



# **SURVEY OF NEEDLE PHOBIA: UNDERLYING REASONS, IMPACTS AND MITIGATION STRATEGIES**

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# Disclosures

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- This work was funded by Becton, Dickinson, and Company (BD), Franklin Lakes, NJ, USA.
- Kimberly Alsbrooks and Klaus Hoerauf are employees of BD and own stock at the company.

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- Needle phobia is an **understudied condition**<sup>1</sup>, which **significantly impacts patients** undergoing procedures including venipuncture, blood donations, and those with chronic conditions requiring frequent injections.<sup>2-5</sup>
  - Needle fear exists on a continuum of severity and can lead to **delayed therapy, treatment avoidance, and vaccine hesitancy**.<sup>3, 4, 6-10</sup>
- A significant portion of literature regarding the prevalence and severity of needle phobia has been **focused on specific subpopulations** (i.e., pregnant patients, children, and travelers).<sup>2, 11, 12</sup>
- Research is **limited in the general population**, which reports a **wide range of prevalence rates** from 2.1% to 30%.<sup>5, 13</sup>
- Studies to investigate the **prevalence and severity of needle phobia in a general adult population** are needed to evaluate patient perspectives regarding strategies that can be utilized to address needle fear.



This study aims to identify how common and to what extent needle phobia is experienced by the **general adult population**, and its **underlying reasons, impacts, and related mitigation strategies**.

A global survey was conducted in January 2022 in a general adult population using a 21-item questionnaire based on a TLR that identified under-researched areas

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- **Participants were recruited using the convenience sampling method**, and any adults willing and able to complete the questionnaire were considered potential study subjects.
- The questionnaire was developed based on a comprehensive TLR conducted in the PubMed database, including **peer-reviewed manuscripts published between 2011-2021**.
  - Of 334 studies identified, 263 papers were selected for full-text review after the screening, and **163 were relevant**.
- The contents of **the questionnaire consisted of four main sections**, including multiple-choice, 11-point Likert-like scale, ranking, and open-ended questions.
  - Responses to the questionnaire were **encrypted and submitted anonymously on a secure, web-based survey platform** (i.e., SurveyMonkey).

### Major Components of the Questionnaire

#### Section 1

The prevalence and intensity of needle fear

#### Section 2

Underlying reasons and root causes

#### Section 3

The impacts on medical care and overall well-being

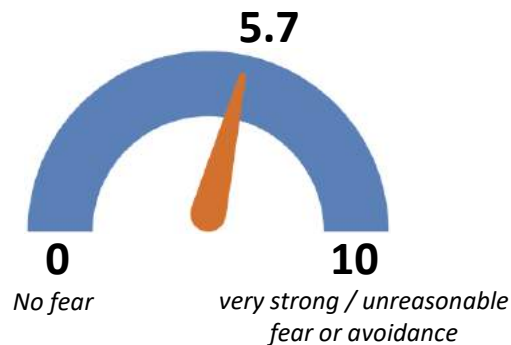
#### Section 4

Potential mitigation strategies

Among the 2,098 participants who completed the survey, 63.2% (n=1,325) reported experiencing needle fear and pain was the largest contributor to their fear

### Characteristics of Patients Experiencing Needle Phobia (n=1,325)

Participant Characteristics	n	%	P-value <sup>a</sup>
Female	739	55.8%	0.004
No prior family history with needle fear	897	67.7%	<0.001
Non-healthcare professional	940	70.9%	<0.001
Non-needle-related medical fears	488	36.8%	<0.001
Condition that requires frequent injections or blood draws	414	31.2%	<0.001



Participants experiencing needle phobia rated the **intensity of their fear** as **5.7 ( $\pm 2.6$ )** on average before, during, and after a medical procedure or intervention

### Largest Contributors to Needle Fear



**Pain**  
**(37.1%)**



**General anxiety**  
**(22.9%)**










**Previous traumatic experience with needles**  
**(17.5%)**

<sup>a</sup> Statistical models used chi-squared test for categorical variables

More than half of participants (52.2%) experiencing needle phobia avoided blood draws, followed by 49.0% for blood donations, and 33.1% for vaccinations

Procedures Avoided to Reduce Exposure to Needles<sup>a</sup>

	n	%
 <b>Blood draw from a vein in the arm</b>	691	52.2%
 <b>Blood donation</b>	649	49.0%
 <b>Vaccinations</b>	439	33.1%
 <b>Injection for pain relief</b>	416	31.4%
 <b>Injection for the treatment of a mild medical condition (low risk of morbidity)</b>	359	27.1%
 <b>Capillary blood draw (fingerstick)</b>	348	26.3%
 <b>Injection for the treatment of a mild medical condition (significant risk of morbidity / mortality)</b>	242	18.3%

- **Avoidance behavior** can significantly impact patients with conditions requiring frequent injections, including **poor treatment adherence** and **increased disease severity**.<sup>14</sup>
- **Vaccine hesitancy** can cause **profound public health implications**, such as **higher infection rates** and **increased morbidity/ mortality** in under-vaccinated communities.<sup>15-17</sup>

<sup>a</sup> Participants could select more than one option

Most participants did not seek help but have shared their fear with providers, and noted that non-invasive alternatives and smaller needles would reduce their fear



While **24.3%** of participants **have seen a therapist** for their needle phobia, most have never sought help



Participants have shared their fear with nurses (61.1%) or physicians (44.4%); however, the **provider helpfulness was rated as 4.9 ( $\pm 3.1$ )** on average

### Percentage of Patient Preferences on Strategies that Reduce Needle Fear

#### Device-related



Non-invasive alternatives (**94.1%**)



Smaller needles (**91.1%**)

#### Non-device-related



Distractions during procedures (**92.1%**)



Relaxation techniques (**91.7%**)

# Key Conclusions

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- Our findings illustrate a strikingly **high prevalence of needle phobia** in a sizeable global adult population.
- **Avoidance behavior is common among patients with needle fear** and can negatively impact the well-being of individuals and their communities.
- **Patients did not perceive clinician responses as helpful**, highlighting a need to devise, evaluate and implement strategies to alleviate needle phobia, and improve the patient experience.



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