

**Simone Wright**

BS, is a medical student, School of Medicine, Griffith University, Logan, Queensland. simonemwright@gmail.com

Michael Yelland

MBBS, PhD, FRACGP, FAFMM, GradDipMusMed, is Associate Professor of Primary Health Care, School of Medicine, Griffith University, Logan, Queensland.

Kathy Heathcote

MPH, GradDipAppEpi, is Research Officer, School of Medicine, Griffith University, Logan, Queensland.

Shu-Kay Ng

BSc, MScSt, PhD, is Senior Lecturer in Biostatistics, School of Medicine, Griffith University, Logan, Queensland.

Fear of needles

Nature and prevalence in general practice

Background

The extent to which a fear of needles influences health decisions remains largely unexplored. This study investigated the prevalence of fear of needles in a southeast Queensland community, described associated symptoms, and highlighted health care avoidance tendencies of affected individuals.

Methods

One hundred and seventy-seven participants attending an outer urban general practice responded to a questionnaire on fear of needles, symptoms associated with needles and its influence on their use of medical care.

Results

Twenty-two percent of participants reported a fear of needles. Affected participants were more likely than participants with no fear to report vasovagal symptoms, have had a previous traumatic needle experience (46.2 vs. 16.4%, $p < 0.001$) and avoid medical treatment involving needles (20.5 vs. 2.3%, $p < 0.001$).

Discussion

Fear of needles is common and is associated with health care avoidance. Health professionals could better identify and manage patients who have a fear of needles by recognising associated vasovagal symptoms and past traumatic experiences.

■ **Injections play a central role in medical care with an estimated 12 billion injections and 100 million childhood vaccinations given worldwide annually.¹ As general practice patients are commonly required to tolerate needles, a fear of needles may be a barrier to accessing good medical care. There is some anecdotal evidence of the fear of needles resulting in diabetics avoiding their insulin injections, patients forgoing vaccinations, the postponement of urgent surgery, and the avoidance of medical help altogether.²⁻⁵ It is especially important for general practitioners to be aware of their pregnant patients with a fear of needles, as this can lead to suboptimal care, with routine blood tests, injections and pain management (during childbirth) all involving needles.^{2,6}**

There are no published estimates of the prevalence of fear of needles in the general practice setting. Research on fear of needles has been in specialised settings or has focused on needle phobia. Nir et al⁴ reported a prevalence of a fear of needles in 23% of travellers attending a travel health clinic. Fear of dental care (principally the needle and drill) has been reported among 6–51% of college students.^{7,8}

The most dramatic form of a fear of needles is seen in those fitting the DSM-IV-TR classification of needle phobia.⁹ This includes avoidance of the phobic situation, a recognition that the fear is unreasonable, and the interference with the person's routine. The prevalence of needle phobia has been estimated at 2% in a travellers' health clinic and 10% in the general population.^{4,10}

Published case reports have focused on the vasovagal response to procedures involving needles.^{3,11} A vasovagal response includes a drop in blood pressure which leads to dizziness, fainting and shock.⁶ Patients who experience a vasovagal response to needles are more likely to have an intense fear response the next time they seek treatment.¹⁰

Specific measures, including education, graded exposure and teaching relaxation techniques can be taken to minimise anxiety in patients with a fear of needles.^{10,12,13} This makes recognition of this group and their defining characteristics important.

The primary objective of this study was to make a preliminary

Garfield Wright

MBA, BSc, is a medical student, School of Medicine, Griffith University, Logan, Queensland.

Table 1. Demographics of participants

	Fear of needles (%)	No fear of needles (%)	Total (%)*
Gender			
Male	8 (20.5)	40 (31.3)	50 (28.2)
Female	28 (71.8)	68 (53.1)	101 (57.1)
Not specified	3 (7.7)	20 (15.6)	26 (14.7)
Age (years)			
18–29	30.8	20.3	22.6
30–39	30.8	21.9	24.3
40–49	7.7	14.1	12.4
50–59	15.4	18.0	17.5
>60	12.8	22.7	19.8
Not specified	2.6	3.1	3.4

* Total number includes nonrespondents to the question regarding fear of needles

Table 2. Percentage of participants with relatives with a fear of needles and with a previous traumatic experience with needles

	Fear of needles % (n)	No fear of needles % (n)	Total %* (n)
Relative with a fear of needles			
Yes	38.5 (15)	37.5 (48)	36.2 (64)
No	56.4 (22)	57.0 (73)	57.1 (101)
Not specified	5.1 (2)	5.5 (7)	6.8 (12)
Traumatic experience			
Yes	46.2 (18)	16.4 (21)	23.7 (42)
No	48.7 (19)	76.6 (98)	67.8 (120)
Not specified	5.1 (2)	7.0 (9)	8.5 (15)

* Total number includes nonrespondents to the question regarding fear of needles

estimate on the prevalence of fear of needles in a general practice setting. Secondary objectives were to relate the fear of needles to physiological factors, and to determine the extent of avoidance of health care by those with a fear of needles, therefore bringing greater awareness of this condition to health professionals.

Methods

The setting of the study was the Ormeau General Practice, an outer urban practice in southeast Queensland with an active patient population of approximately 12 000. Participants were patients or those accompanying them. The only exclusion criterion applied was to those aged less than 18 years, in order to simplify the ethics approval and consent processes.

Data was collected through a one page questionnaire which was

placed on the reception counter of the practice. Receptionists were asked to offer the survey to any patient or accompanying persons over 18 years of age; however they were under no obligation to do so. Completed surveys were deposited in a drop box on the counter. The questionnaire requested nonidentifying demographic information. It used a similar question to that used in the travellers' health clinic study:⁴ 'Are you afraid of needles?' It then requested information on the level of fear of needles, associated symptoms, the presence of relatives with a fear of needles, the extent of avoidance of past medical treatment, and future common medical procedures involving needles. Associated symptoms included feeling sweaty, dry mouth, shortness of breath, nausea, vomiting, faintness/dizziness and passing out. Future common medical procedures included influenza and tetanus vaccinations, blood tests, pain relief and blood donations. Attached to

the questionnaire was a cover page explaining the questionnaire, the voluntary nature of the research and that consent was implied by completion and submission of the questionnaire.

Ethics approval was obtained from the Griffith University Health Research and Ethics Committee.

In the analysis, respondents were classified according to their response to the question: 'Are you afraid of needles?' A 'yes I avoid them if I can' response was classified as 'fear of needles' and all other responses as 'no fear of needles'. Nonrespondents were classified 'not specified'.

Data were compiled using Microsoft Access with subsequent analysis via Microsoft Excel and SPSS. Fisher's exact test was used to test for statistically significant differences between the proportions of response categories between groups.

Results

A total of 177 questionnaires were collected over a survey period of 2 months. During this period, there were three full time GPs and two part time GPs working at the practice; each seeing up to 40 patients per day. More females (57.1%) than males (28.2%) completed the questionnaire (gender was not specified by 14.7%). Twenty-two percent were in the 'fear of needles' group, and of these, 71.8% were female and 61.6% were aged less than 40 years (*Table 1*).

The percentage of respondents with a relative with a fear of needles was similar in the 'fear of needles' and 'no fear of needles' groups (38.5% and 37.5% respectively, *Table 2*). Previous traumatic experience with needles was reported by 46.2% of the 'fear of needles' group compared with the 16.4% of the 'no fear of needles' group (Fisher's exact test, $p=0.0004$) and by 23.7% of all participants.

Symptoms experienced while receiving a needle are outlined in *Table 3*. The 'fear of needles' group reported a significantly higher

proportion of symptoms of dry mouth, feeling sweaty, shortness of breath, nausea, and faintness/dizziness while receiving a needle.

In the 'fear of needles' group, 20.5% had avoided medical treatment in the past compared to only 2.3% of the 'no fear of needles' group (Fisher's exact test, $p=0.0004$ for the difference). Those with a fear of needles anticipated a significantly lower uptake of all of five common medical procedures involving needles than those without a fear of needles (*Table 4*).

Discussion

This study demonstrated the high prevalence of people (22%) with a fear of needles in an outer suburban general practice, very similar to the prevalence of 23% reported in a travellers' health clinic⁴ and more than twice the population based estimated prevalence for needle phobia of 10%.^{5,9} Over 60% reported physical symptoms and over 20% had fainted in response to needles. A fear of needles was more common in females (72%) and in people less than 40 years of age (60%), similar to the findings in specialised settings studies.^{4,5,14}

There is debate in behavioural literature as to whether fear acquisition is caused by an association with traumatic experiences.¹⁵ Our study failed to show the strong association between a fear of needles and having a relative with fear of needles as reported for needle phobia by Hamilton.⁵ However, we did find a strong association with past traumatic experiences. We also found a strong association between fear of needles and vasovagal symptoms such as sweating, nausea, respiratory disturbances.

Our findings that those with a fear of needles anticipated avoidance of medical treatment involving needles is of concern and points to the need for a prospective cohort study to test if these attitudes translate into actual avoidance of treatment and poorer health outcomes.

Table 3. Percentage of 'fear of needles' group and 'no fear of needles' group with symptoms related to needles

Symptom	Percentage with symptom (sometimes/always)		p value
	Fear of needles	No fear of needles	
Dry mouth	53.8	12.5	<0.00001
Sweaty	64.1	22.6	<0.00001
Short of breath	61.5	13.3	<0.00001
Nauseous	61.5	7.9	<0.00001
Feel faint/dizzy	61.5	11.7	<0.00001
Pass out	20.5	4.7	0.0053

Table 4. Percentage of 'fear of needles' group and 'no fear of needles' group avoiding future medical procedures

Medical procedure	Percentage avoiding future medical procedures		p value
	Fear of needles	No fear of needles	
Flu shot	64.1	19.5	<0.00001
Tetanus	30.8	7.0	0.0004
Blood test	10.3	2.3	0.047
Pain relief	25.6	6.3	0.003
Donate blood	76.9	16.4	<0.00001

Limitation of this study

This study had several limitations and so constitutes a preliminary investigation pointing to the need for further research. The sample size was modest and included an unknown proportion of people who were not seeking medical care at the time. The passive method of offering the questionnaire led to a low uptake and unknown selection bias and there were incomplete responses in up to 9% in sections of the questionnaire. Hence the results may not truly represent the views of a general practice population or indeed the wider community.

Implications for general practice

- Fear of needles may be common within the general practice population and GPs should be aware of this condition when dealing with patients.
- If a patient reports a fear of needles or a past traumatic experience with needles, GPs should take additional precautions with procedures involving needles. Traumatic experiences with a needle may play a role in the development of a fear of needles.
- People with a fear of needles anticipate that they will avoid seeking medical care involving needles and so warrant extra attention in following up tests and procedures requested for them.

Conflict of interest: none declared.

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AFP CORRESPONDENCE afp@racgp.org.au