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“Gold Standard, but...”: Exploring the Evidence-Practice Gap in Lithium Prescribing for Bipolar Disorder — A Qualitative Study of UK Psychiatrists

Sumeet Gupta[1]

sumeet.gupta@york.ac.uk

Tees, Esk and Wear Valleys NHS Foundation Trust

Sunil Nodiyal[2]

Cumbria Northumberland Tyne and Wear NHS Foundation Trust

Avni Agrawal[3]

Sheffield Teaching Hospitals NHS Foundation Trust

Suman Ahmad[4]

Leeds and York Partnership NHS Foundation Trust

Christopher Clarke[1]

Tees, Esk and Wear Valleys NHS Foundation Trust

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“Gold Standard, but...”: Exploring the Evidence-Practice Gap in Lithium Prescribing for Bipolar Disorder — A Qualitative Study of UK Psychiatrists

Authors

Sumeet Gupta[1]* (ORCID: 0000-0003-1586-5069), Sunil Nodiyal[2], Avni Agrawal[3], Suman Ahmad[4], Christopher Clarke[1]

[1] Tees, Esk and Wear Valleys NHS Foundation Trust, West Park Hospital, Edward Pease Way, Darlington, DL2 2TS, UK; Honorary Senior Lecturer, Mental Health and Addiction Research Group (MHARG), Department of Health Sciences, University of York, Heslington, York, YO10 5DD, United Kingdom (Sumeet Gupta only)

[2] Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust, St Nicholas Hospital, Jubilee Road, Gosforth, Newcastle upon Tyne, NE3 3XT, United Kingdom.

[3] Sheffield Teaching Hospitals NHS Foundation Trust, Royal Hallamshire Hospital, Glossop Road, Sheffield, S10 2JF, United Kingdom.

[4] Leeds and York Partnership NHS Foundation Trust, Trust Headquarters, St Mary’s House, St Mary’s Road, Leeds, LS7 3JX, United Kingdom.

*Corresponding author: Dr Sumeet Gupta (ORCID: 0000-0003-1586-5069), Consultant Psychiatrist, Tees, Esk and Wear Valleys NHS Foundation Trust, West Park Hospital, Edward Pease Way, Darlington, DL2 2TS, UK; Honorary Senior Lecturer, Mental Health and Addiction Research Group (MHARG), Department of Health Sciences, University of York. Email: Sumeet.gupta@york.ac.uk

Abstract

Background: Lithium remains the most evidence-based prophylactic treatment for bipolar disorder, yet its use has declined steadily across most developed health systems despite consistent guideline endorsement. Cross-sectional surveys have documented this evidence-practice gap but cannot explain how clinicians reconcile their stated endorsement of lithium with their actual prescribing behaviour. This qualitative study

explores how psychiatrists in the English National Health Services (NHS) understand, justify, and navigate decisions about lithium prescribing.

Methods: Twenty psychiatrists across two large NHS mental health trusts (13 consultants, 3 senior trainees, 2 core trainees, 2 speciality doctors) took part in semi-structured one-to-one interviews conducted online. Transcripts were analysed using Braun and Clarke's reflexive thematic analysis, with coding performed inductively in NVivo 15.

Results: Six interlocking themes were identified: (1) a persistent gap between declarative endorsement of lithium's evidence base and its delayed use in practice; (2) patient-selection heuristics that progressively narrow who is considered "suitable"; (3) practitioner, patient, and systemic barriers to prescribing; (4) marked inconsistency in the thresholds clinicians apply to lithium levels and renal risk; (5) facilitators, including confidence in managing side effects and structured monitoring support; and (6) clinician-generated suggestions for closing the gap, centred on training and earlier exposure.

Conclusions: NHS psychiatrists universally endorse lithium's evidence base, but a self-reinforcing cycle of selective patient suitability, eroded confidence and systemic friction keeps it as a late-line rather than first-line choice. The barriers are attitudinal, experiential and systemic rather than rooted in unfamiliarity with the evidence, pointing to specific, modifiable levers for change.

Keywords: lithium; bipolar disorder; qualitative research; thematic analysis; prescribing behaviour; evidence-practice gap; psychiatry; NHS

Background

Bipolar disorder is a chronic relapsing illness associated with substantial morbidity, premature mortality, and a lifetime suicide rate that is significantly higher than in the general population. Beyond the management of acute mood episodes, prophylaxis against future relapse is therefore a central component of effective long-term care. Pharmacological treatment remains the mainstay of this prophylactic strategy [1–3].. Despite the development of numerous mood-stabilising drugs and the widespread use of

second-generation antipsychotics for maintenance treatment, lithium has retained its position as the most evidence-based option available. It is unsurprising, then, that evidence-based guidelines and expert consensus statements have consistently recommended lithium as a first-line prophylactic agent [1–3].

Lithium's advantages extend beyond its efficacy in preventing future mood episodes. It is associated with a reduction in suicide risk and all-cause mortality, and emerging evidence points to a possible role in preventing Alzheimer's dementia, raising the possibility that lithium acts as a disease-modifying agent in bipolar disorder [4,5]. However, it carries a narrow therapeutic index and is associated with clinically significant adverse effects on renal, thyroid and parathyroid function, necessitating regular blood monitoring. Alternative agents — anticonvulsants such as valproate and lamotrigine, and second-generation antipsychotics such as olanzapine, quetiapine, aripiprazole and lurasidone — are increasingly used in practice, despite comparatively limited evidence base and a different, but significant, side-effect burden. [6–13].

Despite this evidence base, lithium use has declined steadily across most health systems. In the UK, a primary-care cohort of 4,700 patients with bipolar disorder followed between 1995 and 2009 found that overall psychotropic prescribing rose sharply over the period, driven largely by valproate, olanzapine and quetiapine, while lithium prescribing remained comparatively static [6]. A Scottish data-linkage study of over 23,000 patients between 2009 and 2016 identified a clear decline in lithium prescribing relative to atypical antipsychotics and antidepressants [7]. In the United States, second-generation antipsychotic prescriptions for bipolar disorder rose from 12.4% to 51.4% of psychiatrist outpatient visits between 1997 and 2016, while lithium specifically fell from 30.4% to 17.6% [8]. Danish national data reported that lithium moved from being the most commonly prescribed agent for bipolar disorder in 2000 to the least commonly prescribed by 2011 [9], and comparable declines have been documented in Sweden [10] and across eleven European countries [11]; an earlier US market-scan analysis found that lithium was the initial treatment for only 7.5% of newly diagnosed patients [12]. A recent retrospective cohort study. from Clinical Practice Research Datalink reviewed 40965 patients pharmacological treatment 12 months before and after the diagnosis of bipolar

disorders. Only 18.5 % received lithium after the diagnosis and out of these only 4% patients had received it as a monotherapy. In contrast, antipsychotic monotherapy (36.0%) was the most common post diagnostic treatment[13].

The reasons for this dissonance between evidence and practice are multiple and have prompted repeated editorial concern that lithium is under-utilised relative to its evidence base [13–18]. Cross-sectional surveys of clinicians across multiple jurisdictions — India [19], Spain [20], Canada [21], Saudi Arabia [22], and a global ISBD task-force survey of 886 respondents from 43 countries [23] — identify a consistent set of barriers: adverse-effect concerns, monitoring burden, limited clinician experience and confidence, patient-related factors (such as their negative beliefs and/or attitudes towards lithium), and the absence of pharmaceutical marketing relative to patented alternatives. The ISBD survey found that 59% of respondents identified lithium as their preferred maintenance agent — substantially higher than actual prescribing rates would suggest, pointing to a clear knowledge-practice gap [23].

These cross-sectional surveys have been invaluable in documenting the scale of underutilisation, but they cannot explain *why* the barriers persist despite widespread awareness of the evidence. Survey data can establish that clinicians cite adverse effects or monitoring burden, but cannot illuminate how these concerns are weighed against competing considerations in real encounters, how decisions are shaped by training and institutional culture, or how clinicians reconcile stated endorsement with observed behaviour. These questions focus on clinicians' lived experiences of decision-making and therefore require qualitative methods. Exploring them will help us understand—and ultimately address—the evidence–practice gap. To our knowledge, no published qualitative study has examined psychiatrists' perspectives on lithium prescribing within the English NHS, where Nantional Instutute of Health and Care Excellence (NICE) guidelines for bipolar disorders unambiguously recommends lithium as first-line long-term treatment, yet prescribing data suggest continued underutilisation [2,13–18]. This study set out to explore, through in-depth interviews, how NHS psychiatrists understand, justify and navigate their decisions about prescribing lithium.

Methods

Participants

A convenience sampling strategy, supplemented by purposive recruitment, was used to ensure representation across psychiatric grades and training routes. Inclusion criteria were: medically qualified psychiatrists currently practising, of any grade, who were involved in prescribing decisions for adults with bipolar disorder. Recruitment took place across two NHS mental health Trusts in the North of England.

Twenty psychiatrists took part. The sample comprised 13 consultants (a mixture of UK-trained and internationally trained doctors, with consultant experience ranging from under two years to over twenty years), three higher or senior trainees (more then than three years of experience in psychiatry), two core trainees (with over two years of experience in psychiatry), and two speciality doctors (with over five years of experience in psychiatry). Participants worked across general adult, older-adult, rehabilitation, community and inpatient settings. Recruitment and interviewing proceeded sequentially until thematic saturation was achieved, as indicated by the absence of new themes emerging from successive interviews.

Procedures

Information about the study was circulated through Trust academic mailing lists and clinical directorate meetings. Psychiatrists who expressed interest were contacted by the lead researcher (SG), provided with a participant information sheet, and gave written informed consent prior to interview. Interviews were conducted online via Microsoft Teams by the lead researcher (SG), a consultant psychiatrist. Each interview lasted approximately 60 minutes (range 45–80 minutes). A semi-structured interview guide, developed in consultation with colleagues, opened with broad questions about participants' general preferences and reasoning for pharmacological choices in bipolar disorder before narrowing to specific perspectives, attitudes and practices around lithium. The guide was applied flexibly, with the direction of each interview shaped by participants' responses so as to allow exploration of unanticipated themes as they arose. Interviews were recorded and automatically transcribed using the Microsoft Teams transcription

feature; transcripts were subsequently checked and manually corrected against the audio recording by SG and a second researcher (AA).

Analysis

The study adopted a critical realist epistemological stance, treating participants' account as meaningful representations of clinical experience while recognising that those accounts are shaped by professional culture, training and institutional contexts.

Transcripts were analysed thematically following Braun and Clarke's six-phase framework: (1) familiarisation through repeated reading of the dataset; (2) generation of initial codes; (3) searching for candidate themes; (4) reviewing themes against both the coded extracts and the dataset as a whole; (5) defining and naming themes; and (6) producing the final analytic report.Coding was conducted using NVivo 15 software. Codes were generated inductively from the data, and no a priori coding framework was imposed prior to analysis. Because the reasons clinicians gave for choosing, or not choosing, lithium for an individual patient were typically informed by several interrelated factors, the broader themes identified were further subdivided into sub-themes to preserve this complexity.

In terms of positionality, the research team comprised practising Consultant Psychiatrists and a Consultant Psychologist working in one of the NHS Trusts where participants were recruited. It was acknowledged that some participants were known to the interviewer due to prior professional affiliation. Whilst this enabled rapport building, shared insight and deeper exploration of professional contexts, there was a risk that taken-for-granted assumptions as well as professional identity and hierarchy dynamics influenced data generated from interviews. Several measures were taken to mitigate this. The research team acknowledged their own assumption that lithium may be underutilised may not be shared by participants. Interviews comprised open-ended and flexible questioning to probe deeply for perceptions and reasoning linked to participants' lived experiences of prescribing. Aligned with RTA, the research team explicitly acknowledged their own positionality and assumptions but treated their clinical stance and practices as analytical resources rather than biases.

Ethics

The study received ethical approval from the participating NHS Trust Research and Development offices and the UK Health Research Authority. All participants provided written informed consent. Identifying details were removed from transcripts, and all quotations reported here are anonymised.

Results

Six themes were identified: (1) effectiveness belief versus practice; (2) Deciding who is offered lithium : a narrowing pool of candidates; (3) barriers to prescribing, encompassing practitioner-related, patient-related and systemic sub-themes; (4) inconsistencies in prescribing thresholds; (5) facilitators and good practice. These themes did not operate independently; rather, as the Discussion will elaborate, they interlock to form a self-reinforcing cycle that perpetuates lithium's status as a late-line rather than first-line treatment (Figure 1).

Theme 1: "It's the gold standard, but...": effectiveness belief versus practice

Every participant endorsed lithium's evidence base without reservation, using phrases such as "gold standard", "first-line" and "best evidence" and often referencing UK NICE guidance directly. Yet this declarative endorsement co-existed with accounts in which lithium appeared late in the decision sequence — typically only after one or more trials of an atypical antipsychotic or valproate Several participants articulated this dissonance directly and without prompting:

"If you asked me on a survey, of course I'd say lithium is the best drug. If you asked me what I actually started in clinic last week, it would be quetiapine."

"I use it more as a second-line treatment. If those second-generation antipsychotics are not very effective, then I do use lithium, but that is quite rare in my practice."

“I think lithium is brilliant. But I’d be lying if I said I reached for it first. I reach for it third or fourth.”

“Lithium depends. I usually use it as the last resort because of the monitoring and the long-term side effects.”

Antipsychotics dominated initial treatment decisions in many accounts, particularly in acute mania, where clinicians prioritised medications that “act more rapidly” and have a “tranquilising effect”. Olanzapine, quetiapine, aripiprazole and valproate were described as default first-line choices, especially on inpatient wards where patients are “more unstable and acutely unwell”. Once such patients responded, the same agent was often simply continued into the maintenance phase, rather than lithium being introduced at that point:

“Most of our patients are likely to be on antipsychotic treatment, especially since many with bipolar disorder come from the ward after an acute manic episode. They are often prescribed an antipsychotic, with olanzapine being the most common. I recently did a medication survey and looked at medication orders; patients from the wards or the crisis team tend to be prescribed more olanzapine. If I start medication, I never choose olanzapine. In the year we audited, I didn’t start olanzapine; instead, I used aripiprazole and risperidone.”

The narrative structure of these accounts was strikingly consistent: an unprompted affirmation of effectiveness, immediately followed by a “but” clause introducing a practical or risk-based qualification. This rhetorical pattern recurred across grades and training backgrounds. What sits on the other side of the “but” is explored in the themes that follow.

Theme 2: Deciding who is offered lithium: a narrowing pool of candidates

Sub-theme 2.1: Patient characteristics and demographics

Participants described, often without prompting, a clear picture of the patient they considered “suitable” for lithium: stable, organised and motivated, with a classical bipolar I presentation, a supportive family network, no significant substance misuse or chaotic lifestyle, and the capacity to attend regular blood monitoring. Conversely, lithium was

implicitly or explicitly considered relatively contraindicated in patients with impulsivity or acute suicidality ,as well as active substance misuse, chaotic engagement, comorbid personality disorder, renal or thyroid disease, and women of reproductive age.

“Lithium suits the well-organised, well-supported patient. Which is, of course, not most of the patients I see.”

“You hold off on someone who’s unstable, who’s impulsive. But then you realise — that’s exactly the person the suicide data says should be on it.”

Gender, and specifically reproductive considerations, was repeatedly emphasised. Clinicians noted that “the gender of the person is essential” and that for female patients “you need also to see whether they are in childbearing age”, weighing risks such as the “possibility of having some birth defect”. This translated into more cautious prescribing for women: “I feel more comfortable starting lithium in a male patient because the issue of pregnancy… is not there”, with some noting “we tend to use atypical antipsychotics more frequently than lithium” in women of reproductive age. These accounts suggest that prescribing is highly individualised, with clinicians integrating demographic, lifestyle and personal context into an informal composite assessment of suitability.

Sub-theme 2.2: Clinical profile and comorbidities

Clinicians also weighed the complexity of the bipolar presentation and comorbid physical health, including diagnostic certainty as a precondition for considering lithium at all:

“If I’m not sure it’s bipolar — and you’re often not sure for years — I won’t start lithium. I’ll start something I can stop easily.”

Although NICE guidance does not formally differentiate by subtype, most participants defaulted to alternatives such as lamotrigine or quetiapine where the predominant polarity was depressive. The bipolar I/II distinction emerged repeatedly as pivotal:

“I think the evidence base is more convincing for lithium in bipolar I. So, I think it should be discussed, at least considered, in pretty much every patient with bipolar I. Bipolar II, I appreciate that the evidence base is not as clear cut, and [there are] other medications that have got evidence that is more comparable to lithium in bipolar II.”

“If depressive symptoms are prominent… I tend to use quetiapine more.”

Physical comorbidities — particularly renal and thyroid conditions — were consistently identified as critical: “lithium may not be a good option in someone with chronic kidney disease”, and patients who “already have issues with the thyroid” prompted similar caution. Diabetes was singled out given its long-term trajectory, with affected patients seen as likely to “affect their kidneys, so that always remains a worry”.

Sub-theme 2.3: Patient adherence and engagement with blood monitoring

A patient’s perceived willingness and practical capacity to engage with ongoing blood monitoring was a further key consideration; where clinicians were uncertain about this, alternative treatments were typically preferred:

“If somebody’s saying, ’I won’t accept blood tests right now,’ it’s quite hard to go for lithium.”

Reluctance towards blood tests or structured follow-up was frequently a decisive barrier in itself: “if someone really dislikes needles or blood tests, you might think this is not the best long-term option in terms of compliance”. More broadly, clinicians noted that lithium was more likely to be offered to patients “willing to come for regular follow-up and blood tests”.

Concerns about general adherence also shaped prescribing, with lithium avoided in patients perceived as unreliable, and lifestyle factors such as alcohol use and chaotic routines compounding this concern — “a patient has got a chaotic life” or a “risk of binge alcohol drinking” was seen as compromising both adherence and safety:

“If the patient is not going to reliably take it because of a past history of non-compliance or non-adherence with other treatments then lithium would not be prescribed.”

Sub-theme 2.4: Treatment history and drug interactions

Previous response to medication, including family history, was an important guide to future decisions. Positive past experience strengthened confidence — “if people do respond to lithium… it’s usually an excellent medication” — whereas negative experience, particularly toxicity or overdose, exerted a powerful and lasting deterrent effect:

“[I remember] somebody impulsively take a lithium overdose and get a blood level of 6... I thought she would die.”

This clinician described becoming markedly more cautious about starting further patients on lithium as a direct result. Existing regimens also mattered, particularly where a patient was already stable on another medication: “if people stabilise on just the antipsychotic medication, you might not need to add something else in” — reflecting a broader pattern in which antipsychotic drugs are initiated as amood stabiliser during an acute admission and simply continued into maintenance, with lithium never entering the picture. Concerns about polypharmacy and drug interactions were especially prominent in older adults, where clinicians described being “more cautious about lithium because they are taking more medications”.

Theme 3: Barriers to prescribing lithium — caution, confidence and constraint

Barriers to prescribing were raised repeatedly, both in direct response to questions about reasons for not prescribing and in broader reflections on underuse. This was the most extensively developed theme, and barriers were categorised as practitioner-related, patient-related, or systemic.

Sub-theme 3.1: Practitioner-related barriers

Burden of monitoring . The single most frequently discussed barrier — raised by the majority of participants when asked for three main reasons not to prescribe — concerned not the burden of monitoring on the clinician,as well as concern about *patients’* capacity to comply with it: “regular monitoring can be “pretty cumbersome” for the patient, while “other medications are easier to prescribe and easier to monitor”.

Safety concerns. For a subset, concerns about toxicity, side effects and overdose risk were the principal reason lithium was not their first choice, particularly with a history of overdose, creating a “big barrier psychologically to start someone on lithium”:

“I dislike it because somewhere in the back of my mind, I’ve always worried — what if they get dehydrated, take lithium, what if they get highly toxic levels? I just worry about it.”

General lack of confidence and experience. Trainees and less experienced participants described marked hesitancy from limited direct experience. One trainee with six years' experience made a striking admission:

"I've never started lithium. I've monitored, adjusted, stopped — never initiated. That feels wrong saying it out loud."

This was also named by senior consultants reflecting on the profession more broadly:

"People are afraid to start lithium; they lack much experience because it is now more of a cyclical trend. Why am I confident? Because I have used it on many patients back in India. But in the UK, I believe the new consultants don't have much experience with lithium."

Several linked their own hesitation to its effect on patients, noting it could "unintentionally create fear or anxiety in patients", while others described a medicolegal dimension rooted in fear of accountability: "it feels like we're going to be held responsible". A further source of low confidence concerned perceived evidence gaps in specific populations, such as first-episode psychosis (that includes patients with bipolar disorders):

"I know there is substantial evidence in the general population, but I believe my client group is quite different. In many ways, they often already need to be on an antipsychotic, so I don't have patients with solely bipolar disorder displaying only mood swings and fluctuations. They will already be on an antipsychotic anyway. Therefore, I am unsure whether there is evidence that lithium offers additional benefit on top of antipsychotic medication."

Concerns about adverse effects. The most consistently cited practitioner-related barrier overall was confidence — or its absence — in managing lithium's adverse effects:

"Even though I am aware of the side effects, I am not always confident in how to manage them, and that is one reason I prefer antipsychotics over lithium."

"We know lithium has a lot of side effects, but if we are unsure how to manage them, we will be reluctant to prescribe it."

Renal impairment featured prominently, especially in older adults, with kidney dysfunction repeatedly described as “the biggest issue” in this group. Several believed the long-term incidence of renal impairment was very high: “I have a rule of thumb, that after 30 years, 50% would have some renal impairment.” Others described its gradual, often irreversible trajectory:

“It is the likelihood that at some point it’s going to have to be stopped because of worsening renal function, that those that take it long enough will often happen to.”

“[I’ve seen] people having to have stopped lithium and then relapsing [after many years of treatment, because] the kidney function declines gradually, and that’s not helped by the lithium.”

For some, a single prior experience continued to shape practice years later:

“I had a patient years ago whose kidneys really suffered. You don’t forget that. Every time I think about starting lithium now, I think about him.”

By contrast, participants felt considerably more confident managing thyroid dysfunction, tremor and weight gain; few had encountered parathyroid problems or hypercalcaemia. As one summarised: “That is the main reason lithium has become second-line in my own practice. It used to be first-line 20 years ago, but now it has become second-line because of toxicity and long-term adverse effects on the thyroid and kidneys.”

Sub-theme 3.2: Patient-related barriers

Participants also identified barriers they believed originated with patients, which often overlapped with their own reasoning.

Concerns about side effects. Participants described a widespread patient perception that lithium is “somewhat intrusive” and toxic, with intensive monitoring and detailed clinical explanations reinforcing an “automatic assumption that this is more dangerous than the other drugs”. How clinicians framed the discussion mattered: “the clinician influences the patient by how they present lithium”, and opening with “we do not usually start this first line” was thought likely to “create fear in the patient”. As one put it, “people

get quite scared with the list of potential side effects and the physical monitoring that it requires to get them to the target dose, and they usually just say no to it".

"I think patients get scared about the potential side effects and I think they get very anxious about engaging in physical monitoring."

"Because when I offered it a few times, they just looked at the side effect profile and the potential risk to the kidneys and thyroid, and they decided to try something else."

Influence of previous experience. Prior experience strongly predicted attitude towards continuing or restarting lithium: "most patients who have been stable on it want to continue it [but] if patients have developed toxicity, they do not want to take it".

Sub-theme 3.3: Systemic barriers

High workload and low support. Although rarely cited as a personal reason for avoiding lithium, systemic barriers were discussed extensively. One participant described a previous workplace where lithium was underutilised because referral to a monitoring clinic was administratively "cumbersome" and involved "a lot of extra admin work", so "everything else would be tried first". Others described monitoring as "burdensome" without a clear team structure, linking this to overall workload: "workload becomes relatively more if you prescribe lithium… that's why some teams are reluctant" — in short, "too much hassle" given limited infrastructure.

Insufficient training and exposure. Participants described a persistent lack of knowledge and practical exposure to lithium, linked to gaps in training structure, with an *insufficient focus on benefits*: "we learn so much about the side effects that it creates fear".

Theme 4: Inconsistencies in prescribing views and practices — judgement over thresholds

It became apparent during interviews that individual clinicians applied lithium inconsistently, not always in line with standard guidelines, informed largely by personal perceptions of risk.

Variation in therapeutic targets and toxicity thresholds. Although most participants referred to a broadly familiar range of "0.6 and 0.8mmol/L", actual decision-making varied considerably with clinical response, patient history, age, setting and individual comfort. Some described titrating upward in symptomatic mania — "if a patient has partially responded, I will consider increasing the dose" — while others became "very nervous" beyond 0.9mmol/L and would "change the dose for anything above 0.9mmol/L".

Variation in renal thresholds. A further area of marked variability concerned renal impairment, with eGFR thresholds to start lithium ranging from 45 to 60 ml/min, and thresholds for discontinuing it ranging from 30 to 60 ml/min, often deferred to a nephrologist:

"Once patients start showing symptoms like a reduction in eGFR, etc., we usually try to switch them to another medication rather than waiting for their renal function to deteriorate further. However, if the patient must be doing well solely on lithium, sometimes we have to keep them on it. In such cases, we always seek the help of a nephrologist."

"We involve a nephrologist and monitor regularly according to the guidelines."

This suggests prescribing is guided more by individual judgement and accumulated experience than a single consistently applied threshold — a flexibility that may allow tailored treatment, but also means different practitioners may respond quite differently to the same level or degree of impairment, particularly around borderline results.

Theme 5: Facilitators and good practice — Confident, competent, communicative care: what supports safe lithium use

In contrast to the barriers above, participants also identified factors that facilitated lithium's continued or safe use, derived largely from their own descriptions of how they manage it in practice.

Clarity and confidence in managing side effects. Many clinicians described practical strategies that did not necessarily require discontinuing lithium. Tremor was typically managed by checking levels, assessing functional impact, and considering dose reduction: "we need to decide whether lithium can be reduced, or whether we should use

other medications like propranolol", though "fine tremor doesn't usually require intervention if it's not impairing function". Thyroid dysfunction was seen as more straightforwardly manageable, often alongside continued lithium and thyroid replacement: "following that, the patient was started on thyroid replacement therapy, but we continued lithium" — thyroid abnormality alone "wouldn't be a reason on its own to stop it unless the patient wanted to". Confidence in managing side effects thus functions as an important facilitator of continued, clinically beneficial use.

Recognising the benefits and strengths of lithium. Confidence in the medication itself was an important precondition for overcoming reluctance. Participants cited its effectiveness in mood regulation and relapse prevention and its anti-suicidal effect, noting it is "generally well tolerated and many patients do not experience significant side effects", and that when effects do occur "they can be monitored closely and managed".

Confident and effective monitoring. Where monitoring was supported by a dedicated team structure, it was not experienced as a barrier. One participant felt "very confident" because their team had "excellent physical health monitoring departments" with same-day communication of abnormal results, enabling them to "act immediately".

Shared decision-making and clear communication. A patient's willingness to accept lithium "depends a lot on how it has been explained to them", and disproportionate emphasis on side effects could become self-fulfilling: "if the practitioner emphasises the side effects more than the benefits, that scares them away." Several reflected that clinicians may unintentionally transfer their own anxieties through how lithium is framed — presenting it as rarely used "can create fear in the patients" — and described practical tools such as a whiteboard explanation of "that optimal range" to help patients understand the rationale for monitoring, alongside structured discussions with patients and families covering "the benefits, the side effects, the monitoring" before starting treatment.

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Improved training and education. The most commonly cited suggestion was that greater knowledge and clinical exposure would strengthen prescribing confidence: introducing lithium earlier and more positively in training, with due emphasis on benefits,

and embedding it in examinations as a “gold standard” option. Several argued this education should extend beyond psychiatrists to nurses, advanced practitioners, GPs and medical students, who frequently encounter patients already taking lithium. Participants also wanted exaggerated toxicity fears directly challenged, calling for “a balanced view both about the effects and side effects” rather than a focus skewed toward toxicity — lithium is often informally framed as “lithium bad, everything else good”, despite comparable risks with alternatives. Further suggestions included stronger psychopharmacology representation in guidelines, sharing positive patient experiences, and more practical teaching on prescribing procedures and monitoring schedules, since trainees may understand the evidence intellectually while lacking confidence applying it.

A related suggestion concerned direct clinical exposure: “you get confidence by actually doing it,” so “we need to give trainees experience of managing patients on lithium.” Another framed this as role modelling: “if trainees see consultants using lithium safely and effectively, and see that it works well for patients, they will be more likely to use it later in their own careers” — and “if they do not get that exposure, they will not.”

Patient education and monitoring reform. Four participants suggested patient-facing education to address misconceptions, and a further four suggested relaxing monitoring requirements:

“I think if we would space out the monitoring, I think patients would be more likely to agree to these trials and to maintain this medication, and potentially GPs would be happier to continue to take over the prescribing responsibility.”

Many recommendations rested on the recognition that patient perception is itself shaped by clinician attitude:

“They are usually concerned about the seriousness of toxicity and about the regular monitoring required. But patient perception depends a lot on the doctor’s attitude. If the patient sees that the doctor is confident, they are more likely to accept it. If the patient perceives the doctor as hesitant or unsure, they will also be less confident.”

Several expressed a clear personal commitment to at least raising lithium as an option, even where uptake remained low:

“Going down bipolar one pathway, I think we should at least be having the conversation with all of those patients — not saying that everyone should start it.”

“I’m always keen to sell lithium, and I always offer it, but unfortunately, I’ve had a lot of patients saying no to lithium.”

“We tend to emphasise negative side effects because of a safe-practice point of view. So do you think it might be better if we have a way to give a balanced view about lithium — give them accurate information about the chance of benefit and the chance of side effects, as well as the impact of side effects?”

Discussion

This qualitative study of 20 psychiatrists across two large English NHS trusts identified six interlocking themes that together potentially explain the gap between universal endorsement of lithium’s evidence base and its limited deployment in everyday practice.

Our findings converge closely with international surveys of prescriber attitudes from Spain [20], India [19], Canada [21], Saudi Arabia [22] and the ISBD global task-force [23], all of which identify adverse-effect concerns, monitoring burden and clinician experience as principal drivers of underuse. Our qualitative data deepen these findings by showing how these factors are not independent variables but interwoven within clinical reasoning: concerns about side effects and safety issues shape patient selection; patient selection narrows clinical experience; narrowed experience erodes confidence; eroded confidence reinforces side-effect anxiety. This self-reinforcing cycle is not something survey methodology alone can capture, since it requires participants to articulate the sequential, mutually reinforcing logic connecting belief, selection, experience and confidence over time.

Work from Poland on prescriber and patient attitudes has similarly identified negative perceptions of lithium toxicity as a key driver of underuse, alongside active promotion of patented alternatives [24] — though our NHS sample did not identify the absence of

pharmaceutical marketing as a structural disadvantage, a point of divergence that may reflect differences in how medicines are promoted within the NHS.

The Lithium Attitudes Questionnaire [25] has been used in several studies to assess patient beliefs, with prior work showing that better patient knowledge correlates with more positive attitudes and adherence [26]. Importantly, a late-life bipolar cohort study found that patients already established on lithium reported *more* positive attitudes towards pharmacotherapy than those on alternative agents [27] — directly contradicting the assumption, voiced by several of our participants, that patients prefer non-lithium options. This discordance is a critical leverage point: clinicians avoiding lithium “because patients don’t like it” may be acting on an inaccurate belief about patient preference, and the Polish findings [24] reinforce that both clinician and patient attitudes are modifiable through structured education and powerfully shaped by the surrounding clinical environment. The most likely explanation is that preconceived beliefs lead clinicians to under-offer lithium to eligible patients, and that even when it is offered, its risks and benefits relative to alternatives are not sufficiently discussed to support informed consent.

Our finding that NHS prescribers systematically deviate from the NICE guidelines in bipolar II — preferring quetiapine or lamotrigine over lithium — warrants attention. NICE guidance does not formally differentiate by subtype, yet the CANMAT/ISBD 2018 guidelines do [1], distinguishing first-line agents by polarity and subtype. This mismatch between local reasoning and national guidance creates a zone of genuine ambiguity into which prescribers’ default towards perceived safer alternatives — an area where guideline clarification could meaningfully reduce uncertainty.

The lithium evidence-practice gap identified here is consistent with a large and persistent pattern documented internationally: UK [6], US [8,12], Scandinavian [9,10] and pan-European [11] data all show lithium’s share of bipolar prescribing has declined or stagnated relative to atypical antipsychotics over the past two decades. If lithium remains the most efficacious maintenance agent available, as comparative-effectiveness literature concludes [28,29], this gap is a meaningful public-health concern rather than a matter of clinical preference alone — though more recent commentary has cautioned that the precise magnitude of lithium’s effect size is harder to pin down than earlier meta-analyses

suggested, given heterogeneity across trials [30]. Closing the gap will not be achieved simply by repeating the evidence — every participant here already knew it — but by addressing the situational, attitudinal and systemic factors that mediate its translation into prescribing behaviour. The ISBD/IGSLI Task Force recommendation that the standard serum target be 0.60–0.80 mmol/L, with the option to reduce this to 0.40–0.60 mmol/L in patients with good response but poor tolerability [31], offers a practical framework that may address some of the renal and cognitive concerns voiced by our participants; a similar recalibration of monitoring requirements, provided it does not compromise safety, may improve uptake without introducing additional risk. Similarly, there are still significant variations regarding monitoring recommended for safe monitoring of use of lithium; this is mostly based on expert opinion, and more research needs to be done to establish whether monitoring frequency can be relaxed without compromising safety [32,33].

Strengths and limitations

A key strength was the sample's heterogeneity — spanning all psychiatric grades from core trainee to senior consultant, both UK- and internationally-trained consultants, and two large NHS trusts with diverse catchment populations. In keeping with reflexive thematic analysis, this diversity enriched the data, with varied perspectives enabling more nuanced theme development and enhancing the transferability of the findings.rigorous application of Braun and Clarke’s reflexive thematic analysis; and SRQR-compliant reporting [34].

Limitations include the convenience sampling approach, which may have preferentially recruited clinicians with strong pre-existing views on lithium, whether positive or negative; the single-region focus on North-East England, which may limit generalisability to other countries ; the absence of patient and family perspectives, which would meaningfully complement and test the clinician-reported assumptions identified here; the lack of objective prescribing-rate data drawn from participants’ own clinical practice; and the online interview format, which may have constrained rapport relative to face-to-face interviewing — although the consistency of themes across interviews, and the depth of disclosure observed even in this format, suggest that this constraint was not critical to the overall findings.

Conclusions

NHS psychiatrists across two large North-East England trusts universally endorse lithium's evidence base for bipolar disorder, yet consistently describe practices in which lithium is introduced late, reserved for a narrowly defined patient profile, and surrounded by persistent anxiety about monitoring and toxicity. The drivers of this evidence-practice gap are not deficits in knowledge about lithium's efficacy, but are instead attitudinal, experiential and systemic in nature. A number of modifiable levers are identified by this study and lie within the reach of trust-level and national policy action: structured training in lithium initiation for trainees, dedicated lithium clinics, improved electronic decision support, clearer shared-care arrangements with primary care, and shared decision-making tools that directly correct clinicians' misperceptions of patient preference. Closing this gap is both feasible and necessary to achieve optimum outcomes for patients.

The recommendations arising from this study are pragmatic and grounded directly in participants' own accounts; their effectiveness in changing prescribing behaviour and, ultimately, patient outcomes would need to be formally tested in future implementation studies, ideally using cluster-randomised or stepped-wedge designs deployed across multiple sites..

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Declarations

Ethics approval and consent to participate: The study received ethical approval from the relevant NHS trust Research and Development offices and the Health Research Authority. All participants provided written informed consent prior to taking part.

Consent for publication: All quotations included in this manuscript have been anonymised and contain no identifying details; participants consented to the use of anonymised quotations for publication.

Availability of data and materials: The interview transcripts generated and analysed in this study are not publicly available, in order to protect participant confidentiality, but de-identified excerpts are available from the corresponding author on reasonable request.

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Authors' contributions:

SG conceived the idea, wrote the protocol and conducted interviews, transcribed and analysed the transcripts and wrote the article.

SN- contributed to writing of protocol, recruitment of participants and contributed to revision of the final manuscript.

AA- manually corrected the manuscript and contributed to writing and revision of the final manuscript.

SA- Contributed to writing of protocol and revision of the final manuscript.

CC- Contributed to writing of protocol and revision of the final manuscript.

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Figure 1:Thematic map — lithium prescribing study

Five interlocking themes: the gold-standard belief–practice tension frames patient selection and barriers, which drive inconsistent practice, while facilitators and good practice counter the barriers.

