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Empowering future Leaders: The Value of Simulation in Active Bystander Training for Medical Students

Abstract

Disrespectful behaviour in the healthcare environment affects clinical learning, impacts those receiving such behaviour and adversely affects patient outcomes. Mandated "diversity training" has minimal impact and, if poorly done, can worsen toxic work environments. Our study aimed to develop a simulation based active bystander training (ABT) session for medical students and to evaluate the impact of this training.

Method:

Sessions comprised short recap of students' learning to date; pre-recorded video vignettes; a card game and immersive simulation. Advocacy with inquiry debrief, facilitated by faculty with equality, diversity and inclusivity (EDI) expertise followed each scenario. Students completed a validated questionnaire developed for this study, pre- and post-intervention.

Results:

Sixty-six medical students from 3 teaching hospitals attended seven 3-hour sessions. The average number of students attending each session was 9 (range 7-12). The questionnaire was completed with matched pairs of pre- and post- intervention scores on a Likert scale by 58 (88%) students. There were significant deficits ($p < 0.001$) in students' self-rated knowledge with a mean pre-intervention score of 38.2 (S.D 5.9) out of a maximum score of 55. This compared with post-intervention score of 49.1 (S.D 4.8). The mean increase in total score post-intervention was 11.0 (95% C.I 9.4-12.5; $p < 0.001$).

Conclusion:

We found significant deficits in medical students' self-rated knowledge of recognising disrespectful behaviour at work. Simulation in active bystander training was effective in reversing this. This is a timely study given the new responsibilities placed on doctors by the GMC to act when witnessing discriminatory behaviour or harassment at work.

Key Message:

- **What is already known on this topic**

Harassment and bullying at work impacts negatively on patient outcomes and student learning. Active bystander training is cited as a potential solution and simulation has been proposed as a method to teach students how to be active bystanders. However evidence for its efficacy in this setting is lacking.

- **What this study adds**

Simulation-based active bystander training was effective in teaching medical students to recognise disrespectful behaviour at work and increased the likelihood of intervention by students when witnessing such behaviour.

- **How this study might affect research, practice or policy**

Further research is required as findings may have implications for incorporation into medical school curriculum and wider use among NHS staff.

Introduction

The UK Equalities Act 2010 was enacted to prevent discrimination and harassment of people with protected characteristics¹. Discrimination and harassment – beyond those of gender, ethnicity, disability, religious belief and sexual orientation - have no place in medical education. Disrespectful behaviour in the healthcare environment affects clinical learning and not only impacts the person receiving such behaviour, but also adversely affects patient outcomes^{2,3}. More concerning is the finding suggesting such behaviours have increased during the pandemic⁴.

The General Medical Council (GMC) recently added a “Racism in the Workplace” resource on its website, acknowledging the unacceptably high levels of racism directed towards staff in health care setting⁵. The GMC states all doctors “... must tackle discrimination where it arises and encourage your colleagues to do the same. You must treat your colleagues fairly and with respect. You must not bully or harass them or unfairly discriminate against them. You should challenge the behaviour of colleagues who do not meet this standard.” Furthermore, they are clear that doctors with extra responsibilities (such as leadership or management roles) “... must actively advance equality and diversity by creating or maintaining a positive working environment free from discrimination, bullying and harassment. You must make sure that your organisation’s policies on employment and equality and diversity are up to date and reflect the law.” These expectations require doctors and students to be able to recognise harassment, bullying, and discrimination as well as being in possession of the skills and abilities to be active bystanders. This places an onus on medical school curricula to facilitate students develop these.

Simulation is an effective medical education tool in the teaching of basic science and clinical knowledge, procedural skills, teamwork, and communication as well as assessment at the undergraduate and graduate medical education levels^{6,7}. Therefore, it has been proposed as a defacto way to teach learners how to respond when witnessing disrespectful behaviour. While there is some information on efficacy and impact in the context of postgraduate medical education, no evidence exists for its inclusion in already over-crowded undergraduate medical curricula^{8,9}.

Attempting to improve matters, many organisations have mandated compulsory "diversity training". However, this has been shown to have little real impact and in fact, if done poorly, can have the opposite intended effect of worsening toxic work environments¹⁰. To inform our

own curriculum developments, we sought to determine if simulation-based training could be effective in teaching medical students how to be active bystanders.

Our study aims were:

1. To develop a simulation-based active bystander training session for medical students.
2. To evaluate the impact of this training utilising a validated questionnaire developed as tool of assessment for our students.

Methods

Active bystander training is part of the wider EDI program embedded into the curriculum throughout Years 1 to 5 in our medical school, under the auspices of General Practice, Communications Skills and Professionalism¹¹. This training includes flexible but compulsory e-learning modules in Year 1 and two large group interactive webinars on Active Bystander Training and Cross Cultural Communications delivered in Year 4 of the curriculum¹². All students who participated in the sessions described below had recently completed the interactive webinars as well as the e-learning modules.

Active Bystander Training Development

An expert panel was convened to determine the content and format of the proposed small group simulation-based Active Bystander Training (ABT) sessions. The panel comprised the medical School leads for EDI, Communication Skills and Quality Assurance as well as colleagues with expertise and experience in Professionalism teaching and in Simulation. Panel members were all active clinicians from a range of specialties including General Practice, Surgery, Paediatrics, Neurology, Geriatrics, Endocrinology, Radiology, as well as Nursing. All members of the expert panels were asked to contribute exemplar scenarios of “difficult” situations medical students could potentially encounter in the clinical environments. Those included could be examples of rudeness, clear discrimination or situations which were “uncomfortable” in nature.

These scenarios were collated and formed the content pool from which video vignettes, immersive simulation and card games were chosen for filming, script development and printing.

A draft programme was agreed and delivered initially to the faculty described above to test content and format. The student voice was also represented in this session by medical students active in LGBTQIA+ and disability/ability groups. This first run helped refine the material and approach, ready for use in the formal teaching sessions.

Questionnaire Development

No suitable tool to evaluate our planned training program was available at the time of the study. A further expert panel was convened to develop a bespoke tool suitable for evaluating the planned simulation based Active Bystander training sessions. The panel consisted of medical educators from our Institution, spread across a range of clinical practice. Details of the panel and questionnaire development process can be found in Appendix 1.

The resultant questionnaire comprised 11 questions/statements – 10 of which had 100% consensus for inclusion while 1 had 89% concordance. The final questionnaire is shown in Appendix 2.

Students are asked to rate each question / statement on a 5 point Likert scale. The first cohort of students were invited to complete the pre-intervention tool twice, approximately a week apart, to help determine the internal consistency and stability of the tool prior to training.

Simulation based Active Bystander Training (ABT): Session Description

Fourth year students attending 3 hospitals for Medicine and Surgery placements, were invited to each session. After completing the pre-intervention questionnaire(s), these students were given a small reference book on anti-racism and a link to anti-sexism game as preparation to their active bystander training session^{13,14}.

The sessions comprised:

- 1) An interactive introduction to recap students' learning to date, emphasising the role of effective communication skills, utilising the ABC approach and "4D's" framework of how to be an Active Bystanders¹² (15-30 minutes).
- 2) Watching pre-recorded video vignettes (x3 cases).
- 3) Playing an ABT themed card game (variable number of cases dependent on time).

- 4) Immersive simulation (x 2 cases).
- 5) Summary with “Take forwards” messages from students.
- 6) Close.

The card game involved students picking a random card from the stack and reading out loud the workplace scenario (akin to an abridged immersive simulation “plot”) written on it. The groups were asked to consider if the described behaviours were appropriate, if not why not (“name it”) and what strategies (the “4Ds” framework) an active bystander could potentially employ. Facilitated discussions were conducted after each scenario in segments (2) – (4). Further details can be found in Appendix 3.

Student preference and protected characteristics

Students were asked to rank their preference of the proffered activities on the day (Introduction, Video Vignette, Card Game and Immersive Simulation) - most (1), quite (2), somewhat (3) and least helpful (4).

Students were also asked if they self-identified as having a protected characteristic and provide feedback, including suggested improvements.

Response to these questions was optional.

Institutional board review was sought for this work but waived as it was undertaken as planned curriculum development and considered part of normal and expected education evaluation process.

Statistics:

Bland and Altman limits of agreement were computed for the two pre-intervention questionnaire scores to determine how consistent questionnaire responses were over time. The change in total questionnaire scores pre and post-intervention were analysed using a paired t-test. All analyses were done using Minitab (version 18) at a 5% significance level.

Results

Questionnaire validation: Internal stability

Matched pairs of pre-intervention questionnaires were collected from the first cohort of medical students (N=22) who participated in this program.

Limits of Agreement were used to determine the agreement between the questionnaire scores on the two occasions. The mean difference between Attempts 1 and 2 was just 0.04 (95% C.I -2.36 – 2.45) – suggesting excellent internal consistency (Figure 1).

Outcome after Simulation based Active Bystander Training session:

A total of 66 medical students from 3 teaching hospitals attended seven 3-hour sessions. The average number of students attending each session was 9 (range 7-12).

The questionnaire was completed with matched pairs of pre- and post- intervention scores by 58 (88%) students. There was a significant increase in the total scores after the intervention ($p < 0.001$) for all statements [including “I feel able to act as a bystander if I witness harassment or disrespectful behaviour”] except Statement 5 (“I know when physical contact is inappropriate”) – Table 1.

The mean pre-intervention score was 38.2 (S.D 5.9) out of a maximum score of 55. This compared with post-intervention score of 49.1 (S.D 4.8). The mean increase in total score post-intervention was 11.0 (95% C.I 9.4, 12.5; $p < 0.001$) – Figure 2.

Student preference and protected characteristics

Thirty-nine students ranked their preference for the different proffered activities. Immersive simulation was ranked as most or quite helpful by 29 students, compared to 26 for video vignette ($p = N.S$).

Thirty-eight (69.1%) of 55 students who answered this optional question self-identified as having a protected characteristic, with 2 students choosing “Prefer not to say” on their forms. We received 33 (50%) free text comments about these sessions from students. A summary of the collated themes from their feedback is tabled (Table 2) and selected comments are listed in Appendix 4.

Discussion

This study demonstrates that medical students significantly improved their total scores after attending small group ABT sessions on how to be active bystanders. This, to our knowledge, is the first study to evaluate the use of simulation to teach Medical Students how to be active bystanders. This study has also developed a stable tool to evaluate simulation-based Active Bystander Training.

This questionnaire identified significant self-rated deficits among medical students, particularly in the knowledge of the 9 characteristics protected under the UK Equalities Act 2010 and the set of skills that can be utilised when witnessing harassment or disrespectful behaviours. This occurred despite repeated exposure to compulsory online as well as written material on EDI in their medical school curriculum, before this training session.

Our ABT session deliberately included varied tools of simulation (immersive role play, reading out scenarios and watching filmed video vignette) to appeal to different learner preferences as well as to gradually build students up towards more challenging immersive simulation situations. Our group agreed the minimum personnel required per session were 2 topic-expert group facilitators, 2 actors (for our chosen scenarios) and an AV technologist to handle the technological requirements to broadcast live video from the simulation room to the main group.

The time and resource required to develop and deliver such a training program, each spanning approximately 3-4 hours, is not insignificant. Although students ranked the immersive role play most highly, it was in practice difficult to get students to volunteer on the day to participate in these segments. It is also the most expensive component of the session. Given the minimal difference in student preference between immersive simulation and video vignette, omitting the immersive simulation component may be an option if curriculum space and economic resource are limited.

Our findings build on previous work establishing simulation as an effective tool when teaching communication skills. It supports the premise that simulation-based active bystander training

could help students develop the ability to recognise unprofessional behaviour and learn the communication skills required to be effective active bystanders. Knowing how to support recipients of unprofessional behaviour – through reporting and formal channels was also recognised as important.

Despite the 2010 Equality Act, there remains acknowledged unacceptably high levels of discriminatory, harassment and bullying behaviour in the workplace. It is time, given GMC's new initiatives and mandates, for medical educators to effect culture change with a "bottom up" approach – through our medical students. Culture change requires every student or doctor, wherever they are in the medical hierarchy, to understand what constitutes unprofessional behaviour and know that there can be no tolerance of inappropriate behaviour in the work environment¹⁵. The role of the active bystander in this challenge has been highlighted as key¹.

Post pandemic, the UK is facing a medical workforce shortfall crisis. A recent BMA survey of over 4000 junior doctors found 4 in 10 are actively planning to leave the NHS as soon as they can find another job ^{16,17}. While 85% cited the current level of pay as the main reason, deteriorating work conditions (83%), lack of recognition of good work (72%), worsening personal well-being (70%) and worsening culture of workplace (61%) were also listed highly.

A culture of professionalism is undoubtedly crucial in retention, recruitment and better mental health at work – as stated by the US Surgeon General in his 2022 public health report ¹⁸. Poor professional behaviour in the healthcare workplace affect team performance and potentially patient outcomes¹⁹.

Psychological safety (for students and faculty) was paramount for the sessions to be authentic and effective. Students were advised by email prior to the session, as well as verbally on the day, that the material being discussed could be potential upsetting. Students were encouraged to contribute and engage as they felt able in the facilitated discussions. They were also informed it was acceptable to not actively participate if that was preferable; that they could take time out and that a quiet room was available if required. They were reminded of the multiple ways they

can get in touch with members of the Medical School Faculty to discuss any issues raised by the session, with particular emphasis on the School's "Raising Concern" online form.

The Socratic Method of elenchus was adopted during discussions ("advocacy inquiry" process of simulation debrief) – never didactic teaching nor shaming, disrespecting participants – rather a collective student-teacher and teacher-student exploration^{20,21}. The exception being when students misconstrued disrespectful behaviour as "par for the course of the hidden curriculum of medical hierarchy", where clarification regarding boundaries was necessitated. Our experienced medical educator-facilitators were thus key in this process – with more than one present to allow "sense checking".

Students appreciated the participation and informality of well-known senior members of the Medical School. They felt this contributed to the authenticity of the sessions as well as signalling genuine commitment by the Medical School to improve the culture and experiences of students while on clinical placements.

Of interest, was the apparent widespread unfamiliarity of the students with our "Raising Concerns" online form as a means to highlight issues to the Medical School. This occurred despite this resource being highlighted verbally and in writing on numerous occasions over the previous 3 years and also during the large group webinar a month prior to the training sessions. It served as a reminder of the importance and value of repeating "important" information in multiple media, as no one method is infallible.

One of the strengths of our study is the diverse panel of experts we drew on to develop and deliver these training sessions. The diversity of experts was not confined to merely protected characteristics, but also included professional expertise, medical students and a lay person to give as wide a perspective as possible of different stake holders in this educational activity. This diversity afforded authenticity and was likely a factor in both the resultant stability of the evaluation tool developed as well as the impact of the training on student's scores. It is also worth noting a high proportion of these otherwise unselected students self-identified as having

a protected characteristic. This reflects published data on the diverse make-up of our NHS workforce and the importance of policies to develop more inclusive, diverse and equitable workforce at every level of the NHS²².

A potential limitation to the study was that just 88% of students completed the pre- and post-intervention questionnaires. This reduced the total number of potential data points we could have analysed and may have inadvertently introduced bias in the form of the self-selection of respondents and students who voluntarily participated in the training sessions. Nevertheless, our completion rate is extremely high when compared to other studies and would have limited any potential bias.

Another potential limitation was faculty members, types of discussions and number of card game scenarios discussed were different between sessions. This resulted in a “non-standardised” teaching intervention that was being evaluated across the period of study. However, this was deemed a reflection of “real world” teaching and serves to demonstrate that the training program was effective despite the non-uniformity and lends it well to potential transferability and sustainability beyond this small study.

Future work could evaluate the efficacy of the training program if rolled out across the whole year group (circa 400); the efficacy of this/similar training program delivered without immersive simulation or at a different medical school. This would allow for external and geographical validation of the questionnaire, as well as the potential role of inter-professional learning of this material. We are planning to evaluate longer term impact with follow up focus group discussion and questionnaire.

Conclusion

We found significant deficits in medical students' self-rated knowledge of recognising disrespectful behaviour at work, particularly with regards to protected characteristics. Simulation in active bystanders training was effective in reversing this. This is a timely study given the new responsibilities placed on doctors by the GMC to act when witnessing discriminatory behaviour or harassment at work.

Table 1 : Change in scores for each question.

Question	Pre-intervention Mean (SD)	Post-intervention Mean (SD)	p-value
1	2.28 (0.91)	4.74 (0.48)	<0.001
2	3.33 (0.91)	4.55 (0.57)	<0.001
3	4.05 (0.58)	4.55 (0.54)	<0.001
4	3.53 (0.84)	4.33 (0.63)	<0.001
5	4.35 (0.85)	4.55 (0.63)	0.097
6	4.29 (0.68)	4.67 (0.47)	<0.001
7	3.83 (0.84)	4.41 (0.68)	<0.001
8	3.66 (0.83)	4.33 (0.83)	<0.001
9	2.66 (0.91)	4.19 (0.81)	<0.001
10	3.07 (0.92)	4.40 (0.67)	<0.001
11	3.14 (1.02)	4.41 (0.65)	<0.001

Table 2: Students comments - Summarised theme of feedback comments (N=33)

Themes	Numbers (N)
Excellent session, very engaging	23
I felt the session was a safe space, I felt relaxed and comfortable sharing my experience	18
Loved how open everyone was	8
Facilitators compliments (warm etc)	6

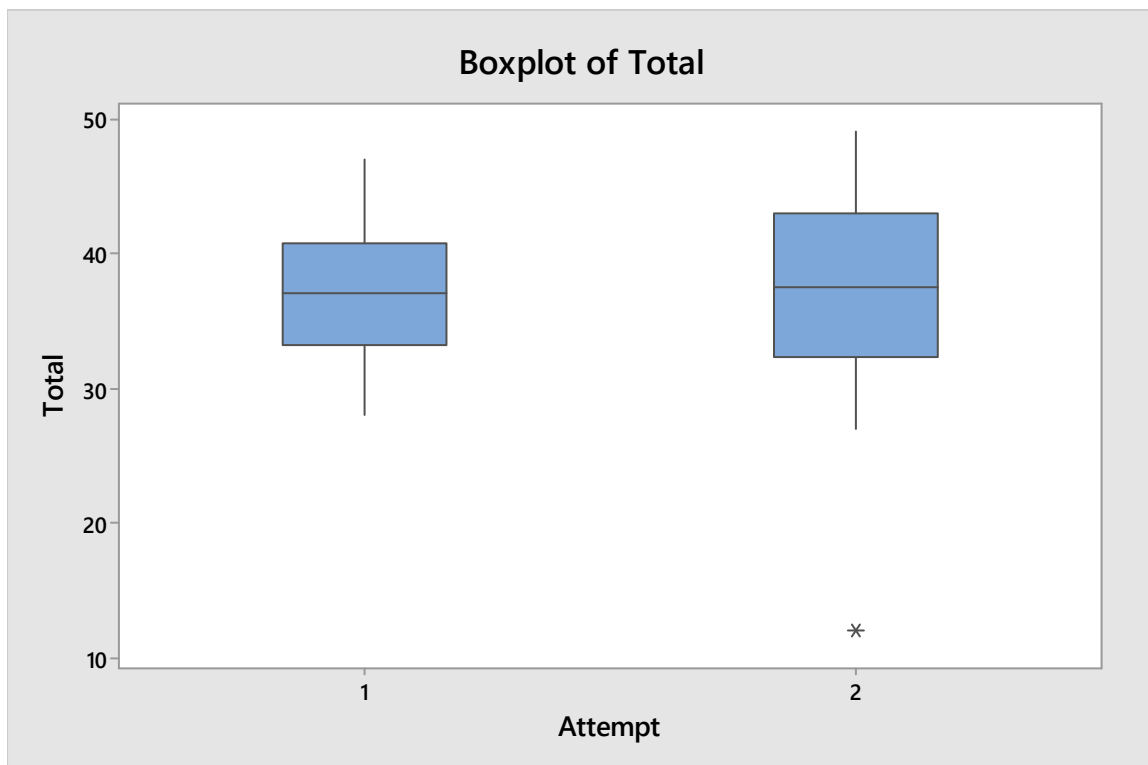


Figure 1 : The boxplot shows the distribution of total scores on the two baseline questionnaire attempts. The hypothesis being that total scores are equivalent.

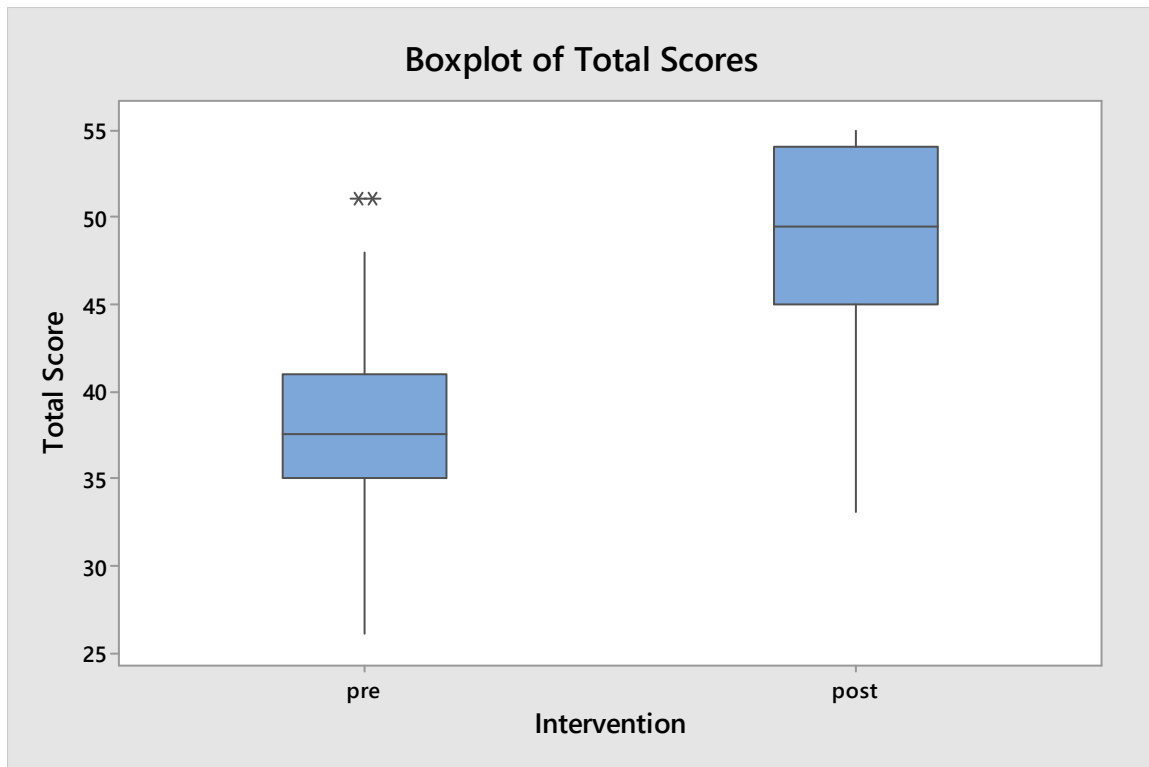


Figure 2: Boxplot of total scores pre- and post-intervention.

Legend

Figure 1 : The boxplot shows the distribution of total scores on the two baseline questionnaire attempts. The hypothesis being that total scores are equivalent.

Figure 2: Boxplot of total scores pre- and post-intervention.

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Appendix 1: Questionnaire Development

Expert panel and Question/Statement inclusion details:

Program leadership, medical students (N=2) and lay person (N=1) were also included. Panellists were chosen for their leadership positions, experience in dealing with challenging situations involving medical students, as well as their lived experience.

Panellists were invited by email to submit questions or statements suitable for the proposed evaluation tool. The statements should reflect what 4th year (clinical) students are expected to know about professional behaviour in the clinical work place (“Knowledge” domain) and how to be an active bystander (“Likelihood to Intervene” domain). Panellists’ question submissions were informed by multiple resources, some of which are listed below*.

Panellists were then invited (by email link to a Google form) to evaluate the collated statements for content validity (are the statements appropriate, accurate and interpretable) and for inclusion in the tool. One reminder email was sent at 4 weeks. Response was collected anonymously, and through a planned iterative modified Delphi process, repeated until a consensus was reached. A statement was included if 75% panel agreement was achieved.

The expert panel comprised 10 members. Nine (90%) panellists responded to the first round of the Delphi consensus to evaluate the statements for inclusion at 6 weeks after the initial email invitation.

Thirteen questions and statements suitable for the tool were collated in total - 10 under “Knowledge” and 3 under “Likelihood to intervene” domains. Two statements had only 67% concordance and were excluded.

Of the remaining 11 questions/statements: 10 had 100% concordance with 89% concordance on the remainder. Given the high level of concordance, only 1 round of the Delphi was conducted. The final questionnaire is included as Appendix 1.

Panellists self-identified with 8 of the 9 characteristics protected under the Equalities Act 2010.

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Appendix 2:

The Glasgow Active Bystander Training Evaluation Tool

Please respond on a 5-point Likert scale your agreement with each statement below – 1: Strongly Disagree to 5: Strongly Agree.

1. I know the 9 characteristics protected under the UK Equalities Act 2010.
2. I can identify discrimination based on protected characteristics
3. I can identify harassment at the work place
4. I feel confident identifying when microaggression occurs at work
5. I know when physical contact is inappropriate.
6. I can identify when someone is being humiliated in public.
7. I can distinguish constructive feedback from persistent and unjust critical comments / monitoring of my work.
8. I can identify if someone is under unreasonable pressure to produce work to a challenging standard or deadline.

This next section will ask about your likelihood of intervening as an Active Bystander.

9. I am aware of policies and procedures I can follow if I witness harassment or disrespectful behaviour.
10. I have a set of skills I can use to help if I witness harassment or disrespectful behaviour.
11. I feel able to act as a bystander if I witness harassment or disrespectful behaviour

Appendix 3: Details of each Active Bystander Training session.

Each of the session's components (watching video vignettes, card games and immersive simulation) took the format of:

- (i) Watching, reading or playing out each scenario
- (ii) Facilitated group discussions about what the students saw and felt was happening,
- (iii) Exploring what strategies they might employ or language they could use to be active bystanders, all the while reinforcing the ABC and 4D's framework.
- (iv) Summary debrief was conducted at the end of each video/card/immersive simulation scenario before moving onto the next scenario or activity.

Although students were all encouraged to volunteer to participate in the immersive simulation, mindful of the variable enthusiasm of students towards such activities, the immersive simulation component are designed to be able to run as long as 1 student volunteered.

Prior to the formal delivery of these pilot training sessions, a trial "dry run" was conducted. Medical students representing the student body as well as student societies with protected characteristics were invited to attend, to provide feedback for improvement.

Every participant (student and faculty) wore a name badge. After the initial introduction of faculty – who were all well known to students because of their roles within the Medical School – first names only were used by everyone for the remainder of the session to minimise any discomfort that could arise from, and to flatten any, perceived power hierarchy. This served also to encourage the feeling of camaraderie on the collective journey ahead and trust within each group.

Appendix 4: Indicative student feedback comments

“The session felt very relaxed (I was apprehensive at first) but it was good to have senior medical school staff present and listening without judgement.”

“Gave us a structured way to respond to uncomfortable situations and stand up for others”

“Exposure to people scenarios that affect people with protected characteristics was very good. We had a good breadth of topics and situations discussed, as well as our responses to said situations. Incredibly well executed and I look forward to more of these sessions in future for me and my peers/juniors.”

“Good amount of discussion and interaction can’t think of any improvement.”

“I really liked how warm and open the facilitators were in this session. I felt very safe and that I could discuss anything. I also really liked the access this gave us to senior members of the education team. It makes it so much easier to bring up points to them when you have met them in such a safe environment. I really liked the session so no points of improvement. It taught me so much about by standing and how it isn’t all aggressive and calling people out. We saw how subtly (sic) is still by standing.”

“Very safe space, felt comfortable to talk about my concerns and experiences.”

“Loved how open everyone was. It felt like a very safe place. All our opinions and thoughts were handled with the utmost respect. [facilitator] we love you!”