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Prescription medication hoarding, borrowing and sharing among elderly Illawarra residents

Judy Mullan

University of Wollongong, jmullan@uow.edu.au

J Ellis

University of Wollongong, jce840@uow.edu.au

A Worsley

University of Wollongong, tworsley@uow.edu.au

W Yeo

University of Wollongong, wilf@uow.edu.au

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Abstract

Objective: To examine prescription medication hoarding and borrowing or sharing (PMHBS) behaviours in aged people, particularly which medications are subject to these behaviours and the circumstances that enable these behaviours. Method: A mixed methods triangulation design, using consecutive qualitative (focus groups) and quantitative (survey) methodologies in a convenience sample of people aged over 65, living independently in the Illawarra region (NSW). Results: Focus group participants (n=28) acknowledged PMHBS behaviours were widespread; however, very few survey respondents (n=226) admitted to engaging in these behaviours. Main findings in the study were enablers for these behaviours: the prescription medication is considered the same as that prescribed previously; and self medicating for pain relief. Conclusions: The prevalence of PMHBS behaviours in this study was low, although it was acknowledged such behaviours occurred in the wider community. Sharing strong pain medication and the same prescription medication appeared to be acceptable in this population.

Keywords

among, illawarra, residents, borrowing, prescription, hoarding, medication, sharing, elderly

Disciplines

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Prescription Medication Hoarding and Borrowing or Sharing Behaviours in Aged Residents in the Illawarra (NSW), Australia

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Keywords:	Aged, Health Behaviour, Medication Adherence, Self Medication

ABSTRACT

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Conclusions: The prevalence of PMHBS behaviours in this study was low, although it was acknowledged such behaviours occurred in the wider community. Sharing strong pain medication and the same prescription medication appeared to be acceptable in this population.

KEY WORDS (MeSH Headings): Aged, Health Behaviour, Medication Adherence, Self Medication

Introduction

Prescription medication hoarding, borrowing and sharing (PMHBS) is a significant factor in aged Australians' medication management behaviours (1-3). Prescription medication "hoarding" refers to the collection of three or more of the one kind of prescription medication that the patient cannot be expected to consume within a reasonable timeframe (1), usually 90 days' worth of treatment (4). This behaviour results in the collection of a range of unwanted or no longer needed prescription medications in the home (3). It is recognised by the authors that the term "hoarding" can be viewed as negative, judgemental and a derogatory term but would like to emphasise that many older people could be inadvertently hoarding medications because they do not wish to be wasteful; however, the risks of accidental adverse drug events (ADEs) from the consumption of "hoarded" prescription medication, particularly in the elderly, makes this behaviour of concern to health professionals (3). The evidence on the prevalence of this behaviour in Australian aged populations varies greatly. For example, an in-home assessment of aged patients (over 65) found that 30% of study participants hoarded three or more prescription medications (3), while a review of 1000 case studies of aged adults (median age 75 years) undergoing the Home Medication Review process, found that only 0.9% of participants hoarded medications (2).

"Borrowing" a prescription medication means that the patient takes a medication that has been prescribed for someone else; "sharing" (or "loaning") indicates that the patient gives a medication prescribed for themselves to someone else (5). A review of Australian studies of medication management by the aged (3) showed that 13-20% of

aged Australians shared prescription medications, increasing the potential risk of adverse drug effects and avoiding counselling from a prescriber or dispenser (5).

However, there are few studies that focus specifically on borrowing or sharing behaviours in the aged (1, 3), with only two recent studies focusing on younger people taking part in such behaviours (5, 6).

The aim of the current study was to examine prescription medication hoarding and borrowing or sharing amongst people over the age of 65 years, living independently in the Illawarra Region, NSW. The study sought to (a) identify attitudes towards PMHBS behaviours and the prevalence of these behaviours; (b) to determine which types of prescription medications are more likely to be implicated in PMHBS behaviours; and (c) to determine if there are circumstances that facilitate PMHBS behaviours.

Method

The study utilised a mixed methods triangulation design (7), which requires the collection and comparison of qualitative and quantitative data separately, culminating in the combination of the data streams in the final analysis (8). The study was conducted in two consecutive phases, carried out during June-August, 2009: Phase One – qualitative method (focus group discussion); Phase Two – quantitative method (survey questionnaire). The findings from the focus groups (Phase One) were evaluated, with some of the major findings used to inform the development of the survey instrument for Phase Two. The survey results were then evaluated separately and then in the context of the focus group results, to elicit a deeper understanding of what the results meant in relation to the study objectives.

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7 The protocols for conducting the focus groups and survey in this study were approved
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9 by the University of Wollongong's Health and Medical Human Research Ethics
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11 Committee (Reference No HE09/083).
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13

16 **1. Focus Groups (Phase One)**

18 *Participants*

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20 Four focus groups were conducted over a two week period in June 2009, attended by a
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22 total of 28 participants. Three main groups were approached – two community
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24 organisations catering to the elderly (one each in the north and south of the Illawarra
25
26 region); and patient volunteers at the University's Graduate School of Medicine. One
27
28 focus group was dominated by male participants (6 males to 1 female). However, the
29
30 total number of males ($n=13$) and females ($n=15$) participating in the first phase of this
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32 study was almost even. While no demographic information (i.e. age) was collected
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34 from focus group participants, the primary selection criterion for the focus groups was a
35
36 minimum age of 65 years.
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44 *Administration*

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46 Four scenarios based on Goldsworthy, Schwartz & Mayhorn's (5) study of prescription
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48 medication borrowing and sharing in the general population were presented to stimulate
49
50 discussion and elicit focus group participants' attitudes about and experiences with
51
52 PMHBS behaviours. These scenarios described a specific situation (e.g. brother and
53
54 sister with same health problem), linked with a particular medication (e.g. antibiotics).
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56 Participants were asked to explore the acceptability or otherwise of the scenario being
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4 presented. Participants were also encouraged to discuss how their opinions about
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6 borrowing or sharing would change if another medication (e.g. pain medication) was
7
8 involved.
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16 **2. Survey Questionnaire (Phase Two)**

18 *Participants and Sampling*

20 A convenience sample of independent living residents in the Illawarra region, aged over
21
22 65 years, was targeted. Residents in the north and south of the region were recruited
23
24 through local shopping centres, as well as members of the University of the Third Age
25
26 (U3A) groups. Independent Living Unit residents of an Illawarra-based retirement
27
28 organisation and participants undergoing a Home Medicines Review (HMR) by
29
30 pharmacists throughout the region were also invited to participate in the survey. Table
31
32 1 shows the number of participants in Phase Two of the study and the response rate
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34 from each recruitment source. The desired sample size for statistical significance was
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36 300 (Cramer's statistic value = .20, power = .95, $p=0.05$).
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45 Almost half (46%, $n=104$) of the respondents were in the 65-74 age bracket, 39%
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47 ($n=89$) were in the 75-84 age bracket, and only 9% ($n=20$) were aged over 85 years. A
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49 small number of respondents (6%, $n=13$) did not answer the question about age. The
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51 majority of respondents were female (65%, $n=147$) and around half (55%, $n=125$) had
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53 completed up to higher school or leaving certificate (Year 10) or equivalent education
54
55 level. Most respondents (73%, $n=165$) reported being treated for two or more chronic
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57 conditions.
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*Prescription Medication Hoarding and Borrowing/Sharing**Survey Instrument*

The self-completed survey instrument consisted of 43 questions. Issues identified in the focus group discussions relating to medication management behaviours, how excess medications were disposed of and the actual hoarding, borrowing or sharing of prescription medications guided the inclusion of questions targeting those behaviours in the survey instrument. In addition, the question matrix used in previous research into PMHBS behaviour among younger populations (5, 6), was adapted for inclusion in the current study survey instrument to elicit information about which prescription medications respondents thought were safe to borrow or share, and whether they agreed or disagreed with borrowing or sharing prescription medications in specific situations. The Medication-Taking-Measures Questionnaire (9) was included to elicit information about the level of medication adherence and finally questions about the number of diagnosed medical conditions (comorbidity), the number of prescribed medications (polypharmacy), and demographic data (gender, age, level of education) were included in the survey instrument.

Results**1. Focus Groups**

Digital recordings of the focus group discussions were transcribed and a “framework analysis” (Richie et al. 2003, cited in (10)) approach was used to analyse the discussions. Broad themes and concepts based on the data were generated and then arranged hierarchically (10). The study objectives (themes) were placed at the top of

Prescription Medication Hoarding and Borrowing/Sharing

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4 the hierarchy, with relevant data from the discussions (concepts) placed under each
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6 objective, allowing exploration of linkages between the study objectives and data.
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11 Participants referred to hoarding behaviour by aged relatives and the common
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13 expression of this behaviour was facilitated by the expectation of receiving medication
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15 prescriptions at each medical consultation:
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21 *[They] just keep taking something, they went to some other doctor, they*
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23 *prescribed something else, they kept taking [prescription medicines]* (Participant
24
25 2, Group 4)
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29
30 Some focus group participants seemed unclear as to the appropriate disposal of excess
31
32 or out of date medications, with some reports of patients hanging on to prescription
33
34 medications past the expiration date, as evidenced by the following:
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40 *“One of the biggest problems ... is that a lot of people take old medication*
41
42 *because they haven't had that illness for a while”* (Participant 4, Group 1)
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46
47 *“If they're old and funny, drop 'em down the dunny”* (Participant 3, Group 3)
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51
52 Even though the participants strongly disapproved of prescription medication borrowing
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54 or sharing behaviours, they agreed that this behaviour was commonplace. Participants
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56 did, however, discuss situations where borrowing or sharing behaviour might be
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58 acceptable and included family members trying each other's medication; wanting to try
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Prescription Medication Hoarding and Borrowing/Sharing

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4 a medication before getting a prescription from the medical practitioner; and forgetting
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6 to get a prescription filled. There was also agreement that in certain circumstances
7
8 people might borrow or share prescription medications which were exactly the same as
9
10 their own. One situation that was clearly supported by focus group participants was the
11
12 borrowing or sharing of strong pain medication in an emergency situation:
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14

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16
17 *What about pain medication? We've got a scenario here where somebody can't*
18
19 *get to the doctor or the chemist because it's late (Facilitator (JE))*
20
21

22 *There'd be more prevalence of that I would imagine (Participant 1, Group 1)*
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27 Knowledge about medications amongst focus group participants was apparent, with
28
29 some participants being aware of the differences in strength and brand names (including
30
31 generic brands) in the same prescription medication formulation. Interactions between
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33 medications were also given as a reason not to borrow or share other people's
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35 prescription medications:
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41 *I know how important it is, because if you've got a nasty cold and you want*
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43 *some cold and flu tablets, they ask if you're on blood pressure tablets, they have*
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45 *to give you a certain sort (Participant 4, Group 4)*
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52 **2. Survey Questionnaire**

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54 Of the 354 distributed surveys, 231 (65%) were returned. Five surveys were removed
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56 because no data was entered or respondents were from outside the Illawarra Region.
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58 The final number of surveys analysed, therefore, was 226. While this is slightly less
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Prescription Medication Hoarding and Borrowing/Sharing

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4 than the desired number of 300 surveys, the response rate was high for this type of
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6 study. However, no statistically significant relationships were found between variables
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8 and are therefore are not reported.
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13
14 Almost all respondents (97%, $n=212$) indicated that they did not hoard (keep more than
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16 three packets of the same prescription medication). However, 13% ($n=27$) indicated
17
18 that they would keep leftover prescription medications in case they needed them later.
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21
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23 Only a small number of respondents admitted to borrowing (5%, $n=10$) or sharing (6%,
24
25 $n=12$) prescription medications. When asked about the hypothetical acceptability of
26
27 borrowing or sharing certain prescription medications, 70% ($n=158$) of respondents
28
29 agreed that no prescription medication was acceptable to borrow or share (Table 2).
30
31 However, 14% ($n=32$) of respondents agreed that borrowing or sharing strong pain
32
33 medications was acceptable. No other prescription medication received this level of
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35 support, with only nine percent ($n=20$) of respondents agreeing that borrowing or
36
37 sharing of arthritis or joint inflammation medications was acceptable. Furthermore, very
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39 few respondents agreed that borrowing or sharing medications prescribed for the
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41 treatment of cardiovascular disease, diabetes, affective disorders, or antibiotics was
42
43 acceptable (Table 2).
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52 When it came to circumstances in which borrowing or sharing might be acceptable,
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54 28% ($n=63$) of respondents agreed that borrowing and 23% ($n=53$) agreed that sharing
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56 prescription medications would be acceptable if the other person had exactly the same
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Prescription Medication Hoarding and Borrowing/Sharing

prescription medication. Other circumstances which were less likely to elicit borrowing or sharing of prescription medications included;

- if they had run out or forgotten their own prescription medication (13% ($n=30$) agreed with borrowing or 13% ($n=30$) agreed with sharing);
- if the other person was in a lot of pain (11% ($n=24$) borrowing; 13% ($n=30$) sharing);
- couldn't afford the medication (3% ($n=6$) borrowing; 14% ($n=32$) sharing); or
- couldn't get to the doctor or chemist (13% ($n=29$) borrowing; 11% ($n=25$) sharing)

Discussion

The study suggests that there may be a difference between actual prescription medication hoarding and borrowing or sharing (PMHBS) behaviours and the perception of the prevalence of these behaviours. This is evident in the low numbers of survey respondents admitting to engaging in these behaviours and the assertion by focus group participants that PMHBS behaviours are widespread in the community. This concurs with the conflicting evidence in the existing research literature, as discussed below.

Prescription Medication Hoarding Behaviours

Some focus group participants and survey respondents were confused about how to correctly dispose of unwanted medications, and a small number of survey respondents (13%, $n=27$) indicated that they kept prescription medications in case they needed them later. However, very few study participants admitted to hoarding, which contradicted a

Prescription Medication Hoarding and Borrowing/Sharing

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3
4 previous finding of higher levels of hoarding behaviour in the aged (11). One
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6 explanation for the current finding of low levels of reported hoarding may be that many
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8 study participants suffer chronic co-morbid conditions and as such are frequently
9
10 prescribed a number of different medications, an issue linked to adverse drug events
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12 (ADEs) in the elderly (3). Changes to medication regimes can occur from time to time,
13
14 leading to the accumulation of unwanted medications. These accumulated medications
15
16 may have been forgotten, resulting in under-reporting of hoarding behaviour in this
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18 study. Relatedly, the confusion about the appropriate disposal of prescription
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20 medications may also contribute to the low levels of reported hoarding. The assumption
21
22 here is that, if the patient doesn't know how to dispose of expired or unwanted
23
24 prescription medication, there is an inadvertent "hoarding" of these medications.
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26 Because the hoarding is accidental in this case, the participants may not consider
27
28 themselves hoarders in the strict sense of the term.
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Prescription Medication Borrowing or Sharing Behaviours

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38 Although both focus group participants and survey respondents strongly disapproved of
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40 prescription medication borrowing or sharing, results from both phases of the current
41
42 study suggest there are circumstances which may enable these behaviours, confirming
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44 findings reported in other studies into this behaviour in the general population (5, 6).
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50 Both focus group and survey participants expressed a willingness to borrow or share
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52 strong pain medication, particularly in situations where people might have difficulty
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54 accessing medical assistance. No other prescription medication that is usually
55
56 prescribed for the aged received the same level of support for borrowing or sharing in
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58 the current study. This confirms previous findings of support for borrowing or sharing
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Prescription Medication Hoarding and Borrowing/Sharing

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4 of strong pain medications (6). It has been shown that people suffering strong pain in a
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6 medical emergency are more likely to self-medicate and were less likely to think about
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8 the consequences of their actions as a result (12), therefore delaying seeking medical
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10 advice, with resultant poorer outcomes.
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16 Study participants also strongly expressed an endorsement for borrowing or sharing
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18 prescription medications if they felt the medication was exactly the same as had been
19
20 previously prescribed. Potentially, recipients may not understand the complete nature
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22 of the medication from a reading of the label. The active agent may be the same in both
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24 medications, but there may be a difference in the dosage and/or strength, possibly
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26 resulting in an ADE if consumed incorrectly. As the aged are over-represented in ADE
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28 statistics (3), this is of concern.
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Limitations

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37 Several limitations apply to the present study. Firstly, the dynamics of the focus group
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39 may have influenced the discussion, preventing some participants from saying anything
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41 if they felt it was counter to the prevailing opinion. Similarly, administration of the
42
43 survey to a convenience sample, where respondents self-selected their participation in a
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45 study into prescription medication, may have over-represented people with a level of
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47 understanding of the variables being measured (although this level of understanding was
48
49 not directly measured) and a possible associated social desirability bias, therefore
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51 underreporting PMHBS behaviours. Finally, the exclusion of people who could not
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53 read or speak English may have reduced the generalisability of the study findings.
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Conclusion

This study is among the first to exclusively examine PMHBS behaviours in community-dwelling aged people and highlights two main factors which may enable these behaviours in this population. The findings in studies of younger peoples' PMHBS behaviours may not necessarily be generalisable to aged people who live in situations such as aged care facilities, independent accommodation, or in areas with little access to medical practitioners or pharmacists is difficult. More research into the prevalence and mechanisms of these behaviours in these populations is required to understand and therefore address this issue.

KEY POINTS:

- The reported prevalence of prescription medication hoarding and borrowing or sharing in this study was much lower than reported in some research literature, and the levels of these behaviours perceived by research participants
- Borrowing or sharing strong pain medication to manage acute pain was perceived to be acceptable
- The borrowing or sharing of prescription medication individuals believed was exactly the same also was perceived to be acceptable

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Table 1 – Survey distribution and response rates

Distribution Point	No. surveys distributed	No. surveys returned	Response Rate
Shopping Centre (North Illawarra)	50	36	72%
Shopping Centre (South Illawarra)	99	47	48%
U3A† (North Illawarra)	43	41	95%
U3A† (South Illawarra)	51	36	71%
Independent Living Unit Residents	44	35	80%
Participants undergoing an HMR‡ by Pharmacists	67	36	54%
Total	354	231	65%

† University of the Third Age

‡ Home Medication Review

Table 2 – Prescription Medications Survey Respondents believe are Safe to Borrow/Share

Type of Medication	Number of Respondents [†]	%
Blood Pressure Medications	12	5%
Heart Disease Medications	8	4%
Arthritis/Joint Inflammation Medications	20	9%
Strong Pain Medications	32	14%
Diabetes Medications	5	2%
Depression/Anxiety Medications	5	2%
Antibiotics	3	1%
Other Medications [‡]	4	2%
No Prescription Medications	158	70%

[†] More than one response was allowed

[‡] "Other" responses were an non-steroidal anti-inflammatory drug, asthma prevention, high cholesterol, stomach reflux and Panamax (500mg Paracetamol)