.9-6.3)	3383	579565.3	5.8	(5.6-6.0)
	2015	4518	573604.2	7.9	(7.6-8.1)	3906	581031.7	6.7	(6.5-6.9)	3781	583123.3	6.5	(6.3-6.7)
	2016	5040	577343	8.7	(8.5-9.0)	4447	585114.1	7.6	(7.4-7.8)	4336	587246.3	7.4	(7.2-7.6)
	2017	5099	578392.4	8.8	(8.6-9.1)	4507	586500	7.7	(7.5-7.9)	4398	588653.4	7.5	(7.3-7.7)
	2018	5265	579697.1	9.1	(8.8-9.3)	4737	588072.3	8.1	(7.8-8.3)	4658	590242.6	7.9	(7.7-8.1)
Female	2003	9616	561165.4	17.1	(16.8-17.5)	7747	562206	13.8	(13.5-14.1)	6813	562761.7	12.1	(11.8-12.4)
	2004	9031	559146.1	16.2	(15.8-16.5)	7298	562065.9	13.0	(12.7-13.3)	6464	563562.5	11.5	(11.2-11.8)
	2005	7819	552457.7	14.2	(13.8-14.5)	6141	557111	11.0	(10.7-11.3)	5466	559358.2	9.8	(9.5-10.0)
	2006	7436	551190.1	13.5	(13.2-13.8)	5916	557340.1	10.6	(10.3-10.9)	5410	560126.1	9.7	(9.4-9.9)
	2007	7300	549048.9	13.3	(13.0-13.6)	5929	556467.5	10.7	(10.4-10.9)	5481	559666	9.8	(9.5-10.1)
	2008	6981	550176.7	12.7	(12.4-13.0)	5653	558752.2	10.1	(9.9-10.4)	5229	562280.8	9.3	(9.0-9.6)
	2009	7037	548524.2	12.8	(12.5-13.1)	5805	558121.1	10.4	(10.1-10.7)	5433	561937.9	9.7	(9.4-9.9)
	2010	7009	548729.1	12.8	(12.5-13.1)	5903	559239.4	10.6	(10.3-10.8)	5528	563338.2	9.8	(9.6-10.1)
	2011	7148	548855.7	13.0	(12.7-13.3)	6118	560116.9	10.9	(10.7-11.2)	5799	564423.3	10.3	(10.0-10.5)
	2012	7139	551358.2	12.9	(12.6-13.3)	6181	563311.4	11.0	(10.7-11.2)	5875	567814.5	10.3	(10.1-10.6)

	2013	7326	551188.3	13.3	(13.0-13.6)	6265	563730.8	11.1	(10.8-11.4)	6002	568352.8	10.6	(10.3-10.8)
	2014	7761	551562.5	14.1	(13.8-14.4)	6750	564731.9	12.0	(11.7-12.2)	6484	569470.4	11.4	(11.1-11.7)
	2015	8421	552035.3	15.3	(14.9-15.6)	7356	565811.7	13.0	(12.7-13.3)	7139	570592.8	12.5	(12.2-12.8)
	2016	9138	552747.5	16.5	(16.2-16.9)	8146	567215.5	14.4	(14.1-14.7)	7891	572072.9	13.8	(13.5-14.1)
	2017	9455	550555.3	17.2	(16.8-17.5)	8479	565495.9	15.0	(14.7-15.3)	8279	570406.2	14.5	(14.2-14.8)
	2018	9551	549433.9	17.4	(17.0-17.7)	8705	564762.4	15.4	(15.1-15.7)	8497	569723.3	14.9	(14.6-15.2)
** N = Number of prescriptions*													

A.38 Incidence rates for prescriptions of benzodiazepines and beta-blockers between 2003 and 2018, by gender

Table 54 Incidence rates for prescriptions of benzodiazepines and beta-blockers between 2003 and 2018, by gender

Variable		Benzodiazepines				Beta-blockers (propranolol)			
Gender	Year	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
Male	2003	2203	544135.8	4.0	(3.9-4.2)	815	544864.4	1.5	(1.4-1.6)
	2004	2075	551290.9	3.8	(3.6-3.9)	814	553355.5	1.5	(1.4-1.6)
	2005	2016	553184.3	3.6	(3.5-3.8)	742	556372.5	1.3	(1.2-1.4)
	2006	1934	558313.8	3.5	(3.3-3.6)	716	562629	1.3	(1.2-1.4)
	2007	1898	562248.5	3.4	(3.2-3.5)	718	567503.8	1.3	(1.2-1.4)
	2008	1730	568436.8	3.0	(2.9-3.2)	766	574502.1	1.3	(1.2-1.4)
	2009	1928	571811.1	3.4	(3.2-3.5)	845	578500.5	1.5	(1.4-1.6)
	2010	1887	576064.5	3.3	(3.1-3.4)	849	583395.8	1.5	(1.4-1.6)
	2011	1895	578031.8	3.3	(3.1-3.4)	929	585948.2	1.6	(1.5-1.7)
	2012	1919	583161	3.3	(3.1-3.4)	1022	591600.6	1.7	(1.6-1.8)
	2013	1806	585190.4	3.1	(2.9-3.2)	1096	593917.3	1.8	(1.7-2.0)
	2014	1902	590575.6	3.2	(3.1-3.4)	1202	599505.4	2.0	(1.9-2.1)
	2015	1896	595673.2	3.2	(3.0-3.3)	1280	604697.2	2.1	(2.0-2.2)
	2016	1999	601808.4	3.3	(3.2-3.5)	1418	610932.5	2.3	(2.2-2.4)
	2017	1994	605370.6	3.3	(3.2-3.4)	1490	614460	2.4	(2.3-2.6)
	2018	1904	609436.3	3.1	(3.0-3.3)	1551	618356.1	2.5	(2.4-2.6)
Female	2003	4899	563994.6	8.7	(8.4-8.9)	1748	565659.9	3.1	(2.9-3.2)
	2004	4737	566934.3	8.4	(8.1-8.6)	1898	571729.1	3.3	(3.2-3.5)
	2005	4349	564184.3	7.7	(7.5-7.9)	1795	571512.1	3.1	(3.0-3.3)
	2006	4134	566156.3	7.3	(7.1-7.5)	1697	575694.5	2.9	(2.8-3.1)
	2007	4167	567048.8	7.3	(7.1-7.6)	1657	578682	2.9	(2.7-3.0)
	2008	3912	570895.7	6.9	(6.6-7.1)	1609	584446.7	2.8	(2.6-2.9)
	2009	4001	571900.3	7.0	(6.8-7.2)	1806	587074.3	3.1	(2.9-3.2)
	2010	3719	574836.8	6.5	(6.3-6.7)	1894	591418.4	3.2	(3.1-3.4)
	2011	3777	577676.2	6.5	(6.3-6.8)	2023	595271.5	3.4	(3.3-3.5)
	2012	3649	583166.7	6.3	(6.1-6.5)	2186	601548.9	3.6	(3.5-3.8)
	2013	3687	585911.9	6.3	(6.1-6.5)	2373	604681.8	3.9	(3.8-4.1)
	2014	3800	589311.2	6.4	(6.2-6.7)	2579	608388.5	4.2	(4.1-4.4)
	2015	3777	593245.1	6.4	(6.2-6.6)	2838	612367.6	4.6	(4.5-4.8)
	2016	3942	598437.4	6.6	(6.4-6.8)	3146	617470.4	5.1	(4.9-5.3)
	2017	3756	600645.5	6.3	(6.1-6.5)	3346	619186	5.4	(5.2-5.6)
	2018	3635	604173.5	6.0	(5.8-6.2)	3573	621857.5	5.7	(5.6-5.9)

** N = Number of prescriptions*

A.39 Incidence rates for prescriptions of antipsychotics and anticonvulsants between 2003 and 2018, by gender

Table 55 Incidence rates for prescriptions of antipsychotics and anticonvulsants between 2003 and 2018, by gender

Variable		Antipsychotics				Anticonvulsants			
Gender	Year	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
Male	2003	214	545211.8	0.4	(0.3-0.4)	63	545296.2	0.1	(0.1-0.1)
	2004	212	554347.5	0.4	(0.3-0.4)	46	554626.2	0.1	(0.1-0.1)
	2005	198	557954.3	0.4	(0.3-0.4)	75	558369.2	0.1	(0.1-0.2)
	2006	213	564716.6	0.4	(0.3-0.4)	117	565246.4	0.2	(0.2-0.2)
	2007	180	570046.6	0.3	(0.3-0.4)	120	570643.3	0.2	(0.2-0.3)
	2008	190	577549.2	0.3	(0.3-0.4)	168	578193.2	0.3	(0.2-0.3)
	2009	221	582107.5	0.4	(0.3-0.4)	218	582705.3	0.4	(0.3-0.4)
	2010	239	587595.8	0.4	(0.4-0.5)	258	588181.1	0.4	(0.4-0.5)
	2011	240	590723.4	0.4	(0.4-0.5)	279	591257.7	0.5	(0.4-0.5)
	2012	265	596977.1	0.4	(0.4-0.5)	344	597466.8	0.6	(0.5-0.6)
	2013	298	599902.3	0.5	(0.4-0.6)	361	600324.1	0.6	(0.5-0.7)
	2014	304	606214.1	0.5	(0.4-0.6)	424	606555.8	0.7	(0.6-0.8)
	2015	305	612189	0.5	(0.4-0.6)	458	612401.6	0.7	(0.7-0.8)
	2016	364	619263.8	0.6	(0.5-0.7)	509	619337.3	0.8	(0.8-0.9)
	2017	378	623594.3	0.6	(0.5-0.7)	527	623552	0.8	(0.8-0.9)
	2018	365	628395	0.6	(0.5-0.6)	489	628232.3	0.8	(0.7-0.9)
Female	2003	323	566430.6	0.6	(0.5-0.6)	93	566566.6	0.2	(0.1-0.2)
	2004	307	574071.4	0.5	(0.5-0.6)	145	574425.6	0.3	(0.2-0.3)
	2005	284	575426.3	0.5	(0.4-0.6)	169	575903.2	0.3	(0.3-0.3)
	2006	290	581030.1	0.5	(0.4-0.6)	239	581571.1	0.4	(0.4-0.5)
	2007	282	585286.8	0.5	(0.4-0.5)	243	585850.4	0.4	(0.4-0.5)
	2008	324	592273.3	0.5	(0.5-0.6)	342	592791.5	0.6	(0.5-0.6)
	2009	321	596114.4	0.5	(0.5-0.6)	440	596557.6	0.7	(0.7-0.8)
	2010	356	601767.7	0.6	(0.5-0.7)	595	602036	1.0	(0.9-1.1)
	2011	381	607028.2	0.6	(0.6-0.7)	659	606992.2	1.1	(1.0-1.2)
	2012	405	614885	0.7	(0.6-0.7)	723	614538.9	1.2	(1.1-1.3)
	2013	370	619564.1	0.6	(0.5-0.7)	859	618828.3	1.4	(1.3-1.5)
	2014	439	625032.8	0.7	(0.6-0.8)	934	623815.4	1.5	(1.4-1.6)
	2015	436	630906.9	0.7	(0.6-0.8)	1065	629149	1.7	(1.6-1.8)
	2016	490	638148.9	0.8	(0.7-0.8)	1232	635772.4	1.9	(1.8-2.0)
	2017	596	641999.1	0.9	(0.9-1.0)	1196	639020.5	1.9	(1.8-2.0)
	2018	568	646898.8	0.9	(0.8-1.0)	1182	643381.7	1.8	(1.7-1.9)

** N = Number of prescriptions*

A.40 Incidence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 - test for interaction between year and gender

Table 56 Incidence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 - test for interaction between year and gender

Variable		Multivariable IRR	(95%CI)	P value
Year	2003	1.00		<0.001
	2004	0.92	(0.88-0.96)	
	2005	0.82	(0.79-0.86)	
	2006	0.80	(0.76-0.83)	
	2007	0.78	(0.75-0.82)	
	2008	0.73	(0.70-0.76)	
	2009	0.81	(0.78-0.85)	
	2010	0.79	(0.76-0.83)	
	2011	0.82	(0.79-0.86)	
	2012	0.86	(0.82-0.90)	
	2013	0.85	(0.81-0.89)	
	2014	0.88	(0.84-0.92)	
	2015	0.97	(0.93-1.01)	
	2016	1.08	(1.03-1.12)	
	2017	1.10	(1.05-1.13)	
	2018	1.13	(1.08-1.17)	
Gender	Male	1.00		<0.001
	Female	2.12	(2.05-2.20)	
Year X Gender	2003	1.00		
	2004	1.03	(0.98-1.08)	0.320
	2005	1.00	(0.95-1.06)	0.899
	2006	0.99	(0.94-1.04)	0.700
	2007	0.99	(0.94-1.04)	0.757
	2008	1.02	(0.97-1.08)	0.492
	2009	0.92	(0.87-0.97)	0.003
	2010	0.94	(0.89-1.00)	0.032
	2011	0.93	(0.88-0.98)	0.007
	2012	0.88	(0.83-0.93)	0.000
	2013	0.92	(0.87-0.97)	0.002
	2014	0.94	(0.89-0.99)	0.025
	2015	0.93	(0.88-0.97)	0.003
	2016	0.90	(0.86-0.95)	0.000
	2017	0.93	(0.89-0.98)	0.004
	2018	0.91	(0.87-0.96)	0.000
Age Band (years)	18-24	1.00		<0.001
	25-34	0.94	(0.92-0.95)	
	35-44	0.88	(0.87-0.90)	
	44-54	0.80	(0.79-0.81)	
	55-64	0.68	(0.67-0.70)	
	65-74	0.57	(0.56-0.58)	
	75-84	0.60	(0.58-0.61)	
	85+	0.49	(0.47-0.50)	

A.41 Incidence rates, absolute differences, and incidence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 by gender - test for interaction between year and gender

Table 57 Incidence rates, absolute differences, and incidence rate ratios for prescriptions for any anxiolytic between 2003 and 2018 by gender - test for interaction between year and gender

		Male			Female			Interaction parameter	P value for interaction parameter
Variable		Incidence (1000PYAR)	Absolute difference	IRR	Incidence (1000PYAR)	Absolute difference	IRR		
Year	2003	8.2	-	1.00	17.1	-	1.00	1.00	
	2004	7.6	-0.6	0.92	16.2	-0.9	0.94	1.03	0.320
	2005	6.8	-1.4	0.82	14.2	-2.9	0.83	1.00	0.899
	2006	6.6	-1.6	0.80	13.5	-3.6	0.79	0.99	0.700
	2007	6.4	-1.8	0.74	13.3	-3.8	0.73	0.99	0.757
	2008	6.0	-2.2	0.73	12.7	-4.4	0.74	1.02	0.492
	2009	6.7	-1.5	0.81	12.8	-4.3	0.75	0.92	0.003
	2010	6.5	-1.7	0.79	12.8	-4.3	0.75	0.94	0.032
	2011	6.7	-1.5	0.82	13.0	-4.1	0.76	0.93	0.007
	2012	7.0	-1.2	0.86	12.9	-4.2	0.76	0.88	0.000
	2013	6.9	-1.3	0.85	13.3	-3.8	0.78	0.92	0.002
	2014	7.1	-1.1	0.88	14.1	-3.0	0.83	0.94	0.025
	2015	7.9	-0.3	0.97	15.3	-1.8	0.90	0.93	0.003
	2016	8.7	0.5	1.08	16.5	-0.6	0.97	0.90	0.000
	2017	8.8	0.6	1.09	17.2	0.1	1.01	0.93	0.004
	2018	9.1	0.9	1.13	17.4	0.3	1.03	0.91	0.000

A.42 Incidence rates for prescriptions of any anxiolytics, all antidepressants, and SSRIs and 'other' antidepressants between 2003 and 2018, by age

Table 58 Incidence rates for prescriptions of any anxiolytic, all antidepressants, and SSRIs and 'other' antidepressants between 2003 and 2018, by age

Variable		Any anxiolytic				All antidepressants				SSRIs and 'other' antidepressants			
Age band	Year	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
<25	2003	1041	107177.3	9.7	(9.1-10.3)	826	107323	7.7	(7.2-8.2)	785	107351.4	7.3	(6.8-7.8)
	2004	1003	107748.6	9.3	(8.7-9.9)	754	108110.7	7.0	(6.5-7.5)	702	108183.3	6.5	(6.0-7.0)
	2005	923	107356.6	8.6	(8.1-9.2)	652	107911.8	6.0	(5.6-6.5)	602	108022	5.6	(5.1-6.0)
	2006	915	108688.2	8.4	(7.9-9.0)	643	109411.7	5.9	(5.4-6.3)	614	109539.4	5.6	(5.2-6.1)
	2007	983	109924.1	8.9	(8.4-9.5)	747	110735.3	6.7	(6.3-7.2)	722	110868.6	6.5	(6.0-7.0)
	2008	1031	112333.2	9.2	(8.6-9.8)	738	113217.2	6.5	(6.1-7.0)	713	113339	6.3	(5.8-6.8)
	2009	1048	113244.4	9.3	(8.7-9.8)	808	114155.8	7.1	(6.6-7.6)	787	114262.9	6.9	(6.4-7.4)
	2010	1187	114144.4	10.4	(9.8-11)	933	115080.4	8.1	(7.6-8.6)	895	115192.3	7.8	(7.3-8.3)
	2011	1287	114471.1	11.2	(10.6-11.9)	1027	115406.4	8.9	(8.4-9.5)	996	115522.6	8.6	(8.1-9.2)
	2012	1363	115494.4	11.8	(11.2-12.4)	1095	116444.9	9.4	(8.9-10)	1066	116562.6	9.1	(8.6-9.7)
	2013	1572	115260.2	13.6	(13.0-14.3)	1267	116228.9	10.9	(10.3-11.5)	1222	116368	10.5	(9.9-11.1)
	2014	1760	115082.1	15.3	(14.6-16.0)	1433	116109.2	12.3	(11.7-13.0)	1407	116248.4	12.1	(11.5-12.8)
	2015	2192	114065.8	19.2	(18.4-20.0)	1801	115199.1	15.6	(14.9-16.4)	1755	115337.3	15.2	(14.5-15.9)
	2016	2541	112721.1	22.5	(21.7-23.4)	2112	114001.4	18.5	(17.7-19.3)	2074	114149.7	18.2	(17.4-19.0)
	2017	2682	111231.5	24.1	(23.2-25.0)	2292	112626	20.4	(19.5-21.2)	2246	112776.9	19.9	(19.1-20.8)
	2018	2884	109764	26.3	(25.3-27.3)	2507	111192.9	22.5	(21.7-23.4)	2475	111349.2	22.2	(21.4-23.1)
25-34	2003	2304	187675	12.3	(11.8-12.8)	1910	187921.7	10.2	(9.7-10.6)	1790	187996.9	9.5	(9.1-10.0)
	2004	2152	185169.4	11.6	(11.1-12.1)	1735	185853	9.3	(8.9-9.8)	1633	186080.9	8.8	(8.4-9.2)
	2005	1851	182127.9	10.2	(9.7-10.6)	1465	183214.1	8.0	(7.6-8.4)	1387	183510.4	7.6	(7.2-8.0)
	2006	1754	180358.4	9.7	(9.3-10.2)	1441	181785.3	7.9	(7.5-8.3)	1381	182124.1	7.6	(7.2-8.0)
	2007	1771	178910.7	9.9	(9.4-10.4)	1453	180598	8.0	(7.6-8.5)	1402	180955.4	7.7	(7.3-8.2)
	2008	1718	178735.1	9.6	(9.2-10.1)	1405	180710	7.8	(7.4-8.2)	1362	181092.3	7.5	(7.1-7.9)
	2009	1854	179034.7	10.4	(9.9-10.8)	1548	181256	8.5	(8.1-9.0)	1496	181665.3	8.2	(7.8-8.7)
	2010	1896	180045.4	10.5	(10.1-11.0)	1629	182532.9	8.9	(8.5-9.4)	1570	182979.2	8.6	(8.2-9.0)

	2011	1994	181433.5	11.0	(10.5-11.5)	1714	184159.3	9.3	(8.9-9.8)	1660	184634.1	9.0	(8.6-9.4)
	2012	2213	183945.6	12.0	(11.5-12.5)	1865	186931	10.0	(9.5-10.4)	1821	187412.5	9.7	(9.3-10.2)
	2013	2277	184540.4	12.3	(11.8-12.9)	1917	187742.1	10.2	(9.8-10.7)	1863	188234.8	9.9	(9.5-10.4)
	2014	2623	184746.7	14.2	(13.7-14.8)	2288	188110.7	12.2	(11.7-12.7)	2215	188639.3	11.7	(11.3-12.2)
	2015	2939	185151.2	15.9	(15.3-16.5)	2567	188679.4	13.6	(13.1-14.1)	2514	189239.8	13.3	(12.8-13.8)
	2016	3334	184965.9	18.0	(17.4-18.6)	2983	188681.6	15.8	(15.2-16.4)	2925	189275.9	15.5	(14.9-16.0)
	2017	3536	183710	19.2	(18.6-19.9)	3170	187555.9	16.9	(16.3-17.5)	3129	188150.7	16.6	(16.1-17.2)
	2018	3582	182487.8	19.6	(19.0-20.3)	3252	186440.5	17.4	(16.8-18.1)	3215	187016.2	17.2	(16.6-17.8)
35-44	2003	3360	224626.8	15.0	(14.5-15.5)	2835	224935.2	12.6	(12.1-13.1)	2586	225097.4	11.5	(11.0-11.9)
	2004	2948	225538	13.1	(12.6-13.6)	2444	226388.9	10.8	(10.4-11.2)	2244	226776.7	9.9	(9.5-10.3)
	2005	2575	223264.3	11.5	(11.1-12.0)	2096	224640.5	9.3	(8.9-9.7)	1944	225201.2	8.6	(8.3-9.0)
	2006	2437	222014	11.0	(10.5-11.4)	1992	223823.5	8.9	(8.5-9.3)	1901	224508.8	8.5	(8.1-8.9)
	2007	2296	219141.1	10.5	(10.1-10.9)	1935	221296.7	8.7	(8.4-9.1)	1841	222042.6	8.3	(7.9-8.7)
	2008	2155	216089.6	10.0	(9.6-10.4)	1786	218513.1	8.2	(7.8-8.6)	1683	219283.1	7.7	(7.3-8.1)
	2009	2306	210799.7	10.9	(10.5-11.4)	1917	213500.4	9.0	(8.6-9.4)	1823	214315.2	8.5	(8.1-8.9)
	2010	2163	205471.2	10.5	(10.1-11.0)	1872	208340.7	9.0	(8.6-9.4)	1806	209154.6	8.6	(8.2-9.0)
	2011	2164	200026.4	10.8	(10.4-11.3)	1874	203021.4	9.2	(8.8-9.7)	1802	203826.7	8.8	(8.4-9.3)
	2012	2162	195105.1	11.1	(10.6-11.6)	1889	198196	9.5	(9.1-10.0)	1832	199031.1	9.2	(8.8-9.6)
	2013	2171	190651.2	11.4	(10.9-11.9)	1862	193874.5	9.6	(9.2-10.1)	1817	194692.5	9.3	(8.9-9.8)
	2014	2286	188236	12.1	(11.7-12.7)	2025	191620.5	10.6	(10.1-11.0)	1955	192427.3	10.2	(9.7-10.6)
	2015	2362	187202.4	12.6	(12.1-13.1)	2142	190707.1	11.2	(10.8-11.7)	2091	191511.9	10.9	(10.5-11.4)
	2016	2490	186161.2	13.4	(12.9-13.9)	2247	189755.8	11.8	(11.4-12.3)	2178	190541.5	11.4	(11.0-11.9)
	2017	2651	184433.4	14.4	(13.8-14.9)	2402	188151.6	12.8	(12.3-13.3)	2396	188944.7	12.7	(12.2-13.2)
	2018	2705	183106	14.8	(14.2-15.3)	2486	186990.2	13.3	(12.8-13.8)	2442	187783.2	13.0	(12.5-13.5)
45-54	2003	2617	188110.1	13.9	(13.4-14.5)	2147	188350.2	11.4	(10.9-11.9)	1881	188502.9	10.0	(9.5-10.4)
	2004	2476	188528.5	13.1	(12.6-13.7)	2092	189238.1	11.1	(10.6-11.5)	1878	189654.1	9.9	(9.5-10.4)
	2005	2148	188818.6	11.4	(10.9-11.9)	1707	189969.1	9.0	(8.6-9.4)	1550	190574.1	8.1	(7.7-8.5)
	2006	1977	190903.5	10.4	(9.9-10.8)	1601	192521.6	8.3	(7.9-8.7)	1466	193266.4	7.6	(7.2-8.0)
	2007	2046	193375.5	10.6	(10.1-11.0)	1697	195420	8.7	(8.3-9.1)	1581	196297.1	8.1	(7.7-8.5)
	2008	1990	196866	10.1	(9.7-10.6)	1620	199232	8.1	(7.7-8.5)	1504	200205.4	7.5	(7.1-7.9)
	2009	2035	199960.6	10.2	(9.7-10.6)	1700	202704.7	8.4	(8.0-8.8)	1593	203766.5	7.8	(7.4-8.2)
	2010	2067	203319.1	10.2	(9.7-10.6)	1771	206432.3	8.6	(8.2-9.0)	1651	207602.7	8.0	(7.6-8.3)

	2011	2122	204703.3	10.4	(9.9-10.8)	1818	208135.4	8.7	(8.3-9.1)	1759	209352.6	8.4	(8.0-8.8)
	2012	2080	206701.3	10.1	(9.6-10.5)	1858	210352.3	8.8	(8.4-9.2)	1765	211622.1	8.3	(8.0-8.7)
	2013	1992	207152.4	9.6	(9.2-10.0)	1737	210950.4	8.2	(7.9-8.6)	1687	212259.7	7.9	(7.6-8.3)
	2014	2008	208164.3	9.6	(9.2-10.1)	1796	212182.4	8.5	(8.1-8.9)	1720	213498.6	8.1	(7.7-8.4)
	2015	2206	207882.5	10.6	(10.2-11.1)	1940	212044.8	9.1	(8.7-9.6)	1877	213358.7	8.8	(8.4-9.2)
	2016	2400	207941.1	11.5	(11.1-12.0)	2218	212285.2	10.4	(10-10.9)	2126	213650.5	10.0	(9.5-10.4)
	2017	2322	205256.8	11.3	(10.9-11.8)	2134	209645.8	10.2	(9.8-10.6)	2063	210989.8	9.8	(9.4-10.2)
	2018	2417	202046.4	12.0	(11.5-12.4)	2231	206480.2	10.8	(10.4-11.3)	2158	207847.5	10.4	(9.9-10.8)
55-64	2003	2190	167103.9	13.1	(12.6-13.7)	1690	167359.6	10.1	(9.6-10.6)	1400	167530.6	8.4	(7.9-8.8)
	2004	2039	169692.1	12.0	(11.5-12.5)	1595	170444.6	9.4	(8.9-9.8)	1361	170877	8.0	(7.5-8.4)
	2005	1783	170696.8	10.4	(10.0-10.9)	1401	171866.8	8.2	(7.7-8.6)	1223	172519.7	7.1	(6.7-7.5)
	2006	1801	172208.3	10.5	(10.0-11.0)	1474	173705.9	8.5	(8.1-8.9)	1281	174574.1	7.3	(6.9-7.8)
	2007	1695	172026.1	9.9	(9.4-10.3)	1346	173841.3	7.7	(7.3-8.2)	1202	174859.5	6.9	(6.5-7.3)
	2008	1490	172393.6	8.6	(8.2-9.1)	1212	174524.5	6.9	(6.6-7.3)	1104	175645.9	6.3	(5.9-6.7)
	2009	1600	170923.2	9.4	(8.9-9.8)	1268	173299.4	7.3	(6.9-7.7)	1159	174479.2	6.6	(6.3-7.0)
	2010	1481	171307.3	8.6	(8.2-9.1)	1255	173912.2	7.2	(6.8-7.6)	1153	175174	6.6	(6.2-7.0)
	2011	1460	169241.6	8.6	(8.2-9.1)	1214	172005.6	7.1	(6.7-7.5)	1143	173310.3	6.6	(6.2-7.0)
	2012	1423	166828	8.5	(8.1-9.0)	1262	169751.7	7.4	(7.0-7.9)	1174	171062	6.9	(6.5-7.3)
	2013	1374	166227.5	8.3	(7.8-8.7)	1186	169292	7.0	(6.6-7.4)	1147	170584.4	6.7	(6.3-7.1)
	2014	1342	167096.2	8.0	(7.6-8.5)	1183	170321.4	6.9	(6.6-7.4)	1127	171648.5	6.6	(6.2-7.0)
	2015	1388	169268.8	8.2	(7.8-8.6)	1211	172653.3	7.0	(6.6-7.4)	1170	173984.2	6.7	(6.3-7.1)
	2016	1525	172124.5	8.9	(8.4-9.3)	1385	175716.3	7.9	(7.5-8.3)	1343	177059.4	7.6	(7.2-8.0)
	2017	1524	174978.2	8.7	(8.3-9.2)	1378	178781.9	7.7	(7.3-8.1)	1314	180174.1	7.3	(6.9-7.7)
	2018	1562	178306.4	8.8	(8.3-9.2)	1425	182266.1	7.8	(7.4-8.2)	1383	183699.2	7.5	(7.1-7.9)
65-74	2003	1354	120020.2	11.3	(10.7-11.9)	1002	120198.2	8.3	(7.8-8.9)	792	120315.6	6.6	(6.1-7.1)
	2004	1328	120721.3	11.0	(10.4-11.6)	1011	121242.3	8.3	(7.8-8.9)	800	121585.8	6.6	(6.1-7.1)
	2005	1167	119159.7	9.8	(9.2-10.4)	857	120002.6	7.1	(6.7-7.6)	679	120524.7	5.6	(5.2-6.1)
	2006	1126	118863	9.5	(8.9-10.0)	839	120005.8	7.0	(6.5-7.5)	716	120656.7	5.9	(5.5-6.4)
	2007	1069	119490.1	8.9	(8.4-9.5)	797	120870.9	6.6	(6.1-7.1)	706	121624.2	5.8	(5.4-6.2)
	2008	989	121509.7	8.1	(7.6-8.7)	787	123155.6	6.4	(6.0-6.9)	691	124018.6	5.6	(5.2-6.0)
	2009	1000	123630.4	8.1	(7.6-8.6)	771	125485	6.1	(5.7-6.6)	652	126477.5	5.2	(4.8-5.6)
	2010	974	124782.3	7.8	(7.3-8.3)	785	126880.5	6.2	(5.8-6.6)	683	127981.5	5.3	(4.9-5.8)

	2011	995	128318	7.8	(7.3-8.3)	846	130597	6.5	(6.0-6.9)	775	131797.5	5.9	(5.5-6.3)
	2012	978	134084.5	7.3	(6.8-7.8)	796	136600.3	5.8	(5.4-6.2)	725	137887.8	5.3	(4.9-5.7)
	2013	983	137148	7.2	(6.7-7.6)	820	139859	5.9	(5.5-6.3)	759	141198.5	5.4	(5.0-5.8)
	2014	971	139809.8	6.9	(6.5-7.4)	837	142638.3	5.9	(5.5-6.3)	773	144061.5	5.4	(5.0-5.8)
	2015	956	142480.9	6.7	(6.3-7.1)	826	145419.8	5.7	(5.3-6.1)	782	146887.2	5.3	(5.0-5.7)
	2016	1004	145422.4	6.9	(6.5-7.3)	856	148475	5.8	(5.4-6.2)	821	149952.9	5.5	(5.1-5.9)
	2017	982	146386.7	6.7	(6.3-7.1)	885	149507.3	5.9	(5.5-6.3)	837	150970.1	5.5	(5.2-5.9)
	2018	891	147264.9	6.1	(5.7-6.5)	811	150450.9	5.4	(5.0-5.8)	769	151923.5	5.1	(4.7-5.4)
75-84	2003	988	81382.27	12.1	(11.4-12.9)	723	81515.27	8.9	(8.2-9.5)	563	81590.26	6.9	(6.3-7.5)
	2004	948	81317.42	11.7	(10.9-12.4)	737	81688.17	9.0	(8.4-9.7)	597	81930.23	7.3	(6.7-7.9)
	2005	830	79605.97	10.4	(9.7-11.2)	627	80183.17	7.8	(7.2-8.5)	500	80559.01	6.2	(5.7-6.8)
	2006	783	78898.41	9.9	(9.2-10.6)	587	79661.18	7.4	(6.8-8.0)	500	80122.25	6.2	(5.7-6.8)
	2007	728	78759.03	9.2	(8.6-9.9)	573	79693.26	7.2	(6.6-7.8)	486	80235.13	6.1	(5.5-6.6)
	2008	688	78784.05	8.7	(8.1-9.4)	533	79895.96	6.7	(6.1-7.3)	438	80519.68	5.4	(4.9-6.0)
	2009	677	79014.34	8.6	(7.9-9.2)	580	80267.15	7.2	(6.6-7.8)	513	80956.66	6.3	(5.8-6.9)
	2010	658	79533.11	8.3	(7.7-8.9)	512	80891.24	6.3	(5.8-6.9)	474	81595.2	5.8	(5.3-6.4)
	2011	675	80253.78	8.4	(7.8-9.1)	573	81756.39	7.0	(6.4-7.6)	512	82529.33	6.2	(5.7-6.8)
	2012	616	81717.39	7.5	(7.0-8.2)	535	83273.28	6.4	(5.9-7.0)	479	84094.91	5.7	(5.2-6.2)
	2013	645	82685.79	7.8	(7.2-8.4)	553	84323.39	6.6	(6.0-7.1)	515	85197.18	6.0	(5.5-6.6)
	2014	582	83899.34	6.9	(6.4-7.5)	501	85632.39	5.9	(5.3-6.4)	470	86516.66	5.4	(5.0-5.9)
	2015	666	84172.19	7.9	(7.3-8.5)	577	85986.68	6.7	(6.2-7.3)	549	86853.58	6.3	(5.8-6.9)
	2016	624	84627.6	7.4	(6.8-8.0)	569	86508.83	6.6	(6.0-7.1)	543	87385.4	6.2	(5.7-6.8)
	2017	626	86143.62	7.3	(6.7-7.9)	524	88074.55	5.9	(5.5-6.5)	499	89013.07	5.6	(5.1-6.1)
	2018	573	88414.97	6.5	(6.0-7.0)	542	90427.07	6.0	(5.5-6.5)	528	91384.58	5.8	(5.3-6.3)
85+	2003	236	27854.61	8.5	(7.4-9.6)	172	27888.53	6.2	(5.3-7.2)	129	27911.55	4.6	(3.9-5.5)
	2004	280	27873.62	10.0	(8.9-11.3)	202	27996.49	7.2	(6.3-8.3)	177	28057.02	6.3	(5.4-7.3)
	2005	254	28835.83	8.8	(7.8-10)	188	29037.44	6.5	(5.6-7.5)	156	29143.33	5.4	(4.5-6.3)
	2006	252	30097.11	8.4	(7.4-9.5)	181	30376.11	6.0	(5.1-6.9)	145	30536.11	4.7	(4.0-5.6)
	2007	275	30635.61	9.0	(7.9-10.1)	220	31000.42	7.1	(6.2-8.1)	181	31204.67	5.8	(5.0-6.7)
	2008	254	31387.46	8.1	(7.1-9.2)	207	31802.9	6.5	(5.7-7.5)	177	32050.28	5.5	(4.7-6.4)
	2009	252	31702.8	7.9	(7.0-9.0)	191	32164.59	5.9	(5.1-6.8)	172	32445.64	5.3	(4.5-6.2)
	2010	235	32604.28	7.2	(6.3-8.2)	181	33127.03	5.5	(4.7-6.3)	172	33450.71	5.1	(4.4-6.0)

	2011	232	33334.92	7.0	(6.1-7.9)	197	33896.59	5.8	(5.0-6.7)	178	34216.65	5.2	(4.5-6.0)
	2012	274	33863.49	8.1	(7.2-9.1)	212	34507.16	6.1	(5.3-7.0)	193	34837.96	5.5	(4.8-6.4)
	2013	226	34246.91	6.6	(5.8-7.5)	198	34917.02	5.7	(4.9-6.5)	183	35275.98	5.2	(4.5-6.0)
	2014	261	34929.75	7.5	(6.6-8.4)	209	35622	5.9	(5.1-6.7)	200	35995.42	5.6	(4.8-6.4)
	2015	230	35415.59	6.5	(5.7-7.4)	198	36153.09	5.5	(4.7-6.3)	182	36543.41	5.0	(4.3-5.8)
	2016	260	36126.73	7.2	(6.3-8.1)	223	36905.45	6.0	(5.3-6.9)	217	37303.91	5.8	(5.1-6.6)
	2017	231	36807.51	6.3	(5.5-7.1)	201	37652.82	5.3	(4.6-6.1)	193	38040.32	5.1	(4.4-5.8)
	2018	202	37740.44	5.4	(4.6-6.1)	188	38586.78	4.9	(4.2-5.6)	185	38962.49	4.7	(4.1-5.5)
** N = Number of prescriptions*													

A.43 Incidence rates for prescriptions of benzodiazepines and beta-blockers between 2003 and 2018, by age

Table 59 Incidence rates for prescriptions of benzodiazepines and beta-blockers between 2003 and 2018, by age

Variable		Benzodiazepines				Beta-blockers (propranolol)			
Age band	Year	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
<25	2003	374	107653.3	3.5	(3.1-3.8)	231	107725.6	2.1	(1.9-2.4)
	2004	338	108876.6	3.1	(2.8-3.5)	280	109038.3	2.6	(2.3-2.9)
	2005	344	108861.8	3.2	(2.8-3.5)	277	109037.2	2.5	(2.3-2.9)
	2006	351	110491.6	3.2	(2.9-3.5)	300	110644.8	2.7	(2.4-3.0)
	2007	373	111904.1	3.3	(3.0-3.7)	278	112081.1	2.5	(2.2-2.8)
	2008	361	114467.8	3.2	(2.8-3.5)	316	114633.7	2.8	(2.5-3.1)
	2009	360	115548.8	3.1	(2.8-3.5)	309	115670.9	2.7	(2.4-3.0)
	2010	398	116610.2	3.4	(3.1-3.8)	392	116663	3.4	(3.0-3.7)
	2011	423	117123.8	3.6	(3.3-4.0)	397	117142.3	3.4	(3.1-3.7)
	2012	438	118417.3	3.7	(3.4-4.1)	460	118408	3.9	(3.5-4.3)
	2013	446	118512	3.8	(3.4-4.1)	574	118371.6	4.8	(4.5-5.3)
	2014	477	118711.4	4.0	(3.7-4.4)	657	118433.6	5.5	(5.1-6.0)
	2015	518	118300.6	4.4	(4.0-4.8)	782	117788.2	6.6	(6.2-7.1)
	2016	578	117950.4	4.9	(4.5-5.3)	907	117195.3	7.7	(7.2-8.3)
	2017	528	117326.9	4.5	(4.1-4.9)	928	116304.1	8.0	(7.5-8.5)
	2018	543	116813.5	4.6	(4.3-5.1)	1050	115530.6	9.1	(8.5-9.7)
25-34	2003	966	188533.5	5.1	(4.8-5.5)	558	188784.5	3.0	(2.7-3.2)
	2004	910	187538.6	4.9	(4.5-5.2)	549	188204.4	2.9	(2.7-3.2)
	2005	849	185625.7	4.6	(4.3-4.9)	528	186536.3	2.8	(2.6-3.1)
	2006	815	184710.4	4.4	(4.1-4.7)	479	185883	2.6	(2.4-2.8)
	2007	837	183993.7	4.5	(4.2-4.9)	490	185338.8	2.6	(2.4-2.9)
	2008	770	184568.7	4.2	(3.9-4.5)	485	186061.6	2.6	(2.4-2.8)
	2009	898	185581.7	4.8	(4.5-5.2)	578	187216.5	3.1	(2.8-3.3)
	2010	843	187402.2	4.5	(4.2-4.8)	570	189142.7	3.0	(2.8-3.3)
	2011	897	189584.5	4.7	(4.4-5.1)	701	191339.9	3.7	(3.4-3.9)
	2012	947	193065.9	4.9	(4.6-5.2)	814	194700	4.2	(3.9-4.5)
	2013	964	194605.8	5.0	(4.6-5.3)	896	195976.5	4.6	(4.3-4.9)
	2014	1091	195829.8	5.6	(5.2-5.9)	984	196954.7	5.0	(4.7-5.3)
	2015	1176	197371.2	6.0	(5.6-6.3)	1130	198252.6	5.7	(5.4-6.0)
	2016	1268	198754.4	6.4	(6.0-6.7)	1229	199366.2	6.2	(5.8-6.5)
	2017	1226	199251.6	6.2	(5.8-6.5)	1371	199414.1	6.9	(6.5-7.2)
	2018	1238	199818.3	6.2	(5.9-6.6)	1436	199494.1	7.2	(6.8-7.6)
35-44	2003	1543	225683.7	6.8	(6.5-7.2)	700	226153.8	3.1	(2.9-3.3)
	2004	1386	228498.9	6.1	(5.8-6.4)	734	229792	3.2	(3.0-3.4)
	2005	1332	227714.9	5.8	(5.5-6.2)	651	229597.4	2.8	(2.6-3.1)
	2006	1267	227666.4	5.6	(5.3-5.9)	613	230091.3	2.7	(2.5-2.9)
	2007	1204	225932.1	5.3	(5-5.6)	607	228798.6	2.7	(2.4-2.9)
	2008	1131	223682.6	5.1	(4.8-5.4)	559	226939.9	2.5	(2.3-2.7)
	2009	1195	219191.1	5.5	(5.1-5.8)	667	222628	3.0	(2.8-3.2)
	2010	1104	214598.2	5.1	(4.8-5.5)	647	218218.2	3.0	(2.7-3.2)
	2011	1137	209797.7	5.4	(5.1-5.7)	690	213483.3	3.2	(3.0-3.5)

	2012	1045	205539.4	5.1	(4.8-5.4)	700	209250.7	3.3	(3.1-3.6)
	2013	1089	201772.8	5.4	(5.1-5.7)	771	205428.6	3.8	(3.5-4.0)
	2014	1127	200032.1	5.6	(5.3-6.0)	818	203693.6	4.0	(3.7-4.3)
	2015	1076	199962.7	5.4	(5.1-5.7)	841	203420.3	4.1	(3.9-4.4)
	2016	1161	199884.6	5.8	(5.5-6.2)	955	203188.4	4.7	(4.4-5.0)
	2017	1093	199257.4	5.5	(5.2-5.8)	1022	202336.6	5.1	(4.7-5.4)
	2018	1113	199358.5	5.6	(5.3-5.9)	1080	202012.4	5.3	(5.0-5.7)
45-54	2003	1261	188873.9	6.7	(6.3-7.1)	497	189267.5	2.6	(2.4-2.9)
	2004	1271	190709.9	6.7	(6.3-7.0)	534	191884.2	2.8	(2.6-3.0)
	2005	1173	192197.9	6.1	(5.8-6.5)	526	194072.3	2.7	(2.5-3.0)
	2006	1059	195351.1	5.4	(5.1-5.8)	495	197869.3	2.5	(2.3-2.7)
	2007	1142	198875.1	5.7	(5.4-6.1)	485	202010.1	2.4	(2.2-2.6)
	2008	1103	203415.8	5.4	(5.1-5.8)	513	207085.6	2.5	(2.3-2.7)
	2009	1169	207602.8	5.6	(5.3-6)	538	211866.9	2.5	(2.3-2.8)
	2010	1105	212061	5.2	(4.9-5.5)	555	216871.9	2.6	(2.4-2.8)
	2011	1164	214528.9	5.4	(5.1-5.7)	585	219767.5	2.7	(2.5-2.9)
	2012	1144	217601.4	5.3	(5.0-5.6)	610	223286.2	2.7	(2.5-3.0)
	2013	1081	219061	4.9	(4.6-5.2)	616	225051.2	2.7	(2.5-3.0)
	2014	1090	221075.7	4.9	(4.6-5.2)	645	227166.4	2.8	(2.6-3.1)
	2015	1051	221813.1	4.7	(4.5-5.0)	697	228033.2	3.1	(2.8-3.3)
	2016	1093	223149.5	4.9	(4.6-5.2)	802	229316.3	3.5	(3.3-3.7)
	2017	1081	221532.5	4.9	(4.6-5.2)	807	227517.9	3.5	(3.3-3.8)
	2018	986	219424.1	4.5	(4.2-4.8)	796	225083	3.5	(3.3-3.8)
55-64	2003	1222	167668.5	7.3	(6.9-7.7)	344	168106.1	2.0	(1.8-2.3)
	2004	1189	171291.7	6.9	(6.6-7.3)	375	172609.4	2.2	(2.0-2.4)
	2005	1115	173151	6.4	(6.1-6.8)	319	175268.7	1.8	(1.6-2.0)
	2006	1061	175503.3	6.0	(5.7-6.4)	318	178332.6	1.8	(1.6-2.0)
	2007	1033	176131.3	5.9	(5.5-6.2)	312	179574.8	1.7	(1.5-1.9)
	2008	923	177253.8	5.2	(4.9-5.6)	302	181273.1	1.7	(1.5-1.9)
	2009	983	176416.4	5.6	(5.2-5.9)	336	180877.9	1.9	(1.7-2.1)
	2010	879	177566.8	5.0	(4.6-5.3)	344	182431.5	1.9	(1.7-2.1)
	2011	832	176160.9	4.7	(4.4-5.1)	334	181234.9	1.8	(1.7-2.1)
	2012	776	174421.9	4.4	(4.1-4.8)	338	179649.6	1.9	(1.7-2.1)
	2013	740	174541	4.2	(3.9-4.6)	350	179959.3	1.9	(1.7-2.2)
	2014	734	176219	4.2	(3.9-4.5)	382	181900.9	2.1	(1.9-2.3)
	2015	727	179117.2	4.1	(3.8-4.4)	393	185011.9	2.1	(1.9-2.3)
	2016	745	182989	4.1	(3.8-4.4)	390	189166.6	2.1	(1.9-2.3)
	2017	761	186972.4	4.1	(3.8-4.4)	395	193399.4	2.0	(1.8-2.3)
	2018	740	191394.9	3.9	(3.6-4.2)	449	198080.3	2.3	(2.1-2.5)
65-74	2003	907	120274	7.5	(7.1-8.0)	151	120656.7	1.3	(1.1-1.5)
	2004	885	121450.2	7.3	(6.8-7.8)	156	122561.5	1.3	(1.1-1.5)
	2005	778	120335.7	6.5	(6.0-6.9)	148	122074.4	1.2	(1.0-1.4)
	2006	793	120403	6.6	(6.1-7.1)	140	122734.5	1.1	(1.0-1.3)
	2007	757	121420.4	6.2	(5.8-6.7)	130	124309.1	1.0	(0.9-1.2)
	2008	690	123853.6	5.6	(5.2-6.0)	119	127276	0.9	(0.8-1.1)
	2009	692	126455	5.5	(5.1-5.9)	146	130372.1	1.1	(0.9-1.3)
	2010	665	128060.6	5.2	(4.8-5.6)	153	132405.8	1.2	(1.0-1.4)
	2011	642	132135.5	4.9	(4.5-5.2)	164	136975.3	1.2	(1.0-1.4)
	2012	627	138625.4	4.5	(4.2-4.9)	188	143934.9	1.3	(1.1-1.5)

	2013	634	142250.9	4.5	(4.1-4.8)	172	147915.6	1.2	(1.0-1.4)
	2014	609	145489.3	4.2	(3.9-4.5)	200	151373.2	1.3	(1.1-1.5)
	2015	575	148787.2	3.9	(3.6-4.2)	178	154934.8	1.1	(1.0-1.3)
	2016	575	152397.7	3.8	(3.5-4.1)	181	158647.7	1.1	(1.0-1.3)
	2017	534	153972.7	3.5	(3.2-3.8)	197	160331.1	1.2	(1.1-1.4)
	2018	482	155559.4	3.1	(2.8-3.4)	208	161936.3	1.3	(1.1-1.5)
75-84	2003	670	81542.39	8.2	(7.6-8.9)	69	81850	0.8	(0.7-1.1)
	2004	629	81851.29	7.7	(7.1-8.3)	76	82711.46	0.9	(0.7-1.2)
	2005	589	80420.62	7.3	(6.7-7.9)	78	81752.05	1.0	(0.8-1.2)
	2006	547	79923.76	6.8	(6.3-7.4)	52	81667.02	0.6	(0.5-0.8)
	2007	519	79987.86	6.5	(5.9-7.1)	58	82141.44	0.7	(0.5-0.9)
	2008	484	80205.42	6.0	(5.5-6.6)	71	82753.75	0.9	(0.7-1.1)
	2009	451	80625.67	5.6	(5.1-6.1)	60	83471.36	0.7	(0.5-0.9)
	2010	462	81352.86	5.7	(5.2-6.2)	64	84478.94	0.8	(0.6-1.0)
	2011	430	82314.3	5.2	(4.7-5.7)	69	85765.15	0.8	(0.6-1.0)
	2012	425	83939.69	5.1	(4.6-5.6)	79	87678.18	0.9	(0.7-1.1)
	2013	398	85166.87	4.7	(4.2-5.2)	77	89087.96	0.9	(0.7-1.1)
	2014	401	86534.1	4.6	(4.2-5.1)	82	90649.95	0.9	(0.7-1.1)
	2015	398	86994.67	4.6	(4.1-5.0)	85	91224.12	0.9	(0.7-1.2)
	2016	379	87744.23	4.3	(3.9-4.8)	79	92226.76	0.9	(0.7-1.1)
	2017	379	89554.02	4.2	(3.8-4.7)	95	94168.25	1.0	(0.8-1.2)
	2018	329	92148.89	3.6	(3.2-4.0)	86	96916.91	0.9	(0.7-1.1)
85+	2003	159	27901.02	5.7	(4.8-6.7)	13	27980.05	0.5	(0.2-0.8)
	2004	204	28008.02	7.3	(6.3-8.4)	8	28283.23	0.3	(0.1-0.6)
	2005	185	29061.06	6.4	(5.5-7.4)	10	29546.26	0.3	(0.2-0.6)
	2006	175	30420.59	5.8	(4.9-6.7)	16	31101.11	0.5	(0.3-0.8)
	2007	200	31052.72	6.4	(5.6-7.4)	15	31931.86	0.5	(0.3-0.8)
	2008	180	31884.8	5.6	(4.9-6.5)	10	32925.14	0.3	(0.1-0.6)
	2009	181	32290.07	5.6	(4.8-6.5)	17	33471.06	0.5	(0.3-0.8)
	2010	150	33249.37	4.5	(3.8-5.3)	18	34602.15	0.5	(0.3-0.8)
	2011	147	34062.41	4.3	(3.6-5.1)	12	35511.27	0.3	(0.2-0.6)
	2012	166	34716.74	4.8	(4.1-5.6)	19	36241.96	0.5	(0.3-0.8)
	2013	141	35191.99	4.0	(3.4-4.7)	13	36808.24	0.4	(0.2-0.6)
	2014	173	35995.39	4.8	(4.1-5.6)	13	37721.55	0.3	(0.2-0.6)
	2015	152	36571.43	4.2	(3.5-4.9)	12	38399.63	0.3	(0.2-0.5)
	2016	142	37375.85	3.8	(3.2-4.5)	21	39295.64	0.5	(0.3-0.8)
	2017	148	38148.65	3.9	(3.3-4.6)	21	40174.64	0.5	(0.3-0.8)
	2018	108	39092.3	2.8	(2.3-3.3)	19	41160.05	0.5	(0.3-0.7)

** N = Number of prescriptions*

A.44 Incidence rates for prescriptions of antipsychotics and anticonvulsants between 2003 and 2018, by age

Table 60 Incidence rates for prescriptions of antipsychotics and anticonvulsants between 2003 and 2018, by age

Variable		Antipsychotics				Anticonvulsants			
Age band	Year	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
<25	2003	29	107854.1	0.3	(0.2-0.4)	1	107870.2	0.0	(0.0-0.1)
	2004	48	109352.6	0.4	(0.3-0.6)	4	109410.8	0.0	(0.0-0.1)
	2005	35	109525.1	0.3	(0.2-0.4)	3	109604.7	0.0	(0.0-0.1)
	2006	32	111266.1	0.3	(0.2-0.4)	2	111363.6	0.0	(0.0-0.1)
	2007	29	112796.4	0.3	(0.2-0.4)	10	112893.7	0.1	(0.0-0.2)
	2008	32	115440.2	0.3	(0.2-0.4)	9	115539.3	0.1	(0.0-0.1)
	2009	46	116505.2	0.4	(0.3-0.5)	8	116613.1	0.1	(0.0-0.1)
	2010	57	117576.3	0.5	(0.4-0.6)	19	117691.1	0.2	(0.1-0.3)
	2011	60	118135.6	0.5	(0.4-0.7)	30	118241	0.3	(0.2-0.4)
	2012	54	119500.5	0.5	(0.3-0.6)	21	119604.9	0.2	(0.1-0.3)
	2013	76	119579.7	0.6	(0.5-0.8)	44	119684	0.4	(0.3-0.5)
	2014	78	119817.1	0.7	(0.5-0.8)	54	119934	0.5	(0.3-0.6)
	2015	92	119433.7	0.8	(0.6-0.9)	87	119546.4	0.7	(0.6-0.9)
	2016	96	119144.6	0.8	(0.7-1.0)	85	119264.8	0.7	(0.6-0.9)
	2017	126	118517.2	1.1	(0.9-1.3)	86	118647.4	0.7	(0.6-0.9)
	2018	141	117983.6	1.2	(1.0-1.4)	76	118153.6	0.6	(0.5-0.8)
25-34	2003	87	189048.7	0.5	(0.4-0.6)	12	189095.5	0.1	(0.0-0.1)
	2004	77	188955.1	0.4	(0.3-0.5)	14	189078.9	0.1	(0.0-0.1)
	2005	82	187736.8	0.4	(0.3-0.5)	15	187923.4	0.1	(0.0-0.1)
	2006	79	187431	0.4	(0.3-0.5)	20	187677.1	0.1	(0.1-0.2)
	2007	64	187190.6	0.3	(0.3-0.4)	21	187478.6	0.1	(0.1-0.2)
	2008	88	188227.6	0.5	(0.4-0.6)	39	188547.8	0.2	(0.1-0.3)

	2009	97	189693.2	0.5	(0.4-0.6)	57	190027.7	0.3	(0.2-0.4)
	2010	105	191968	0.5	(0.4-0.7)	96	192334.4	0.5	(0.4-0.6)
	2011	103	194569.6	0.5	(0.4-0.6)	96	194930.2	0.5	(0.4-0.6)
	2012	127	198420.8	0.6	(0.5-0.8)	137	198790.2	0.7	(0.6-0.8)
	2013	131	200254.1	0.7	(0.5-0.8)	161	200591.4	0.8	(0.7-0.9)
	2014	151	201747.5	0.7	(0.6-0.9)	200	202037.3	1.0	(0.9-1.1)
	2015	165	203633.9	0.8	(0.7-0.9)	222	203860.7	1.1	(1.0-1.2)
	2016	184	205444.5	0.9	(0.8-1.0)	254	205587.9	1.2	(1.1-1.4)
	2017	226	206229	1.1	(1.0-1.2)	259	206347	1.3	(1.1-1.4)
	2018	202	206978.1	1.0	(0.8-1.1)	258	207107.3	1.2	(1.1-1.4)
35-44	2003	104	226469.1	0.5	(0.4-0.6)	31	226513.1	0.1	(0.1-0.2)
	2004	109	230746.3	0.5	(0.4-0.6)	24	230891	0.1	(0.1-0.2)
	2005	100	231136.7	0.4	(0.4-0.5)	44	231347.8	0.2	(0.1-0.3)
	2006	104	232172.6	0.4	(0.4-0.5)	68	232414.3	0.3	(0.2-0.4)
	2007	101	231332.3	0.4	(0.4-0.5)	57	231622.2	0.2	(0.2-0.3)
	2008	107	229816.4	0.5	(0.4-0.6)	98	230117.5	0.4	(0.3-0.5)
	2009	118	225946.3	0.5	(0.4-0.6)	125	226215.1	0.6	(0.5-0.7)
	2010	114	221878	0.5	(0.4-0.6)	162	222133.2	0.7	(0.6-0.9)
	2011	134	217512.2	0.6	(0.5-0.7)	183	217713	0.8	(0.7-1.0)
	2012	140	213668.5	0.7	(0.6-0.8)	196	213837.8	0.9	(0.8-1.1)
	2013	141	210115.9	0.7	(0.6-0.8)	216	210259.3	1.0	(0.9-1.2)
	2014	133	208838.8	0.6	(0.5-0.8)	274	208885.8	1.3	(1.2-1.5)
	2015	172	209061	0.8	(0.7-1.0)	260	209030.4	1.2	(1.1-1.4)
	2016	186	209335.5	0.9	(0.8-1.0)	347	209234.1	1.7	(1.5-1.8)
	2017	194	209039.2	0.9	(0.8-1.1)	358	208784	1.7	(1.5-1.9)
	2018	173	209493.2	0.8	(0.7-1.0)	308	209112.5	1.5	(1.3-1.6)

45-54	2003	85	189494.5	0.4	(0.4-0.6)	26	189523.6	0.1	(0.1-0.2)
	2004	79	192579.1	0.4	(0.3-0.5)	51	192666.2	0.3	(0.2-0.3)
	2005	86	195247.9	0.4	(0.4-0.5)	44	195384.6	0.2	(0.2-0.3)
	2006	102	199490.2	0.5	(0.4-0.6)	88	199676.6	0.4	(0.4-0.5)
	2007	89	204041.2	0.4	(0.4-0.5)	87	204248.7	0.4	(0.3-0.5)
	2008	114	209612.9	0.5	(0.4-0.7)	135	209803.2	0.6	(0.5-0.8)
	2009	102	214824.9	0.5	(0.4-0.6)	149	215046.3	0.7	(0.6-0.8)
	2010	139	220361.2	0.6	(0.5-0.7)	209	220557.9	0.9	(0.8-1.1)
	2011	130	223756.9	0.6	(0.5-0.7)	228	223880.3	1.0	(0.9-1.2)
	2012	146	227780.8	0.6	(0.5-0.8)	260	227782.3	1.1	(1.0-1.3)
	2013	123	230113.8	0.5	(0.4-0.6)	276	230004.1	1.2	(1.1-1.4)
	2014	157	232768.3	0.7	(0.6-0.8)	284	232542.9	1.2	(1.1-1.4)
	2015	136	234175.1	0.6	(0.5-0.7)	366	233747.4	1.6	(1.4-1.7)
	2016	176	236089.6	0.7	(0.6-0.9)	381	235454.9	1.6	(1.5-1.8)
	2017	191	234777	0.8	(0.7-0.9)	385	234033.7	1.6	(1.5-1.8)
	2018	181	232832.2	0.8	(0.7-0.9)	383	231929.2	1.7	(1.5-1.8)
55-64	2003	77	168244.6	0.5	(0.4-0.6)	32	168274.4	0.2	(0.1-0.3)
	2004	74	173077.6	0.4	(0.3-0.5)	43	173145.7	0.2	(0.2-0.3)
	2005	70	176021.9	0.4	(0.3-0.5)	58	176126.1	0.3	(0.3-0.4)
	2006	83	179384.7	0.5	(0.4-0.6)	82	179495.2	0.5	(0.4-0.6)
	2007	76	180914.5	0.4	(0.3-0.5)	81	181021.7	0.4	(0.4-0.6)
	2008	70	182886.8	0.4	(0.3-0.5)	100	182999	0.5	(0.4-0.7)
	2009	70	182825.4	0.4	(0.3-0.5)	149	182855	0.8	(0.7-1.0)
	2010	79	184699.9	0.4	(0.3-0.5)	152	184655.6	0.8	(0.7-1.0)
	2011	78	183813.8	0.4	(0.3-0.5)	187	183699.4	1.0	(0.9-1.2)
	2012	86	182548.5	0.5	(0.4-0.6)	187	182375.3	1.0	(0.9-1.2)

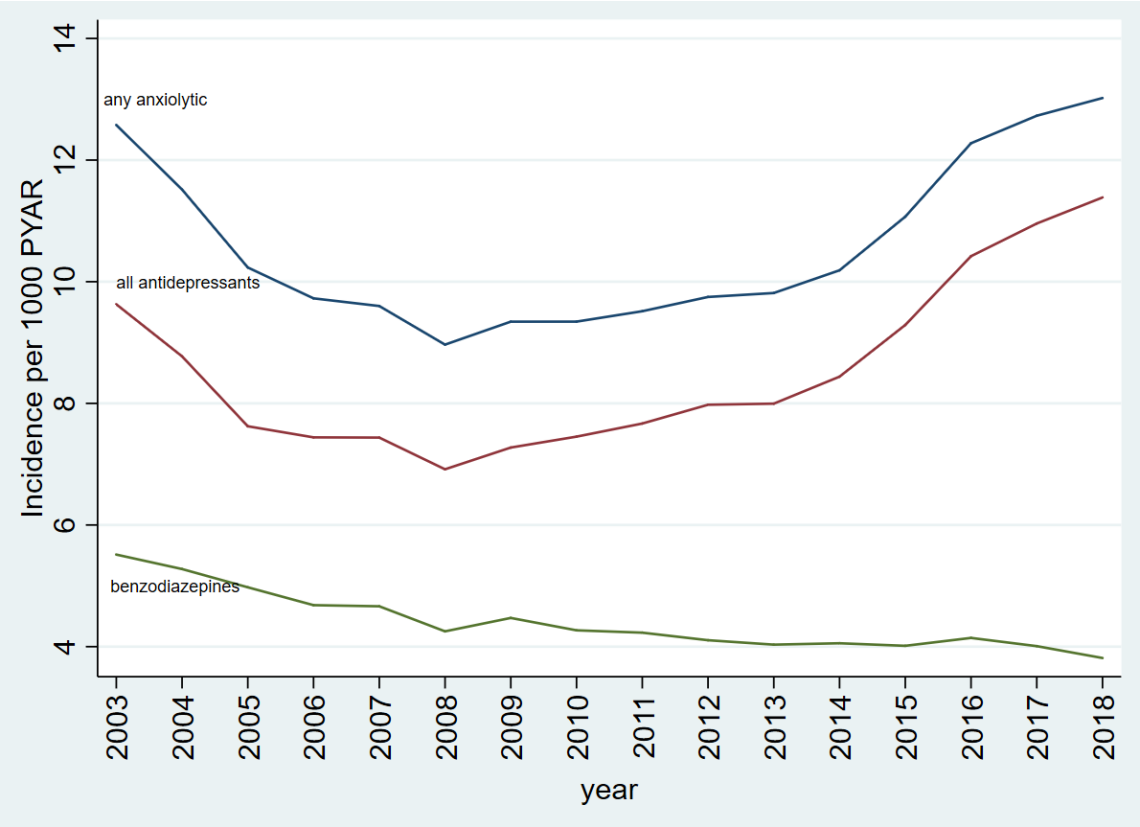
	2013	87	183133.6	0.5	(0.4-0.6)	211	182880	1.2	(1.0-1.3)
	2014	95	185457.7	0.5	(0.4-0.6)	205	185096.1	1.1	(1.0-1.3)
	2015	69	188979.9	0.4	(0.3-0.5)	236	188508.1	1.3	(1.1-1.4)
	2016	96	193564.8	0.5	(0.4-0.6)	305	192923.7	1.6	(1.4-1.8)
	2017	105	198300.8	0.5	(0.4-0.6)	276	197433.2	1.4	(1.2-1.6)
	2018	112	203463.8	0.6	(0.5-0.7)	301	202418.7	1.5	(1.3-1.7)
65-74	2003	70	120703.9	0.6	(0.5-0.7)	29	120723.8	0.2	(0.2-0.3)
	2004	55	122705.8	0.4	(0.3-0.6)	23	122763.3	0.2	(0.1-0.3)
	2005	44	122352.2	0.4	(0.3-0.5)	34	122416.9	0.3	(0.2-0.4)
	2006	47	123129.3	0.4	(0.3-0.5)	46	123214.2	0.4	(0.3-0.5)
	2007	40	124829.6	0.3	(0.2-0.4)	49	124910.2	0.4	(0.3-0.5)
	2008	52	127943	0.4	(0.3-0.5)	65	128004.5	0.5	(0.4-0.6)
	2009	46	131187.3	0.4	(0.3-0.5)	105	131209.7	0.8	(0.7-1.0)
	2010	37	133417.8	0.3	(0.2-0.4)	129	133388.4	1.0	(0.8-1.1)
	2011	60	138215.9	0.4	(0.3-0.6)	124	138102.6	0.9	(0.7-1.1)
	2012	56	145433.6	0.4	(0.3-0.5)	135	145239.2	0.9	(0.8-1.1)
	2013	64	149664	0.4	(0.3-0.5)	173	149376.8	1.2	(1.0-1.3)
	2014	55	153402.1	0.4	(0.3-0.5)	188	153013.8	1.2	(1.1-1.4)
	2015	44	157234.5	0.3	(0.2-0.4)	199	156720.6	1.3	(1.1-1.5)
	2016	48	161254.3	0.3	(0.2-0.4)	197	160590.2	1.2	(1.1-1.4)
	2017	57	163181	0.3	(0.3-0.5)	200	162378	1.2	(1.1-1.4)
	2018	63	165088.4	0.4	(0.3-0.5)	182	164162.1	1.1	(1.0-1.3)
75-84	2003	56	81859.77	0.7	(0.5-0.9)	21	81876.5	0.3	(0.2-0.4)
	2004	50	82745.24	0.6	(0.4-0.8)	27	82800.2	0.3	(0.2-0.5)
	2005	46	81833.67	0.6	(0.4-0.7)	36	81898.36	0.4	(0.3-0.6)
	2006	34	81792.2	0.4	(0.3-0.6)	40	81838.18	0.5	(0.3-0.7)

	2007	53	82304.25	0.6	(0.5-0.8)	40	82345.03	0.5	(0.3-0.7)
	2008	36	82963.04	0.4	(0.3-0.6)	43	83011.75	0.5	(0.4-0.7)
	2009	41	83744.84	0.5	(0.4-0.7)	54	83784.65	0.6	(0.5-0.8)
	2010	47	84819.14	0.6	(0.4-0.7)	68	84798.29	0.8	(0.6-1.0)
	2011	40	86175.6	0.5	(0.3-0.6)	80	86098.9	0.9	(0.7-1.2)
	2012	40	88164.14	0.5	(0.3-0.6)	98	88035.86	1.1	(0.9-1.4)
	2013	32	89661.07	0.4	(0.2-0.5)	108	89460.77	1.2	(1.0-1.5)
	2014	50	91334.46	0.5	(0.4-0.7)	117	91051.52	1.3	(1.1-1.5)
	2015	43	91996.44	0.5	(0.3-0.6)	120	91647.41	1.3	(1.1-1.6)
	2016	50	93083.12	0.5	(0.4-0.7)	134	92672.74	1.4	(1.2-1.7)
	2017	52	95132.61	0.5	(0.4-0.7)	116	94664.62	1.2	(1.0-1.5)
	2018	40	98035.89	0.4	(0.3-0.6)	118	97483.38	1.2	(1.0-1.4)
85+	2003	29	27967.61	1.0	(0.7-1.5)	4	27985.6	0.1	(0.0-0.4)
	2004	27	28257.16	1.0	(0.6-1.4)	5	28295.62	0.2	(0.1-0.4)
	2005	19	29526.32	0.6	(0.4-1.0)	10	29570.49	0.3	(0.2-0.6)
	2006	22	31080.69	0.7	(0.4-1.1)	10	31138.37	0.3	(0.2-0.6)
	2007	10	31924.47	0.3	(0.2-0.6)	18	31973.38	0.6	(0.3-0.9)
	2008	15	32932.6	0.5	(0.3-0.8)	21	32961.66	0.6	(0.4-1.0)
	2009	22	33494.81	0.7	(0.4-1.0)	11	33511.22	0.3	(0.2-0.6)
	2010	17	34643.17	0.5	(0.3-0.8)	18	34658.27	0.5	(0.3-0.8)
	2011	16	35572	0.4	(0.3-0.7)	10	35584.48	0.3	(0.1-0.5)
	2012	21	36345.23	0.6	(0.4-0.9)	33	36339.99	0.9	(0.6-1.3)
	2013	14	36944.12	0.4	(0.2-0.6)	31	36895.93	0.8	(0.6-1.2)
	2014	24	37880.94	0.6	(0.4-0.9)	36	37809.84	1.0	(0.7-1.3)
	2015	20	38581.25	0.5	(0.3-0.8)	33	38489.58	0.9	(0.6-1.2)
	2016	18	39496.28	0.5	(0.3-0.7)	38	39381.25	1.0	(0.7-1.3)

	2017	23	40416.59	0.6	(0.4-0.9)	43	40284.75	1.1	(0.8-1.4)
	2018	21	41418.4	0.5	(0.3-0.8)	45	41247.21	1.1	(0.8-1.5)
** N = Number of prescriptions*									

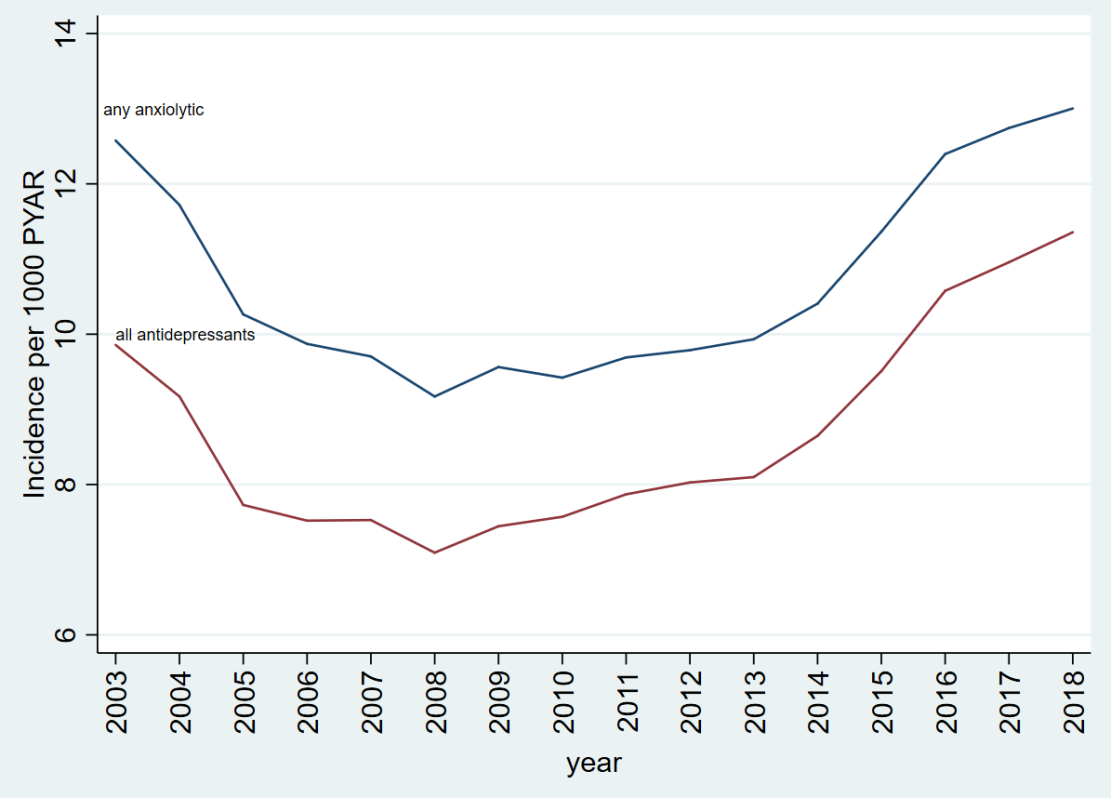
A.45 Incidence of anxiolytic prescriptions (any anxiolytic, all antidepressants, and benzodiazepines) per 1000 person years between 2003 and 2018 – restricted time frame sensitivity analysis

Figure 66 Incidence of anxiolytic prescriptions (any anxiolytic, all antidepressants, and benzodiazepines) per 1000 person years between 2003 and 2018 – restricted time frame sensitivity analysis



A.46 Incidence of anxiolytic prescriptions (any anxiolytic and all antidepressants) per 1000 person years between 2003 and 2018 – excluding low dose amitriptyline sensitivity analysis

Figure 67 Incidence of anxiolytic prescriptions (any anxiolytic and all antidepressants) per 1000 person years between 2003 and 2018 – excluding low dose amitriptyline sensitivity analysis



A.47 Incidence rates for prescriptions of any combination therapy, and SSRIs & 'other' antidepressants with a benzodiazepine, and for SSRIs & 'other' antidepressants with a beta-blocker (propranolol), between 2003 and 2018

Table 61 Incidence rates for prescriptions of any combination therapy, and SSRIs & 'other' antidepressants with a benzodiazepine, and for SSRIs & 'other' antidepressants with a beta-blocker between 2003 and 2018

Variable		Combination therapy – any combination of anxiolytics				Combination therapy – SSRI & 'other' antidepressant with benzodiazepine				Combination therapy – SSRI & 'other' antidepressant with a beta-blocker (propranolol)			
		N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)	N*	PYAR	Incidence (1000PYAR)	(95%CI)
Year	2003	1252	1111328	1.1	(1.1-1.2)	760	1111570	0.7	(0.6-0.7)	128	1111871	0.1	(0.1-0.1)
	2004	1214	1128673	1.1	(1.0-1.1)	742	1128921	0.7	(0.6-0.7)	140	1129221	0.1	(0.1-0.2)
	2005	1090	1134194	1.0	(0.9-1.0)	623	1134434	0.6	(0.5-0.6)	123	1134665	0.1	(0.1-0.1)
	2006	1055	1147014	0.9	(0.9-1.0)	629	1147221	0.6	(0.5-0.6)	124	1147486	0.1	(0.1-0.1)
	2007	985	1157048	0.9	(0.8-0.9)	599	1157239	0.5	(0.5-0.6)	106	1157501	0.1	(0.1-0.1)
	2008	944	1171977	0.8	(0.8-0.9)	550	1172180	0.5	(0.4-0.5)	113	1172377	0.1	(0.1-0.1)
	2009	1042	1180713	0.9	(0.8-0.9)	625	1180913	0.5	(0.5-0.6)	115	1181161	0.1	(0.1-0.1)
	2010	1010	1192350	0.9	(0.8-0.9)	574	1192567	0.5	(0.4-0.5)	125	1192785	0.1	(0.1-0.1)
	2011	1096	1201149	0.9	(0.9-1.0)	602	1201388	0.5	(0.5-0.5)	153	1201600	0.1	(0.1-0.2)
	2012	1132	1215730	0.9	(0.9-1.0)	559	1216008	0.5	(0.4-0.5)	175	1216224	0.1	(0.1-0.2)
	2013	1200	1223821	1.0	(0.9-1.0)	625	1224110	0.5	(0.5-0.6)	187	1224315	0.1	(0.1-0.2)
	2014	1306	1236030	1.1	(1.0-1.1)	640	1236365	0.5	(0.5-0.6)	236	1236560	0.2	(0.2-0.2)
	2015	1438	1248347	1.2	(1.1-1.2)	694	1248697	0.6	(0.5-0.6)	313	1248882	0.3	(0.2-0.3)
	2016	1592	1263215	1.3	(1.2-1.3)	722	1263636	0.6	(0.5-0.6)	358	1263813	0.3	(0.3-0.3)
	2017	1620	1272066	1.3	(1.2-1.3)	686	1272533	0.5	(0.5-0.6)	435	1272654	0.3	(0.3-0.4)
	2018	1643	1282381	1.3	(1.2-1.3)	697	1282850	0.5	(0.5-0.6)	464	1282977	0.4	(0.3-0.4)

** N = Number of prescriptions*

References

Age UK. (2020). IAPT and mental health in older people. Retrieved from https://www.ageuk.org.uk/discover/2020/01/iapt/

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. Arlington, VA: American Psychiatric Pub.

Andrew, G., Cohen, A., Salgaonkar, S., & Patel, V. (2012). The explanatory models of depression and anxiety in primary care: a qualitative study from India. *BMC Research Notes, 5*, 499.

Anthierens, S., Habraken, H., Petrovic, M., & Christiaens, T. (2007). The lesser evil? Initiating a benzodiazepine prescription in general practice: a qualitative study on GPs' perspectives. *Scandinavian journal of primary health care, 25*(4), 214-219.

Antony, M. M., & Stein, M. B. (2008). *Oxford handbook of anxiety and related disorders*: Oxford University Press.

Anxiety UK. (2009). *Anxious Times: ensuring the needs of anxiety sufferers are met in the next decade*. Retrieved from http://www.anxietyuk.org.uk/docs/new_horizons_response.pdf

Aschim, B., Lundevall, S., Martinsen, E. W., & Frich, J. C. (2011). General practitioners' experiences using cognitive behavioural therapy in general practice: A qualitative study. *Scandinavian journal of primary health care, 29*(3), 176-180.

Atkinson, P. (2014). Lies, damned lies, and IAPT statistics. *Self & Society, 42*(1-2), 18-19.

Bachhuber, M. A., Hennessy, S., Cunningham, C. O., & Starrels, J. L. (2016). Increasing benzodiazepine prescriptions and overdose mortality in the United States, 1996–2013. *American journal of public health, 106*(4), 686-688.

Baker, C. (2020). *Mental health statistics for England: prevalence, services and funding*. Retrieved from https://commonslibrary.parliament.uk/research-briefings/sn06988/

Baldwin, D. S., Ajel, K., Masdrakis, V. G., Nowak, M., & Rafiq, R. (2013). Pregabalin for the treatment of generalized anxiety disorder: an update. *Neuropsychiatric disease and treatment, 9*, 883.

Baldwin, D. S., Anderson, I. M., Nutt, D. J., Allgulander, C., Bandelow, B., den Boer, J. A., . . . Lidbetter, N. (2014). Evidence-based pharmacological treatment of anxiety disorders, post-traumatic stress disorder and obsessive-compulsive disorder: a revision of the 2005 guidelines from the British Association for Psychopharmacology. *Journal of Psychopharmacology, 28*(5), 403-439.

Baldwin, D. S., Anderson, I. M., Nutt, D. J., Bandelow, B., Bond, A., Davidson, J. R., . . . Scott, J. (2005). Evidence-based guidelines for the pharmacological treatment of anxiety disorders: recommendations from the British Association for Psychopharmacology. *Journal of Psychopharmacology, 19*(6), 567-596.

Baldwin, D. S., & Polkinghorn, C. (2005). Evidence-based pharmacotherapy of generalized anxiety disorder. *International Journal of Neuropsychopharmacology, 8*(2), 293-302.

Baldwin, D. S., Waldman, S., & Allgulander, C. (2011). Evidence-based pharmacological treatment of generalized anxiety disorder. *International Journal of Neuropsychopharmacology, 14*(5), 697-710.

Barlow, D. H., Gorman, J. M., Shear, M. K., & Woods, S. W. (2000). Cognitive-behavioral therapy, imipramine, or their combination for panic disorder: A randomized controlled trial. *Jama, 283*(19), 2529-2536.

Barnes, M., Kessler, D., Archer, C., & Wiles, N. (2019). Prioritising physical and psychological symptoms: what are the barriers and facilitators to the discussion of anxiety in the primary care consultation? *BMC Family Practice, 20*(1), 106.

Barney, L. J., Griffiths, K. M., Jorm, A. F., Christensen, H., & Zealan, N. (2006). Stigma about depression and its impact on help-seeking intentions. *Australian Journal of Psychiatry, 40*(1), 51-54.

Bastiampillai, T. J., Allison, S., Harford, P., Perry, S. W., & Wong, M.-L. (2019). Has the UK Improving Access to Psychological Therapies programme and rising antidepressant use had a public health impact? *The Lancet Psychiatry, 6*(3), e8-e9.

Batelaan, N. M., Spijker, J., de Graaf, R., & Cuijpers, P. (2012). Mixed anxiety depression should not be included in DSM-5. *The Journal of nervous and mental disease, 200*(6), 495-498.

Baumeister, H. (2012). Inappropriate prescriptions of antidepressant drugs in patients with subthreshold to mild depression: time for the evidence to become practice. *Journal of affective disorders, 139*(3), 240-243.

Biddle, L., Donovan, J. L., Gunnell, D., & Sharp, D. (2006). Young adults' perceptions of GPs as a help source for mental distress: a qualitative study. *British Journal of General Practice, 56*(533), 924-931.

Bishop, F. L. (2015). Using mixed methods research designs in health psychology: An illustrated discussion from a pragmatist perspective. *British journal of health psychology, 20*(1), 5-20.

Borowsky, S. J., Rubenstein, L. V., Meredith, L. S., Camp, P., Jackson-Triche, M., & Wells, K. B. (2000). Who is at risk of nondetection of mental health problems in primary care? *Journal of general internal medicine, 15*(6), 381-388.

Bosman, R. C., Huijbregts, K. M., Verhaak, P. F., Ruhé, H. G., van Marwijk, H. W., Van Balkom, A. J., & Batelaan, N. M. (2016). Long-term antidepressant use: a qualitative study on perspectives of patients and GPs in primary care. *Br J Gen Pract, 66*(651), e708-e719.

Bougerol, T., Scotto, J.-C., Patris, M., Strut, N., Lemming, O., & Petersen, H. E. H. (1997). Citalopram and fluoxetine in major depression. *J Clinical drug investigation, 14*(2), 77-89.

Bourke, A., Dattani, H., & Robinson, M. (2004). Feasibility study and methodology to create a quality-evaluated database of primary care data. *Journal of Innovation in Health Informatics, 12*(3), 171-177.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101.

British Medical Association. (2006). *Revisions to the GMS contract 2006/07: delivering investment in general practice*. Retrieved from https://www.nhsemployers.org/~/media/Employers/Documents/SiteCollectionDocuments/briefing_revisions_gms_stage1_cd_130209.pdf

Brudkowska, Ż., Tomczyk, M., Jusiak, K., Karakuła-Juchnowicz, H., & Rudnicka-Drożak, E. (2018). The role of beta-adrenolytic drugs in treating anxiety disorders. *Current Problems of Psychiatry, 19*(3), 209-224.

Bunney, W. E., & Davis, J. M. (1965). Norepinephrine in depressive reactions: A review. *Archives of General Psychiatry, 13*(6), 483-494.

Buszewicz, M., Pistrang, N., Barker, C., Cape, J., & Martin, J. (2006). Patients' experiences of GP consultations for psychological problems: a qualitative study. *Br J Gen Pract, 56*(528), 496-503.

Cape, J., Geyer, C., Barker, C., Pistrang, N., Buszewicz, M., Dowrick, C., & Salmon, P. (2010). Facilitating understanding of mental health problems in GP consultations: a qualitative study using taped-assisted recall. *Br J Gen Pract, 60*(580), 837-845.

Carbonari, D. M., Saine, M. E., Newcomb, C. W., Blak, B., Roy, J. A., Haynes, K., . . . Cardillo, S. (2015). Use of demographic and pharmacy data to identify patients included within both the Clinical Practice Research Datalink (CPRD) and The Health Improvement Network (THIN). *Pharmacoepidemiology & drug safety, 24*(9), 999-1003.

Cascade, E., Kalali, A. H., & Kennedy, S. H. (2009). Real-world data on SSRI antidepressant side effects. *J Psychiatry, 6*(2), 16.

Cassano, G. B., Rossi, N. B., & Pini, S. (2002). Psychopharmacology of anxiety disorders. *Dialogues in clinical neuroscience, 4*(3), 271.

Chan, T., de Lusignan, S., Cohen, A., Dhoul, N., Hague, N., van Vlymen, J., & Roberts, A. P. (2006). Prescription of psychotropic medications in primary care: a cross-sectional study of general practice computer records. *Primary Care Mental Health, 4*(2), 81.

Chew-Graham, C., Chamberlain, E., Turner, K., Folkes, L., Caulfield, L., & Sharp, D. (2008). GPs' and health visitors' views on the diagnosis and management of postnatal depression: a qualitative study. *Br J Gen Pract, 58*(548), 169-176.

Chew-Graham, C., Mullin, S., May, C. R., Hedley, S., & Cole, H. (2002). Managing depression in primary care: another example of the inverse care law? *Fam Pract., 19*(6), 632-637.

Chew-Graham, C. A., Hunter, C., Langer, S., Stenhoff, A., Drinkwater, J., Guthrie, E. A., & Salmon, P. (2013). How QOF is shaping primary care review consultations: a longitudinal qualitative study. *BMC Family Practice, 14*(1), 103.

Citrome, L., & Volavka, J. (2011). Pharmacological management of acute and persistent aggression in forensic psychiatry settings. *CNS drugs, 25*(12), 1009-1021.

Clark. (2011). Implementing NICE guidelines for the psychological treatment of depression and anxiety disorders: the IAPT experience. *International review of psychiatry, 23*(4), 318-327.

Clark. (2018). Realizing the mass public benefit of evidence-based psychological therapies: the IAPT program. *J Annual Review of Clinical Psychology, 14*.

Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., . . . Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological medicine, 45*(1), 11-27.

Comino, E., Silove, D., Manicavasagar, V., Harris, E., & Harris, M. (2001). Agreement in symptoms of anxiety and depression between patients and GPs: the influence of ethnicity. *Family Practice, 18*(1), 71-77.

Cook, J. M., Biyanova, T., Masci, C., & Coyne, J. C. (2007a). Older patient perspectives on long-term anxiolytic benzodiazepine use and discontinuation: a qualitative study. *Journal of general internal medicine, 22*(8), 1094-1100.

Cook, J. M., Marshall, R., Masci, C., & Coyne, J. C. (2007b). Physicians' perspectives on prescribing benzodiazepines for older adults: a qualitative study. *Journal of general internal medicine, 22*(3), 303-307.

Coope, C., Gunnell, D., Hollingworth, W., Hawton, K., Kapur, N., Fearn, V., . . . Metcalfe, C. (2014). Suicide and the 2008 economic recession: who is most at risk? Trends in suicide rates in England and Wales 2001–2011. *Social Science & Medicine, 117*, 76-85.

Cornford, C. S., Hill, A., & Reilly, J. (2007). How patients with depressive symptoms view their condition: A qualitative study. *Family Practice, 24*(4), 358-364.

Creswell, J. W., Fetters, M. D., & Ivankova, N. V. (2004). Designing a mixed methods study in primary care. *The Annals of Family Medicine, 2*(1), 7-12.

Crocq, M.-A. (2017). The history of generalized anxiety disorder as a diagnostic category. *Dialogues in clinical neuroscience, 19*(2), 107.

Cromme, S. K., Whitaker, K. L., Winstanley, K., Renzi, C., Smith, C. F., & Wardle, J. (2016). Worrying about wasting GP time as a barrier to help-seeking: a community-based, qualitative study. *Br J Gen Pract, 66*(648), e474-e482.

Darawsheh, W., Stanley, M., & Rehabilitation. (2014). Reflexivity in research: Promoting rigour, reliability and validity in qualitative research. *International Journal of Therapy, 21*(12), 560-568.

Davies, J., Rae, T. C., & Montagu, L. (2017). Long-term benzodiazepine and Z-drugs use in England: a survey of general practice. *BJGP, 67*, 1-5.

Davies, M. (2000). The stigma of anxiety disorders. *International Journal of Clinical Practice, 54*(1), 44-47.

Davies, S. (2014). *Annual Report of the Chief Medical Officer 2013, Public Mental*

Health Priorities: Investing in the Evidence. Retrieved from London: www.gov.uk/government/publications/chief-medical-officer-cmo-annual-reportpublic-mental-health

Davis, A., Smith, T., Talbot, J., Eldridge, C., & Betts, D. (2020). Predicting patient engagement in IAPT services: a statistical analysis of electronic health records. *Evidence-based mental health, 23*(1), 8-14.

de Lusignan, S. (2005). Codes, classifications, terminologies and nomenclatures: definition, development and application in practice. *Journal of Innovation in Health Informatics, 13*(1), 65-69.

de Lusignan, S., & Chan, T. (2008). The development of primary care information technology in the United kingdom. *The Journal of ambulatory care management, 31*(3), 201-210.

de Lusignan, S., Liaw, S.-T., Dedman, D., Khunti, K., Sadek, K., & Jones, S. (2015). An algorithm to improve diagnostic accuracy in diabetes in computerised problem orientated medical records (POMR) compared with an established algorithm developed in episode orientated records (EOMR). *J Innov Health Inform, 22*(2), 255-264.

Deacon, B. J. (2013). The biomedical model of mental disorder: A critical analysis of its validity, utility, and effects on psychotherapy research. *Clinical psychology review, 33*(7), 846-861.

Depping, A. M., Komossa, K., Kissling, W., & Leucht, S. (2010). Second-generation antipsychotics for anxiety disorders. *Cochrane Database of Systematic Reviews*(12).

DiMauro, J., Domingues, J., Fernandez, G., & Tolin, D. F. (2013). Long-term effectiveness of CBT for anxiety disorders in an adult outpatient clinic sample: A follow-up study. *Behaviour research therapy, 51*(2), 82-86.

Donker, T., Griffiths, K. M., Cuijpers, P., & Christensen, H. (2009). Psychoeducation for depression, anxiety and psychological distress: a meta-analysis. *BMC medicine, 7*(1), 79.

Donoghue, J., & Lader, M. (2010). Usage of benzodiazepines: a review. *International journal of psychiatry in clinical practice, 14*(2), 78-87.

Dooley, T. P. (2015). Treating anxiety with either beta blockers or antiemetic antimuscarinic drugs: a review. *Mental health in family medicine, 11*, 89-99.

drugs.com. (2020a). Amoxapine Dosage. Retrieved from https://www.drugs.com/dosage/amoxapine.html

drugs.com. (2020b). Nefazodone Dosage. Retrieved from https://www.drugs.com/dosage/nefazodone.html

Dugas, M. J., Brillon, P., Savard, P., Turcotte, J., Gaudet, A., Ladouceur, R., . . . Gervais, N. J. (2010). A randomized clinical trial of cognitive-behavioral therapy and applied relaxation for adults with generalized anxiety disorder. *Behavior Therapy, 41*(1), 46-58.

Dugas, M. J., Francis, K., & Bouchard, S. (2009). Cognitive behavioural therapy and applied relaxation for generalized anxiety disorder: a time series analysis of change in worry and somatic anxiety. *Cognitive behaviour therapy, 38*(1), 29-41.

Dunlop, B. W., & Davis, P. G. (2008). Combination treatment with benzodiazepines and SSRIs for comorbid anxiety and depression: a review. *Primary care companion to the Journal of clinical psychiatry, 10*(3), 222.

Ekselius, L., & Eberhard, G. (1997). A double-blind multicenter trial comparing sertraline and citalopram in patients with major depression treated in general practice. *International clinical psychopharmacology, 12*(6), 323-331.

EMIS Health. (2020). EMIS. Retrieved from https://www.emishealth.com/

Evoy, K. E., Morrison, M. D., & Saklad, S. R. (2017). Abuse and misuse of pregabalin and gabapentin. *Drugs, 77*(4), 403-426.

Feltner, D. E., Harness, J., Brock, J., Sambunaris, A., Cappelleri, J. C., & Morlock, R. (2009). Clinical Evaluation of the Daily Assessment of Symptoms-Anxiety (DAS-A): A New Instrument to Assess the Onset of Symptomatic Improvement in Generalized Anxiety Disorder. *CNS neuroscience & therapeutics, 15*(1), 12-18.

Ford, E., Campion, A., Chamles, D. A., Habash-Bailey, H., & Cooper, M. (2016). "You don't immediately stick a label on them": a qualitative study of influences on general practitioners' recording of anxiety disorders. *BMJ Open, 6*(6), e010746.

Frasquilho, D., Matos, M. G., Salonna, F., Guerreiro, D., Storti, C. C., Gaspar, T., & Caldas-de-Almeida, J. M. (2016). Mental health outcomes in times of economic recession: a systematic literature review. *BMC public health, 16*(1), 1-40.

French, L. R., Thomas, L., Campbell, J., Kuyken, W., Lewis, G., Williams, C., . . . Turner, K. M. (2017). Individuals' long term use of cognitive behavioural skills to manage their depression: a qualitative study. *Behavioural cognitive psychotherapy, 45*(1), 46-57.

Gabe, J. (1990). Towards a sociology of tranquillizer prescribing. *British journal of addiction, 85*(1), 41-48.

Geraghty, A. W., Santer, M., Williams, S., Mc Sharry, J., Little, P., Munoz, R. F., . . . Moore, M. (2017). 'You feel like your whole world is caving in': A qualitative study of primary care patients' conceptualisations of emotional distress. *Health, 21*(3), 295-315.

Gnani, S., & Majeed, A. (2006). *A user's guide to data collected in primary care in England*. Retrieved from https://manualzilla.com/doc/6892628/a-user-s-guide-to-data-collected-in-primary-care-in-england

Goldberg, D., & Huxley, P. (1992). *Common mental disorders: a bio-social model*. London; New York: Tavistock/Routledge.

Gonzalez-Bono, E., Moya-Albiol, L., Salvador, A., Carrillo, E., Ricarte, J., & Gomez-Amor, J. (2002). Anticipatory autonomic response to a public speaking task in women: the role of trait anxiety. *Biological Psychology, 60*(1), 37-49.

Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. *Clinical psychology review, 37*, 1-12.

Gyani, A., Pumphrey, N., Parker, H., Shafran, R., & Rose, S. (2012). Investigating the use of NICE guidelines and IAPT services in the treatment of depression. *Mental health in family medicine, 9*(3), 149.

Hargreaves, D. (2018). Minds matter: time to take action on children and young people's mental health. Retrieved from https://www.nuffieldtrust.org.uk/news-item/minds-matter-time-to-take-action-on-children-and-young-people-s-mental-health

Haslam, C., & Nurmikko, T. (2008). Pharmacological treatment of neuropathic pain in older persons. *Clinical interventions in aging, 3*(1), 111.

Haw, C., & Stubbs, J. (2007). Benzodiazepines — a necessary evil? A survey of prescribing at a specialist UK psychiatric hospital. *Journal of Psychopharmacology, 21*(6), 645-649.

Hayes-Skelton, S. A., Roemer, L., Orsillo, S. M., & Borkovec, T. D. (2013). A contemporary view of applied relaxation for generalized anxiety disorder. *Cognitive behaviour therapy, 42*(4), 292-302.

Healthcare Safety Investigation Branch. (2020). *Potential under-recognised risk of harm from the use of propranolol*. Retrieved from https://www.hsib.org.uk/documents/214/hsib_report_potential_under_recognised_risk_harm_propranolol.pdf

Healy, D. (1997). *The antidepressant era*: Harvard University Press.

Healy, D., Whitaker, C., & Neuroscience. (2003). Antidepressants and suicide: risk–benefit conundrums. *Journal of Psychiatry, 28*(5), 331.

Henderson, C., Robinson, E., Evans-Lacko, S., & Thornicroft, G. (2017). Relationships between anti-stigma programme awareness, disclosure comfort and intended help-seeking regarding a mental health problem. *The British Journal of Psychiatry, 211*(5), 316-322.

Herrett, E., Gallagher, A. M., Bhaskaran, K., Forbes, H., Mathur, R., Van Staa, T., & Smeeth, L. (2015). Data resource profile: clinical practice research datalink (CPRD). *International journal of epidemiology, 44*(3), 827-836.

Hippisley-Cox, J., Stables, D., & Pringle, M. (2004). QRESEARCH: a new general practice database for research. *Journal of Innovation in Health Informatics, 12*(1), 49-50.
Hjeltnes, A., Moltu, C., Schanche, E., & Binder, P. E. (2016). What Brings You Here? Exploring Why Young Adults Seek Help for Social Anxiety. *Qualitative Health Research, 26*(12), 1705-1720.
Hoffman, D. L., Dukes, E. M., & Wittchen, H. U. (2008). Human and economic burden of generalized anxiety disorder. *Depression anxiety, 25*(1), 72-90.
Hoffmann, F. (2013). Perceptions of German GPs on benefits and risks of benzodiazepines and Z-drugs. *Swiss Med Wkly, 143*(0).
Hofmann, S. G., & Smits, J. A. (2008). Cognitive-behavioral therapy for adult anxiety disorders: a meta-analysis of randomized placebo-controlled trials. *The Journal of clinical psychiatry, 69*(4), 621.
Horwitz, A. V. (2010). How an age of anxiety became an age of depression. *The Milbank Quarterly, 88*(1), 112-138.
Horwitz, A. V., & Wakefield, J. C. (2007). *The loss of sadness: How psychiatry transformed normal sorrow into depressive disorder*: Oxford University Press.
Hughes, R., & Huby, M. (2002). The application of vignettes in social and nursing research. *Journal of advanced nursing, 37*(4), 382-386.
Huh, J., Goebert, D., Takeshita, J., Lu, B. Y., & Kang, M. (2011). Treatment of generalized anxiety disorder: a comprehensive review of the literature for psychopharmacologic alternatives to newer antidepressants and benzodiazepines. *The Primary Care Companion to CNS Disorders, 13*(2).
Hyde, J., Calnan, M., Prior, L., Lewis, G., Kessler, D., & Sharp, D. (2005a). A qualitative study exploring how GPs decide to prescribe antidepressants. *Br J Gen Pract, 55*(519), 755-762.
Hyde, J., Evans, J., Sharp, D., Croudace, T., Harrison, G., Lewis, G., & Araya, R. (2005b). Deciding who gets treatment for depression and anxiety: a study of consecutive GP attenders. *Br J Gen Pract, 55*(520), 846-853.
Ilyas, S., & Moncrieff, J. (2012). Trends in prescriptions and costs of drugs for mental disorders in England, 1998–2010. *The British Journal of Psychiatry, 200*(5), 393-398.
In Practice Systems LTD. (2020). Vision medical software. Retrieved from https://www.visionhealth.co.uk/vision-medical-software/
Jasiak, N. M., & Bostwick, J. R. (2014). Risk of QT/QTc prolongation among newer non-SSRI antidepressants. *Annals of Pharmacotherapy, 48*(12), 1620-1628.
John, A., Marchant, A., McGregor, J., Tan, J., Hutchings, H., Kovess, V., . . . Lloyd, K. (2015). Recent trends in the incidence of anxiety and prescription of anxiolytics and hypnotics in children and young people: an e-cohort study. *Journal of affective disorders, 183*, 134-141.
John, A., McGregor, J., Fone, D., Dunstan, F., Cornish, R., Lyons, R. A., . . . making, d. (2016). Case-finding for common mental disorders of anxiety and depression in primary care: an external validation of routinely collected data. *BMC medical informatics, 16*(1), 35.
Johnson, R. B., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher, 33*(7), 14-26.
Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (2000). Mental health literacy. *British Journal of Psychiatry, 177*(5), 396-401.
Kadam, U. T., Croft, P., McLeod, J., & Hutchinson, M. (2001). A qualitative study of patients' views on anxiety and depression. *Br J Gen Pract, 51*(466), 375-380.
Kaye, J. A., Bradbury, B. D., & Jick, H. (2003). Changes in antipsychotic drug prescribing by general practitioners in the United Kingdom from 1991 to 2000: a population-based observational study. *British journal of clinical pharmacology, 56*(5), 569-575.
Keles, B., McCrae, N., Grealish, A., & Youth. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence, 25*(1), 79-93.

Kelliher, F. (2011). Interpretivism and the pursuit of research legitimisation: an integrated approach to single case design. *Leading issues in business research methods, 1*(2), 123-131.
Kelly, K. (2018). The therapeutic value of communicating a diagnosis. *Journal of Communication in Healthcare, 11:1*, 7-8.
Kendrick, T. (2018). Improve access to quality primary care for patients with anxiety or depression. *The Lancet, 392*(10155), 1308.
Kendrick, T., Stuart, B., Newell, C., Geraghty, A. W., & Moore, M. (2015). Changes in rates of recorded depression in English primary care 2003–2013: time trend analyses of effects of the economic recession, and the GP contract quality outcomes framework (QOF). *Journal of affective disorders, 180*, 68-78.
Kessler, D., Bennewith, O., Lewis, G., & Sharp, D. (2002). Detection of depression and anxiety in primary care: follow up study. *BMJ, 325*(7371), 1016-1017.
Kolb, L. C., Frazier, S. H., & Sirovatka, P. (2000). *The National Institute of Mental Health: Its Influence on Psychiatry and the Nation's Mental Health*.
Kontopantelis, E., Buchan, I., Reeves, D., Checkland, K., & Doran, T. (2013). Relationship between quality of care and choice of clinical computing system: retrospective analysis of family practice performance under the UK's quality and outcomes framework. *BMJ open, 3*(8).
Kontopantelis, E., Stevens, R. J., Helms, P. J., Edwards, D., Doran, T., & Ashcroft, D. M. (2018). Spatial distribution of clinical computer systems in primary care in England in 2016 and implications for primary care electronic medical record databases: a cross-sectional population study. *BMJ Open, 8*(2), e020738.
Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med, 16*(9), 606-613.
Kroenke, K., Spitzer, R. L., Williams, J. B., Monahan, P. O., & Löwe, B. (2007). Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Annals of internal medicine, 146*(5), 317-325.
Kuhn, T. S. (2012). *The structure of scientific revolutions*. Chicago: University of Chicago press.
Kurko, T., Saastamoinen, L., Tähkäpää, S., Tuulio-Henriksson, A., Taiminen, T., Tiihonen, J., . . . Hietala, J. (2015). Long-term use of benzodiazepines: definitions, prevalence and usage patterns–a systematic review of register-based studies. *European psychiatry, 30*(8), 1037-1047.
Kwong, A., Pearson, R., Adams, M., Northstone, K., Tilling, K., Smith, D., . . . Timpson, N. (2020). Mental health during the COVID-19 pandemic in two longitudinal UK population cohorts. *medRxiv*. doi:https://doi.org/10.1101/2020.06.16.20133116
Lader, M. (2011). Benzodiazepines revisited—will we ever learn? *Addiction, 106*(12), 2086-2109.
Lader, M. (2015). Generalized anxiety disorder. In *Encyclopedia of Psychopharmacology* (pp. 699-702). New York: Springer.
Lader, M., Tylee, A., & Donoghue, J. (2009). Withdrawing benzodiazepines in primary care. *CNS drugs, 23*(1), 19-34.
Layard, R., & Clark, D. (2015). Why More Psychological Therapy Would Cost Nothing. *Frontiers in Psychology, 6*.
Lépine, J.-P. (2002). The epidemiology of anxiety disorders: prevalence and societal costs. *The Journal of clinical psychiatry, 63*, 4-8.
Lewis, G., & Pelosi, A. (1990). Manual of the revised clinical interview schedule (CIS-R). *London: Institute of Psychiatry*.
Lijster, J. M. d., Dierckx, B., Utens, E. M., Verhulst, F. C., Zieldorff, C., Dieleman, G. C., & Legerstee, J. S. (2017). The age of onset of anxiety disorders: a meta-analysis. *The Canadian Journal of Psychiatry, 62*(4), 237-246.
Lockhart, P., & Guthrie, B. (2011). Trends in primary care antidepressant prescribing 1995-2007: a longitudinal population database analysis. *Br J Gen Pract, 61*(590), e565-e572.

Lydiard, R. B., Rickels, K., Herman, B., & Feltner, D. E. (2010). Comparative efficacy of pregabalin and benzodiazepines in treating the psychic and somatic symptoms of generalized anxiety disorder. *International Journal of Neuropsychopharmacology, 13*(2), 229-241.
Lynch, L., Long, M., & Moorhead, A. (2018). Young men, help-seeking, and mental health services: Exploring barriers and solutions. *Am J Mens Health, 12*(1), 138-149.
Marks, D. F. (2018). IAPT under the microscope. In. London, England: SAGE Publications.
Mars, B., Heron, J., Kessler, D., Davies, N. M., Martin, R. M., Thomas, K. H., & Gunnell, D. (2017). Influences on antidepressant prescribing trends in the UK: 1995–2011. *Social psychiatry and psychiatric epidemiology, 52*(2), 193-200.
Martin-Merino, E., Ruigomez, A., Wallander, M. A., Johansson, S., & Garcia-Rodriguez, L. A. (2010). Prevalence, incidence, morbidity and treatment patterns in a cohort of patients diagnosed with anxiety in UK primary care. *Family Practice, 27*(1), 9-16.
Mason, M. (2010). *Sample size and saturation in PhD studies using qualitative interviews.* Paper presented at the Forum: qualitative social research.
McAteer, A., Elliott, A. M., & Hannaford, P. C. (2011). Ascertaining the size of the symptom iceberg in a UK-wide community-based survey. *Br J Gen Pract, 61*(582), e1-e11.
McCrea, R. L., Sammon, C. J., Nazareth, I., & Petersen, I. (2016). Initiation and duration of selective serotonin reuptake inhibitor prescribing over time: UK cohort study. *The British Journal of Psychiatry, 209*(5), 421-426.
McCrone, P. R., Dhanasiri, S., Patel, A., Knapp, M., & Lawton-Smith, S. (2008). *Paying the price: the cost of mental health care in England to 2026*. London: King's Fund.
McEvoy, P., & Richards, D. (2006). A critical realist rationale for using a combination of quantitative and qualitative methods. *Journal of research in nursing, 11*(1), 66-78.
Mehdi, T. (2012). Benzodiazepines revisited. *British Journal of Medical Practitioners, 5*(1), 501.
Meibach, R. C., Dunner, D., Wilson, L. G., Ishiki, D., & Dager, S. (1987). Comparative efficacy of propranolol, chlordiazepoxide, and placebo in the treatment of anxiety: A double-blind trial. *The Journal of clinical psychiatry, 48*, 355-358.
MHRA. (2015). Benzodiazepines Learning Module. *Benzodiazepines Prescribing Trends.* Retrieved from http://www.mhra.gov.uk/benzodiazepines-learning-module/con234573?useSecondary=&showpage=20
Milton, A. C., & Mullan, B. A. (2014). Communication of a mental health diagnosis: a systematic synthesis and narrative review. *Journal of Mental Health, 23*(5), 261-270.
Mitchell, C., Dwyer, R., Hagan, T., & Mathers, N. (2011). Impact of the QOF and the NICE guideline in the diagnosis andmanagement of depression: a qualitative study. *Br J Gen Pract, 61*(586), e279-e289.
Möller, H.-J., Bandelow, B., Volz, H.-P., Barnikol, U. B., Seifritz, E., & Kasper, S. (2016). The relevance of 'mixed anxiety and depression'as a diagnostic category in clinical practice. *European archives of psychiatry and clinical neuroscience, 266*(8), 725-736.
Montastruc, F., Loo, S. Y., & Renoux, C. (2018). Trends in first gabapentin and pregabalin prescriptions in primary care in the United Kingdom, 1993-2017. *Jama, 320*(20), 2149-2151.
Moore, M., Yuen, H. M., Dunn, N., Mullee, M. A., Maskell, J., & Kendrick, T. (2009). Explaining the rise in antidepressant prescribing: a descriptive study using the general practice research database. *BMJ, 339*, b3999.
Moore, N., Pariente, A., & Bégaud, B. (2015). Why are benzodiazepines not yet controlled substances? *JAMA psychiatry, 72*(2), 110-111.
Morrison, J., Anderson, M.-J., Donald, S. M., Maxwell, M., Munoz-Arroyo, R., Power, A., . . . Wilson, P. (2008). Relationship between antidepressant and anxiolytic/hypnotic prescribing: a mixed-methods study. *The European journal of general practice, 14*(3-4), 129-135.
Morse, J. M., & Cheek, J. (2014). Making room for qualitatively-driven mixed-method research. In. Los Angeles: Sage Publications.

Naismith, S. L., Hickie, I. B., Scott, E. M., & Davenport, T. A. (2001). Effects of mental health training and clinical audit on general practitioners' management of common mental disorders. *The Medical Journal of Australia, 175*, S42-47.
Nash, J., & Nutt, D. (2007). Psychopharmacology of anxiety. *J Psychiatry, 6*(4), 143-148.
National Cancer Institute. (2020). Joinpoint Trend Analysis Software. Retrieved from https://surveillance.cancer.gov/joinpoint/
National Statistics. (2015). English indices of deprivation 2015. Retrieved from https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015
Newbold, A., Hardy, G., & Byng, R. (2013). Staff and patient experience of improving access to psychological therapy group interventions for anxiety and depression. *Journal of Mental Health, 22*(5), 456-464.
NICE. (2009). *Depression in adults: recognition and management Clinical guideline [CG90]*. Retrieved from https://www.nice.org.uk/guidance/cg90
NICE. (2011a). *Common mental health problems:identification and pathways to care Clinical guideline [CG123]*. Retrieved from https://www.nice.org.uk/guidance/cg123
NICE. (2011b). *Generalised anxiety disorder and panic disorder in adults: management Clinical guideline [CG113]*. Retrieved from https://www.nice.org.uk/guidance/cg113
NICE. (2014). *Anxiety Disorders - Quality standard [QS53]*. Retrieved from https://www.nice.org.uk/guidance/qs53
Nutt, D. J. (2005). Overview of diagnosis and drug treatments of anxiety disorders. *CNS Spectrums, 10*(1), 49-56.
O'Brien, D., Harvey, K., Young, B., Reardon, T., & Creswell, C. (2017). GPs' experiences of children with anxiety disorders in primary care: a qualitative study. *British Journal of General Practice*.
OECD. (2014). Making mental health count: The social and economic costs of neglecting mental health care. In. Paris: OECD Publishing
Offidani, E., Guidi, J., Tomba, E., & Fava, G. A. (2013). Efficacy and tolerability of benzodiazepines versus antidepressants in anxiety disorders: a systematic review and meta-analysis. *Psychotherapy and psychosomatics, 82*(6), 355-362.
Olariu, E., Forero, C. G., Castro-Rodriguez, J. I., Rodrigo-Calvo, M. T., Álvarez, P., Martín-López, L. M., . . . Vilagut, G. (2015). Detection of anxiety disorders in primary care: A meta-analysis of assisted and unassisted diagnoses. *Depression and Anxiety, 32*(7), 471-484.
Olfson, M., King, M., & Schoenbaum, M. (2015). Benzodiazepine use in the United States. *JAMA psychiatry, 72*(2), 136-142.
openprescribing.net. (2020). Propranolol Hydrochloride (0204000R0). Retrieved from https://openprescribing.net/chemical/0204000R0/
Park, Y. S., Konge, L., & Artino Jr, A. R. (2020). The positivism paradigm of research. *Academic Medicine, 95*(5), 690-694.
Parker, D., Byng, R., Dickens, C., Kinsey, D., & McCabe, R. (2020). Barriers and facilitators to GP-patient communication about emotional concerns in UK primary care: a systematic review. *Family Practice, XX*, 1-11.
Patel, V., Abas, M., Broadhead, J., Todd, C., & Reeler, A. (2001). Depression in developing countries: lessons from Zimbabwe. *BMJ, 322*(7284), 482-484.
Patomäki, H., & Wight, C. (2000). After postpositivism? The promises of critical realism. *International Studies Quarterly, 44*(2), 213-237.
Patris, M., Bouchard, J., Bougerol, T., Charbonnier, J., Chevalier, J., Clerc, G., . . . Høpfner, H. P. (1996). Citalopram versus fluoxetine: a double-blind, controlled, multicentre, phase III trial in patients with unipolar major depression treated in general practice. *International clinical psychopharmacology, 11*(2), 129-136.
Patston, T., & Loughlan, T. (2014). Playing with performance: The use and abuse of beta-blockers in the performing arts. *Victorian Journal of Music Education*(1), 3.

Penninx, B. W., Nolen, W. A., Lamers, F., Zitman, F. G., Smit, J. H., Spinhoven, P., . . . van der Meer, K. (2011). Two-year course of depressive and anxiety disorders: results from the Netherlands Study of Depression and Anxiety (NESDA). *J Affect Disord, 133*(1-2), 76-85.

Pettit, S., Qureshi, A., Lee, W., Stirzaker, A., Gibson, A., Henley, W., & Byng, R. (2017). Variation in referral and access to new psychological therapy services by age: an empirical quantitative study. *Br J Gen Pract, 67*(660), e453-e459.

Pitchforth, J., Fahy, K., Ford, T., Wolpert, M., Viner, R. M., & Hargreaves, D. S. (2019). Mental health and well-being trends among children and young people in the UK, 1995–2014: analysis of repeated cross-sectional national health surveys. *Psychological medicine, 49*(8), 1275-1285.

Prins, M. A., Verhaak, P. F., Bensing, J. M., & van der Meer, K. (2008). Health beliefs and perceived need for mental health care of anxiety and depression—The patients' perspective explored. *Clinical psychology review, 28*(6), 1038-1058.

Public Health England. (2019). *Dependence and withdrawal associated with some prescribed medicines: An evidence review*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/829777/PHE_PMR_report.pdf

Public Health England. (2020). National General Practice Profiles. Retrieved from https://fingertips.phe.org.uk/profile/general-practice

QSR International (Producer). (2020). NVivo software. Retrieved from https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home

Quagliato, L. A., Freire, R. C., & Nardi, A. E. (2018). Risks and benefits of medications for panic disorder: a comparison of SSRIs and benzodiazepines. *Expert opinion on drug safety, 17*(3), 315-324.

Ravindran, A. V., & da Silva, T. L. (2013). Complementary and alternative therapies as add-on to pharmacotherapy for mood and anxiety disorders: a systematic review. *Journal of affective disorders, 150*(3), 707-719.

Redwood, S., & Gill, P. S. (2013). Under-representation of minority ethnic groups in research—call for action. *Br J Gen Pract, 63* 342-343.

Reins, J. A., Boß, L., Lehr, D., Berking, M., & Ebert, D. D. (2019). The more I got, the less I need? Efficacy of Internet-based guided self-help compared to online psychoeducation for major depressive disorder. *Journal of affective disorders, 246*, 695-705.

Riemann, D., & Perlis, M. L. (2009). The treatments of chronic insomnia: a review of benzodiazepine receptor agonists and psychological and behavioral therapies. *Sleep medicine reviews, 13*(3), 205-214.

Riss, J., Cloyd, J., Gates, J., & Collins, S. (2008). Benzodiazepines in epilepsy: pharmacology and pharmacokinetics. *Acta neurologica scandinavica, 118*(2), 69-86.

Ritchie, J., & Spencer, L. (1994). . Qualitative data analysis for applied policy research. In A. Bryman & R. Burgess (Eds.), *Analysing qualitative data* (pp. 173-194). London: Routledge.

Rogers, A., Pilgrim, D., Brennan, S., Sulaiman, I., Watson, G., & Chew-Graham, C. (2007). Prescribing benzodiazepines in general practice: a new view of an old problem. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine, 11*(2), 181-198.

Rogers, C. M., Dianne Oliver, Anne (2001). Experiencing depression, experiencing the depressed: the separate worlds of patients and doctors. *J Mental Health, 10*(3), 317-333.

Ronalds, C., Creed, F., Stone, K., Webb, S., & Tomenson, B. (1997). Outcome of anxiety and depressive disorders in primary care. *British Journal of Psychiatry, 171*, 427-433.

Rosner, S. (2015). Increasing the Recognition of Generalized Anxiety Disorder in Primary Care. *Family Medicine Clerkship Student Projects, 48*.

Roy-Byrne, P. P., Davidson, K. W., Kessler, R. C., Asmundson, G. J., Goodwin, R. D., Kubzansky, L., . . . Stein, M. B. (2008). Anxiety disorders and comorbid medical illness. *General Hospital Psychiatry, 30*(3), 208-225.

Royal College of General Practitioners. (2019). *The RCGP Curriculum: The Curriculum Topic Guides*. Retrieved from https://www.rcgp.org.uk/-/media/Files/GP-training-and-exams/Curriculum-2019/Curriculum-Topic-Guides-300819.ashx?la=en

Royal Pharmaceutical Society of Great Britain. (2020). *British national formulary 79*. London: Royal Pharmaceutical Society.

Salaheddin, K., & Mason, B. (2016). Identifying barriers to mental health help-seeking among young adults in the UK: a cross-sectional survey. *British Journal of General Practice, 66*(651), e686-e692.

Sandelin, R., Kowalski, J., Ahnemark, C., & Allgulander, C. (2012). Treatment patterns and costs in patients with generalised anxiety disorder: One-year retrospective analysis of data from national registers in Sweden. *European psychiatry, 28*, 125-133.

Saver, B. G., Van-Nguyen, V., Keppel, G., & Doescher, M. P. (2007). A qualitative study of depression in primary care: missed opportunities for diagnosis and education. *J Am Board Fam Med, 20*(1), 28-35.

Schnyder, N., Panczak, R., Groth, N., & Schultze-Lutter, F. (2017). Association between mental health-related stigma and active help-seeking: systematic review and meta-analysis. *The British Journal of Psychiatry, 210*(4), 261-268.

Schonfeld, W. H., Verboncoeur, C. J., Fifer, S. K., Lipschutz, R. C., Lubeck, D. P., & Buesching, D. P. (1997). The functioning and well-being of patients with unrecognized anxiety disorders and major depressive disorder. *Journal of affective disorders, 43*(2), 105-119.

Seeman, M. V. (2004). Gender differences in the prescribing of antipsychotic drugs. *American Journal of Psychiatry, 161*(8), 1324-1333.

Shorter, E. (2008). *Before Prozac: The troubled history of mood disorders in psychiatry*: Oxford University Press.

Sidorchuk, A., Isomura, K., Molero, Y., Hellner, C., Lichtenstein, P., Chang, Z., . . . Mataix-Cols, D. (2018). Benzodiazepine prescribing for children, adolescents, and young adults from 2006 through 2013: A total population register-linkage study. *PLoS medicine, 15*(8).

Simon, G. E., & Ludman, E. J. (2006). Outcome of new benzodiazepine prescriptions to older adults in primary care. *General Hospital Psychiatry, 28*(5), 374-378.

Simon, G. E., VonKorff, M., Heiligenstein, J. H., Revicki, D. A., Grothaus, L., Katon, W., & Wagner, E. H. (1996). Initial antidepressant choice in primary care: effectiveness and cost of fluoxetine vs tricyclic antidepressants. *Jama, 275*(24), 1897-1902.

Sirdifield, C., Anthierens, S., Creupelandt, H., Chipchase, S. Y., Christiaens, T., & Siriwardena, A. N. (2013). General practitioners' experiences and perceptions of benzodiazepine prescribing: systematic review and meta-synthesis. *BMC Family Practice, 14*(1), 191.

Siriwardena, A. N., Qureshi, Z., Gibson, S., Collier, S., & Latham, M. (2006). GPs' attitudes to benzodiazepine and 'Z-drug'prescribing: a barrier to implementation of evidence and guidance on hypnotics. *Br J Gen Pract, 56*(533), 964-967.

Spence, R., Roberts, A., & Ariti, C. (2014). *Focus on: antidepressant prescribing.* Retrieved from London: https://www.health.org.uk/sites/default/files/QualityWatch_FocusOnAndidepressantPrescribing.pdf

Spielberger, C. D., & Reheiser, E. C. (2003). Measuring anxiety, anger, depression, and curiosity as emotional states and personality traits with the STAI, STAXI, and STPI. *Comprehensive handbook of psychological assessment, 2*, 70-86.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med, 166*(10), 1092-1097.

Sreeharan, V., Madden, H., Lee, J. T., Millett, C., & Majeed, A. (2013). Improving Access to Psychological Therapies and antidepressant prescribing rates in England: a longitudinal time-series analysis. *Br J Gen Pract, 63*(614), e649-e653.

Stahl, S. M. (2000). Placebo-controlled comparison of the selective serotonin reuptake inhibitors citalopram and sertraline. *Biological psychiatry, 48*(9), 894-901.
Stansfeld, S., Clark, C., Bebbington, P., King, M., Jenkins, R., & S., H. (2016). 'Chapter 2: Common mental disorders'. In B. P. McManus S, Jenkins R, Brugha T. (eds) (Ed.), *Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014*. Leeds: NHS Digital.
Starcevic, V. (2014). The reappraisal of benzodiazepines in the treatment of anxiety and related disorders. *Expert review of neurotherapeutics, 14*(11), 1275-1286.
StataCorp LLC. (2020). Stata. Retrieved from https://www.stata.com/
Steenen, S. A., van Wijk, A. J., Van Der Heijden, G. J., van Westrhenen, R., de Lange, J., & de Jongh, A. (2016). Propranolol for the treatment of anxiety disorders: Systematic review and meta-analysis. *Journal of Psychopharmacology, 30*(2), 128-139.
Stewart, R. E., Chambless, D. L., & psychology, c. (2009). Cognitive–behavioral therapy for adult anxiety disorders in clinical practice: A meta-analysis of effectiveness studies. *Journal of consulting, 77*(4), 595.
Stiggelbout, A. M., Van der Weijden, T., De Wit, M. P., Frosch, D., Légaré, F., Montori, V. M., . . . Elwyn, G. (2012). Shared decision making: really putting patients at the centre of healthcare. *BMJ: British Medical Journal (Online), 344*.
Strawn, J. R., Mills, J. A., Sauley, B. A., Welge, J. A., & Psychiatry, A. (2018). The impact of antidepressant dose and class on treatment response in pediatric anxiety disorders: a meta-analysis. *Journal of the American Academy of Child, 57*(4), 235-244. e232.
Stuart, H. (2016). Reducing the stigma of mental illness. *Global Mental Health, 3*(e17).
Sturges, J. E., & Hanrahan, K. J. (2004). Comparing telephone and face-to-face qualitative interviewing: a research note. *Qualitative research, 4*(1), 107-118.
Swartz, C. M. (1998). Betaxolol in anxiety disorders. *Annals of clinical psychiatry, 10*(1), 9-14.
Swift, P., Cyhlarova, E., Goldie, I., O'Sullivan, C., Bristow, P., Carson, J., . . . Edwards, J. (2014). *Living with Anxiety: Understanding the role and impact of anxiety in our lives*. Retrieved from https://www.mentalhealth.org.uk/sites/default/files/living-with-anxiety-report.pdf
Swindle Jr, R., Heller, K., Pescosolido, B., & Kikuzawa, S. (2000). Responses to nervous breakdowns in America over a 40-year period: Mental health policy implications. *American Psychologist, 55*(7), 740.
Thomas, F., Hansford, L., Ford, J., Wyatt, K., McCabe, R., & Byng, R. (2019). How accessible and acceptable are current GP referral mechanisms for IAPT for low-income patients? Lay and primary care perspectives. *Journal of Mental Health*, 1-6.
Tolin, D. F. (2010). Is cognitive–behavioral therapy more effective than other therapies?: A meta-analytic review. *Clinical psychology review, 30*(6), 710-720.
Torjesen, I. (2019). Pregabalin and gabapentin: what impact will reclassification have on doctors and patients? *BMJ, 364*.
Tuma, A. H., & Maser, J. D. (2019). *Anxiety and the anxiety disorders*. Oxford: Routledge.
UCL. (2020a). Cognitive and Behavioural Therapy. Retrieved from https://www.ucl.ac.uk/pals/research/clinical-educational-and-health-psychology/research-groups/core/competence-frameworks-2
UCL. (2020b). Millennium Cohort Study. Retrieved from https://cls.ucl.ac.uk/cls-studies/millennium-cohort-study/
van Beljouw, I. M., Verhaak, P. F., Cuijpers, P., van Marwijk, H. W., & Penninx, B. W. (2010). The course of untreated anxiety and depression, and determinants of poor one-year outcome: a one-year cohort study. *BMC psychiatry, 10*(1), 86.
Van Der Hooft, C. S., Schoofs, M. W., Ziere, G., Hofman, A., Pols, H. A., Sturkenboom, M. C., & Stricker, B. H. C. (2008). Inappropriate benzodiazepine use in older adults and the risk of fracture. *British journal of clinical pharmacology, 66*(2), 276-282.

van Rijswijk, E., van Hout, H., van de Lisdonk, E., Zitman, F., & van Weel, C. (2009). Barriers in recognising, diagnosing and managing depressive and anxiety disorders as experienced by Family Physicians; a focus group study. *BMC Family Practice, 10*, 52.

van Schaik, Klijn A, van Hout H, & al., e. (2004). Patients' preferences in the treatment of depressive disorder in primary care. *General Hospital Psychiatry, 26*(3), 184–189.

Vannucci, A., Flannery, K. M., & Ohannessian, C. M. (2017). Social media use and anxiety in emerging adults. *Journal of affective disorders, 207*, 163-166.

Walley, T., & Mantgani, A. (1997). The UK general practice research database. *The Lancet Psychiatry, 350*(9084), 1097-1099.

Walters, K., Buszewicz, M., Weich, S., & King, M. (2011). Mixed anxiety and depressive disorder outcomes: prospective cohort study in primary care. *The British Journal of Psychiatry, 198*(6), 472-478.

Walters, K., Rait, G., Griffin, M., Buszewicz, M., & Nazareth, I. (2012). Recent trends in the incidence of anxiety diagnoses and symptoms in primary care. *PLoS ONE [Electronic Resource], 7*(8), e41670.

Wiebe, E., & Greiver, M. (2005). Using cognitive behavioural therapy in practice: qualitative study of family physicians' experiences. *Canadian Family Physician, 51*(7), 992-993.

Willis, J. W., Jost, M., & Nilakanta, R. (2007). *Foundations of qualitative research: Interpretive and critical approaches*. London: Sage.

Wittchen, H.-U., & Jacobi, F. (2005). Size and burden of mental disorders in Europe—a critical review and appraisal of 27 studies. *European Neuropsychopharmacology, 15*(4), 357-376.

Wittchen, H.-U., Kessler, R. C., Beesdo, K., Krause, P., Höfler, M., & Hoyer, J. (2002). Generalized anxiety and depression in primary care: prevalence, recognition, and management. *The Journal of clinical psychiatry, 63*, 24-34.

Woods, H. C., & Scott, H. (2016). # Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of adolescence, 51*, 41-49.

World Health Organisation. (1992). *The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines* (Vol. 1). Geneva: World Health Organization.

World Health Organisation. (2017). *Depression and other common mental disorders - Global Health Estimates*. Retrieved from http://apps.who.int/iris/bitstream/10665/254610/1/WHO-MSD-MER-2017.2-eng.pdf

Wright, A., Jorm, A. F., & Mackinnon, A. (2012). Labels used by young people to describe mental disorders: which ones predict effective help-seeking choices? *Social psychiatry and psychiatric epidemiology, 47*(6), 917-926.

Wuthrich, V. M., & Frei, J. (2015). Barriers to treatment for older adults seeking psychological therapy. *International Psychogeriatrics, 27*(7), 1227-1236.

Zhang, J.-P., Gallego, J. A., Robinson, D. G., Malhotra, A. K., Kane, J. M., & Correll, C. U. (2013). Efficacy and safety of individual second-generation vs. first-generation antipsychotics in first-episode psychosis: a systematic review and meta-analysis. *International Journal of Neuropsychopharmacology, 16*(6), 1205-1218.

Zimmerman, M., Chelminski, I., & Young, D. (2004). On the threshold of disorder: a study of the impact of the DSM-IV clinical significance criterion on diagnosing depressive and anxiety disorders in clinical practice. *The Journal of clinical psychiatry, 65*, 1400-1405.

Zivin, K., Yosef, M., Miller, E. M., Valenstein, M., Duffy, S., Kales, H. C., . . . Kim, H. M. (2015). Associations between depression and all-cause and cause-specific risk of death: a retrospective cohort study in the Veterans Health Administration. *Journal of Psychosomatic Research, 78*(4), 324-331.