Factors affecting clinical pharmacist decision-making when reviewing and prescribing z-drugs in primary care: a qualitative interview study

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Abstract

Factors affecting clinical pharmacist decision-making when reviewing and prescribing z-drugs in primary care: a qualitative interview study.

*Background*: Z-drugs (zopiclone, zolpidem and zaleplon) are drugs with dependence forming characteristics licensed for the short-term management of insomnia. Patients regularly prescribed z-drugs are candidates for ‘structured medication reviews,’ routinely delivered by pharmacists employed in general practice or primary care networks in England.

*Aim:* To understand the factors that affect pharmacist decision-making when reviewing and prescribing z-drugs in primary care.

*Method:* Qualitative semi-structured interviews with general practice based pharmacists were conducted using MS Teams®. Clinical vignettes to simulate real-world practice were sent to participants and then discussed at interview, followed by structured interview questions. Interview transcripts were thematically analysed to identify themes and sub-themes expressed by participants.

*Results:* Three over-arching themes emerged over the course of qualitative interviews with 10 clinical pharmacists: the perceived role of the pharmacist in deprescribing, the decision-making process, and perceptions of best practice. Pharmacists highlighted that relationships with patients were an important foundation for medication reviews regarding z-drugs and that at times they felt pressure to continue prescribing z-drugs beyond their licensed use. Participants explored rule-based reasoning and compassionate care when rationalising their decision-making for reviewing and prescribing z-drugs.

*Conclusion:* Patient factors, time pressures, ‘rule-based’ beliefs and pharmacist self-efficacy were key practice aspects which can influence the pharmacist decision-making process when reviewing or prescribing z-drugs. Pharmacists believed z-drugs should be short-term interventions for insomnia, with non-pharmacological, holistic treatment being more appropriate for long term management.

Keywords

Clinical Reasoning, Deprescriptions, Medication Review, Sleep initiation and maintenance disorders, Zolpidem, Zopiclone

Impact Statements

* Time pressures, ‘rules-based’ (deontological) beliefs and patient factors can all affect the decision-making process when pharmacists review and prescribe z-drugs.
* Short term use within product licenses, holistic care and promoting patient agency in decision making were viewed as best practice regarding z-drug use.
* Pharmacists view themselves as more risk averse and thorough when reviewing z-drugs in primary care than their medical colleagues.

Introduction

Z-drugs are indicated for the treatment of acute insomnia and are classed as ‘benzodiazepine receptor agonists,’ sharing many of the same risks as benzodiazepines, including cognitive impairment, increased risk of falls (especially in the elderly), memory effects and potential dependence if continued long term [1,2]. Whilst none of the medicines in the z-drug class carry a licence for long term use, they are often inappropriately continued as chronically prescribed medicines in primary care settings, leading to increased risk of harms, particularly in patients with significant polypharmacy [3,4]. Pressure from patients and perceived lack of alternative options for the treatment of insomnia can contribute to long-term prescribing of these harmful drugs [5]. With risks outweighing benefits in long term use, there is a clear need to reduce inappropriate, extended prescribing of z-drugs.

Internationally, prescribing rights for pharmacists from country to country vary. Multiple models are deployed globally across a spectrum of granting pharmacists full prescribing rights or allowing pharmacists to prescribe from a set formulary, to other jurisdictions granting pharmacists no prescribing rights at all [6,7]. Pharmacists in England are granted full prescribing rights after completing a postgraduate qualification in ‘independent prescribing,’ due to be extended to all newly qualified pharmacists from 2025/26 [8]. The pharmacist role within English primary care has developed rapidly over the past five years, with the introduction of the clinical pharmacist role into recently formed primary care networks (PCNs) [9]. These clinical pharmacists work alongside physicians in the general practice setting, conducting medicines reviews, delivering clinics and undertaking medicines optimisation work. A core part of the PCN clinical pharmacist role is to deliver ‘structured medication reviews’ (SMRs), typically 30-minute face-to-face or telephone reviews defined as “an evidence-based and comprehensive review of a patient's medication” to minimise harm from prescribed medicines [10,11]. A priority patient group to receive SMRs are those taking potentially addictive medicines, including z-drugs [11,12]. Given that pharmacists in England will play a pivotal role in reviewing z-drug prescribing, it is important to understand their perspectives on this area of practice.

Whilst there has been a shift from benzodiazepine prescribing for the management of insomnia to the z-drug class within England, prescriber beliefs concerning the relative risks versus benefits of the two classes are not congruent with national guidance or available evidence [13,14]. This trend is reflected globally, with overall rates of benzodiazepine consumption declining in the last decade (-1.88% from 2008 to 2018), with a converse 3.28% increase in z-drug prescribing in the same period [15].

This study seeks to understand what factors affect this emergent workforce of clinical pharmacists when they prescribe and review z-drugs, and how their beliefs about these medicines translate into clinical decision-making behaviours in practice. This research is important to inform practice as the pharmacist role evolves (both in England and internationally) to encompass prescribing rights, person-centred medication review, and deprescribing of potentially harmful or addictive medicines. Understanding the factors that affect clinical pharmacist decision-making could help inform future interventions targeting z-drug deprescribing or postgraduate education to help tackle inappropriate and harmful chronic z-drug prescribing [16].

Aim

The study aim was to understand the factors which affect primary care clinical pharmacists' decision-making when reviewing and prescribing z-drugs.

Ethics Approval

Ethical approval was granted on 05 September 2022 from the School of Pharmacy and Bioengineering Ethics Committee, Keele University (Reference:SPaBREC050922TK).

Method

**Study Design**

Semi-structured qualitative interviews with clinical pharmacists were used to allow for an in-depth, phenomenological approach to understanding the beliefs, thought processes and clinical attitudes that pharmacists have towards z-drug review and prescribing [17]. The use of an interview schedule in these semi-structured interviews ensured that participants were all asked a set of core questions, whilst also allowing flexibility for more in-depth questioning bespoke to interviewees’ beliefs on what was important to them [18]. Questions for the interview schedule were based on a review of relevant literature alongside the principal investigator’s clinical experience of practice in the management of insomnia. Clinical vignettes were also developed to relate the research question directly to practice and simulate decision-making when reviewing z-drug prescribing (see Online Resource 1). These case studies gave two illustrative examples of contexts that pharmacists encounter z-drugs in the GP (general practice) setting. Vignettes can stimulate initial discussion and explore clinical behaviour of participants by representing a simulated microcosm, which can produce further discussion or highlight areas that participants feel are important to them in their practice [19].

An experienced researcher reviewed the draft vignettes and interview schedule to provide face validity [20]. Participants received copies of the vignettes in advance of the interview, to simulate the ability to review patient notes ahead of an appointment in general practice.

**Sampling and Recruitment**

To ensure a diverse sample, a mix of pharmacist experience working in general practice, prescribers and non-prescribers, gender, and workplace rurality were included in the sampling frame. As there is no formal centralised database of pharmacists working in primary care, snowballing was used to enhance participant recruitment to the research project [21]. To begin the ‘snowball,’ pharmacists were invited to participate in the research project using public social media posts on LinkedIn and Twitter. Generic invitations were also posted to regional and national Primary Care Pharmacy Association telegram group chats, as well as to the principal investigator’s known professional network. The only inclusion criterion for participation in the research interviews were for participants to be registered pharmacists currently working in a GP practice or PCN setting in England. A minimum sample size of 9 participant interviews was set, with further recruitment until thematic data saturation was reached [22].

**Data Collection**

Virtual interviews were recorded (both video and audio) using MS Teams® at a time convenient to the interviewees between October and December 2022. In the introduction to the interview, the researcher shared his own scope of practice as a PCN-based pharmacist specialising in mental health for transparency and to ensure he did not project his own world view onto the interviewee. Question ordering in the interview schedule was not followed by rote and instead a flexible approach was used to allow themes which were important to participants to emerge. The interview schedule was not altered throughout the course of successive interviews. To ensure credibility, transferability, dependability and confirmability, a number of steps were taken including: peer review and debriefing of the principal investigator with a senior researcher, clear methodology, taking a reflexive approach when conducting interviews, definition of a sampling strategy, and ensuring data saturation [23]. Data saturation was considered reached after both the minimum sample size was met and once the stopping criterion of three interviews with no new themes was observed [24]. Informed consent was obtained from all individuals to participate in the study and subsequent publishing of anonymised data. Written information and consent forms for signing were sent to participants in advance of interviews, with oral consent to proceed confirmed at the start of each individual interview.

**Analysis**

A thematic approach to data analysis was taken to provide a flexible strategy to producing a detailed and nuanced picture of the data collected [25]. After conducting the interviews, the steps undertaken using MS Word and Excel were transcript generation, data familiarisation and cleaning, inductive development of codes, generation of themes, developing a framework, mapping responses to codes/themes and subsequent analysis. After the first three interviews were conducted, transcripts were reviewed by both the principal investigator and a senior researcher separately to generate and compare initial codes. This inductive methodology to produce codes ensures that the thematic analysis is data-driven [26]. These codes were then grouped into three broad themes and this thematic framework was then applied to all of the interview transcripts for coding and analysis.

Results

**Demographics**

A total of ten pharmacists participated in semi-structured interviews. A mix of genders (seven female and three male), prescribing status (six prescribers and four non-prescribers) and experience in the general practice setting (one to six years) were represented in the participants, shown in Table 1.

The interviews lasted between 40–60 minutes each, which encompassed discussion of vignettes and set interview schedule questions, as well as allowing for exploration of emerging themes and ideas pertinent to interviewees. Three broad themes emerged over the course of the dialogue with participants: perceived role of the pharmacist in deprescribing, influences on decision-making and perceptions of best practice. These are presented with their constituent sub-themes in Table 2.

**Themes**

**Theme 1: Perceived Role of the Pharmacist in Deprescribing**

Self-Perception

There was a mix of views from the respondents regarding their perceived self-efficacy and their role as clinical pharmacists in general practice. Some pharmacists referred to themselves as ‘gatekeepers’ for the correct use of drugs, whilst other respondents reflected on their perceived thoroughness when reviewing z-drugs. For example, R5 felt:

*“I think pharmacists are far stricter and adhere to the licensing more than doctors.”*

* *R5*

Juxtaposed to this notion of appropriate use when pharmacists review therapy was an underlying hesitancy expressed by participants when reviewing or prescribing medicines, resulting in reduced self-efficacy in practice. One of the respondents reflecting on their own perceived self-efficacy in reviewing z-drugs mentioned:

*“I think in my first two years I was anxious about prescribing so many things and I still am. And I've learned more from it. So I'm always, you know, always think twice before, you know, signing my prescription. And I think it's good practice”*

* *R4*

Perceptions by Patients

How pharmacists felt they were viewed by patients when reviewing z-drugs was reported as a common factor when participants approached medication reviews. With pharmacists being a relatively new role in English general practice, the participants interviewed felt they were often greeted by scepticism from patients, or that they did not have the same social capital afforded by historic doctor-patient relationships that their GP colleagues in practice had. R5 stated:

*“And there's other patients who just aren't interested, you know… and there's a few that say, oh, you're only a pharmacist… what do you know? Umm, and just want to see their normal GP but mostly, mostly I develop a good rapport with patients. I think...* *they see me as a bit of an interloper…and don't have the trust in me that they would have in their GPs”*

* *R5*

All participants interviewed reflected on the value of developing a strong patient-pharmacist relationship during the course of consultations. This was often highlighted as an essential foundation for building a case for change when deprescribing or suggesting a change in management plans. One respondent reflected:

*“…if you can empathise with them and show them that you are understanding what they're saying, but then educating them at the same time so that they can make the right choice and the most appropriate use of it, then you should hopefully come to the right endpoint.”*

* *R6*

The other dynamic which some respondents felt could tainted discussions was aggression and patient non-engagement with discussions regarding z-drug reviews. This highlighted the need for mutual respect and trust before tackling difficult or emotionally charged conversations. For example, R9 stated:

*“They can be very aggressive… It's very difficult. I will say 95% of patients prescribed them don’t want to come off. They will feel we don't understand them, we are not them. We are not the one who's not sleeping. They'll be like uh, I’d rather have all the side effect that you just mentioned than not sleeping.”*

* *R9*

Comparison of practice with GPs

All pharmacists interviewed had strong views of the practice of other primary care colleagues in relation to z-drug prescribing, particularly GPs. Respondents felt that GPs were less perturbed by drug safety risks when making prescribing decisions and were more willing to extend prescribing beyond product licenses.

*“I'm making an assumption that broadly they’re probably starting the majority of these medicines… broadly there's a real difference in attitude. And GPs are very much taught to give things a go, it will probably be fine… the GPs become progressively less risk averse, whereas pharmacists I think don’t tend to deviate”*

*-R1*

**Theme 2: Influences on Decision-making**

Compassionate Care

A key component of the decision-making process for the pharmacists interviewed was demonstrating empathy when rationalising therapeutic options and considering the ramifications for patients of any decisions made. This was sometimes at odds with the licensed use of the medicines, but most respondents wrestled with how patients feel when making shared decisions about ongoing prescribing. R7 stated:

*“If somebody's in that acute phase of not being able to sleep, obviously, hopefully they will help that person sleep and we know that lack of sleep can have knock on effects with people's health”*

* *R7*

Rule-based Decision-making

The second major factor influencing decision-making of the pharmacists interviewed were ‘rule-based’ reasoning, or beliefs about what is right and wrong, regardless of the circumstances. All respondents at some point during their interview voiced a ‘black-and-white’ opinion regarding the use of z-drugs. These rule-based beliefs regarding the correct use of z-drugs were often in contrast to participants empathising with patient beliefs and motives. One respondent weighed up the potential cognitive dissonance between these two, sometimes conflicting, views:

*“I do wonder sometimes if there is a point where, you look at a prescription like that and think the difference between them having a good night's, it's a balance, between them having a what they perceive seems to be a good night's sleep and us acting in their best interest in, you know in in terms of safety, safely prescribing something like zopiclone.”*

* *R3*

Time Pressure

All of the pharmacists interviewed reflected in some way that reviewing z-drugs in practice took a significant amount of time, which could be a barrier to best practice or appropriate decision-making. For instance, R2 stated:

*“It's very difficult to do, they need a lot of time and we…I don't think we have the time.”*

* *R2*

Patient Pressure

The pharmacists interviewed felt that patients overtly pressurised them into prescribing z-drugs during consultations or authorising them for long term use, which in turn could influence their decision-making, especially when deciding to decline repeat prescriptions. R8 felt that:

*“There's definitely certain patients which will say I really need this medication, please give me this medication. And often I would stick to what the plan is that seems to be on their prescription. So obviously I would never give them over what they their prescribed but yeah, if there's pressure from them that suggests even more strongly that there's a problem with dependency or addiction.”*

* *R8*

Patients who were prescribed z-drugs chronically for several years (or ‘legacy’ prescribing) were viewed as being more difficult to manage or broker agreement for change with by the pharmacists interviewed. This represented extended use beyond the product licence recommendations. Respondents recognised that this was more widespread in elderly patients or those who had been historically initiated on a z-drug before their safety concerns were fully understood. R2 reflected:

*“Usually it would be mostly very old people who've been on them for a long time. And they're very, very difficult to manage. You know, they've been on for years and years… It's very difficult when they've got very firm, long held beliefs”*

* *R2*

**Theme 3: Perceptions of best practice**

Patient information and agency

Equipping patients with the information they needed to be equitable partners in the decision-making process was a core theme that ran through care planning in the clinical vignettes with the majority of pharmacists interviewed. All of the pharmacists interviewed included holistic interventions and non-pharmacological options in care planning for the clinical vignettes they were presented with. Interventions such as talking therapy, sleep hygiene and app-based technology were suggested as first line for supporting people with insomnia, over and/or in addition to prescribed therapy. Expectation setting at the outset and good information sharing regarding the length of use of z-drugs when initiating was also seen as best practice by six of the respondents. R8 felt that:

*“making sure they're fully informed and counselled that these drugs are for short term use only and that we cannot carry on the prescriptions long term. And backing up that information with resources like z-drug decision aids. Or any other resources”*

* *R8*

Treating underlying conditions

The majority of participants viewed the use of z-drugs as a means to a short term end, as opposed to a long term therapeutic option. Seven of the pharmacists interviewed felt that treating underlying issues without having a z-drug as part of long term therapy represented best practice. R4 articulated this, saying:

*“Most of these patients, they have that underlining trigger that hasn't been resolved”*

* *R4*

Discussion

**Key Findings**

It was generally viewed that z-drugs should only be used within their product licence for short term use secondary to an acute need, such as a significant life event. However, participants highlighted that there is a large cohort of patients in primary care with ‘legacy prescribing’ who have been maintained on z-drugs for extended periods, which reflects both global trends of gradually increasing z-drug prescribing and risks additional harm in the context of elderly patients or those with complex polypharmacy [4,15]. Pharmacists throughout the interviews spoke about ‘doing the right thing’ or working within product licences as part of professional obligations for best practice. This ‘black-and-white’ or rules-based approach to making decisions aligns to the spirit of deontological ethics and is in concordance with the study by Carter et al, which elucidated that pharmacists both self-characterised and were perceived by other healthcare professionals as more likely to follow guidelines or take a ‘rules-based’ approach to problem solving in comparison to other healthcare disciplines [27]. The participants in the interviews considered the ramifications of their actions and prescribing decisions (both to prescribe a z-drug or to refuse issuing the medicine) from a patient perspective, which at times compounded the perceived complexity of decision making when in discord with a deontological belief.

Pharmacists expressed a range of views regarding the prescribing practice of other healthcare professionals, in particular GP colleagues. There were perceptions that GPs did not have enough time in practice to adequately review patients initiated on or maintained on z-drug therapy and that pharmacists took a more thorough approach when reviewing z-drug prescribing. This was contextualised by the real-world time pressures on general practice teams that participants discussed during interviews, reinforcing the trade-off Duncan et al described from both pharmacists and GPs between efficiency versus thoroughness in medication reviews [28]. The fact that PCN-specified SMR appointments to be delivered by clinical pharmacists are recommended to be 30 minutes in length, in comparison to the average UK GP appointment time of approximately ten minutes, might contribute to why pharmacists feel that they are more thorough in reviewing z-drugs as a professional group [12, 29].

The participants had a mixed view of their own prescribing practice and perceived themselves to be risk averse and cautious when making decisions about z-drug prescribing. During the interviews, pharmacists expressed limited self-efficacy to adequately make prescribing decisions regarding the use of z-drugs outside of their product licence [30]. The rationale for deprescribing in legacy patients was often offset against patient perceptions of the pharmacist role or beliefs that participants had about the difficulty in having these conversations with patients. This highlights a potential developmental need in clinical pharmacist prescribers around consultation skills, however this might equally be seen as a symptom of the limited experience in a new role. This latter explanation might be justified by Cope et al, who highlighted that the longer non-medical prescribers had been qualified, the higher their perceived self-efficacy for prescribing within the scope of their competence was [31]. On the other hand, a review by Mertens et al suggested that clinical pharmacists by nature proceed with greater risk aversity than other colleagues in general practice when making decisions [32].

The relationship with patients was seen as an essential foundation to provide a safe space to discuss z-drugs as equitable partners in a shared decision-making approach. The participants reflected that without this, patients could be aggressive, less accepting of the pharmacist role in providing care and put pressure on clinicians to extend prescribing of z-drugs beyond their licensed use. The finding that pharmacists can feel pressured into z-drug prescribing mirrors GP sentiments shared in the Siriwardena et al 2010 survey questionnaire study however, this study also spoke to patients, who stated overwhelmingly that they would be open minded to non-pharmacological interventions for the treatment of insomnia [5]. Perhaps there is a middle road to be taken jointly by clinicians and patients, between the medicalised view of care and treatment that western society often expects versus a holistic non-pharmacological approach.

**Strengths and Weaknesses**

The time invested in these semi-structured interviews allowed for in-depth probing of beliefs and the development of rich insights into the clinical decision-making process. A narrow research aim with a purposive sample of pharmacists who held the experiences in practice under investigation enhanced the information power yielded [33]. After the thematic framework was developed from initial transcripts, no new major themes emerged over subsequent interviews, with no new codes or themes identified in the final three interviews. This suggests that thematic data saturation was reached.

The data could have been triangulated by taking a multiple methods approach, supplemented with a questionnaire survey to understand the perceptions of pharmacists in practice across the nation when reviewing z-drugs to enhance data reliability and strengthen the case for data saturation [34]. The interview guide was also not pilot tested before data collection. However, the researchers were limited by time available to answer the research question, which in turn informed the methods used. Whilst the inclusion criteria allowed pharmacists from anywhere within England to participate, most respondents were based in the Southwest of the country – other geographical regions may have different themes not entirely captured in this study.

**Further Research**

Following on from this research, the themes identified could be used as a framework to inform future questionnaire design as part of a wider international study, using a quantitative approach to compare clinical practice globally. Qualitative interviews with patients could also be performed to understand patient perceptions of pharmacist-delivered care in general practice regarding the management of insomnia. Such interviews or observational studies of medication reviews could inform perceptions of pharmacist behaviour from a different viewpoint in concert with pharmacist interviews. GPs were often referred to throughout the interviews by participants against which to measure their own practice– interviewing GPs to understand what their beliefs around the correct use of z-drugs in primary care are and their perceptions of pharmacist-delivered reviews would provide further insight.

Conclusion

Time pressures, patient relationship dynamics, ethical considerations and self-efficacy can affect the decision-making process for clinical pharmacists when reviewing z-drugs in general practice. The pharmacists interviewed believed that z-drugs should be used within their product licence as part of an acute intervention for insomnia, with non-pharmacological, holistic treatment being more appropriate for long term management. Participants perceived their practice to be more adherent to national guidelines than medical colleagues, however they expressed low self-efficacy regarding the management and deprescribing of z-drugs used in chronic insomnia. Adequate in-practice training for navigating difficult shared-care decisions regarding drugs with dependence forming characteristics is also needed to enhance quality of care delivered by clinical pharmacists.

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Conflicts of Interest

The authors have no relevant conflicts of interest to declare.

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Tables

**Table 1** Demographic information of participants included in the study.

|  |  |  |  |
| --- | --- | --- | --- |
| Pseudonym | Gender | Prescribing Status | Experience in GP practice (years) |
| R1 | Female | Prescriber | 3.5 |
| R2 | Female | Prescriber | 6 |
| R3 | Female | Non-Prescriber | 2.5 |
| R4 | Male | Prescriber | 5.5 |
| R5 | Male | Prescriber | 5 |
| R6 | Female | Non-Prescriber | 2.5 |
| R7 | Female | Prescriber | 1.5 |
| R8 | Female | Non-Prescriber | 1.5 |
| R9 | Female | Prescriber | 3 |
| R10 | Male | Non-Prescriber | 1 |

**Table 2** Themes and sub-themes elucidated during semi-structured interviews regarding factors which affect decision-making when prescribing and reviewing z-drugs in general practice.

|  |  |
| --- | --- |
| Theme | Sub-Theme |
| 1. Perceived Role of the Pharmacist in Deprescribing | 1.1 Pharmacist self-perception  Pharmacist self-efficacy, empowerment and risk adversity |
| 1.2 Perceptions by patients  How pharmacists feel they are perceived by patients, encompassing clinician-patient relationship dynamics |
| 1.3 Comparison of practice with GPs  In-practice perceptions of GP prescribing of z-drugs compared to clinical pharmacists |
| 2. Influences on Decision-making | 2.1 Compassionate care  Patient specific factors which affected decisions when reviewing z-drugs |
| 2.2 Rules-based decision-making  Perceptions of what is ‘right’ and ‘wrong’ when reviewing and prescribing z-drugs, regardless of circumstance |
| 2.3 Time pressure  The effect of time pressures in practice on decision-making |
| 2.4 Patient pressure  Pharmacist experiences of pressure from patients to continue or initiate prescribing of z-drugs |
| 3. Perceptions of Best Practice | 3.1 Patient information and agency  Empowering patients with accessible information about their treatment to promote agency in decision-making |
| 3.2 Treating underlying conditions  The value of using z-drugs symptomatically and exploring other therapeutic options to treat any underlying conditions |