






BMJ Open Attitudes towards protecting Emergency Medical Services (EMS) staff from violence and aggression: a survey of adults in Wales

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ABSTRACT

Objective To explore the Welsh public's views of violence and aggression (V&A) directed at EMS (emergency medical services) staff, awareness of policy changes and the reach of media campaigns.

Design/setting/participants Survey involving non-probabilistic purposive sampling of 1010 Wales adults (aged 18+) from a matched panel, representative of the population, derived from a UK YouGov panel of >360 000 adults registered.

Results Most (62.5%) participants had heard of V&A directed towards EMS staff; 81.1% had heard about it through the media. 21.0% of participants had witnessed V&A towards EMS staff; younger participants were more likely to have witnessed an incident 18.7% via a social setting and 81.1% through the media. 90.4% disagreed with the statement that V&A towards EMS staff can be acceptable in some cases, and 53.3% were not aware of related media campaigns. Participants thought intoxication with alcohol (92.4%), drugs (90.5%) and altered mental status following illness and/or injury (84.3%) would likely contribute to V&A towards EMS staff. 22.0% of participants were aware of the Assaults on Emergency Workers Act. Although I thought the act was unlikely to deter perpetrators who were intoxicated with drugs (75.2%), alcohol (75.2%), with altered mental status following illness and/or injury (75.6%) or other member of the public (42.4%). Younger participants were more likely to think the act would deter those intoxicated with drugs, alcohol, with altered mental status following illness and/or injury and other members of the public. Those with social grades of C2/D/E thought the act was likely to deter those intoxicated with drugs.

Conclusion There is good public awareness of V&A directed towards EMS staff in Wales who find it unacceptable. Our survey found limited awareness and perceived effectiveness of related legislation and media campaigns in the last 2 years. Participants thought legislation would not deter those intoxicated with drugs, alcohol or altered mental status. Therefore, we recommend further research to understand and develop evidence-based interventions for these groups of people. We also recommend amplifying messages targeted towards young people and through social settings where V&A may be encountered.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The non-probabilistic sampling methodology employed by YouGov allowed for prompt and cost-effective delivery of a prespecified sample.
- ⇒ Nationally representative sample of the Wales adult population.
- ⇒ Our survey was confined to Wales and may not therefore be representative of the rest of the UK.
- ⇒ Generalisation of the results should be taken with caution as they are based on self-reported survey data, and responses may have been subject to recall bias.

BACKGROUND

Emergency medical services (EMS) staff worldwide have long been at risk of encountering violence and aggression (V&A) directed towards them during their work.^{1–3} This study defines EMS staff as emergency medical technicians (EMTs), paramedics, nurses, call handlers and others who provide prehospital and emergency care. V&A has been reported in 8.5% of patient encounters with USA EMS staff; 52.7% directed towards staff,⁴ and verbal forms of V&A are most prevalent,^{5–8} along with physical injury, and on rare occasions, deaths occur.⁹

Between 61% and 90% of EMS staff have reported being subjected to physical violence during their duties, and 17% have reported being threatened with a weapon.^{2 4 10–12} Exposure to such V&A can result in increased levels of stress, fear, anxiety, emotional exhaustion and burnout syndrome.^{7 13 14} This issue has been reported in the literature since 1978, but despite its significance, nearly half a century later, little effective progress has been made to tackle it.²

Many EMS systems have introduced interventions attempting to tackle this problem, and it has increasingly become a priority within Wales (UK), resulting in policy and

legislation developments and initiatives. We have previously described the multi-agency approach taken in Wales (UK),¹⁵ which includes changes in legislation such as the Assaults on Emergency Workers (Offences) Act,¹⁶ the Obligatory Responses to Violence in Healthcare¹⁷ and the JESG #WithUsNotAgainst Us campaign.¹⁸ These approaches reflect the complexity of V&A directed towards EMS staff and acknowledge the need for further research and evidence-based interventions to better understand and effectively tackle this issue. This study (PEACE 1) is part of a programme of Research and Innovation, which aims to explore strategies designed to protect EMS staff from aggression and violence in conflict encounters.

The overall aim of this project was to explore the Welsh public's views of V&A directed at EMS staff and their awareness of policy changes and the reach of media campaigns associated with recent policy changes. The specific objectives were to:

- ▶ Explore general views on V&A directed towards EMS staff.
- ▶ Explore views on characteristics associated with V&A such as intoxication, drugs, altered mental status and the role of medical illnesses and mental health problems.
- ▶ Explore the impact of policy changes such as The Assaults on Emergency Workers (Offences) Act 2018 and the #WithUsNotAgainst Us campaign in order to gauge the attitudes, understandings and impact of these initiatives in the public.

Methods

Survey design

Questions for the survey were developed from a previously published literature review by our team,¹⁵ along with correspondence and discussion with people and groups with expertise in this area. We worked with YouGov and researchers familiar with this method¹⁹ to optimise question clarity of meaning and ease of understanding. We did not pilot test, as the YouGov Methodology does not allow for this. We did, however, base the survey instrument on a rigorous review of the literature, extensive previous research and through team discussions and review.

Sample

We included a YouGov non-probabilistic purposive sample of 1010 Wales adults (aged 18+) from a matched panel representative of the population derived from a UK YouGov panel of >360 000 adults registered. The achieved sample was weighted to be representative of Wales adults (aged 18+) in terms of age, sex, social class and type of newspaper chosen.²⁰ This sample size will be sufficient to report results at the 5% significance level with 95% CIs with a margin of error of ~1.4%. Therefore, we are confident that the results will reliably reflect the views of the adult population in Wales and allow for potential subgroup exploration.

Patient and public involvement

Patients and/or the public are involved in the PEACE research programme from which this paper derived. They are involved in design, conduct, reporting or dissemination plans of the research.

Analysis

To assess the extent to which our study cohort was representative of the overall population, we expressed all participant characteristics as numbers, percentages, medians and quartiles as appropriate. Where responses to questions were less than 10, they were grouped and reported with an appropriate category. The National Readership Survey classification system²¹ was used to categorise social grade ((A) workers in high managerial, administrative or professional jobs; (B) workers in intermediate managerial, administrative or professional jobs; (C1) workers in supervisory, clerical and junior managerial, administrative or professional jobs; (C2) skilled manual workers; (D) semi- and unskilled manual workers; (E) state pensioners, casual or lowest grade workers and those unemployed with state benefits only).

We analysed survey response data using Stata V17.0 SE according to a predefined statistical analysis plan, using generalised linear regression models to obtain adjusted comparisons. The precise form of the model used reflected the nature of the variable under consideration (logistic models for binary variables; ordinal logistic models for ordered variables). We adjusted the models for prespecified variables which were judged to impact perceptions of EMS staff: gender, age, social grade, Welsh region and working status (working full or part time vs full time student, retired, unemployed or not working/other). All analysis was unweighted, consistent with our previous work using YouGov data.¹⁹ Responses of 'don't know' and 'don't know/can't recall' were excluded from ordinal regression analysis due to not being unordered responses.

Responses to how many times you witnessed V&A directed towards EMS staff were dichotomised into No vs Yes, they had witnessed V&A. A sensitivity analysis explored with characteristics being more likely to be indicators of having witnessed V&A directed towards EMS staff. Participants who had never heard about V&A incident/s were grouped with participants who reported having not heard about V&A incidents via a specific situation. A sensitivity analysis explored the implication of including these participants on characteristics more likely to have heard about V&A incident/s directed towards EMS staff via these situations.

RESULTS

The online survey was conducted between 18 and 24 August 2022 and included a sample of 1010 Wales adults (aged 18+). The characteristics of this sample are presented in table 1. 52.4% were women, and the median age and IQR was 52. Just over half were in social grade

ABC1 (52.5%). 60.2% lived in areas with the most urban conurbations and 39.8% in the areas that are most rural.

Experience of V&A directed towards EMS staff

When considering public experiences, 24.4% had never heard about V&A directed towards EMS staff, while 62.5% had heard about it (table 2). No characteristics were indicative of whether participants were more likely to have heard about an incident or more incidents of V&A towards EMS staff (table 3 online supplemental table 1). Most participants (72.1%) had never witnessed an incident, with 21.0% having witnessed an incident (table 2). Younger participants (OR 0.972, 95% CI 0.962 to 0.981; $p<0.001$) were more likely to have witnessed more incidents, but this included a low number of responses in the 10–20 and 20+ times categories (table 3). A sensitivity analysis, dichotomising the categories into No vs Yes, they had witnessed V&A directed towards EMS staff, also concluded that younger participants were more likely to have witnessed an incident (OR 0.973, 95% CI 0.964 to 0.983; $p<0.001$), supplemental online supplemental table 1.

Of those who had heard about the V&A incident/s, 17.7% heard via work (online supplemental table 2a). Women (OR 1.648, 95% CI 1.065 to 2.548; $p=0.025$), younger participants (OR 0.982, 95% CI 0.968 to 0.996; $p=0.010$) and currently employed (OR 2.992, 95% CI 1.841 to 4.863; $p<0.001$) participants were more likely to have heard via work (online supplemental table 2b). A sensitivity analysis, including participants who had never heard about V&A incident/s, concluded that the same characteristics were more likely to have heard via work (online supplemental table 2c).

Of those who had heard about the V&A incident/s, 18.7% heard via a social setting (online supplemental table 2a). Younger participants (OR 0.972, 95% CI 0.960 to 0.985; $p<0.001$) were more likely to have heard via a social setting (online supplemental table 2b). A sensitivity analysis, including participants who had never heard about V&A incident/s, also concluded that the same characteristics were more likely to have heard via a social setting (online supplemental table 2c).

Table 1 Baseline characteristics of study cohort

Gender, n (%)	
Female	529 (52.4%)
Male	481 (47.6%)
Age (years), median (p25, p75)	52(37 67)
Social grade, n (%)	
A/B/C1	530 (52.5%)
C2/D/E	380 (47.5%)
Welsh region, n (%)	
Mid and West Wales	193 (19.1%)
North Wales	209 (20.7%)
Cardiff	133 (13.2%)
South Wales Central	69 (6.8%)
South Wales East	235 (23.3%)
South Wales West	171 (16.9%)
Working status, n (%)	
No	524 (51.9%)
All workers (net)	486 (48.1%)
p25 – lower quartile; p75 – upper quartile.	

Of those who had heard about the V&A incident/s, 81.1% heard through the media (online supplemental table 2a). Older participants (OR 1.016, 95% CI 1.002 to 1.029; $p=0.021$) were more likely to have heard through the media, while participants from North Wales (OR 0.449, 95% CI 0.210 to 0.962; $p=0.039$) were less likely to have heard than participants from Cardiff through the media (online supplemental table 2b). However, the sensitivity analysis, including participants who had never heard about the V&A incident/s, concluded no characteristics were indicative of being more likely to have heard through the media (online supplemental table 2c).

Of those who had heard about the V&A incident/s, 46.4% heard through discussion with friends/acquaintances/family members (online supplemental table 2a). Females (OR 1.754, 95% CI 1.266 to 2.428; $p=0.001$) and participants from South Wales, compared with Cardiff

Table 2 How many respondents had heard or witnessed V&A towards EMS staff

Responses	Code	N (%)	
		1 a) Heard about V&A (n=1010)	1b) Witnessed V&A (n=1010)
Never	1	246 (24.4%)	728 (72.1%)
Less than 10 times	2	334 (33.1%)	157 (15.5%)
Between 10 and 20 times	3	154 (15.3%)	30 (3.0%)
More than 20 times	4	143 (14.2%)	25 (2.5%)
Don't know/can't recall	Omitted	133 (13.2%)	70 (6.9%)
The column code represents the order of responses; 1 represents the reference category and each subsequent number represents each level in the model.			

(OR 2.138, 95% CI 1.138 to 4.014; $p=0.018$) were more likely to have heard through discussions (online supplemental table 2b). A sensitivity analysis, including participants who had never heard about V&A incident/s, also concluded females (OR 1.626, 95% CI 1.218 to 2.171; $p=0.001$) were more likely to have heard through discussions. Although we did not determine a statistical difference between participants from South Wales and Cardiff. Younger participants (OR 0.991, 95% CI 0.982 to 1.000; $p=0.041$) were more likely to have heard through discussions (online supplemental table 2c).

Acceptability of V&A directed towards EMS staff

The vast majority (90.4%) disagreed with the statement 'V&A towards EMS staff can be acceptable in some cases' (online supplemental table 3a). Younger participants (OR 0.966, 95% CI 0.956 to 0.977; $p<0.001$) and social grades of C2/D/E (OR 1.859, 95% CI 1.301 to 2.658; $p=0.001$) were more likely to agree with the statement (online supplemental table 3b).

Perceptions on the scale of V&A directed towards EMS staff

Perceptions varied on how many incidents of V&A towards EMS staff were reported to police each year in Wales. 33.2% of participants thought there are more than 500 incidents reported to police each year in Wales, while 27.7% did not know (online supplemental table 4a). Males (OR 0.729, 95% CI 0.556 to 0.956; $p=0.022$) were more likely to think more incidents are reported to the police each year (online supplemental table 4b).

Around 61.6% of participants thought 30% or more EMS staff members have, or will experience, being subjected to physical violence, and 15.0% did not know (online supplemental table 5a). No characteristics were indicative of being more likely to have thought EMS staff have, or will experience, being subjected to physical violence (online supplemental table 5b). 60.3% of participants thought 10% or more EMS staff members either have, or will experience, being threatened with a weapon, and 17.1% did not know (online supplemental table 5c). No characteristics were indicative of being more likely to have thought EMS staff have, or will experience, being threatened with a weapon (online supplemental table 5d).

84.3% of participants thought it was likely that an EMS member of staff would experience verbal aggression (eg, intimidation, threatening words or behaviour) from members of the public while they are at work; only 5.0% thought it was unlikely, and 10.6% did not know (online supplemental table 6a). Older participants (OR 1.009, 95% CI 1.001 to 1.018; $p=0.035$) were more likely to think EMS staff would experience verbal aggression while at work (online supplemental table 6b). Participants from South Wales Central, compared with Cardiff (OR 0.420, 95% CI 0.225 to 0.782; $p=0.006$) were less likely to think EMS staff would experience verbal aggression while at work (online supplemental table 6b).

Table 3 Characteristics associated with having heard or witnessed more incidents of V&A towards EMS staff

	Multivariable ordinal logistic regressions OR,(95% CI of OR), (P value)	
	1 a) Heard about V&A (n=877)	1b) Witnessed V&A (n=940)
Female	0.878 (0.689, 1.119) ($p=0.293$)	1.035 (0.757, 1.416) ($p=0.827$)
Age (years)	0.994 (0.986, 1.001) ($p=0.094$)	0.972 (0.962, 0.981) ($p<0.001$)
C2/D/E	0.846 (0.663, 1.080) ($p=0.181$)	1.042 (0.761, 1.427) ($p=0.798$)
Mid and West Wales	0.987 (0.638, 1.528) ($p=0.954$)	1.357 (0.748, 2.462) ($p=0.315$)
North Wales	1.021 (0.671, 1.555) ($p=0.922$)	1.546 (0.882, 2.710) ($p=0.128$)
South Wales Central	0.895 (0.503, 1.592) ($p=0.706$)	1.096 (0.493, 2.440) ($p=0.822$)
South Wales East	1.145 (0.760, 1.725) ($p=0.516$)	1.507 (0.874, 2.597) ($p=0.140$)
South Wales West	0.904 (0.570, 1.434) ($p=0.668$)	1.698 (0.953, 3.025) ($p=0.072$)
All workers (net)	0.992 (0.761, 1.295) ($p=0.955$)	0.824 (0.589, 1.153) ($p=0.258$)
The order of responses is represented in table 2 by the column code. Reference categories: female with respect to male; social grade C2/D/E with respect to A/B/C1; Welsh regions with respect to Cardiff; all workers (NET) with respect to non-workers.		

Most participants (71.9%) felt it was likely that an EMS member of staff would experience physical violence (eg, spitting, punching, kicking) from members of the public while they are at work; 16.0% thought it was unlikely and 12.0% did not know (online supplemental table 6c). Females (OR 1.405, 95% CI 1.089 to 1.813; $p=0.009$) and older participants (OR 1.405, 95% CI 1.006 to 1.022; $p<0.001$) were more likely to think EMS staff would experience physical violence while at work (online supplemental table 6d).

58.7% of participants thought it was likely that an EMS member of staff would experience sexual assault/harassment (eg, use of explicit or implicit sexual overtones, unwanted touching) from members of the public while they are at work; 25.1% thought it was unlikely and 16.1%

did not know (online supplemental table 6c). Women (OR 1.600, 95% CI 1.231, 2.080; $p<0.001$) were more likely to think EMS staff would experience sexual assault/harassment while at work (online supplemental table 6d).

Attitudes to those most likely to direct V&A towards EMS staff

64.2% of participants thought it was likely that the patient being treated would be violent and/or aggressive (online supplemental table 7a). No characteristics were indicative of being more likely to think a patient being treated would be V&A towards the EMS staff (online supplemental table 7b). 61.8% of participants thought it was likely that a relative/friend of the patient being treated would be violent and/or aggressive (online supplemental table 7a). Social grades of C2/D/E (OR 1.344, 95% CI 1.033 to 1.749, $p=0.028$) were more likely to think a relative/friend of the patient being treated would be V&A towards the EMS staff (online supplemental table 7b). 31.0% of participants thought it was likely that a bystander/stranger with no relation to the patient or EMS staff member would be V&A (online supplemental table 7a). No characteristics were indicative of being more likely to think a bystander/stranger, with no relation to the patient or EMS staff, would be V&A towards the EMS staff (online supplemental table 7b).

Attitudes to factors of V&A directed towards EMS staff

We explored participants' perceptions of how likely a factor was to contribute to violent and/or aggressive incidents towards EMS staff. 92.4% thought intoxication with alcohol was likely to contribute to V&A incidents, [table 4](#). Participants from South Wales Central, compared with Cardiff (OR 0.481, 95% CI 0.240 to 0.963; $p=0.039$), were less likely to think intoxication with alcohol would contribute to V&A incidents ([table 5](#)). 90.5% thought intoxication with drugs was likely to contribute to V&A incidents ([table 4](#)). Females (OR 1.400, 95% CI 1.041 to 1.883; $p=0.026$) and older participants (OR 1.015, 95% CI 1.005 to 1.024; $p=0.002$) were more likely to think intoxication with drugs would contribute to V&A incidents ([table 5](#)). 84.3% thought an altered mental status following illness and/or injury was likely to contribute to V&A ([table 4](#)). No characteristics were indicative

of a respondent being more likely to think an altered mental status following illness and/or injury was likely to contribute to V&A incidents ([table 5](#)).

Awareness of and attitudes to legislation and media campaigns related to V&A directed towards EMS staff

We asked participants if, before taking the survey, they were aware of the Assaults on Emergency Workers (Offences) Act of 2018; 22.0% reported being aware of the act (online supplemental table 8a); males (OR 0.621, 95% CI 0.459 to 0.842; $p=0.002$) were more likely to be aware of the act (online supplemental table 8b).

The Assaults on Emergency Workers (Offences) Act (2018) was described to participants in the questionnaire (online supplemental appendix 1). We asked how likely participants thought the Assault on Emergency Workers (Offences) Act (2018) would be at deterring members of the public. 75.2% thought it was unlikely that those intoxicated with alcohol would be deterred from being V&A towards EMS staff, and 15.4% thought it was likely ([table 6](#)). Younger participants (OR 0.987, 95% CI 0.979 to 0.994; $p=0.001$) were more likely to think those intoxicated with alcohol would be deterred ([table 7](#)). 75.2% thought it was unlikely that those intoxicated with drugs would be deterred from being V&A towards EMS staff, and 15.0% thought it was likely ([table 6](#)). Younger participants (OR 0.992, 95% CI 0.984 to 0.999; $p=0.033$) and social grade of C2/D/E (OR 1.315, 95% CI 1.024 to 1.689; $p=0.032$) were more likely to think those intoxicated with drugs would be deterred ([table 7](#)). 75.6% thought it was unlikely that those with an altered mental status following illness and/or injury would be deterred from being V&A towards EMS staff ([table 6](#)). Younger participants (OR 0.989, 95% CI 0.981 to 0.997; $p=0.006$) were more likely to think those with an altered mental status following illness and/or injury would be deterred ([table 7](#)). 42.2% thought it was unlikely that other members of the public would be deterred from being V&A towards EMS staff, and 42.9% thought it was likely ([table 6](#)). Younger participants (OR 0.991, 95% CI 0.983 to 0.999; $p=0.029$) were more likely to think other members of the public would be deterred ([table 7](#)).

Table 4 How likely respondents thought factors contributed to V&A towards EMS staff

Responses	Code	N (%)					
		Q10a) Alcohol (n=1010)		Q10b) Drugs (n=1010)		Q10c) Altered mental status following illness and/or injury (n=1010)	
1=Not at all likely*/ Not very likely	1	18	(1.8%)	34	(3.4%)	66	(6.5%)
2=Fairly likely	2	183	(18.1%)	209	(20.7%)	420	(41.6%)
3=Very likely	3	750	(74.3%)	705	(69.8%)	431	(42.7%)
Don't know	Omitted	59	(5.8%)	62	(6.1%)	83	(8.2%)

*The category has been grouped with another appropriate category due to a low number of responses, $n<10$. The column code represents the order of responses; one represents the reference category and each subsequent number represents each level in the model.

Table 5 Characteristics associated with thinking a factor was more likely to contribute to violence and aggression towards emergency medical service staff

	Multivariable ordinal logistic regressions OR,(95% C.I. of OR) (P value)		
	Q10a) Alcohol (n=951)	Q10b) Drugs (n=948)	Q10c) Altered mental status following illness and/ or injury (n=927)
Female	0.988 (0.720, 1.355) (p=0.940)	1.400 (1.041, 1.883) (p=0.026)	1.259 (0.978, 1.621) (p=0.074)
Age (years)	1.009 (0.999, 1.019) (p=0.070)	1.015 (1.005, 1.024) (p=0.002)	1.001 (0.993, 1.009) (p=0.733)
Social grade C2/D/E	0.977 (0.711, 1.341) (p=0.884)	0.932 (0.693, 1.254) (p=0.643)	1.034 (0.803, 1.331) (p=0.794)
Mid and West Wales	0.753 (0.418, 1.358) (p=0.346)	0.606 (0.352, 1.046) (p=0.072)	1.035 (0.658, 1.629) (p=0.882)
North Wales	0.968 (0.540, 1.736) (p=0.913)	0.968 (0.559, 1.679) (p=0.909)	1.183 (0.760, 1.842) (p=0.457)
South Wales Central	0.481 (0.240, 0.963) (p=0.039)	0.513 (0.263, 1.002) (p=0.051)	0.982 (0.543, 1.773) (p=0.951)
South Wales East	0.731 (0.421, 1.268) (p=0.264)	0.697 (0.413, 1.176) (p=0.176)	1.189 (0.772, 1.832) (p=0.432)
South Wales West	0.738 (0.409, 1.331) (p=0.313)	0.809 (0.463, 1.416) (p=0.459)	1.332 (0.838, 2.116) (p=0.225)
ALL WORKERS (NET)	0.758 (0.538, 1.069) (p=0.114)	0.940 (0.682, 1.295) (p=0.704)	1.113 (0.841, 1.473) (p=0.454)

The order of responses is represented in table 4 by the column code. Reference categories: female with respect to male; social grade C2/D/E with respect to A/B/C1; Welsh regions with respect to Cardiff; all workers (NET) with respect to non-workers.

66.5% agreed with the statement, 'as a result of the Act, those who are V&A towards EMS staff will receive harsher sentences,' and 7.5% disagreed with the statement (online supplemental table 9a). Older participants (OR 1.018, 95% CI 1.010 to 1.026; $p<0.001$) agreed more with the statement that those who are V&A EMS staff will receive harsher sentences, (online supplemental table 9b).

53.3% of participants were not aware of any publicity and/or media campaigns launched in the last 2 years asking people to treat emergency workers with respect before taking this survey (online supplemental tables 10a). Females (OR 1.321, 95% CI 1.027 to 1.699; $p=0.030$)

were more aware of publicity and/or media campaigns launched in the last 2 years (online supplemental table 10b).

DISCUSSION

We believe this is the first UK survey of public attitudes to V&A towards EMS staff. We have reported elsewhere recent efforts to tackle this issue, and how it has become a priority within Wales (UK), resulting in a wide range of policy developments and initiatives such as the Assaults on Emergency Workers (Offences) Act¹⁶ and JESG #WithUs-NotAgainstUs campaign.^{15 18} Our results reflect an awareness of this issue by the public, which may or may not reflect the impact of these initiatives and may be a useful benchmark for future evaluations. Our results also reveal more scope for raising awareness, as 24.4% had never heard about V&A directed towards EMS staff.

Awareness of V&A directed towards EMS staff

Most participants (72.1%) had never witnessed V&A directed towards EMS staff, but worryingly 21.0% had. Younger participants were more likely to have witnessed more incidents of V&A towards EMS staff, which may be due to their presence at social settings where EMS staff may be likely to face V&A such as pubs serving alcohol. Of those who had heard about V&A towards EMS staff, 17.7% had heard via work, with workers, females and younger participants being more likely to have heard via this situation.

Most (81.3%) participants that had heard about V&A directed towards EMS staff did not hear via a social setting (eg, pub, sports team). Social settings present an opportunity to do target activities towards younger participants who are more likely to have heard via social settings. The most prominent situation participants (81.1%) reported having heard about V&A incident/s was through the media, especially older participants. Most participants (82.0%) disagreed with the statement that V&A can be acceptable in some cases, with a further 8.4% of participants disagreeing. Despite this, younger participants and those with a social grade of C2/D/E were more likely to agree with the statement. This is an intriguing finding, and questions emerge as to whether such attitudes are shaped by cultural, socioeconomic or situational factors.

Social acceptance of V&A towards EMS staff may reflect a move towards normalisation of this issue in some social environments and age groups, where V&A may be more prevalent and accepted as part of everyday life. Spector *et al*²² conducted a review of international nursing violence literature and found they are routinely exposed to violence but also revealed a potential socio-cultural dimension to this issue, where physical violence was nearly twice as prevalent in Anglo regions compared with Middle East regions; non-physical violence was lower in Asia. This requires further research, but future initiatives should also target attention on such groups while also recognising that the overwhelming majority disagreed.

Table 6 How likely respondents thought the Assault on Emergency Workers (Offences) Act would deter types of individuals from being V&A towards EMS staff

Responses	Code	N (%)							
		Q12a) Alcohol (n=1010)		Q12b) Drugs (n=1010)		Q12c) Altered mental status following illness and/or injury (n=1010)		Q12d) Other members of the public (n=1010)	
Not at all likely	1	458	(45.3%)	470	(46.5%)	410	(40.6%)	89	(8.8%)
Not very likely	2	302	(29.9%)	290	(28.7%)	354	(35.0%)	339	(33.6%)
Fairly likely	3	77	(7.6%)	79	(7.8%)	85	(8.4%)	368	(36.4%)
Very likely	4	79	(7.8%)	72	(7.1%)	46	(4.6%)	65	(6.4%)
Don't know	Omitted	94	(9.3%)	99	(9.8%)	115	(11.4%)	149	(14.8%)

The column code represents the order of responses; 1 represents the reference category and each subsequent number represents each level in the model.

Table 7 Characteristics associated with who were more likely to think the Assault on Emergency Workers (Offences) Act would deter types of individuals from being V&A towards EMS staff

	Multivariable ordinal logistic regressions OR,(95% C.I. of OR) (P value)			
	Q12a) Alcohol (n=916)	Q12b) Drugs (n=911)	Q12c) Altered mental status following illness and/or injury (n=895)	Q12d) Other members of the public (n=861)
Female	1.033 (0.806, 1.325) (p=0.796)	1.024 [0.797, 1.315 (p=0.855)	1.089 (0.847, 1.400) (p=0.505)	0.904 (0.702, 1.165) (p=0.436)
Age (years)	0.987 (0.979, 0.994) (p=0.001)	0.992 (0.984, 0.999) (p=0.033)	0.989 (0.981, 0.997) (p=0.006)	0.991 (0.983, 0.999) (p=0.029)
Social grade C2/D/E	1.177 (0.918, 1.509) (p=0.198)	1.315 (1.024, 1.689) (p=0.032)	1.116 (0.869, 1.434) (p=0.390)	0.850 (0.660, 1.094) (p=0.208)
Mid and West Wales	0.937 (0.601, 1.461) (p=0.774)	0.935 (0.598, 1.463) (p=0.769)	0.885 (0.566, 1.383) (p=0.591)	1.007 (0.645, 1.575) (p=0.974)
North Wales	1.224 (0.795, 1.886) (p=0.359)	1.261 (0.820, 1.939) (p=0.292)	1.252 (0.813, 1.929) (p=0.308)	0.886 (0.573, 1.369) (p=0.585)
South Wales Central	1.203 (0.676, 2.142) (p=0.529)	1.312 (0.738, 2.334) (p=0.355)	1.322 (0.732, 2.389) (p=0.355)	0.869 (0.479, 1.576) (p=0.645)
South Wales East	0.877 (0.575, 1.338) (p=0.542)	0.904 (0.592, 1.381) (p=0.642)	0.915 (0.601, 1.392) (p=0.677)	0.804 (0.524, 1.234) (p=0.319)
South Wales West	0.931 (0.592, 1.466) (p=0.759)	0.964 (0.610, 1.523) (p=0.874)	1.157 (0.736, 1.821) (p=0.528)	0.829 (0.526, 1.308) (p=0.421)
All (NET)	0.952 (0.725, 1.250) (p=0.721)	1.095 (0.833, 1.439) (p=0.517)	1.108 (0.842, 1.459) (p=0.465)	0.857 (0.648, 1.133) (p=0.278)

The order of responses is represented in table 6 by the column code. Reference categories: female with respect to male; social grade C2/D/E with respect to A/B/C1; Welsh regions with respect to Cardiff; all workers (NET) with respect to non-workers.

Perpetrators of V&A towards EMS

Limited epidemiology of the perpetrators of V&A towards EMS staff exists in the published literature. WAST (2023), however, reported that offenders aged 26–35 account for the highest portion of offending (23.6%), and Friday and Saturday nights present the highest number of emergency worker assaults, accounting for 26.2% of incidents, and alcohol intoxication continues to present as the largest impact factor, applying to a quarter of incidents. Evidence from other settings such as the ED has found perpetrators to be predominantly male,^{23–25} 52–81.6% of cases are associated with mental behavioural disorders (MBD) or significant mental illness, 47% of which requiring psychiatric admission (79%, involuntarily), 11% have a history of violence, 24% are repeat perpetrators (93.5% associated with a MBD), 30% involve alcohol and 17–42.4% involve psychoactive substance or illicit drugs.^{23 26} In our survey, most people agreed that intoxication with alcohol or drugs was a factor more likely to influence V&A towards EMS staff and that for those offenders the change in law was unlikely to deter them.

WAST²⁷ recently reported 1421 assaults in the 6 month period between January and June 2022 and an average of 241 per month. Our survey indicates that the public are not aware of the scale of assaults against EMS staff; for instance, only 33.2% of participants thought there were more than 500 incidents reported to the police each year in Wales. UK/Wales-based data is lacking, but across all measures, the public underestimated the scale of V&A directed towards EMS staff reported in the international literature, where between 67% and 99% of staff report experiencing verbal abuse, 41–80% report intimidation, 26–69% report physical assaults, 10–17% report threats with weapons, 14–61.5% report sexual harassment and 3–13.8% sexual assault.^{5 11 12 28–31} Aside from the immediate physical and psychological impact, such V&A leads to staff fatigue, emotional exhaustion, loss of productivity and, eventually, turnover.^{32 33}

Only 58.7% thought it was likely that EMS staff members would experience sexual assault/harassment from members of the public, with women being more likely to report this. This reflects gender differences in actual sexual harassment/assault of EMS staff. While both men and women EMS staff report sexual harassment, females are significantly more often affected; 24–34.2% of females vs 6–9.2% of males.^{28 34} A similar pattern is observed in other settings.^{35–39} We have previously reported EMS staff experiences of sexual V&A, which reflect international experiences, especially for women, and how socio-cultural constructs of misogyny and sexual V&A within EMS and its culture have not been effectively tackled.⁴⁰ Since conducting this study, this has received high-profile media attention,⁴¹ and the Association of Chief Ambulance Executives and Office of the Chief Allied Health Professions Officer have launched publications aimed at reducing misogyny and improving sexual safety in the ambulance service.⁴²

In our survey, 64.2% of participants thought it was likely that the patient being treated by EMS staff would be violent and/or aggressive towards them while they are trying to treat the patient, while 23.0% thought it was unlikely. Our participants underestimated the likelihood of patients, relatives or their friends being violent and/or aggressive towards EMS staff. 20.00% felt this was not very likely, and 35% thought it was not at all likely, despite patients, relatives or their friends having been reported to be common perpetrators of V&A towards EMS staff.^{5 9 43–45} People with a social grade C2/D/E were more likely to accurately think a relative/friend of the patient would be violent and/or aggressive towards EMS staff, which may reflect actual experiences of V&A in this population.

Most participants accurately recognised the role of intoxication with alcohol and drugs as a contributory factor to V&A directed towards EMS staff. Females and older participants were more likely to think intoxication with drugs contributed to V&A directed towards EMS staff. 84.3% felt it was likely that altered mental status following illness and/or injury made people more likely and contributed to being aggressive and/or violent towards EMS staff, while 6.5% felt it was unlikely. No characteristics were indicative of whether a participant thought an altered mental status following illness and/or injury contributed to V&A towards EMS staff.

Impact of legislation and media campaigns

Most participants (78.0%) were not aware of the Assaults on Emergency Workers (Offences) Act of 2018, which should be of concern. Most felt it was unlikely (75.2%) to deter those intoxicated with alcohol from being violent and/or aggressive towards EMS staff, and only 15.4% thought it was likely. It was somewhat reassuring that males report more awareness of this act. Most (75.6%) thought the act was unlikely to deter those with an altered mental status following illness and/or injury, and only 13.0% thought it was likely to. Views were mixed on whether other members of the public would be deterred from being violent and/or aggressive towards EMS staff. 42.9% thought it was likely and 42.6% thought it was unlikely.

Younger participants were also more likely to think the act would deter people intoxicated with alcohol, drugs, people with an altered mental status following illness and/or injury and other members of the public. This is encouraging, because as highlighted earlier, younger people are more likely to be perpetrators of such V&A. This raises significant questions around the purpose of the act and may indicate the need for other interventions as well as raising awareness of legal consequences among the public. This may include considering how EMS staff can be protected or protect themselves. Can interventions be developed with the public which recognise the challenge of people becoming violent when they are intoxicated? How can it be stopped? As well as working with offenders to understand what would have made a difference to stopping them from assaulting staff. These are very difficult issues, and a combination of approaches will

likely be needed. 66.5% agreed with the statement, 'as a result of the Assault on Emergency workers (Offences) Act, those who are violent and/or assault EMS staff will receive harsher sentences.' However, older participants were more likely to think offenders would receive harsher sentences because of the act, which may reflect support for punitive approaches to this issue. Such intergenerational disparities require further understanding.

Public education messages based on theory are more effective than those that are not.^{46 47} 81.1% of those in our study who reported hearing about V&A had done so through the media, which reflects previous literature recognising how use of mass media, including television, radio, internet and printed materials, is still the best way to spread a message for short-term or long-term campaigns as they keep the message current, reach the largest audiences and cost little per audience member.⁴⁸ These media campaigns should come from many directions and with a persistent and consistent message.⁴⁸ The WHO, therefore, recommends using media campaigns to change attitudes, behaviours and social norms about violence.⁴⁹

46.7% of participants were aware of publicity and/or media campaigns launched since August 2020 asking people to treat emergency workers with respect. Females were more aware of publicity and/or media campaigns. Efficacy of communication campaigns varies greatly,⁵⁰ and they can have a wider range of impacts, including positive,⁵¹ no effects at all⁵² and negative effects.⁵³ Faced with such disparate results, it is difficult to anticipate when and, for whom, anti-violence campaigns will be effective, ineffective or even counterproductive.⁵⁴

Previous research on violent incidents has found that communication campaigns do not seem to achieve their goal of reducing the problem.⁵⁵ Messages that contain prohibitions or seek to change behaviour through fear appeals tend to be ineffective or even counterproductive for reducing violent attitudes and aggressive behaviour.^{55–57} Throughout the 2000s, 'zero tolerance' posters were placed in public areas across the UK to communicate the NHS stance on V&A towards staff, yet no explanation was provided of what zero tolerance meant and few policy and legislative mechanisms were in place to tackle V&A. The 'zero tolerance' policy also lacked a peer-reviewed evidence base and what did exist suggested the approach was ineffective.⁵⁸

The Wales anti-violence campaign asked the public to work with us, not against us, and treat staff with respect while highlighting the consequences of V&A on them. This campaign may, however, have introduced an element of fear, highlighting that V&A on EMS staff was not acceptable and could result in a prison sentence. This may reflect reactance, which is the state of psychological activation and resistance that arises when our freedom is limited or threatened: the most direct consequence of this state is a tendency to resist everything that could be considered as a threat to one's personal liberty.⁵⁹ Media messages often use fear to reduce V&A towards EMS staff but should consider how they may be perceived as

threatening and learn to generate reactance from the intended audience. This has been reported in the literature^{60 61} and has resulted in campaigns failing and even backfiring, resulting in favourable attitudes towards the behaviour in the target population.⁶²

The public appear to support the notion that V&A towards EMS staff is not acceptable, and we have identified groups and settings where this message may be amplified, such as young people, men, those in social grade of C2/D/E and through social settings. Targeting such populations and settings where this issue may be more prevalent seems sensible. Social media is increasingly widely used, especially among younger people, and can rapidly spread misinformation, conspiracy theories, stigma, violence and religious-cultural sentiments damage.⁶³ Countering such messages with social media adverts and behavioural interventions has been shown to be effective when targeted towards young people who engaged in risky drinking and drug,^{64 65} we therefore recommend trialling such an approach to prevent V&A towards EMS staff.

If the aim is to prevent V&A towards EMS staff, it is currently unknown if there are any wider costs to the efforts of communication campaigns, policy and legislation and if they are indeed effective or harmful. Eburn *et al*⁶⁶ provide sophisticated commentary in relation to jail sentences for perpetrators of V&A on EMS staff, which may be relevant to wider initiatives above. They highlight that to protect EMS staff, the offending needs to be prevented before it happens. Harsh sentencing for perpetrators aimed at protecting emergency workers from future violence they suggest is akin to delivering a placebo ('A ... procedure prescribed for the psychological benefit to the patient rather than for any physiological effect' or 'A measure designed merely to humour or placate someone') rather than effective or meaningful protection. Eburn *et al*⁶⁶ do, however, acknowledge that punitive sentences for people who assault paramedics may be called for in some circumstances, that it is not okay to intentionally assault paramedics and that's why it is illegal, as it should be.

It may be argued that legislation and high-profile communication may act as a deterrent for V&A on EMS staff, but this may rely on accurately targeting potential perpetrators, which may be challenging and, as discussed earlier, could have the opposite effect. Media reporting is influenced and is shaped by public attitudes and interests. Therefore, how the media 'frames' narrative related to health professionals can influence the public's perceptions of those people, services and how they discuss public events.^{67–69} Eburn *et al*⁶⁶ highlight such a socio-political dimension to this issue as politicians can win many more votes by being 'tough on crime'. This was also suggested by Hoyle *et al*⁶⁷ who found that newspaper coverage of workplace violence in Scotland was overwhelmingly negative and reductionist in V&A directed to nurses, with a strong tendency to either attribute blame to the patient behaving aggressively or to provide

a platform for politicians to rivals or NHS management. Even when there is awareness in these groups, the preventative capacity of such initiatives may be limited, as most perpetrators may be intoxicated with drugs and alcohol or incapacitated through illness or injury at the time of the V&A. While our study suggests the public are aware of the limitations of such initiatives due to the impact of intoxication, many of the complex related issues and care needs for such groups are rarely presented in the media or discussed with the public.

Scheufele⁷⁰ highlighted that media information is often incomplete, slanted and influenced by the intentions of the journalist, editor or owner of specific media outlets, which may also be the case in V&A directed towards EMS staff. Media reports have also been found to sensationalise and skim the surface of the issues when reporting on V&A directed towards health staff, which may be at the expense of clear and balanced news reporting.^{71 72} The focus on the prosecution of those who perpetrate V&A towards EMS staff may convey the idea of public safety. In reality, such an approach in general for those with drug and alcohol-related issues has proved ineffective in reducing recidivism (criminals re-offending) and those involved in the criminal justice system are more likely to return to prison and show no reduction in substance use after incarceration.⁷³

Eburn *et al*⁶⁴ once again point to the potential costs of focusing on punitive approaches and its potential to reduce trust of EMS in these vulnerable patient groups and communities. Eburn *et al*⁶⁶ urges caution over governments and others appearing to act to placate those calling for something to be done, but rather call for tackling the causes of V&A by funding education, provision of mental health services, drug and alcohol rehabilitation.

LIMITATIONS

This study is limited as it did not involve a probabilistic sample and does not intend to establish causal links. We do, however, report associations among participant characteristics. Members of our team have used similar methods through YouGov in UK surveys of attitudes to Cardiopulmonary Resuscitation and Defibrillator Use,¹⁹ which continue to be valued by the ambulance services community. By using a prespecified sample size, our approach was able to sample this appropriate population quickly and efficiently, which would otherwise have been extremely challenging and costly by other survey methods.

CONCLUSION

Understanding public attitudes towards protecting EMS staff from V&A is important, to consider the societal impact of policy, legislation and initiatives such as information campaigns. Our study has revealed that the public have good awareness of this issue and appear to support the notion that V&A towards EMS staff is not acceptable

but underestimate the actual scale of the problem. We have identified groups and settings where this message may be amplified, such as young people, men, those in social grades C2/D/E and through social settings where V&A may be encountered more often. We also found that females had great awareness and perception of sexual harassment and assault, which reflects the actual experiences of female EMS staff who are more likely to encounter this form of V&A. We, therefore, recommend future campaigns targeted towards men, more research into why and what interventions could help, and research to quantify the actual scale of sexual assault and harassment for ambulance staff from the public and internally.

Participants were, however, less enthusiastic about the likelihood of the effectiveness of legislation in deterring those with drugs and alcohol or altered mental status following illness and/or injury who represent the likely perpetrators of V&A towards EMS staff. It is, therefore, currently unknown whether such legislation, policy initiatives and information campaigns will have any impact on the actual problem. We recommend a UK-wide survey using this methodology as a benchmark. We also recommend that further research needs to focus on the epidemiology of perpetrators and the development of evidence-based interventions to protect EMS staff from aggression and violence in conflict encounters.

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Contributors All authors contributed to the conceptions and design of the study. NR led the study with CH who provided significant input into the methodology. DT conducted statistical analysis with advice and support of FF data analysis. PO, NR, JW, LW and CH provided Ambulance Services and emergency medical service expertise and interpretations. All authors contributed to the interpretation of findings and the drafting of the paper, reviewed successive drafts and approved the final version of the manuscript. NR will act as guarantor.

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Ethics approval This study involves human participants. The study was approved by the Health Research Authority⁷³²² and Health and Care Research Wales (IRAS ref. 313346) and complied with Health Research Authority guidance. Participants were not patients, and the data set were pseudonymised. Organisational approval was received from the Medical and Clinical Services Directorate of the Welsh Ambulance Service NHS Trust. Patient and public participants are involved in the PEACE research program and study including review, input and dissemination from the Welsh Ambulance Services University Trust Partners in Healthcare team. Participants gave informed consent to participate in the study before taking part.

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REFERENCES

- Copeland D, Henry M. Workplace Violence and Perceptions of Safety Among Emergency Department Staff Members: Experiences, Expectations, Tolerance, Reporting, and Recommendations. *J Trauma Nurs* 2017;24:65–77.
- Murray RM, Davis AL, Shepler LJ, et al. A Systematic Review of Workplace Violence Against Emergency Medical Services Responders. *New Solut* 2020;29:487–503.
- Rees NW. Violence and Aggression directed towards Ambulance Services personnel: Guidance through application of behavioural sciences. *Ambulance UK* 2005;20:267–176.
- Corbett SW, Grange JT, Thomas TL. Exposure of prehospital care providers to violence. *Prehosp Emerg Care* 1998;2:127–31.
- Bigham BL, Jensen JL, Tavares W, et al. Paramedic self-reported exposure to violence in the emergency medical services (EMS) workplace: a mixed-methods cross-sectional survey. *Prehosp Emerg Care* 2014;18:489–94.
- Oliver A, Levine R. Workplace Violence: A Survey of Nationally Registered Emergency Medical Services Professionals. *Epidemiol Res Int* 2015;2015:1–12.
- Bernaldo-De-Quirós M, Piccini AT, Gómez MM, et al. Psychological consequences of aggression in pre-hospital emergency care: cross sectional survey. *Int J Nurs Stud* 2015;52:260–70.
- Baydin AK, Erenler AK. Workplace Violence in Emergency Department and its Effects on Emergency Staff. *Int J Emerg Ment Health* 2014;16:288–90.
- Maguire BJ, Hunting KL, Guidotti TL, et al. Occupational injuries among emergency medical services personnel. *Prehosp Emerg Care* 2005;9:405–11.
- Pozzi C. Exposure of prehospital providers to violence and abuse. *J Emerg Nurs* 1998;24:320–3.
- Suserud BO, Blomquist M, Johansson I. Experiences of threats and violence in the Swedish ambulance service. *Accid Emerg Nurs* 2002;10:127–35.
- Boyle M, Koritsas S, Coles J, et al. A pilot study of workplace violence towards paramedics. *Emerg Med J* 2007;24:760–3.
- Taylor JA, Barnes B, Davis AL, et al. Expecting the unexpected: A mixed methods study of violence to EMS responders in an urban fire department. *Am J Ind Med* 2016;59:150–63.
- Yoon HS, Sok SR. Experiences of violence, burnout and job satisfaction in Korean nurses in the emergency medical centre setting. *Int J Nurs Pract* 2016;22:596–604.
- Rees N, Rees P, Hough L, et al. A multi-agency approach to reducing harms from violence and aggression directed towards ambulance services staff in Wales (UK). *JACPR* 2022;14:143–58.
- Assaults on emergency workers (offences) act 2018. Legal Guidance, Violent crime; 2021. Available: <https://www.cps.gov.uk/legal-guidance/assaults-emergency-workers-offences-act-2018> [Accessed 20 May 2022].
- Obligatory responses to violence in healthcare. NHS anti-violence collaborative obligatory responses to violence in healthcare. 2018. Available: <https://nwssp.nhs.wales/corporate-documents/corporate-anti-violence/obligatory-responses-to-violence-in-healthcare-english/> [Accessed 26 May 2022].
- Welsh Ambulance Services University NHS Trust. With us, not against us. 2022. Available: <https://ambulance.nhs.wales/get-involved/with-us-not-against-us> [Accessed 7 Jan 2023].
- Hawkes CA, Brown TP, Booth S, et al. Attitudes to Cardiopulmonary Resuscitation and Defibrillator Use: A Survey of UK Adults in 2017. *J Am Heart Assoc* 2019;8:e008267.
- YouGov. YouGov research data and analytics technology group. 2022. Available: <https://corporate.yougov.com/> [Accessed 7 Jan 2023].
- National Readership Survey. Social grade. 2017. Available: <http://www.nrs.co.uk/nrs-print/lifestyle-and-classification-data/social-grade> [Accessed 20 Nov 2022].
- Spector PE, Zhou ZE, Che XX. Nurse exposure to physical and nonphysical violence, bullying, and sexual harassment: a quantitative review. *Int J Nurs Stud* 2014;51:72–84.
- Nikathil S, Olausson A, Symons E, et al. Increasing workplace violence in an Australian adult emergency department. *Emerg Med Australas* 2018;30:181–6.
- Nikathil S, Olausson A, Gocentas RA, et al. Review article: Workplace violence in the emergency department: A systematic review and meta analysis. *Emerg Med Australas* 2017;29:265–75.
- Knott JC, Bennett D, Rawet J, et al. Epidemiology of unarmed threats in the emergency department. *Emerg Med Australas* 2005;17:351–8.
- Thomas BJ, O'Meara P, Edvardsson K, et al. Barriers and Opportunities for Workplace Violence Interventions in Australian Paramedicine: A Qualitative Study. *Australas J Paramed* 2020;17:1–9.
- Welsh Ambulance Services University NHS Trust. Plea as emergency worker assaults continue to rise. 2022. Available: <https://ambulance.nhs.wales/news/nhs/2022/plea-as-emergency-worker-assaults-continue-to> [Accessed 12 Feb 2025].
- Savoy S, Carron PN, Romain-Glassey N, et al. Self-Reported Violence Experienced by Swiss Prehospital Emergency Care Providers. *Emerg Med Int* 2021;2021:9966950.
- Mausz J, Johnston M. *Violence, in fact, is not part of the job' a qualitative study of paramedic experiences with workplace violence*. Brampton, Ontario: Peel Regional Paramedic Services, 2018.
- Newbury-Birch D, Martin N, Giles E, et al. A survey of paramedics and alcohol related work: ascertaining fear of and level of assault in the North East Ambulance Service. *BPJ* 2017;1:13–20.
- Maguire BJ, O'Meara P, O'Neill BJ, et al. Violence against emergency medical services personnel: A systematic review of the literature. *Am J Ind Med* 2018;61:167–80.
- Montero-Tejero DJ, Jiménez-Picón N, Gómez-Salgado J, et al. Factors Influencing Occupational Stress Perceived by Emergency Nurses During Prehospital Care: A Systematic Review. *Psychol Res Behav Manag* 2024;17:501–28.
- Cao Y, Gao L, Fan L, et al. Effects of verbal violence on job satisfaction, work engagement and the mediating role of emotional exhaustion among healthcare workers: a cross-sectional survey conducted in Chinese tertiary public hospitals. *BMJ Open* 2023;13:e065918.
- Shabanikiya H, Kokabisaghi F, Mojtabaiean M, et al. Global Prevalence of Workplace Violence Against Paramedics: A Systematic Review and Meta-analysis. *HDQ* 2021;6:205–16.
- Akhter S, Rutherford S, Chu C. Sufferings in silence: Violence against female workers in the ready-made garment industry in Bangladesh: A qualitative exploration. *Womens Health (Lond Engl)* 2019;15:1745506519891302.
- Ansoleaga E, Ahumada M, González-Santa Cruz A. Association of Workplace Bullying and Workplace Vulnerability in the Psychological

- Distress of Chilean Workers. *Int J Environ Res Public Health* 2019;16:4039.
- 37 Chappell D, Martino D. Violence at work. Geneva International Labor Organization Report; 2000.
 - 38 Chappell D. Violence at work. International Labour Organization; 2006.
 - 39 Rotundo M, Nguyen DH, Sackett PR. A meta-analytic review of gender differences in perceptions of sexual harassment. *J Appl Psychol* 2001;86:914–22.
 - 40 Rees N, Hawkes C, Williams L, *et al.* Emergency medical systemic frustration of aggression and violence in conflict encounters: an evolved grounded theory. *Health Policy* [Preprint].
 - 41 BBC. Misogyny: welsh paramedics share sexual harassment experiences. 2023. Available: <https://www.bbc.co.uk/news/uk-wales-66397630> [Accessed 21 Oct 2023].
 - 42 AACE. Association of ambulance chief executives: reducing misogyny and improving sexual safety in the ambulance service. 2023. Available: <https://aace.org.uk/reducing-misogyny-and-improving-sexual-safety-in-the-ambulance-service/> [Accessed 29 Nov 2023].
 - 43 Taylor JA, Davis AL, Barnes B, *et al.* Injury risks of EMS responders: evidence from the National Fire Fighter Near-Miss Reporting System. *BMJ Open* 2015;5:e007562.
 - 44 Gormley MA, Crowe RP, Bentley MA, *et al.* A National Description of Violence toward Emergency Medical Services Personnel. *Prehosp Emerg Care* 2016;20:439–47.
 - 45 Rahmani A, Hassankhani H, Mills J, *et al.* Exposure of Iranian emergency medical technicians to workplace violence: a cross-sectional analysis. *Emerg Med Australas* 2012;24:105–10.
 - 46 Guttman N. Persuasive appeals in road safety communication campaigns: Theoretical frameworks and practical implications from the analysis of a decade of road safety campaign materials. *Accid Anal Prev* 2015;84:153–64.
 - 47 Tay R. Drivers' perception of two seatbelt wearing advertisements with different emotional appeals and cultural settings. *J Australas Coll Road Saf* 2011;22:82–9.
 - 48 Wakefield MA, Loken B, Hornik RC. Use of mass media campaigns to change health behaviour. *The Lancet* 2010;376:1261–71.
 - 49 Vivolo AM, Matjasko JL, Massetti GM. Mobilizing communities and building capacity for youth violence prevention: the National Academic Centers of Excellence for Youth Violence Prevention. *Am J Community Psychol* 2011;48:141–5.
 - 50 Cho H, Salmon CT. Unintended Effects of Health Communication Campaigns. *J Commun* 2007;57:293–317.
 - 51 Devlin E, Eadie D, Stead M, *et al.* Comparative study of young people's response to anti-smoking messages. *Int J Advert* 2007;26:99–128.
 - 52 Foxcroft DR, Lister-Sharp D, Lowe G. Alcohol misuse prevention for young people: a systematic review reveals methodological concerns and lack of reliable evidence of effectiveness. *Addiction* 1997;92:531–7.
 - 53 Bushman BJ, Huesmann LR. . Effects of violent media on aggression. *Handbook of Children and the Media*; 2021.2012. 231–48.
 - 54 Merrell KW, Gueldner BA, Ross SW, *et al.* How effective are school bullying intervention programs? A meta-analysis of intervention research. *Sch Psychol Q* 2008;23:26–42.
 - 55 Cárdbaba MAM, Briñol P, Brändle G, *et al.* The moderating role of aggressiveness in response to campaigns and interventions promoting anti-violence attitudes. *Aggress Behav* 2016;42:471–82.
 - 56 Bushman BJ, Stack AD. Forbidden fruit versus tainted fruit: Effects of warning labels on attraction to television violence. *J Exp Psychol Appl* 1996;2:207–26.
 - 57 Roskos-Ewoldsen DR, Yu JH, Rhodes N. Fear appeal messages affect accessibility of attitudes toward the threat and adaptive behaviors. *Commun Monogr* 2004;71:49–69.
 - 58 Whittington R. Attitudes toward patient aggression amongst mental health nurses in the 'zero tolerance' era: associations with burnout and length of experience. *J Clin Nurs* 2002;11:819–25.
 - 59 Brehm SS, Brehm JW. *Psychological reactance: a theory of freedom and control*. Academic Press, 2013.
 - 60 Byrne S, Linz D, Potter WJ. A Test of Competing Cognitive Explanations for the Boomerang Effect in Response to the Deliberate Disruption of Media-Induced Aggression. *Media Psychol* 2009;12:227–48.
 - 61 Kim SY, Levine TR, Allen M. The Intertwined Model of Reactance for Resistance and Persuasive Boomerang. *Communic Res* 2017;44:931–51.
 - 62 Nyhan B, Reifler J, Richey S, *et al.* Effective messages in vaccine promotion: a randomized trial. *Pediatrics* 2014;133:e835–42.
 - 63 Kanchan S, Gaidhane A. Social Media Role and Its Impact on Public Health: A Narrative Review. *Cureus* 2023;15:e33737.
 - 64 Bonar EE, Bauermeister JA, Blow FC, *et al.* A randomized controlled trial of social media interventions for risky drinking among adolescents and emerging adults. *Drug Alcohol Depend* 2022;237:109532.
 - 65 Bonar EE, Goldstick JE, Chapman L, *et al.* A social media intervention for cannabis use among emerging adults: Randomized controlled trial. *Drug Alcohol Depend* 2022;232:109345.
 - 66 Eburn M, Townsend R. Mandatory prison sentences: offering paramedics a placebo rather than protection. *Response: The Journal of Paramedics Australasia* 2018;1–10.
 - 67 Hoyle LP, Kyle RG, Mahoney C. Nurses' views on the impact of mass media on the public perception of nursing and nurse–service user interactions. *J Res Nurs* 2017;22:586–96.
 - 68 Tuchman G. The news net. *Soc Res (New York)* 1978;1:253–76.
 - 69 van Bekkum JE, Hilton S. Primary care nurses' experiences of how the mass media influence frontline healthcare in the UK. *BMC Fam Pract* 2013;14:1–9.
 - 70 Scheufele DA. Framing as a Theory of Media Effects. *J Commun* 1999;49:103–22.
 - 71 Hoyle LP, Smith E, Mahoney C, *et al.* Media Depictions of 'Unacceptable' Workplace Violence Toward Nurses. *Policy Polit Nurs Pract* 2018;19:57–71.
 - 72 Bingham A, Conboy M. *Tabloid century: the popular press in Britain, 1896 to the present*. Oxford: Peter Lang, 2015.
 - 73 Tomaz V, Moreira D, Souza Cruz O. Criminal reactions to drug-using offenders: A systematic review of the effect of treatment and/or punishment on reduction of drug use and/or criminal recidivism. *Front Psychiatry* 2023;14:935755.