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International Cross-Sectional Survey of Bullying, Undermining, and Harassment in the Vascular Workplace

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WHAT THIS PAPER ADDS

This international cross-sectional survey highlights an alarming problem in the vascular workplace, with notable levels of bullying, undermining, and harassment experienced and witnessed by all grades of clinician, particularly within vascular surgery. This adds to existing data suggesting that such behaviours are prevalent in the healthcare workplace. It is the first such survey specifically to investigate the problems faced by physicians treating vascular disease at all career stages. The findings suggest that a concerted effort is required from all stakeholders to improve workplace behaviour and reduce the negative consequences associated with bullying, undermining, and harassment, including poorer patient outcomes.

Objective: Bullying, undermining behaviour, and harassment (BUH) may exist in healthcare settings, impacting on patient care. The aim of this international study was to evaluate the characteristics of BUH experienced by physicians treating vascular diseases at various career stages.

Methods: This was an anonymous international structured non-validated cross-sectional survey distributed via relevant professional societies in collaboration with the Research Collaborative in Peripheral Artery Disease. The survey was disseminated through societies' newsletters, emails, and social media. Data were collected online, allowing free text entries alongside structured multiple choice questions based on previous surveys. Demographics, geographical information, and data relating to stage and training environment were collected.

Results: Of 587 respondents from 28 countries, 86% were working in vascular surgery, mostly at a university hospital (56%); 81% were aged between 31 and 60 years, 57% were working as a consultant, and 23% as a resident. Respondents were mostly white (83%), male (63%), heterosexual (94%), and without disability (96%). Overall, 253 (43%) reported experiencing BUH personally, 75% had witnessed BUH toward colleagues, and 51% witnessed these in the last 12 months. Female sex and non-white ethnicity were associated with BUH (53% *vs.* 38% and 57% *vs.* 40% respectively; $p < .001$ in both cases). While working as a consultant, 171 (50%) reported experiencing BUH, more often among females, non-heterosexuals, those who were not working in their country of birth, and non-white people. Specialty and hospital type were not associated with BUH.

Conclusion: BUH remains a major problem in the vascular workplace. Female sex, non-heterosexuality, and non-white ethnicity are associated with BUH at various career stages.

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INTRODUCTION

There is increasing recognition that bullying, undermining behaviour, and harassment (BUH) exist in healthcare settings and specifically in the surgical workplace.[1—8] This may lead to poor morale among clinicians, the breakdown of effective teamwork, and harm to patients.[1—4,8] A national survey in the USA involving 132 vascular trainees showed that one in two trainees have been bullied, or witnessed a fellow trainee being bullied, in the previous six months.[1] A survey by the Rouleaux Club (the UK Vascular Trainees' Association) in 2017 highlighted that 47% of trainees had experienced BUH during their vascular surgery training, and a follow up survey in 2021 demonstrated that the situation

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appears to have worsened.[9] There have been no wide scale efforts to quantify the magnitude of these issues in vascular healthcare environments among all grades of staff, despite the fact that previous work has shown that narcissism and or BUH traits might be common among vascular surgeons and associated specialties.[10]

The aim of this international survey was to explore the characteristics of BUH in the vascular workplace through an online structured survey of medical practitioners at all career stages working in vascular surgery, interventional radiology, and angiology.

MATERIALS AND METHODS

Survey design and study population

This international, online, cross-sectional survey of the vascular workplace not only targeted medical practitioners in Europe but was also open to those elsewhere. The study was designed and delivered by members of the Research Collaborative in Peripheral Artery Disease (RCPAD [www.rcpad.org]; A.S., I.V.H., H.Z., and K.S.), along with a representative from the Rouleaux Club (R.O.F.) and the wider vascular community (A.A.). The survey design was adapted from the Rouleaux Club's end of year training surveys from 2017 and 2021,[9] and was divided into four parts comprising 44 questions.

A consensus based Checklist for Reporting of Survey Studies (CROSS) is provided in Supplementary Appendix S1. Part A comprised closed questions about demographics, including protected characteristics (gender identity, ethnicity, and sexual orientation) that have previously been identified as being associated with experiencing BUH); part B contained closed questions and allowed free text entries about experiences of BUH; part C comprised closed questions and allowed free text entries on the reporting and management of BUH; and part D contained closed questions and allowed free text entries to explore the effects of BUH on everyday practice (Supplementary Appendix S2). All closed questions were mandatory. This was not a validated survey.

There were no set exclusion criteria, but only the responses of those working in vascular surgery, interventional radiology, or angiology (through a mandatory closed question that included only those options) were considered.

There are no universal definitions of BUH. For the purposes of this study, the definitions applied, based on relevant surveys previously used by the Rouleaux Club in the UK, the Royal College of Surgeons (England), and the validated negative acts questionnaire, are provided in Table 1.[11,12] With regard to professional career stages, the definitions used are provided in Table 2.

Data collection and analysis

The survey was undertaken via the Google Forms survey administration web application and distributed via newsletters, social media channels, and word of mouth; societies and professional networks that supported the dissemination of the survey are listed in the "Acknowledgements" section. Prior to the survey opening, it was advertised on social media and via emails to speciality societies. The survey was active between 7 November 2021 and 20 January 2022, and was anonymous, with no means to prevent multiple participation. Data were held via a password controlled online account and analysed using SPSS version 25 (IBM, Armonk, NY, USA). Demographic data were presented as number (percentage) for numerical and categorical data; cross tabulation and Pearson's chi square test were used to determine the significance of any difference between groups. Significance was taken at the two sided 5%

Table 1. Definitions of types of behaviour used in this survey of bullying, undermining behaviour, and harassment in vascular surgery[11,12]

Type of behaviour	Definition
Bullying	A behaviour or pattern of behaviours that a reasonable person would expect might victimise, humiliate, undermine, or threaten a person to whom the behaviour is directed
Undermining	A behaviour that subverts, belittles, weakens, or wears away confidence (rude, ridicule, belittle, patronise, or similar)
Harassment (discrimination)	An unwanted or unwelcome or uninvited behaviour that makes a person feel humiliated, intimidated, or offended (based on age, religion, culture, sexual orientation, gender, or similar characteristic/trait)
Sexual harassment	Unwelcome sexual advances, request for sexual favours, and other unwelcome conduct of a sexual nature by which a reasonable person would be offended, humiliated, or intimidated

Table 2. Definitions of stages of professional behaviour used in this survey of bullying, undermining behaviour, and harassment in vascular surgery, adapted from UK/European nomenclature

Stage of professional career	Definition
Medical student	In training to become physician or medical doctor
Intern	Completed medical school within last 1−2 years and not yet started specialist training
Resident (including research fellows)	Specialist in training or involved in vascular research while appointed to an official training programme OR not appointed to an official training programme (e.g., trust grade doctor)
Fellow	Completed training, position between resident and consultant (specialist who can provide vascular services independently)
International fellow	Fellow who has come from another country for gaining further experience
Consultant	Doctor who provides specialised care and has fully completed their specialist training

level ($p < .050$). Non-response error was minimised by using mandatory questions. Sensitivity analyses were not performed.

Thematic analysis

Participants were asked to provide examples of BUH in a free text question (question 28; see Supplementary Appendix S2). Responses were anonymised and grouped by theme, and a word cloud was generated using open-source software (www.wordclouds.co.uk; Fig. 1).

RESULTS

Demographic details

The survey was completed by 587 medical practitioners from 28 countries, with the majority working in Europe ($n = 551$; 93.9%), most commonly in the UK ($n = 102$; 17.4%), France ($n = 75$; 12.8%), Spain ($n = 45$; 7.7%), or Germany ($n = 44$; 7.5%) (Supplementary Table S1). The majority of respondents identified as male ($n = 369$; 62.9%), heterosexual ($n = 552$; 94.0%), white ($n = 487$; 83.0%), without disability (n = 564; 96.1%) and most ($n = 502$; 85.5%) were working in vascular surgery. Respondents were most commonly aged 31 − 35 years ($n = 121$; 20.6%), 36 − 40 years ($n = 105$; 17.9%), or 51 − 60 years ($n = 103$; 17.5%). Respondents were predominantly consultants ($n = 336$; 57.2%), working in university or academic hospitals ($n = 329$; 56.0%). Further demographic data and other relevant details are provided in Table 3. It was not possible to calculate a survey response rate due to distribution via multiple mailing lists and open access links via social media.

Personal experience of bullying, undermining behaviour, and harassment within the past 12 months

Some 43.1% ($n = 253$) of the respondents had personally experienced BUH within the last 12 months (Table 4). Recent BUH experience was significantly more common in females (53% *vs.* 38%; $p < .001$). Non-male gender and non-white ethnicity were associated with BUH experience except when working as a fellow or international fellow (for non-males) or as a resident (for non-white ethnicity; Supplementary Table S2). Those who identified as non-heterosexual were more likely to experience BUH as a consultant and not at any other career grade. Those not working in their country of birth were more likely to have experienced BUH in the previous 12 months (55% *vs.* 39%; $p = .017$). There was no apparent association between discipline or hospital setting. When analysing the four countries with the highest number of respondents, there was a high rate of BUH experience in the past 12 months (UK, 63%; France, 36%; Spain, 56%; and Germany, 57%).

Personal experience of bullying, undermining behaviour, and harassment at different career grades

During speciality practice the most common career point during which respondents experienced recent (past 12 months) BUH behaviour was as a resident (57%; $p < .001$ compared across career grades) (Table 4 and Supplementary Table S2). However, when analysing all BUH experience within each career grade, it appeared to be similar throughout speciality practice; notably, of those known to be of consultant grade or retired ($n = 340$), 171 (50.3%) had personal experience of BUH while working as a consultant (Supplementary Table S3).

Figure 1. Word cloud using anonymised free text comments from question 28 ("Please provide an example for every incidence of BUBH that comes to your mind in the box below"). Generated using open source software (www.wordclouds.co.uk). BUBH = bullying, undermining behaviour, and harassment.

Witnessing bullying, undermining behaviour, and harassment toward colleagues

Most people ($n = 442$; 75.3%) witnessed another colleague experience BUH behaviour, with similar proportions of each career grade reporting this (Table 4). Just over half of respondents ($n = 300$; 51.1%) had witnessed this within the previous 12 months, mostly residents (63%). When analysing the four countries with the highest number of respondents, there was a high rate of witnessing BUH (UK, 85%; France, 76%; Spain, 84%; and Germany, 84%).

Frequency and setting of experienced or witnessed bullying, undermining, and harassment

Of those who reported personal or witnessed BUH, this was most commonly on a weekly ($n = 130$; 22.1%), monthly ($n = 99$; 16.9%), or quarterly ($n = 84$; 14.3%) basis. When asked about the perpetrators of BUH, respondents were able to choose more than one option. The most commonly reported perpetrators ($n = 1\,198$) were consultants ($n = 321$; 26.8%), heads of department ($n = 252$; 21.0%), or patient, family member, or member of the public ($n = 148$; 12.3%) (Table 5). When considering only medical practitioners, vascular surgeons were the most common perpetrators ($n = 362/634$; 57.1%), followed by anaesthetists ($n = 84/634$; 13.2%) and interventional radiologists ($n =$

Table 3. Demographic details of respondents to a survey of bullying, undermining behaviour, and harassment in vascular surgery.

Demographic	Overall (n = 587)	Medical student + intern (n = 8)	Resident (n = 134)	Fellow + international fellow (n = 79)	Consultant + retired (n = 340)
Most common age range − y					
31–35	121 (20.6)	1 (13)	43 (32.1)	30 (38)	44 (12.9)
36–40	105 (17.9)	1 (13)	20 (14.9)	19 (24)	65 (19.1)
51–60	103 (17.5)	0 (0)	1 (0.7)	6 (8)	85 (25.0)
Sex					
Male	369 (62.9)	2 (25)	76 (56.7)	41 (51.9)	234 (68.8)
Female	210 (35.8)	6 (75)	56 (41.8)	38 (48.1)	100 (29.4)
Transgender male	1 (0.2)	0 (0)	1 (0.7)	0 (0)	0 (0)
Transgender female	1 (0.2)	0 (0)	0 (0)	0 (0)	1 (0.3)
Transgender non-binary	1 (0.2)	0 (0)	0 (0)	0 (0)	1 (0.3)
Non-binary	1 (0.2)	0 (0)	0 (0)	0 (0)	1 (0.3)
Prefer not to say	4 (0.7)	0 (0)	1 (0.7)	0 (0)	3 (0.9)
Sexual orientation					
Heterosexual	552 (94.0)	6 (75)	126 (94.0)	76 (96)	321 (94.4)
Homosexual	14 (2.4)	0 (0)	3 (2.2)	1 (1)	9 (2.6)
Bisexual	11 (1.9)	2 (25)	4 (3.0)	2 (3)	3 (0.9)
Pansexual	1 (0.2)	0 (0)	0 (0)	0 (0)	0 (0)
Asexual	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Prefer not to say	9 (1.5)	0 (0)	1 (0.7)	0 (0)	7 (2.0)
Ethnicity					
Asian	45 (7.7)	0 (0)	15 (11.2)	3 (4)	27 (7.9)
Black, African, or Caribbean	11 (1.9)	3 (38)	1 (0.7)	4 (5)	3 (0.9)
Mixed or multiple ethnicities	27 (4.6)	1 (13)	7 (5.2)	6 (8)	12 (3.5)
White	487 (83.0)	3 (38)	107 (79.8)	64 (81)	289 (85.0)
Prefer not to say	9 (1.5)	1 (13)	2 (1.5)	0 (0)	5 (1.5)
Other	8 (1.4)	0 (0)	2 (1.5)	2 (3)	4 (1.2)
Current discipline					
Vascular surgery	502 (85.5)	7 (88)	124 (92.5)	72 (91)	279 (82.0)
Interventional radiology	79 (13.4)	0 (0)	10 (7.5)	7 (9)	57 (16.8)
Angiology	6 (1.0)	1 (13)	0 (0)	0 (0)	4 (1.2)

Data are provided as n (%).

61/634; 9.6%). Perpetrators were more likely to be men (n = 205/500; 41.0%).

The majority of BUH took place in the operating room (n = 339/1 082 reported locations; 31.3%), hospital ward (n = 313/1 082; 28.9%), or interventional angiography or radiology suite (n = 107/1 082; 9.9%).

Description of behaviour and relationship to personal or professional characteristics

The incidents were described as undermining in 395 of 952 cases (41.5%), bullying in 308 (32.3%), harassment in 175 (18.4%), and sexual harassment in 62 (6.5%). Incidents were most commonly related to academic training (n = 243/738 reported instances; 32.9%), gender in 170 instances (23.0%), and race in 74 instances (10.0%).

Reaction and response to bullying, undermining, and harassment

When asked how they reacted to experiencing BUH, most respondents waited for the behaviour to stop by itself (n = 231/978 reactions; 23.6%), were not confident to speak up (n = 165; 16.9%), and in 131 instances (13.4%), interrupted or stopped the behaviour. Of those respondents who did not act directly (423 instances), the majority (n = 320; 75.6%) reported that the behaviour continued. When asked about the action taken in the end (476 instances), respondents reported that they primarily spoke to colleagues and mentors (n = 187; 39.3%), remained silent (n = 92; 19.3%), or wrote a formal report or letter (n = 49; 10.3%).

Of those who observed BUH behaviour toward others, the most common reactions (n = 455) were to acknowledge but take no action (n = 106; 23.3%) or to interrupt or stop the behaviour (n = 94; 20.6%). However, a significant proportion of those people (n = 175/391; 44.7%) experienced consequences themselves as a result. If the behaviour was reported, respondents reported that the complaint was taken seriously in 53 of 429 instances (12.4%), whereas the behaviour continued in 159 instances (37.1%) and stopped completely in 33 instances (7.7%).

Half of respondents who reported experiencing or witnessing BUH reported that this behaviour affected their everyday practice (n = 253/507; 49.9%), a similar number considered resigning (n = 252/492; 51.2%), and 74 of 253 respondents (14.6%) resigned from their post (or left the post for a directly related reason, such as termination of contract) as a result of these behaviours. Of those respondents who resigned or were terminated from post, 43 (58%) were male and the rest were female (n = 30; 41%) or transgender (n = 1; 1%).

Table 4. Reponses to survey questions 19 – 21 about bullying, undermining, and harassment (BUH) experience or witnessed experience from respondents according to career grade, with comparisons between grades.

Response	Overall (n = 587)	Medical student + intern (n = 8)*	Resident (n = 134)*	Fellow or international fellow (n = 79)*	Consultant + retired (n = 340)*	p value
Question 19: "Have you personally experienced any BUH in the last 12 months?"						<.001
Yes	253 (43.1)	6 (75)	76 (56.7)	32 (41)	127 (37.3)	
No	324 (55.2)	1 (13)	53 (39.5)	46 (58)	210 (61.8)	
Prefer not to say	10 (1.7)	1 (13)	5 (3.7)	1 (1)	3 (0.9)	
Question 20: "Have you ever witnessed another colleague being BUH?"						.045
Yes	442 (75.3)	6 (75)	104 (77.6)	59 (75)	256 (75.3)	
No	136 (23.2)	2 (25)	26 (19.4)	18 (23)	81 (23.8)	
Prefer not to say	9 (1.5)	0 (0)	4 (3.0)	2 (3)	3 (0.9)	
Question 21: "Have you witnessed another colleague being BUH within the last 12 months?"						<.001
Yes	300 (51.1)	5 (63)	85 (63.4)	42 (53)	153 (45.0)	
No	275 (46.8)	3 (38)	45 (33.6)	35 (44)	181 (53.2)	
Prefer not to say	12 (2.0)	0 (0)	4 (3.0)	2 (3)	6 (1.8)	

Data are provided as n (%).
* Number of respondents known to be the same grade or higher (i.e., removing more junior respondents or those answering "other"), in order to reflect the relative proportion of people exposed to behaviours at the specified career time point. Medical students are not included as a separate group as they are reflected in the overall numbers.

In 20 of 388 instances (5.1%) the perpetrator faced consequences and 107 respondents (26.3% of 406 respondents who reported that the behaviour did not improve after the complaint was handled) stated that they would be confident in addressing the issue within their local medical community to help resolve the issue.

Free text suggestions and thematic analysis

Some 441 respondents provided at least one example of BUH. After anonymising and grouping these non-verbatim quotes into domains of similar themes, a word cloud was generated (Fig. 1), and some illustrative examples are provided in Supplementary Appendix S3.

Participants were asked to share information about initiatives to report and prevent BUH, or to provide any other comments on the subject; suggestions can be found in Supplementary Appendix S4.

DISCUSSION

Bullying in the surgical workplace has been described as "the perfect antidote to self worth and job satisfaction…the perfect crime that leaves no visible marks but effectively destroys one's ego, identity and resilience".[7]

To the authors' knowledge, this is the first international survey to target all career grades, representing a broad snapshot of the vascular workplace, predominantly in vascular surgery. The findings highlight worrying rates of BUH and are similar to the results of previous surveys carried out in the UK and USA.[1,5,6,13–15]

The issue of BUH in the medical workplace has long been highlighted. While there has been increasing awareness and reporting of such behaviours among medical practitioners,[3,16–18] the issues persist, despite beliefs to the contrary.[19] In a previous survey of vascular trainees in the USA, the most common reasons identified for why bullying might occur in vascular training programmes were "high stress environments" and "learned behaviour" from others.[5] These behaviours tend to affect certain groups more commonly. This survey highlighted a higher prevalence of recent (within the past 12 months) experience of BUH among practitioners identifying as female and in those who were of a non-white ethnicity, consistent with other studies.[20,21]

Similar to other studies, the most common perpetrators of BUH were reported to be consultants, and the most common career stage to experience BUH was when working as a resident or fellow. A steep hierarchy has been associated with an increased incidence of BUH; however, the present survey highlights that practitioners not only experience BUH from their seniors, but also from those practising at the same career stage: over half of the consultant respondents in this survey reported a personal experience of BUH during consultant practice. Detailed demographic information regarding perpetrators was not gathered in this survey; however, it would be useful to capture this in future work.

The most common reason for experiencing or witnessing BUH in our survey was in relation to academic training or level of academic knowledge. In a recent systematic review, bullying commonly involved overwork, had a negative effect on wellbeing, and was most frequently perpetrated by male consultants towards more junior females. Victims of academic bullying reported stalled career progression and thoughts of leaving the profession.[22]

While BUH is a persistent problem, it is consistently under reported. Barriers to reporting bullying include fear of a loss of support from supervisors, reputational damage, and a negative impact on career. Bystanders often act in a passive way, for fear of negative consequences or because the perpetrator is part of a dominant group.[23]

Workplace BUH has a significant association with burnout and compassion fatigue,[14,24] and has been associated with depression, sleep disturbance, deterioration of working conditions,[2,14] and suicidal ideation.[3,8,15] Workplace

Table 5. Responses to survey questions regarding perpetrators and perceived nature of behaviour from those respondents who have experienced or witnessed bullying, undermining, or harassment (BUH) behaviour in the last five years.

*Question 23: "If you experienced/observed BUH within the last five years, who was the perpetrator? Multiple answers possible" (n = 1 198)**	
Patient, family member, or public	148 (12.3)
Nursing staff	101 (8.4)
Medical student	9 (0.7)
Resident	72 (6.0)
Fellow	73 (6.1)
Consultant	321 (26.8)
Head of department	252 (21.0)
Administration or management	128 (10.7)
NA	85 (7.1)
Other	9 (0.7)
*Question 24: "If a medical colleague was the perpetrator, what was his or her speciality? Multiple answers possible" (n = 634)**	
Vascular surgery	362 (57.1)
Interventional cardiologist	29 (4.8)
Interventional radiologist	61 (9.6)
Angiologist	14 (2.2)
Anaesthetist	84 (13.2)
Abdominal or general surgeon	33 (5.2)
Other	51 (8.0)
*Question 27: "In your opinion, which of the following best describes the incident(s)? Multiple answers possible" (n = 952)**	
Bullying	308 (32.3)
Undermining	395 (41.5)
Harassment	175 (18.4)
Sexual harassment	62 (6.5)
Other	12 (1.3)
*Question 29: "In your opinion, was this incident related to any of the following? Multiple answers possible" (n = 738)**	
Race	74 (10.0)
Religion	35 (4.7)
Gender	170 (23.0)
Sexual orientation	36 (4.9)
Physical characteristics	59 (8.0)
Disability	8 (1.1)
Pregnancy	35 (4.7)
Academic training or scientific experience	243 (32.9)
Other	78 (10.6)

Data are provided as *n* (%).

* Respondents were allowed to select multiple options; therefore, these numbers represent the total number of responses for each category.

discrimination toward women may impact on their decision to become pregnant.[25] In addition, there is evidence that BUH in the surgical healthcare setting negatively affects patient safety.[26,27] Career progression may be stalled as a result of these behaviours. In a recent survey of 281 women in the vascular surgery workplace in Brazil, > 60% of respondents reported feeling disadvantaged because of their sex.[28]

Aside from the significant human cost to victims of BUH, there are wider implications. Workplace conflict is associated with resignation.[29] Indeed, over half of respondents who experienced BUH in this survey reported that it affected their practice daily, with half considering resignation and 15% actually resigning as a result.

Under certain circumstances, BUH might be illegal. The Occupational Safety and Health Framework Directive (89/391/EEC) obliges employers to ensure the health and safety of their employees, which includes protection from harassment and violence.[30] In the UK, workplace harassment is unlawful under the Equality Act of 2010 (UK), and employers are liable for any harassment suffered by their employees.[31] While it is important to raise BUH awareness, the onus is ultimately on employers and regulators to act.

The surgical community has begun to acknowledge and address destructive behaviours through campaigns and initiatives from speciality societies. In the UK, the Vascular Society formed a working group, published a strategic document, and supports initiatives to counter this behaviour.[32] In the USA, the Society for Vascular Surgery Wellness Taskforce is addressing concerns about surgeon wellness and burnout.[33] Individual and organisational change is mandatory, and speciality societies should produce and enforce clear policies, ensuring that people are held to account. The American College of Cardiology published a Health Policy Statement on Building Respect, Civility, and Inclusion in the Cardiovascular Workplace,[16] which includes tools for individuals and organisations, a suggested framework, and recommends longitudinal data collection and independent evaluation of negative behaviours. Action at an individual level should begin with reflection on a person's own behaviour to identify inadvertent episodes of BUH, while setting a positive example. Individuals could also consider using a "buddy system", nominating a trusted colleague to inform them of inadvertently negative interactions. Protective mechanisms to prevent workplace mistreatment should be in place (implicit bias training and active bystander training) as these are associated with improved physician wellbeing.[32] A number of the survey respondents suggested that there should be designated external, independent contacts for institutions and specialty societies to deal with BUH.

In this survey, only a quarter of those who reported that the BUH behaviour did not improve after the complaint was handled, would be confident in addressing the issue with their local medical community, suggesting that colleagues perceive these mechanisms to be inadequate at present. It is outside the scope of this manuscript to provide a comprehensive overview of suggested action; however, the authors suggest that this is an urgent priority for the vascular community.

The main limitation of this study relates to the distribution of the survey via multiple mailing lists and social media links, while respecting the General Data Protection Regulation, making it impossible to calculate an accurate response rate. Therefore, this survey may be subject to response bias. However, it is worth noting that the results are strikingly similar to previous reports and should be viewed as a snapshot of BUH behaviours in the vascular workplace. In addition, there was a variable number of respondents per country, with a high number of responses from the UK. This may reflect, at least in part, that there has been a focus on these issues in the UK within the last few years and therefore increased awareness.

Another limitation relates to the use of a non-validated questionnaire and lack of external validity. Previous

surveys and questionnaires were adopted and revised; the survey was collated by healthcare professionals from diverse backgrounds at various career levels.

Finally, while the effects of the COVID-19 pandemic were not specifically enquired about, questions pertaining to historical experience covering the entirety of the respondents' careers were included.

Conclusion

BUH in the vascular workplace is common among all career grades. BUH is more frequently experienced by women and those of non-white ethnicity; however, there is a reluctance to report these behaviours. Urgent individual and institutional change is necessary to prevent the detrimental impact of BUH. Speciality societies should mandate data collection, independent evaluation, and the production of frameworks to tackle BUH.

CONFLICT OF INTEREST STATEMENT AND FUNDING

None.

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APPENDIX A. SUPPLEMENTARY DATA

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ejvs.2023.02.075

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COUP D'OEIL

Peri-Prosthetic Fracture as a Rare Cause of Critical Limb Ischaemia

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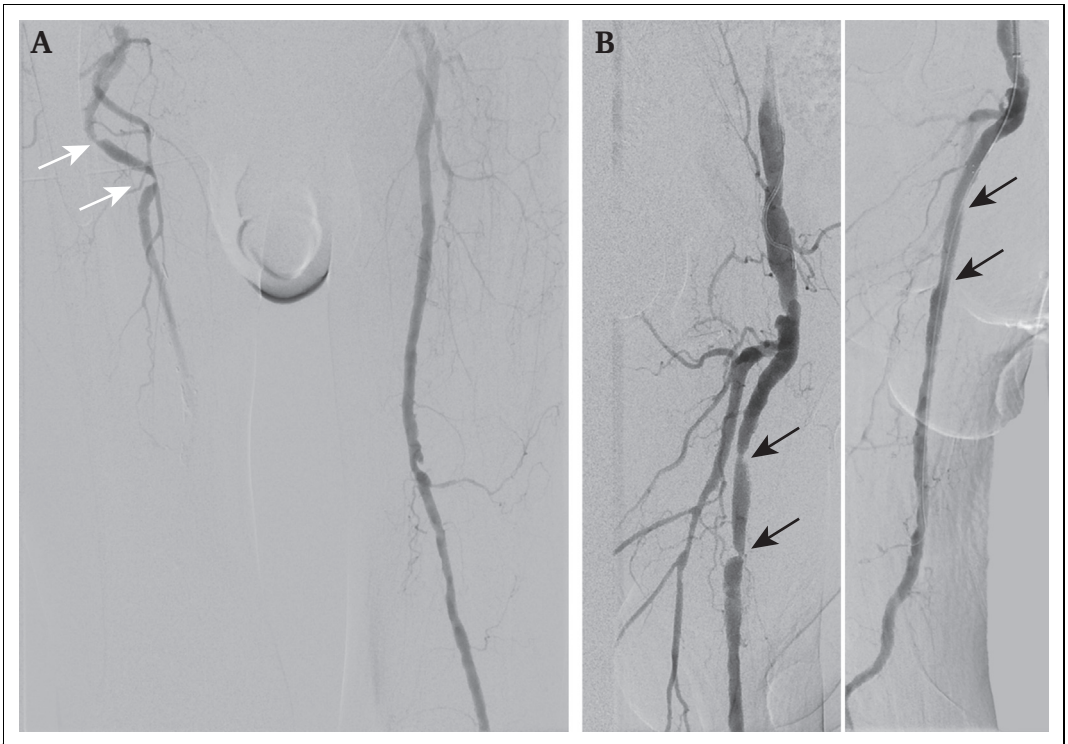

A 75 year old patient who had a total hip replacement nine months previously presented with necrosis of the right hallux for two weeks. The duplex ultrasound revealed a stenosis in the proximal superficial femoral artery (SFA). Digital subtraction angiography (DSA) noted a peri-prosthetic acetabular fracture with luxation of the prosthetic head towards the acetabular roof, which caused kinking of the proximal SFA (A, white arrow). After revising the hip prosthesis, DSA showed correction of the kinking while two atherosclerotic stenoses remained in place of the former kinking (B, black arrow). Angioplasty with a drug eluting stent was performed.

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