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1 Exploring Antipsychotic Prescribing Behaviors for 2 Nursing Home Residents With Dementia: A 3 Qualitative Study

4 Abstract

5 Objectives:

6 Caution is advised when prescribing antipsychotics to people with dementia. This study
7 explored the determinants of appropriate, evidence-based antipsychotic prescribing
8 behaviors for nursing home residents with dementia, with a view to informing future quality
9 improvement efforts and behavior change interventions.

10 Design:

11 Semi-structured qualitative interviews based on the Theoretical Domains Framework (TDF).

12 Setting and participants:

13 A purposive sample of 27 participants from 4 nursing homes, involved in the care of nursing
14 home residents with dementia (8 nurses, 5 general practitioners, 5 healthcare assistants, 3
15 family members, 2 pharmacists, 2 consultant geriatricians and 2 consultant psychiatrists of
16 old age) in a Southern region of Ireland.

17

18 **Measures:**

19 Using Framework Analysis, the predominant TDF domains and determinants influencing
20 these behaviors were identified, and explanatory themes developed.

21 **Results:**

22 Nine predominant TDF domains were identified as influencing appropriate antipsychotic
23 prescribing behaviors. Participants' effort to achieve "*a fine balance*" between the risks and
24 benefits of antipsychotics was identified as the cross-cutting theme that underpinned many
25 of the behavioral determinants. On one hand, neither healthcare workers nor family
26 members wanted to see residents over-sedated and without a quality of life. Conversely,
27 the reality of needing to protect staff, family members and residents from potentially
28 dangerous behavioral symptoms, in a resource-poor environment, was emphasized. The
29 implementation of best-practice guidelines was illustrated through three explanatory
30 themes (*'human suffering'*; *'the interface between resident and nursing home'*; and *'power*
31 *and knowledge: complex stakeholder dynamics'*) which conceptualize how different nursing
32 homes strike this "*fine balance*".

33 **Conclusions:**

34 Implementing evidence-based antipsychotic prescribing practices for nursing home
35 residents with dementia remains a significant challenge. Greater policy and institutional
36 support is required to help stakeholders strike that "*fine balance*" and ultimately make
37 better prescribing decisions. This study has generated a deeper understanding of this
38 complex issue and will inform the development of an evidence-based intervention.

39 Introduction

40 Guidelines advise against antipsychotics for the first-line management of behavioral and
41 psychological symptoms of dementia (BPSD),^{1,2} due to the increased risks of stroke and
42 mortality.³⁻⁵ However, antipsychotics can be appropriate when behavioral symptoms are
43 severe, dangerous, or distressing to the person with dementia.^{1,2} Despite the existence of
44 guidelines for over a decade and national level efforts to improve dementia care,
45 antipsychotic prescribing is still common, especially in nursing home (NH) settings.⁶⁻⁸ Global
46 estimates of antipsychotic prescribing prevalence in NH residents vary from 16% in the US,⁹
47 19% in England,⁶ to 27% across Western Europe.⁷

48 A systematic review examining the effectiveness of interventions to reduce inappropriate
49 prescribing of antipsychotics to NH residents with dementia, reported that the majority of
50 interventions were effective in the short-term.¹⁰ However the long-term effects were
51 assessed in only four studies, with prescribing returning to baseline levels in two studies.^{11,12}

52 Successful implementation of evidence-based practice requires effective and sustained
53 behavior change, beginning with a thorough understanding of the problem.¹³ A body of
54 qualitative research has explored problematic clinical decision-making in this area. We
55 recently published a systematic review of this literature, and found that the use of
56 antipsychotics in NHs is the culmination of a range of healthcare professional behaviors.¹⁴

57 The two main behaviors identified were appropriate requesting and prescribing of
58 antipsychotics. However, there has been a lack of exploration of these behaviors as
59 standalone processes and in terms of how they influence each other. Furthermore, there
60 has been limited exploration of how different stakeholders perceive these interacting

61 behaviors. Hence gaps in our understanding remain, which will be best answered by further
62 qualitative research.

63 The Theoretical Domains Framework (TDF) is an integrative framework of influences on
64 behavior, identified by synthesizing multiple behavior change theories.¹⁵ The TDF consists of
65 14 domains (Table 1), and provides a comprehensive, theory-informed approach to
66 identifying the determinants (i.e. barriers and facilitator) which influence clinical
67 behaviors.¹⁵ Utilization of the TDF will help us to identify the determinants which influence
68 prescribing behaviors and hence support progression from exploration to intervention.¹⁶

69 The aim of this qualitative study was to explore and interpret the determinants of
70 appropriate prescribing behaviors (requesting and prescribing) among a range of individuals
71 involved in the care of NH residents with dementia, with a view to informing future quality
72 improvement efforts and behavior change interventions.

73 **Methods**

74 **Study design**

75 We conducted semi-structured interviews, based on the TDF, with a range of healthcare
76 workers and family members involved in the care of NH residents with dementia, in Cork,
77 Ireland. Ethics approval was granted by the local ethics committee. The consolidated criteria
78 for reporting qualitative research (COREQ) statement guided study reporting
79 (Supplementary Table S1).¹⁷ Two Patient and Public Involvement (PPI) advisory groups
80 composed of four people with dementia in one group, and two family members in the other
81 group, provided input into topic guide development and recruitment. Advisor eligibility

82 criteria included being a person with dementia affiliated with the Alzheimer Society of
83 Ireland or a family member of any NH resident with dementia, and having an interest in
84 research aimed at improving the quality of medication usage in NHs. Written informed
85 consent was obtained from all advisors.

86 **Study setting and sampling**

87 NHs were chosen as the focus of this study as the prevalence of antipsychotic use is highest
88 in these settings.^{18,19} Participants were purposively sampled to ensure a heterogeneous
89 group with maximum variation according to two main pre-determined criteria
90 (*Professional/social role and NH type*) (Supplementary Table S2). We also used snowball
91 sampling to fulfil our sampling framework requirements.

92 Six different NH sites were selected based on our sampling framework, through publicly
93 available directories of registered NHs on the Health Information and Quality Authority
94 (HIQA)²⁰ and Nursing Home Ireland websites.²¹ The Directors (Nursing or Medical) of each
95 NH were contacted about the study. Once access was agreed, the Director and other
96 consenting participants connected to that NH were interviewed. The Directors approached
97 family members initially before recommending that they were suitable to be contacted.

98 Eligibility criteria for healthcare workers included being a physician (general practitioner
99 [GP], geriatrician or psychiatrist of old age), a nurse, a pharmacist or a healthcare assistant
100 (HCA) who was involved in the care of NH residents with dementia. Eligibility criteria for
101 family members included being a relative of a NH resident with dementia (alive or
102 deceased), who had been prescribed an antipsychotic for BPSD.

103 **Data collection**

104 We developed separate topic guides for healthcare professionals, HCAs and family
105 members. Topic guides were iteratively developed using findings from our systematic
106 review,¹⁴ the TDF, advisor recommendations and five pilot interviews. The topic guides
107 underwent revisions throughout the study (Supplementary Table S3), to ensure that
108 emerging themes were captured in subsequent interviews. All interviews were conducted
109 by the primary author. Written informed consent was obtained prior to interviews. All
110 interviews were audio-recorded and transcribed verbatim. The author wrote detailed field
111 notes immediately after interviews, to refine topic guides and inform data analysis. We
112 sampled until no new ideas emerged and conducted three more interviews without any new
113 ideas emerging to ensure that data saturation had been reached.²² The interviews were
114 conducted between July 2016 and April 2017.

115 **Data Analysis**

116 Data analysis followed the principles of Framework Analysis,²³ and utilized NVivo version
117 11.²⁴ Data collection and analysis phases occurred concurrently, to enable the exploration of
118 emergent themes in subsequent interviews and to identify when data saturation occurred.²²
119 We utilized both inductive and deductive approaches to analysis. A detailed description of
120 the analysis is available online (Supplementary Material S4). In summary, we familiarized
121 ourselves with each transcript and coded emerging concepts inductively. Simultaneously,
122 we coded data from the transcripts into one or more TDF domains according to the
123 definitions for each domain (Table 1). We then created distilled summaries of each
124 interview, to identify the predominant TDF domains and the determinants (i.e. barriers and
125 facilitators) of the target behaviors (appropriate requesting and prescribing).¹⁶ Finally, we
126 developed a conceptual model of explanatory findings, by exploring possible relationships

127 between determinants, predominant domains, categories and theory (Figure 1). In essence,
128 the behavioral determinants were the 'building blocks' for the explanatory themes, and an
129 overarching theme was identified, explaining the relationship between determinants and
130 explanatory themes. The research group (consisting of pharmacists, a GP, a health
131 psychologist, a methodologist and a geriatrician) held regular meetings throughout the
132 study to discuss differences in interpretation and to identify themes.

133 **Results**

134 We invited six NHs to participate and four agreed - two private NHs, one with and one
135 without a dementia special care unit (SCU); one voluntary NH (state-funded but charitable
136 organization governance) without a SCU; and one public NH (state-run) without a SCU. Of 38
137 individuals contacted, 27 agreed to participate (eight nurses, five GPs, five HCAs, three
138 family members, two pharmacists, two consultant geriatricians and two consultant
139 psychiatrists of old age) (Table 2). The median interview length was 23 minutes (range 12-56
140 minutes).

141 We identified nine predominant TDF domains, encompassing 38 behavioral determinants
142 that influenced our target behaviors (Table 3). We also developed three explanatory themes
143 and one over-arching theme, which are discussed below and illustrated in a conceptual
144 model (Figure 1). The nine predominant TDF domains and the more seminal determinants
145 are discussed below; detail on the remaining determinants is presented in Table 3.

146

147 **Predominant TDF domains**

148 Behavioral Regulation

149 Participants believed that HIQA, the independent NH regulator in Ireland, has put
150 antipsychotics under scrutiny. Regulation now requires NHs to notify HIQA, on a quarterly
151 basis, of any occasion when restraint (chemical or physical) is used.²⁵ Some participants
152 believed that these regulations made them re-evaluate how they manage BPSD, with
153 positive outcomes for residents.

154 *“I think HIQA is brilliant... because I really think they force people to look at their*
155 *practice, and to challenge their own practice and to change.” [HCA 1]*

156 However, GPs in particular, felt that there was over-regulation by HIQA, resulting in
157 increased administrative burden, which did not necessarily translate into good care.

158 Furthermore, some participants were confused by the regulatory requirements, and were
159 concerned about unintended negative consequences, because of the mistaken belief that
160 only psychotropic medications used for acute episodes were reportable.

161 *“Now, conversely, what it has made some nursing homes do is, if somebody was on a*
162 *PRN psychotropic, because the resident might only need it once or twice per month*
163 *and because it becomes reportable, they get prescribed regularly.” [Nurse 5]*

164 Healthcare workers reported that interdisciplinary medication reviews, audits and internal
165 registries also provided an opportunity for self-monitoring. When in place, these systems
166 assisted with the identification of patterns of inappropriate usage. Prescribers found
167 international guidelines helpful in their decision-making.² However, succinct guidelines
168 specific to the Irish context were sought.

169 Beliefs about Capabilities

170 Participants struggled to find solutions to BPSD other than antipsychotics in part because
171 they felt that they lacked necessary training. NH staff struggled with the daily management
172 of BPSD and some admitted that they needed antipsychotics to cope. GPs often felt out of
173 their comfort zone and regularly needed input from specialists.

174 *“In some ways I don’t feel I have the sufficient expertise to make those decisions so*
175 *I’ll look to specialists at that point if I’m struggling with something.” [GP 3]*

176 **Beliefs about Consequences**

177 Both healthcare workers and family members were worried about side effects such as
178 sedation and falls. Some viewed these side effects as undignified and inhumane, and hence
179 were reluctant to request or prescribe antipsychotics.

180 A fear of negative consequences (i.e. adverse behavioral events from residents) if
181 antipsychotics were not prescribed was expressed by prescribers. They were conscious of
182 the safety of their NH colleagues who were often at the receiving end of behaviors.

183 *“Because you don’t know what precipitated the [behavior], and then, when you’re*
184 *trying to pull back and you walk away, are you leaving your colleagues in the height*
185 *of it then?” [GP 4]*

186

187 **Emotion**

188 Participants, particularly family and NH staff, spoke emotively about BPSD, and how these
189 symptoms deeply impacted upon them personally. Sometimes participants believed that
190 antipsychotics were the only solution to alleviating this distress.

191 *“It was very hard to listen to [the BPSD]... so as far as I’m concerned, if there was a*
192 *medication that would sort this thing anyway, I certainly was completely open to it.”*
193 *[Family member 2]*

194 NH staff were deeply affected by behaviors leading to burn-out, frustration and poor
195 morale. Staff sometimes took behaviors personally, which could increase the propensity to
196 request prescribing of antipsychotics. Empathy as opposed to sympathy was viewed as an
197 important trait when dealing with BPSD. It was seen to be important to be able to step back,
198 evaluate the situation and determine the best course of action for the resident, without
199 emotions clouding one’s judgement.

200 *“I feel that certain people take huge offence if a person who is cognitively impaired*
201 *lashes out, punches, screams, whatever, and you have to let it go.” [Nurse 8]*

202 **Environmental Context and Resources**

203 The overall picture was one of poor resources in NHs. Although non-pharmacologic
204 interventions were generally seen as the gold standard, there was consensus that these
205 interventions were staff-intensive and not always feasible.

206 *“You need to have the time to be with somebody, staffing levels don’t really give you*
207 *the opportunity to sit with somebody all day long or all afternoon... you can come*
208 *and go but you can’t stay with the person.” [Nurse 4]*

209 The physical environment was believed to have a profound impact on residents. Some
210 participants believed that if the environment was better suited to meet the needs of the
211 resident, then there would be less of a need to prescribe.

212 *“I think if we had properly designed purpose built modern dementia units that*
213 *allowed us to offer a different environment than the standard ward environment... I*
214 *do think that would be far more humane and you’ll probably get better overall results*
215 *than resorting to the old fashioned chemical restraints.” [Consultant geriatrician 2]*

216 Participants described how treatment culture impacted on the resident in terms of
217 prescribing, both positively (e.g. being resident-centered) and negatively (e.g. being task-
218 orientated). There was a general agreement that every NH was completely different, and
219 what may be acceptable in one NH may not be acceptable in another.

220 **Knowledge**

221 Both healthcare workers and family members were aware that antipsychotics cause side
222 effects. However, non-consultants in particular, acknowledged their own limited knowledge
223 on this topic, and welcomed further education. Furthermore, GPs believed that a better
224 understanding of the risk/benefit profile among NH staff would reduce requests for
225 antipsychotics.

226 *“If you can tell someone what the potential complications [of antipsychotics] are,*
227 *they may be a little bit less likely to ask for them.” [GP 1]*

228 In-depth knowledge of the resident was believed to be paramount. Knowing the resident
229 and understanding their life story helped NH staff to adapt the environment to meet the
230 needs of the resident, and often prevented unnecessary prescribing.

231 *“I think just knowing the person. Knowing that they have been on them*
232 *[antipsychotics] for years. Looking at them now, their state of deterioration and you*
233 *know in your heart and soul they don't need them.” [Nurse 5]*

234 **Memory, attention and decision-processes**

235 The importance of conducting a holistic assessment of the resident was emphasized by
236 participants. There was agreement that antipsychotics were only appropriate after all
237 potential reversible causes of BPSD were ruled out. In one NH, where a comprehensive
238 assessment protocol was recently introduced, nurses explained how this protocol assisted
239 them with their decision-making.

240 **Social Influences**

241 Prescribers were based off-site so relied on accurate and objective information about
242 residents from nurses. Prescribers largely valued and trusted the nurses' judgements and
243 tended to make prescribing decisions based on the information provided. However this
244 could lead to a perception that behavioral symptoms were being exaggerated in order to
245 increase the likelihood of prescription.

246 *"I think people can be a little bit biased in how they can present a case to you at*
247 *times to get to the ends that they want. I know there has been one incident where... a*
248 *staff member [was overheard] saying 'sure just tell her she's had hallucinations.'" [GP*
249 *3]*

250 Prescribers reported that pressure to prescribe antipsychotics arose from many sources
251 including individual staff members, family members, the NH organization, and from society
252 itself.

253 *"So I feel under pressure to knock this person out, anesthetize this patient, who they*
254 *see as, shouldn't be challenging. And they're already completely over-sedated and*
255 *the staff want them to be even more sedated." [Consultant psychiatrist of old Age 2]*

256 There was a perception by some of a prevailing culture where all behaviors may be
257 attributed to the disease rather than an unmet need. However, other participants felt that,
258 due to the influence of HIQA, NHs were moving toward a more social model of care. This
259 shift in culture was broadly welcomed. However, some physicians feared that the pendulum
260 had “*swung too far*” [Consultant psychiatrist of old age 1], and that GPs, in particular, may
261 be fearful of using antipsychotics due to the perceived anti-medication climate.

262 **Social/Professional Role and Identity**

263 NH staff and family members viewed themselves as the resident’s advocate. This role
264 empowered them to speak up on behalf of the resident.

265 *“See mom didn’t have a voice, nobody would listen to her even when she was*
266 *speaking, she wasn’t listened to and I was her voice.” [Family member 1]*

267 There was a hierarchy described by participants in the NH environment. HCAs were often
268 not involved in any degree of decision-making despite their in-depth knowledge of
269 residents. Furthermore, one pharmacist felt disregarded in this area, despite her
270 pharmacologic expertise. Decisions were perceived as being made between GPs and nurses,
271 with input from consultants when needed.

272 *“As it stands and we’re talking about the real world, it’s really the nursing staff and*
273 *the GP. I don’t have an influence there. If I get the script, we just have to hand it*
274 *over.” [Pharmacist 2]*

275 The importance of leadership from the NH manager was emphasized. Good leaders were
276 perceived as those with experience who provided adequate training and support to staff.

277 **Explanatory themes**

278 We identified “*a fine balance*” [HCA 1] as the over-arching theme. On one hand, neither
279 healthcare workers nor family members wanted to see residents over-sedated and without
280 a quality of life. Conversely, the reality of needing to protect staff, family members and
281 residents from potentially dangerous behavioral symptoms, in a resource-poor
282 environment, was emphasized. We found that NH staff and prescribers struggled with this
283 constant tension throughout their daily practice.

284 Beneath the over-arching theme of “*a fine balance*”, we developed three explanatory
285 themes as a means of illustrating why this implementation issue, non-adherence to best-
286 practice guidelines, persists. Within these themes, opposing perspectives and trade-offs
287 were evident which can tip the “*fine balance*” in favor of undertaking one behavior over
288 another (e.g. prescribe versus not prescribe). We argue that the perspective of each NH
289 toward these three explanatory themes, determines how they strike this “*fine balance*”
290 (Figure 1).

291 **Human Suffering**

292 Participants described suffering related to both the disease and antipsychotic medications.
293 Some viewed dementia as a terrible affliction: “*I think it’s the hardest disease out there, to*
294 *manage. It’s one I would NOT like to get myself*” [HCA 2]. Not only was dementia perceived
295 to cause suffering to the resident, but often participants reported being physically and
296 emotionally affected themselves. Antipsychotics were viewed through this perspective as a
297 way of alleviating suffering for everyone. Conversely, others acknowledged that
298 antipsychotics can cause severe side effects for the resident, and were used primarily for

399 *“staff-focused” [Consultant psychiatrist of old age 2]* as opposed to resident-focused
300 purposes. From this perspective, the use of antipsychotics were frowned upon.

301 **The Interface between Resident and Nursing Home**

302 The perceived effect that the resident has on the NH, and vice versa, was the second
303 explanatory theme. A resident exhibiting BPSD was perceived by some to have a negative
304 impact on the NH environment, ultimately requiring additional staff and money: *“They*
305 *haven’t enough staff and they seem to think that the cheapest way is to dose them, and*
306 *keep them quiet” [Family member 1].* From this perspective, antipsychotics were perceived
307 as necessary to enable staff to care for all residents in an efficient manner. Conversely, the
308 NH environment was perceived by others to have an important impact on the resident.
309 From this perspective, placing the resident in *“the right place” [Nurse 3]*, i.e. a more
310 dementia-friendly environment, was perceived to be more beneficial to the resident than
311 any medication.

312 **Power and Knowledge: Complex Stakeholder Dynamics**

313 The final theme refers to the complex interplay between the many different stakeholders
314 involved in the care of residents. The symbiotic concepts of power and knowledge can help
315 us to understand these complex stakeholder dynamics. There were different types of
316 knowledge valued by participants: knowledge of the disease, the drug and the resident.
317 Often primacy was given to the latter. Hence from this perspective, nurses’ in-depth
318 knowledge of residents legitimized their power to request that an antipsychotic be started
319 or stopped: *“The GP’s will do it [deprescribe], no problem, we need to instigate it, and it’s*
320 *just the experience of knowing the person” [Nurse 5].* Conversely, others argued that those

321 in higher positions of power had knowledge that was more important (i.e. knowledge of
322 drug and disease), in determining the best outcomes for residents: “*Old age psych usually*
323 *make a recommendation and then the GP will sign the prescription*” [Nurse 8]. From this
324 perspective, those in positions of power were perceived to have the most important
325 knowledge in determining the appropriateness of antipsychotic prescribing.

326 **Discussion**

327 Using a novel multi-perspective approach, we have generated a deeper understanding of
328 the behavioral components of antipsychotic use in NH residents with dementia, the
329 professional interactions that occur between different stakeholders and the determinants of
330 implementation of best-practice guidelines. Our findings highlight how implementing
331 evidence-based practice in this area remains a significant challenge, despite advances in
332 knowledge and stricter regulations. We identified that stakeholders strive to strike “*a fine*
333 *balance*” but ultimately, as humans, are influenced by interacting emotional, environmental,
334 organizational and societal issues.

335 **Comparison with Previous Research**

336 This study builds on the findings of our systematic review¹⁴ where we identified five key
337 concepts influencing decision-making: *organizational capacity; individual professional*
338 *capacity; communication and collaboration; attitudes; and regulations and guidelines*. In this
339 current study, we found all of these concepts also play a role in implementing evidence-
340 based practice. With regards to *organizational capacity*, the fundamental issue of
341 inadequate resources was discussed in almost all of our interviews. This current study also
342 extends our understanding of the influence of *regulations* on practice. Our study confirms

343 the important role of regulations, but also highlights unintended negative consequences
344 that may occur as NHs undertake various workarounds. Similar workarounds have been
345 reported in the US, where increasing diagnoses of schizophrenia in NH residents have been
346 observed, in a suspected attempt to exempt antipsychotics from regulatory reporting
347 requirements.²⁶

348 We identified nine TDF domains that influenced our target behaviors which are similar to
349 those found in previous TDF studies exploring prescribing behaviors for various
350 conditions.²⁷⁻³¹ The key difference is our identification of ‘emotion’ as a predominant
351 domain which is absent in the majority of other prescribing studies.²⁷⁻³⁰ The emotional
352 impact of BPSD on family members³² and NH staff³³ is established in the literature. The
353 concept that people with dementia inevitably lose their identity to dementia and thus
354 become ‘dehumanized’ has been hypothesized as a rationale for why family members often
355 struggle with BPSD.³² In our study, this fear of dementia emerged as an important issue. It is
356 evident that this impacts not only on family members, but also NH staff. Prescribers believe
357 that sometimes it is challenging to decipher who precisely is distressed by the BPSD.

358 *Foucault* wrote that power and knowledge are not independent entities but are inextricably
359 linked — ‘*knowledge is always an exercise of power and power always a function of*
360 *knowledge*’.³⁴ This theory may help us to understand the complex dynamics between
361 hierarchical stakeholders and how different types of knowledge are valued by different
362 stakeholders. Knowledge of the resident tends to be prioritized, and sometimes this can
363 contradict with treatment goals set by those in higher positions of power (with different
364 types of knowledge). Hence, advocating on behalf of the resident, particularly by nurses, is
365 central to decision-making, and a key target for potential intervention.^{35,36}

366 Previous studies have explored the challenges GPs experience when managing BPSD.³⁷⁻³⁹
367 Jennings *et al.* identified three main challenges: lack of clinical guidance; stretched
368 resources; and difficulties managing expectations.³⁷ Our study corroborates these findings
369 by highlighting the multitude of difficulties GPs face when deciding whether to prescribe
370 antipsychotics or not. However, our study goes further by exploring the perspectives of a
371 wider range of stakeholders, allowing us to gain a more holistic insight into this
372 implementation problem.

373 **Implications**

374 It is evident that greater policy and institutional support is required to help stakeholders
375 strike that “*fine balance*” and ultimately make better prescribing decisions. Development of
376 national clinical guidelines may be one appropriate policy intervention. Such guidelines are
377 currently being developed in Ireland as a priority action point of the national dementia
378 strategy.⁴⁰ An important implication of our study is the need to clarify existing regulations
379 for stakeholders, as it is evident that they are unsure as to which prescribing scenarios are
380 reportable and which are not, and residents may be adversely affected by this confusion.
381 Further consideration should also be given to the design of future NHs. Our findings
382 highlight the importance stakeholders attribute to dementia SCUs in terms of meeting the
383 needs of residents with dementia. However, resident outcomes from SCUs have been
384 mixed, along with concern over higher levels of antipsychotic usage.^{41,42} Therefore, although
385 SCUs may be desired by stakeholders, more evidence of the quality and safety of this
386 approach is required before widespread adoption.

387 The perceived impact of treatment culture on antipsychotic usage featured heavily
388 throughout this study. In line with previous systematic review findings,^{14,43} the NH manager

389 was seen as a key determinant of NH treatment culture, as they possessed both a position
390 of power and knowledge of the resident. We recommend that NH managers take advantage
391 of their influential role by providing/organizing ongoing training to staff as well as
392 encouraging the involvement of peripheral stakeholders (i.e. HCAs, pharmacists, family
393 members) in decision-making.

394 Despite guidance on avoiding antipsychotics in dementia, they can play an essential role in
395 certain situations.^{1,2} Our study shows that due to the stigma attached to antipsychotics,
396 some prescribers are fearful of prescribing them at all, risking unnecessary distress for a
397 resident for whom the medications are indicated. A recent study demonstrated that
398 discontinuation of antipsychotics, without non-pharmacologic substitution, can have a
399 detrimental impact on residents' health-related quality of life.⁴⁴ Our findings suggest that an
400 evidence-based, standardized approach involving interdisciplinary collaboration, careful
401 documentation and regular review is needed to ensure the most appropriate use of both
402 pharmacologic and non-pharmacologic interventions.⁴⁵ One such model program is the DICE
403 (describe, investigate, create, and evaluate) approach, which promotes a holistic, person-
404 centered approach to managing BPSD.^{45,46}

405 Educational programs are the most common intervention type utilized to tackle
406 inappropriate antipsychotic prescribing¹⁰ e.g. the OASIS program⁴⁷, the HALT study⁴⁸ and the
407 RedUSE project.¹¹ Ongoing education and training to both NH staff and prescribers is an
408 important aspect of ensuring appropriate antipsychotic prescribing, but is not sufficient on
409 its own. Drawing from existing programs^{11,45,47,48} as well as our own findings, we
410 recommend that future programs should include training on the assessment and
411 management of BPSD, dealing with emotions and managing expectations. It is important for

412 prescribers to be empathetic and acknowledge the emotional and physical impact of BPSD,
413 while assertively conveying, the limited benefit and serious risks associated with
414 antipsychotics. Likewise, nurses as the key influencer on prescribing, should be aware of and
415 communicate these issues to others within the NH and to family members. In particular, the
416 OASIS communication training program enforces these key messages.⁴⁷ Future research
417 should focus on determining how best to deliver educational interventions, and alongside
418 what, in order to achieve sustainable results.

419 **Strengths and Limitations**

420 The trustworthiness of our findings are underpinned by the involvement of different
421 disciplines on our research team and the participation of multiple stakeholders from
422 different organizations during the interviews. Triangulation of analysts and participants also
423 contributed toward the credibility of the results. Interviews took place in one region in
424 Ireland, but transferability is supported by the provision of sufficient contextual information
425 to enable readers to determine how applicable our findings are to their own situation.
426 Detailed reporting of well-established methods with diagrammatical audit-trails contributed
427 toward the dependability of our findings. Finally, in terms of confirmability, detailed
428 reporting of participants' quotations, helped ensure that our findings were primarily borne
429 from the data.⁴⁹

430 Although 66% (4/6) of NHs and 71% (27/38) of individuals agreed to participate in our study,
431 it is possible that only those with strong views on this topic took part. Furthermore,
432 although we employed a purposive sampling approach, Directors may have recommended
433 individuals for participation who were more likely to provide favorable responses about
434 practices in their NH. Hence the possibility of selection bias cannot be excluded. Random

435 sampling of participants along with a larger sample may have reduced this problem, and
436 may have allowed us to explore differences in perceptions between respondent groups and
437 settings in greater detail.⁴⁹

438 Another limitation was the small number of family members recruited. The challenges of
439 recruiting family members of residents with dementia to research studies have been
440 previously reported.⁵⁰ Despite engaging with our advisors on this issue, and reminding
441 Directors to identify potential participants, we only managed to recruit three family
442 members. It is possible that family members were apprehensive about taking part due to
443 the emotive nature of this topic. Furthermore, it is possible that the Directors may have
444 been over-protective of family members.

445 **Conclusions**

446 Implementing evidence-based antipsychotic prescribing practices for NH residents with
447 dementia remains a significant challenge, despite advances in knowledge and stricter
448 regulations. In striving to strike “*a fine balance*” stakeholders are influenced by interacting
449 emotional, environmental, organizational and societal issues. Greater policy and
450 institutional support is required to help stakeholders strike that “*fine balance*” and
451 ultimately make better prescribing decisions. This study provides us with a deeper
452 understanding of this complex issue and will inform the development of a theory and
453 evidence-based intervention.

454

455

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457 Author contributions:

458 Study concept and design: KW, JMcS, SB, JB, ST.

459 Acquisition of Data: KW.

460 Analysis and Interpretation of data: KW, AF, CS, JMcS, SB, JB, ST.

461 Drafting of the manuscript: KW.

462 Critical revision of the manuscript for important intellectual content: AF, CS, JMcS, SB, JB, ST.

463 Final approval of version to be published: KW, AF, CS, JMcS, SB, JB, ST.

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474 this process.

475

476 **Conflicts of Interest**

477 The authors declare that they have no conflicts of interest.

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629 **List of Figure Captions**

630 **Fig. 1. Conceptual model of explanatory themes:** Opposing perspectives and trade-offs (in
631 white) can tip the “*fine balance*” in favor of undertaking one behavior over another (e.g.
632 prescribe versus not prescribe). The perspective of each nursing home toward these three
633 explanatory themes (in blue), determines how they strike a “*fine balance*” between the risks
634 and benefits of antipsychotics.

635



Fig. 1. Conceptual model of explanatory themes: The perspective of each nursing toward these three explanatory themes (in blue), determines how they strike a "fine balance" between the risks and benefits of antipsychotics

637 **Table 1** Theoretical Domains Framework (TDF)

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Domain	Definition
Behavioral Regulation	Anything aimed at managing or changing objectively observed or measured actions
Beliefs about Capabilities	Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use
Beliefs about Consequences	Acceptance of the truth, reality, or validity about outcomes of a behavior in a given situation
Emotion	A complex reaction pattern, involving experiential, behavioral and physiological elements, by which the individual attempts to deal with a personally significant matter or event
Environmental Context and Resources	Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behavior
Goals	Mental representations of outcomes or end states that an individual wants to achieve
Intentions	A conscious decision to perform a behavior or a resolve to act in a certain way
Knowledge	An awareness of the existence of something
Memory, Attention and Decision-Processes	The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives
Optimism	The confidence that things will happen for the best or that desired goals will be attained
Reinforcement	Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus
Skills	An ability or proficiency acquired through practice
Social Influences	Those interpersonal processes that can cause individuals to change their thoughts, feelings or behaviors
Social/Professional Role and Identity	A coherent set of behaviors and displayed personal qualities of an individual in a social or work setting

668 **Table 2** Characteristics of Interview Participants (n=27)

Characteristics of total participants (n=27)	Participants, n
Professional/social role	
Nurse	8
General Practitioner	5
Healthcare Assistant	5
Family Member	3
Pharmacist	2
Consultant Geriatrician	2
Consultant Psychiatrist of Old Age	2
Gender	
Female	17
Male	10
Other	0
Category of Nursing Home participant worked in*	
Private only	9
Public only	4
Voluntary only	3
Multiple	8
Years of professional experience (since qualification)*	
<10 years	3
10-19 years	10
≥20 years	10
Information not provided	1
Received specialist dementia training*	
Yes	16
No	8
Presence of dementia special care unit (SCU) in any nursing home participant worked in*	
Yes	7
No	17
Characteristics of Family Member Participants (n=3)	
Gender	
Female	2
Male	1
Other	0
Category of Nursing Home person with dementia resides/resided	
Private	3
Role	
Current carer	1
Former carer	2
Age of participant	
40-49	1
50-59	1
60-69	1
Relationship to person with dementia	
Son/daughter	2
Nephew/niece	1

669 * N/A for n=3 family members

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Table 3 Determinants of appropriate antipsychotic prescribing behaviors (requesting and prescribing)

Predominant TDF domain	Determinants (i.e. barriers and/or facilitators) of appropriate antipsychotic prescribing behaviors	Illustrative quotes
Behavioral Regulation	<ul style="list-style-type: none"> • HIQA regulation as a stimulus for change (facilitator) 	<ul style="list-style-type: none"> • <i>"I think HIQA is brilliant... because I really think they force people to look at their practice, and to challenge their own practice and to change."</i> [HCA 1]
	<ul style="list-style-type: none"> • Perception of HIQA over-regulation by GPs (barrier) 	<ul style="list-style-type: none"> • <i>"I think HIQA are a scourge. I wonder what they bring to the table. I think they're self-fulfilling... Ya I think most GPs would not [be happy with them]. I don't think they bring a whole lot to the table unfortunately. I think they bully private nursing home and private institutions...Ya I think it's all very, very good and ivory tower stuff and politically correct. But, could I think [sic] the money spent on HIQA could be spent better on direct services? Probably."</i> [GP 1]
	<ul style="list-style-type: none"> • Uncertainty regarding HIQA reporting requirements (barrier) 	<ul style="list-style-type: none"> • <i>"Now, conversely, what it has made some nursing homes do is, if somebody was on a PRN psychotropic, because the resident might only need it once or twice per month and because it becomes reportable, they get prescribed regularly."</i> [Nurse 5]
	<ul style="list-style-type: none"> • Self-monitoring (using local systems) of antipsychotic prescribing (facilitator) 	<ul style="list-style-type: none"> • <i>"So, for me it would be to monitor the scripts as they come in and maybe their charts and we do at the request of the Director of Care, we do a psychotropic audit every month. So we see where they're being reviewed."</i> [Pharmacist 2]
	<ul style="list-style-type: none"> • Guidelines for monitoring the appropriateness of antipsychotic prescribing (facilitator) 	<ul style="list-style-type: none"> • <i>"Guidelines is a good thing, and licensing, because you know there isn't any license. Grade one, grade two evidence, meta-analyses... You can certainly use them to say why you're not prescribing an antipsychotic. You just say there's no evidence and it's not national policy."</i> [Consultant Psychiatrist of Old Age 2]
Beliefs about capabilities	<ul style="list-style-type: none"> • Poor self-efficacy in the management of BPSD among non-specialists (barrier) 	<ul style="list-style-type: none"> • <i>"So I suppose in some ways I don't feel I have the sufficient expertise to make those kind of decisions so I'll look to specialists at that point if I'm struggling with something."</i> [GP 3]
	<ul style="list-style-type: none"> • Belief that assessing whether an antipsychotic prescription is 'appropriate' or not is challenging (barrier) 	<ul style="list-style-type: none"> • <i>"It's a difficult one to decipher. When it's appropriate and when it's not appropriate."</i> [Nurse 6]
	<ul style="list-style-type: none"> • Belief that deprescribing antipsychotics is difficult (barrier) 	<ul style="list-style-type: none"> • <i>"And it's very easy starting these things but the discontinuation of them not quite so clear cut."</i> [Consultant Geriatrician 2]
Beliefs about consequences	<ul style="list-style-type: none"> • Concerns about side-effects (facilitator) 	<ul style="list-style-type: none"> • <i>"She was just asleep looking, absolutely drugged out of her tree looking, sitting in a chair."</i> [Family member 1]
	<ul style="list-style-type: none"> • Belief that antipsychotics are highly effective (barrier) 	<ul style="list-style-type: none"> • <i>"I know the drugs can fix these things. Now not completely right. But I know that drugs can fix these things."</i> [Family member 2]
	<ul style="list-style-type: none"> • Belief that NPIs are not a feasible alternative (barrier) 	<ul style="list-style-type: none"> • <i>"But if you have somebody at 2 o'clock in the morning that you're pacing the floor with until 6 o'clock in the morning, where are your therapies then?"</i> [HCA 2]
	<ul style="list-style-type: none"> • Belief that the return of symptoms are caused by the reduction of antipsychotic dosage (barrier) 	<ul style="list-style-type: none"> • <i>"I think people often think, that if something doesn't work straight way or if there happens to be a coincidental problem as soon as you start to reduce it, suddenly there is this complete fear that this has caused it they expect more immediate, they see the immediate things as being either absent or present so when you start a new drug if it hasn't worked straight away there is a bit of 'oh it's not working.'" [GP 3]</i>
	<ul style="list-style-type: none"> • Anticipated regret (barrier) 	<ul style="list-style-type: none"> • <i>"Because you don't know what precipitated the [behavior], and then, when you're trying to pull back and you walk away, are you leaving your colleagues in the height of it then?"</i> [GP 4]
Emotion	<ul style="list-style-type: none"> • Fear of dementia (barrier) 	<ul style="list-style-type: none"> • <i>"It was very hard to listen to [the BPSD]... so as far as I'm concerned, if there was a medication that would sort this thing anyway, I certainly was completely open to it."</i> [Family member 2]
	<ul style="list-style-type: none"> • Taking behaviors personally (barrier) 	<ul style="list-style-type: none"> • <i>"I feel that certain people take huge offence if a person who is cognitively impaired lashes out, punches, screams, whatever and you know, you have to let it go."</i> [Nurse 8]
	<ul style="list-style-type: none"> • Burn-out and frustration (barrier) 	<ul style="list-style-type: none"> • <i>"You'll get staff who are burned out, they just can't cope. They're sick of saying X, Y and Z and they're not being listened to, and they just don't care anymore."</i> [Nurse 3]

	<ul style="list-style-type: none"> • Empathy toward people with dementia (facilitator) 	<ul style="list-style-type: none"> • <i>"I think people with a very empathetic view of dementia would be less likely to encourage, prescription of antipsychotics, because there is that, 'oh it's, you know, you don't have to give them drugs for it, it's just their dementia, we can get around it,' and then, some people... will see the more negative side of the dementia, and be like, 'isn't it awful for them, God wouldn't you just give them something to relax them.' [Nurse 6]</i>
	<ul style="list-style-type: none"> • Emotions of healthcare professionals tend to reflect those of family members (barrier) 	<ul style="list-style-type: none"> • <i>"I'll get [a phone call], 'The family were in today they're very worried about mammy. She's very upset and agitated'. I never get those phone calls to say that they're worried that's she's just sitting there staring into space." [GP 1]</i>
	<ul style="list-style-type: none"> • Personal experience of dementia (barrier/facilitator)* 	<ul style="list-style-type: none"> • <i>"We're all human, we all bring our own stuff." [HCA 3]</i>
Environmental Context and Resources		
	<ul style="list-style-type: none"> • Lack of adequate resources (barrier) 	<ul style="list-style-type: none"> • <i>"You need to have the time to be with somebody, staffing levels don't really give you the opportunity to sit with somebody all day long or all afternoon... you can come and go but you can't stay with the person." [Nurse 4]</i>
	<ul style="list-style-type: none"> • Perception that it's cheaper to give antipsychotics than deliver NPIs (barrier) 	<ul style="list-style-type: none"> • <i>"They haven't enough staff and they seem to think that the cheapest way is to dose them, and keep them quiet" [Family member 1].</i>
	<ul style="list-style-type: none"> • Impact of the built environment on the person with dementia (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"I think if we had properly designed purpose built modern dementia units that allowed us to offer a different environment than the standard ward environment... I do think that would be far more humane and you'll probably get better overall results than resorting to the old fashioned chemical restraints." [Consultant geriatrician 2]</i>
	<ul style="list-style-type: none"> • Each nursing home is different (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"You go to different nursing homes and attitudes are very different." [Nurse 3]</i>
	<ul style="list-style-type: none"> • Impact of treatment culture on residents (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"Sometimes it can feel like the person is there as... I don't know how to say this politely, but they're in the bed and they have to acquiesce or be compliant with the system around them, be good children or good grown-ups and play the game. And if you don't do that, then you get labelled and your behavior gets labelled." [Consultant Psychiatrist of Old Age 1]</i>
Knowledge		
	<ul style="list-style-type: none"> • Knowledge of antipsychotics (facilitator) 	<ul style="list-style-type: none"> • <i>"If you can tell someone what the potential complications [of antipsychotics] are, they may be a little bit less likely to ask for them." [GP 1]</i>
	<ul style="list-style-type: none"> • Knowledge on the cause and nature of BPSD (facilitator) 	<ul style="list-style-type: none"> • <i>"I think if people understood... why [residents] have behaviors that challenge I think that would go a long way for a lot more understanding and people not wanting just to sedate somebody." [Nurse 3]</i>
	<ul style="list-style-type: none"> • Knowledge of the resident (facilitator) 	<ul style="list-style-type: none"> • <i>"I think just knowing the person. Knowing that they have been on them [antipsychotics] for years. Looking at them now, their state of deterioration and you know in your heart and soul they don't need them." [Nurse 5]</i>
Memory, attention and decision-processes		
	<ul style="list-style-type: none"> • Decision-making based on a thorough assessment (facilitator) 	<ul style="list-style-type: none"> • <i>"Then with the physical as well, we do the PINCH ME acronym so we...pain, infection, constipation, hydration, nutrition, medications, environment, we look at real holistic view of the person and try and rule out any triggers there [sic]." [Nurse 6]</i>
	<ul style="list-style-type: none"> • Paying attention to where the challenge lies with regards to the behavioral symptoms (facilitator) 	<ul style="list-style-type: none"> • <i>"Sometimes it just ultimately again it takes me back, you need to take a step back, who are you treating? Are you treating the carer who wants a certain amount given so somebody is peaceful or a certain amount of investigation is done, or are we treating the staff who are treating the patient because they want a peaceful night or a peaceful day on the ward, or are we making a decision to make our own lives easier. And we just have to take a step back sometimes." [GP 5]</i>
Social Influences		
	<ul style="list-style-type: none"> • Social Pressure to prescribe (barrier) 	<ul style="list-style-type: none"> • <i>"So I feel under pressure to knock this person out, anesthetize this patient, who they see as, shouldn't be challenging. And they're already completely over-sedated and the staff want them to be even more sedated." [Consultant psychiatrist of old Age 2]</i>
	<ul style="list-style-type: none"> • Reliance on accurate information from nursing home staff (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"I think people can be a little bit biased in how they can present a case to you at times to get to the ends that they want. I know there has been one incident where... a staff member [was overheard] saying 'sure just tell her she's had hallucinations.'" [GP 3]</i>

	<ul style="list-style-type: none"> • Modelling of prescribing behavior (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"A lot of our learning seems to come from the consultations and referrals that we actually see what the psychiatry of the elderly prescribe in these situations, and we have been led by that, so quetiapine just seems to be one they seem to use."</i> [GP 5]
	<ul style="list-style-type: none"> • Prevailing culture of care (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"Medication comes first in Ireland. 'Give it to them as much as possible'".</i> [Family member 1]
Social/ Professional Role and Identity		
	<ul style="list-style-type: none"> • Advocacy role of nursing home staff and family members (facilitator) 	<ul style="list-style-type: none"> • <i>"See mom didn't have a voice, nobody would listen to her even when she was speaking, she wasn't listened to and I was her voice."</i> [Family member 1]
	<ul style="list-style-type: none"> • Professional identity (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"It depends on what background you are coming from and when you trained, how you view the medications and the use of medications. I think there is a difference, between the younger generation of nurses and the older generation of nurses. There appears to be more of a reluctance, I think, in the younger generation of nurses with giving out, I suppose the high risk medications like [antipsychotics]... And I think there is a difference there then because you're not seeing your nursing profession as a medical profession, you're almost a facilitator...and when you see it from that perspective then medication isn't always the first kind of thing that pops into your head."</i> [Nurse 6]
	<ul style="list-style-type: none"> • Variable sense of responsibility for prescribing decisions (facilitator/barrier)* 	<ul style="list-style-type: none"> • <i>"But I suppose it's up to the prescriber to be able to sort the wheat from the chaff and see what's a good grounded opinion and what's maybe not as reliable you know."</i> [HCA 3]
	<ul style="list-style-type: none"> • Leadership role of nursing home manager (facilitator) 	<ul style="list-style-type: none"> • <i>"You need a manager who is supporting staff and is knowledgeable and roles out good training to the staff. And has good experience so, and ideally good mental health experience because that's, not all of them have good mental health experience but it is important for the manager, if you meet the manager, you can usually see the tone of the home."</i> [Consultant Psychiatrist of Old Age 2]
	<ul style="list-style-type: none"> • Traditional hierarchy (barrier) 	<ul style="list-style-type: none"> • <i>"As it stands and we're talking about the real world, it's really the nursing staff and the GP. I don't have an influence there. If I get the script, we just have to hand it over."</i> [Pharmacist 2]

672 * This determinant could be a barrier or a facilitator depending on the individual circumstance

673 BPSD: Behavioral and Psychological Symptoms of Dementia; GP: General Practitioner; HCA: Healthcare assistant; HIQA:

674 Health Information and Quality Authority; NPIs: Non-pharmacological interventions; TDF: Theoretical Domains Framework

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