

# Prescription drug misuse: quantifying the experiences of New Zealand GPs

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## ABSTRACT

**INTRODUCTION:** The misuse of prescription drugs for their psychoactive effects is an international problem. To date, there is a paucity of quantitative data on prescription drug misuse (PDM) in New Zealand, especially data investigating the experiences of general practitioners (GPs).

**AIM:** To quantify GPs' experiences regarding PDM in New Zealand in terms of the extent of the problem, challenges faced, problem drugs, and actions taken by GPs once PDM is suspected.

**METHOD:** A cross-sectional postal survey of a random sample of 300 GPs in New Zealand was undertaken.

**RESULTS:** A 45.7% response rate was achieved. Approximately two-thirds of GPs (65.9%) had diagnosed at least one patient with a PDM problem in the last 12 months. Thirty percent of respondents indicated that they had been faced with at least one challenge in the past 12 months, with 'verbal threats' being the most common of these (16.3%). Benzodiazepines and opioids were identified as the most problematic drug classes. The action usually taken by the greatest number of GPs once they suspected PDM was to 'document it' (97.9%) followed closely by 'suggest an alternative drug' (96.7%) and 'refrain from prescribing the drug' (91.9%).

**DISCUSSION:** PDM is an issue for GPs. The findings from this study have highlighted the need for further research into this concerning issue, specifically further quantification of the size of the problem in the New Zealand general population. There is also a need for the development and implementation of interventions to help minimise and better manage PDM in New Zealand.

**KEYWORDS:** Prescription drugs; pharmaceutical; drug abuse; drug misuse; general practitioners; New Zealand; questionnaires; quantitative

## Introduction

The misuse of psychotropic prescription drugs and central nervous system-active prescription drugs with psychoactive side effects such as opioids and benzodiazepines is recognised internationally as a problem and is often termed prescription drug misuse (PDM).<sup>1,2</sup> PDM includes using medicines for an indication other than which it was prescribed, taking quantities of the drug exceeding those recommended, lengthening the duration of treatment, utilising alternative routes of administration, and co-ingestion with other potentially harmful agents.<sup>1</sup> Prescription drugs are misused by individuals from all parts of society, for a variety of reasons.<sup>2,3</sup> Patients

may develop dependence after being prescribed the agent as part of a genuine treatment regimen, may misuse prescription drugs for recreational purposes, or may use prescription drugs in addition to, or instead of, an illicit drug.<sup>1,4,5</sup>

The 2007 Australian National Drug Strategy Household Survey reported that 7% of Australians had 'ever used' pharmaceuticals (not limited to psychoactive drugs or prescription drugs) for non-medical purposes, and that 17.8% had an 'offer or opportunity to use' in the last 12 months.<sup>6</sup>

New Zealand data from 2008 indicate that 2.2% of New Zealand adults had 'ever used' prescription sedatives (such as barbiturates or

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benzodiazepines) for recreational purposes, 1.7% prescription stimulants (e.g. methylphenidate and dexamphetamine) and 3.6% 'any opiate'.<sup>7</sup> Further studies conducted in 2008 that questioned frequent drug users indicated that methadone was the most common drug of choice for frequent injecting drug users (29%), followed closely by morphine (26%), with Ritalin® (methylphenidate) and benzodiazepines being favoured by 2% each.<sup>8</sup>

PDM is associated with a multitude of harms, many of which affect the misuser and their family, community and greater society.<sup>1,2,9</sup> Some harms can be directly attributed to the drug being misused, others relate to behaviours associated with substance abuse.<sup>4</sup>

A drug seeker may gain access to prescription drugs through a variety of ways, including purchasing prescription drugs via the internet, prescription forgery, illicit prescribing by physicians, drug theft, and inter-border and international smuggling,<sup>2,10</sup> although New Zealand's border control systems may make the latter more difficult. One of the commonest ways for a misuser to obtain prescription drugs is through primary care.<sup>2,4,11</sup> Drug seekers employ an array of methods to deceive GPs to obtain a supply of drugs. One of these is known as 'doctor shopping', i.e. attending multiple GPs. A survey of physicians conducted by CASA (2005) reported that attending multiple physicians was one of the three most common methods of diversion, in addition to patient deception or manipulation of doctors and forged or altered prescriptions.<sup>2</sup>

GPs face other challenges such as verbal threats and physical violence. A 2002 New Zealand study found the most common context for patient-initiated aggression or violence was requests for drugs (25.3%), and the most prevalent event was 'verbal threats' (15.4%).<sup>12</sup> In 2008 a qualitative study of New Zealand GPs identified an array of actions employed in response to suspected PDM, including refusal to prescribe the drugs, refusal to prescribe to unknown patients, supplying the drug in restricted amounts, and banning the patient from the practice. GPs also reported questioning the patient about their drug use, providing the patient with information on the health effects of PDM, and referring the patient to a specialist service.<sup>13</sup>

## WHAT GAP THIS FILLS

**What we already know:** Prescription drug misuse is of concern internationally, and general practitioners (GPs) are often targeted as a source of such medicines. However, little is known about the extent of the problem for GPs although a qualitative study of New Zealand GPs has been carried out.

**What this study adds:** This study showed that approximately two-thirds of GPs had diagnosed at least one patient with a prescription drug misuse problem in the last 12 months, and that opioids and benzodiazepines were the medicines considered most likely to be misused.

This study aimed to quantify general practitioners' experiences of PDM in New Zealand. Study objectives were to determine the extent of the problem, to identify common challenges, problem drugs, the actions taken by GPs, and to determine the value placed on some potential interventions.

## Methods

A questionnaire was mailed to a random sample of 300 New Zealand GPs registered with the Medical Council of New Zealand (n=2647). Such GPs have a vocational (specialist registration) scope of practice. The database did not include doctors working towards this scope of practice nor those working under the support of a vocationally registered GP. The questionnaire was designed so that it specifically addressed our aims and objectives; with permission from the authors we used as a starting point a questionnaire previously utilised to survey physicians on PDM in the United States by The National Center on Addiction and Substance Abuse at Columbia University (CASA).<sup>2</sup> The questionnaire was trialled on eight GPs and modified according to their feedback. These GPs were excluded from the final survey population.

Questionnaires, a participant information sheet, and a return-addressed freepost envelope were sent to each GP. A unique identifying code written onto the return envelope enabled responders to be tracked and were discarded to maintain GP anonymity. Non-responders were re-sent the questionnaire after two and four weeks. To explore non-responder bias, a telephone follow-up was planned with a random 10% sample of the non-responding GPs. Data were entered into the

Table 1. Demographics of GPs who responded to the postal questionnaire

		n=132	Valid %
Gender	Male	72	54.5
	Female	60	45.5
	Missing	0	
Age	30–34	2	1.5
	35–39	10	7.6
	40–44	11	8.3
	45–49	27	20.5
	50–54	39	29.5
	55–59	20	15.2
	60–64	16	12.1
	65–69	2	1.5
	70–74	4	3.0
	75–79	1	0.8
	Missing	0	
Number of years in practice as a GP in NZ	<10 years	17	13.2
	10–19 years	33	25.8
	20–29 years	55	43.0
	30 or more	23	18.0
	Missing	4	
Area primarily practice in	Urban	62	47.7
	Suburban	43	33.1
	Rural	24	18.5
	Other	1	0.70
	Missing	2	
Number of GPs employed at practice	<5	62	51.7
	5–9	49	40.8
	10–14	7	5.8
	15+	2	1.7
	Missing	12	
Role as GP	Full-time	76	58.9
	Part-time	45	34.9
	Locum	8	6.2
	Missing	3	
Location of practice	North Island	83	70.3
	South Island	35	29.7
	Missing	14	

SPSS statistical software package and data cleaning undertaken. General descriptive statistics were obtained. Differences between means and medians were measured using Student's *t* distribution (*t*-tests) and Mann-Whitney *U* test (MW) for parametric and non-parametric data respectively. Pearson's chi-square ( $\chi^2$ ) tests were used to explore relationships between categorical variables. Statistical significance was inferred when the *p*-value was less than 0.05. Raw data were presented as valid percentages (using a denominator excluding the missing cases).

Ethics approval was obtained from the Auckland University Human Participants Ethics Committee (Ref. 2010/C/012).

## Results

Of the 300 questionnaires mailed out to GPs, 144 were returned. These included one GP refusing to partake, six from GPs no longer practising, and five that were incorrectly addressed. These were excluded from the numerator and denominator; therefore, the response rate of usable questionnaires was 46% (n=132/289). Of the 16 GPs randomly selected for the telephone follow-up, only one was available to take part, thus this data is not presented.

Of the 132 respondents, 55% (n=72) were male. The mean age was 52 years (sd=2.66). The mean number of years in practice as a GP in New Zealand was 22.2 years (sd=9.35) and almost half (47%) of respondents were practising in urban areas. The majority were working in urban areas in practices with fewer than five GPs

Two-thirds of respondents (66%; n=87) had diagnosed at least one patient with a PDM problem in the last 12 months. No significant association between diagnosing and not diagnosing was noted for GP gender, location ('urban' and 'suburban' locations were combined and recoded as 'city' and compared with 'rural', with 'other' responses excluded), North versus South Island, occupational status (part-time, full-time and locum), or years in practice.

The 87 respondents who had diagnosed a patient with a PDM problem in the past 12 months were

asked to indicate the number of occasions on which they had done so. The majority of GPs had done so on '1-3' occasions (86%).

Two-thirds of respondents (66%; n=87) reported 'ever' feeling pressured into prescribing a drug they suspected the patient was misusing. No significant association was found between ever feeling pressured and GP gender, location of practice (city vs rural), North vs South Island or occupational status or number of years in practice. Of those respondents who had 'ever' felt pressured, the majority (69%, data missing on one case) reported experiencing this on '1-3' occasions.

Twenty-four percent (n=31) reported being 'very confident', 70% (n=91) 'fairly confident' and 6% (n=8) 'not confident' in their ability to recognise PDM patients. Responses for 'fairly confident' and 'very confident' were combined into the new variable 'confident' and comparisons between 'confident' and 'not confident' were made. The median years in practice was significantly higher for respondents who claimed to be confident in

Table 2. Challenges faced by GPs in the past 12 months with patients who appear to be misusing prescription drugs

	Yes n (%)	No n (%)
<b>Verbal threats (n=129)</b>	21 (16.3)	108 (83.7)
<b>Physical violence (n=130)</b>	4 (3.1)	126 (96.9)
<b>Theft of drugs (n=129)</b>	3 (2.3)	126 (97.7)
<b>Theft of prescription pad (n=129)</b>	3 (2.3)	126 (97.7)
<b>Other (n=91)</b>	25 (27.5)	66 (72.5)

recognising a PDM patient, compared to those who were not confident in doing so (MW=839;  $p<0.001$ ). No association was found between confidence in detecting a PDM patient and having diagnosed such a patient in the past 12 months.

GPs were asked what challenges they had faced in the past 12 months in relation to PDM (see Table 2). The challenge faced by the greatest number of respondents was 'verbal threats'. Thirty percent reported they had faced at least one challenge during this time. Such respond-

Table 3. Number of occasions GPs refused to prescribe or had concerns about prescribing a drug to a patient suspected of PDM

Drug	Number of occasions				
	0 n (%)	1-3 n (%)	4-6 n (%)	7-9 n (%)	10+ n (%)
<b>Methadone (n=107)</b>	81 (75.7)	24 (22.4)	2 (1.9)	0	0
<b>Morphine (n=110)</b>	65	36	9	0	0
<b>Codeine (n=114)</b>	38 (33.3)	67 (58.8)	9 (7.9)	0	0
<b>Oxycodone (n=111)</b>	78 (70.3)	30 (27.0)	3 (2.7)	0	0
<b>Fentanyl (n=106)</b>	104 (98.1)	2 (1.9)	0	0	0
<b>Tramadol (n=111)</b>	72 (64.9)	35 (31.5)	4 (3.6)	0	0
<b>Buprenorphine (n=106)</b>	104 (98.1)	2 (1.9)	0	0	0
<b>Pethidine (n=110)</b>	78 (70.9)	29 (26.4)	3 (2.7)	0	0
<b>Diazepam (n=114)</b>	37 (32.5)	63 (55.3)	11 (9.6)	3 (2.6)	0
<b>Temazepam (n=104)</b>	63 (60.6)	28 (26.9)	10 (9.6)	2 (1.9)	1 (1.0)
<b>Clonazepam (n=109)</b>	66 (60.6)	36 (33.0)	6 (5.5)	0	1 (0.9)
<b>Lorazepam (n=108)</b>	75 (69.4)	30 (27.8)	1 (0.9)	1 (0.9)	1 (0.9)
<b>Alprazolam (n=106)</b>	93 (87.7)	10 (9.4)	2 (1.9)	0	1 (0.9)
<b>Oxazepam (n=106)</b>	92 (86.8)	9 (8.5)	3 (2.8)	1 (0.9)	1 (0.9)
<b>Zopiclone (n=113)</b>	47 (41.6)	47 (41.6)	13 (11.5)	3 (2.7)	3 (2.7)
<b>Methylphenidate (n=110)</b>	68 (61.8)	38 (34.5)	3 (2.7)	1 (0.9)	0
<b>Dexamphetamine (n=107)</b>	98 (91.6)	9 (8.4)	0	0	0

ents were older ( $t=-2.498$ ,  $df=130$ ;  $p=0.014$ ) and more likely to be males (39% male; 20% female) ( $\chi^2=5.529$ ,  $df=1$ ;  $p=0.019$ ).

Twenty-two respondents provided examples of 'other' challenges they had faced in the past 12 months regarding PDM. These were grouped into common themes and included manipulation, conning or tricking ( $n=12$ ), intimidation ( $n=5$ ), swearing ( $n=2$ ), and using long explanations ( $n=2$ ).

Respondents were asked to report the number of occasions they had refused or had concerns about prescribing a drug to a suspected PDM patient

in the past 12 months. The results are reported in Table 3. The frequency of refusal was greater for benzodiazepines. For many drugs on the list, a majority had not refused or had any concerns during the past 12 months.

GPs perceived benzodiazepines to be a moderate or major problem in their practice (49%;  $n=65$ ) compared to opioids (31%;  $n=41$ ) and stimulants (22%; 16.7). GPs indicated the actions they usually took when suspecting a patient was misusing prescription drugs, from a predetermined list. Three actions, 'refraining from prescribing the drug,' 'suggesting an alternative drug' and 'documenting it,' were usually taken by over 90% of respondents. Almost 27% ( $n=35$ ) of GPs reported feeling very confident in refusing to prescribe to someone they suspected was misusing prescription drugs, 57% ( $n=75$ ) fairly confident and 8% ( $n=11$ ) not confident. Fewer than 10% of general practitioners reported 'ever' contacting the police. See Figure 1.

The free text response option was used by 21 respondents to indicate one or more 'other' actions they usually took. Themes commonly reported were notification of appropriate government agencies (e.g. Medicines Control) ( $n=5$ ); checking whether the patient had presented at other practices ( $n=4$ ) and contacting the local pharmacist ( $n=4$ ).

GPs were asked how many times they had referred a patient for treatment (e.g. drug and alcohol specialist, counselling) of a PDM problem in the past 12 months. Sixty-eight percent ( $n=90$ ) had referred a patient to treatment for prescription drug misuse at least once in the past 12 months, with 61% ( $n=81$ ) having referred on '1-3' occasions.

Interventions for better detection and management of prescription drug misuse were explored using a predetermined list. 'Access to a central database that identifies drug misusers' was considered to be 'highly valuable.' Free-text data strongly indicated that there was a need for improved or faster access to drug addiction services and/or specialist care. 'More training,' 'improved training' and 'more time to attend to each patient' were interventions perceived to have least value. See Table 4.

Figure 1. Percentage of respondents who usually take a particular action when they suspect a patient is misusing a prescription drug

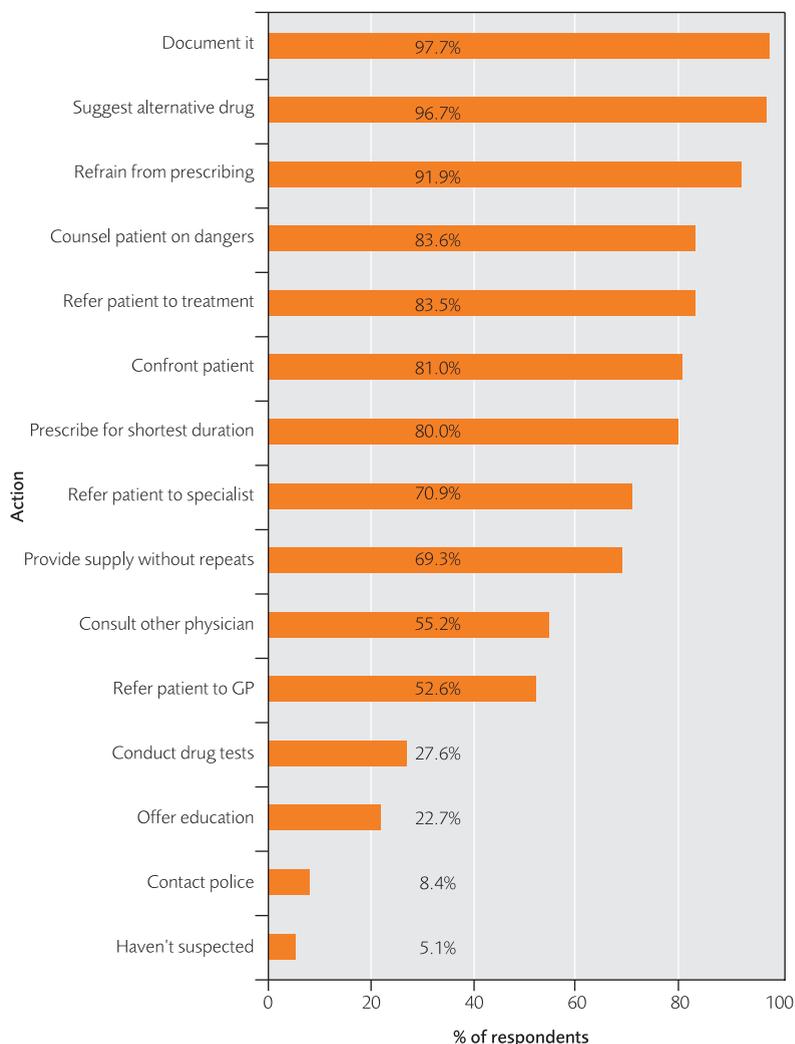


Table 4. GPs' perspectives on the potential value of interventions in enhancing their ability to detect drug seekers

	Highly valuable n (%)	Fairly valuable n (%)	Not valuable n (%)
More training (n=120)	12 (10)	67 (55.8)	41 (34.2)
Improved training (n=1157)	15 (13)	62 (53.9)	38 (33)
More time to attend to each patient (n=121)	25 (20.7)	53 (43.8)	43 (35.5)
Increased cooperation with pharmacists (n=1248)	50 (40.3)	63 (50.8)	11 (8.9)
Access to a central database that identifies drug misusers (n=126)	69 (54.8)	42 (33.3)	15 (11.9)
Working with drug and alcohol specialists (n=129)	45 (34.9)	72 (55.8)	12 (9.3)
Accessible policies/guidelines/protocols (n=116)	32 (27.6)	60 (51.7)	24 (20.7)

## Discussion

Little quantitative international research currently exists on PDM in the primary care setting. This study aimed to quantify GPs' views and experiences of PDM in New Zealand. Two-thirds of responding GPs had diagnosed a patient with a PDM problem in the past 12 months, indicating that PDM presents a reasonably prevalent problem for GPs, a finding similar to the study of American physicians (66.3%).<sup>2</sup> Our findings allude to a significant degree of awareness of the problem by GPs, which concurs with a conclusion from the 2008 NZ qualitative study by Sheridan and Butler.<sup>13</sup>

Two-thirds of GPs reported 'ever' feeling pressured into prescribing a drug for a patient whom they suspected was misusing it, similar to the American physician study where 47.1% of respondents indicated it was 'common' for patients to pressure them into prescribing controlled drugs.<sup>2</sup> One-third of our respondents indicated that they had faced at least one challenge in the past 12 months in relation to PDM. The most common challenge faced was verbal threats, similar to the one-year prevalence of verbal threats against New Zealand GPs.<sup>12</sup> Male GPs were more likely to have faced a challenge, possibly as they are more likely to resist the demands of drug seekers, thereby provoking more challenging encounters. However, it is possible that drug seekers are less likely to be aggressive towards female doctors. Research into aggression towards GPs reported male practitioners were at higher risk of verbal threats, property damage and

assault.<sup>12</sup> Conversely, research into occupational violence and aggression towards GPs<sup>14</sup> noted no gender differences except in relation to sexual harassment.

Benzodiazepines and opioids were identified as the most problematic drug classes, although a lack of concern may also reflect a lack of awareness. Diazepam was the drug that the greatest number of respondents had either refused to prescribe or had concerns about prescribing on at least one occasion in the past 12 months, followed by codeine. Codeine is not required to be prescribed on a triplicate controlled drug form and can be prescribed for longer periods of time compared to other opioids. With this relative lack of restriction on prescribing, it might be a preferred prescribing choice and is possibly perceived as being easier to obtain by drug seekers, possibly in the relative difficulty of obtaining other opioids such as heroin.<sup>15</sup> The finding that codeine was the opioid that the greatest number of GPs had concerns about prescribing is not well reflected in international data,<sup>16</sup> suggesting that codeine misuse may be a New Zealand-specific problem and is reflected in data on misuse from New Zealand's Illicit Drug Monitoring System.<sup>15</sup>

The stimulants methylphenidate and dexamphetamine were not identified as particularly concerning drugs. This could be explained by the supply of these agents being tightly controlled in New Zealand,<sup>17</sup> the conditions treated with these medications—such as attention deficit hyperactivity disorder (ADHD)—involving a

specific set of symptoms difficult to imitate by a drug seeker and, at the time of the research, GPs could only prescribe these drugs with a recommendation from a consultant and special authority from the Pharmaceutical Management Agency of New Zealand.

The action reported by almost all GPs suspecting a patient of PDM was to 'document it'. This action does not put the GP at risk, warns other GPs in the practice about the incident, and refreshes the prescriber's memory of the incident. Referring a patient for treatment was amongst the top five actions reported as being usually taken. However, GPs have previously reported being unaware of where to refer these patients.<sup>13</sup> Therefore some GPs in our study may have answered in a 'socially desirable' manner. Offering educational material was one of the least common actions taken by GPs, and could indicate a lack of useful educational material, available for these patients.

'Increased cooperation with pharmacists', 'working with drug and alcohol specialists' and 'access to a central database' were the three potential interventions deemed to be most valuable by GPs. These findings correlate with those from the 2008 qualitative study by Sheridan and Butler,<sup>13</sup> and suggest the perceived need for the implementation of these interventions remains. It could be postulated that GPs selected 'increased cooperation with pharmacists' to be valuable as the questionnaire and envelope were imprinted with the words 'School of Pharmacy' and hence they wanted to provide an answer 'to please' the researchers.

'More training' and 'improved training' may not have been perceived as valuable interventions by many respondents given their time-consuming nature. However, a study investigating the skills and knowledge gained by undergraduate New Zealand medical students with respect to alcohol and drug misuse in general, found certain deficiencies.<sup>18</sup>

This study has limitations, most importantly the low response rate, which may introduce self-selection bias leading to an overestimation of the size of the problem or the degree of concern

of GPs, for example. However, our inability to gather data on non-responder bias means we have no way to judge this. These limitations are likely to have impacted on the conclusions drawn from the study and hence cannot be an accurate representation of all New Zealand GPs.

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## COMPETING INTERESTS

None declared.