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Street Doctors Northern Ireland: A mixed-method process and impact evaluation of a youth violence reduction intervention

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ABSTRACT

Community violence is an enduring challenge that disproportionately affects youth. This is particularly the case in post-conflict settings such as Northern Ireland. Evidence supported youth work interventions are an important yet under-evaluated area of violence prevention efforts. Youth work approaches have demonstrated significant utility in reaching those most at risk of violence related harm and have the potential to save lives. Street Doctors is a UK charity that seeks to empower young people affected by violence with the skills and knowledge to save lives. Despite burgeoning delivery across the United Kingdom, there has been a paucity of robust evaluations undertaken thus far. The present study reports the findings of a process and impact evaluation of Street Doctors during its pilot into Northern Ireland. The brief intervention was a highly acceptable, thus demonstrating its potential to be implemented within the context of routine youth service provision. Despite the favourable attitudes of participants, no effects were found. Practical implications are discussed.

1. Introduction

Globally, there are an estimated 500,000 people murdered each year, and this appears to be increasing at an annual rate of 2% (Mitis & Sethi, 2015). Youth violence has received particular policy attention, with academic research consistently demonstrating that young people, particularly young males, are at elevated risk of violence-related harms (WHO 2011; Malik, 2020). Administrative data suggest that interpersonal violence is the second leading cause of death for those aged 10–19 (WHO, 2016; UNICEF, 2017), and for every fatality, there are approximately twenty other victims who require medical attention (UNODC, 2019). In the UK, researchers have noted the rising trajectory of more serious injuries, including those caused by knives and sharps (Vulliamy et al., 2018; Wortley & Hagell, 2020). In Northern Ireland too, there has been an upward trend in violence related incidences. Latest police recorded crime data illustrate a 21% increase in all ‘violence against the person’ reports (excluding harassment) in the last decade (PSNI, 2023). Whilst crime statistics are not routinely disaggregated, we know from a number of empirical investigations that youth are disproportionately at risk of community violence (see for example Walsh & Gray, 2021). In a novel study of Emergency Department data in Northern Ireland, Walsh

and Smyth (2022) found that violence was temporally clustered around specific days and months, but also that it was victims of violent injuries in the 16–19 age range that were most likely to require clinical treatment- an indication of injury severity. But not all youth are at the same risk. There is growing evidence that in NI, violence is highly clustered in areas where young people are exposed in the home, in the community and among peers, all of which take place in the context of ongoing paramilitary violence (Walsh & Gray, 2021; Walsh, 2022). Indeed, violence is the single most commonly experienced trauma among young people in Northern Ireland (Bunting et al., 2020).

1.1. Youth work-led approaches

Understanding the utility of reaching youth at risk of violence related harms through youth work approaches is an emerging area of violence prevention research (Walsh, 2023). Youth workers are a valuable resource for engaging young people in pro-social, developmental activities and social, emotional and behavioural change (Walsh & Harland, 2019), and in the context of youth violence, offers the promise of reducing harm (Walsh, 2021) and saving lives (Thapar, 2021). In their study of youth work provision in England, UK Youth (2022) estimated

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that the indirect value of youth work exceeded £ 3bn, with more than £ 500 m in savings from reductions in crime alone. Socially targeted policies frequently cite the potential of youth work to contribute in a collective response to issues such as interpersonal violence (Maxwell & Corliss, 2020). In the context of divided and violent societies such as Northern Ireland, those experiencing the greatest ecological stress are also those most often at risk of marginalisation within communities (Harland & McCready, 2014) and most likely to be exposed to violence and its harms (Fowler et al., 2009).

2. Street doctors

Street doctors is a UK charity that was first established by medical students in Liverpool in 2008 (McCartan et al., 2013) that seeks to empower young people affected by street violence with the skills and knowledge to save lives, and increase their understanding of its medical and psychological consequences (Street Doctors, 2021). Street Doctors employ a peer training methodology, and via Street Doctor practitioners, train young medical volunteers (student doctors, nurses and paramedics) emergency lifesaving training to youth in violence affected communities. Whilst the training itself is akin to traditional, peer led first aid approaches, the distinctiveness of the Street Doctor approach lies in the specific focus on violence related injury, violence related first aid, and importantly, the Street Doctors seek to actively embed the training in communities most affected by violence.

In their latest annual impact report, Street Doctors report having twenty-three volunteer teams across eighteen UK sites. Since its inception in 2013, it has trained more than 22,000 young people, with close to 10% of these trained in 2021 alone ($n = 2096$). More recently, Street Doctors have become embedded in several Violence Reduction Units that have been commissioned as part of the Violence Reduction Fund to lead and coordinate a preventative, whole system approach to violence reduction (Home Office, 2023). Despite their geographical reach, and the incremental increase in financial investment, there has been a paucity of robust evaluations undertaken. For example, Keele University employed a process evaluation of the intervention in the West Midlands, however, this relied exclusively on qualitative data from interviews, did not code session observations, and had no formal impact assessment. An evaluation report by Red Quadrant (2015) demonstrated a high level of satisfaction with the Street Doctor approach and the importance of the peer facilitation method. However, this evaluation lacked a coherent methodological frame, and did not include sufficient details regarding data collection or analyses, thus making interpretation of its findings more difficult. Although McCartan et al. (2013) employed a pre-post-test design using self-report metrics, the full text that includes the methodology, analyses, and results has not been published. The most widely available data on Street Doctors' impact is via a range of self-report metrics that are reported in their annual impact reports collected at a single time-point (Street Doctors, 2022). These metrics and most recently reported responses for each include: young people understand the consequences of violence (96%); young people know what to do if someone is knocked unconscious (96%), young people know what to do if someone is bleeding (95%), young people are willing to act if first aid is required (89%). However, Project Oracle, a scheme that validates project evidence against the standards, reported that these metrics were insufficiently detailed on their own to assess effectiveness (Warner, 2016). Street Doctors expanded into Northern Ireland as a pilot during 2022.

The present study adds to the existing evidence around the Street Doctors' contribution to violence prevention and reports the findings of a process and impact evaluation of the intervention in Northern Ireland. The following questions will be answered: (i) Was the intended audience engaged?; (ii) was it implemented as intended?; (iii) what factors facilitated and impeded delivery?; (iv) was the training acceptable for young people and for youth workers?; (v) and what was the impact of training on reducing youth violence?

3. Method

Process evaluations are critical elements of understanding effective prevention (Densley et al., 2017). They have the potential of opening the 'black box' of prevention by helping us to understand more clearly if and how any intervention has been successful or not (Harachi et al., 1999). Process evaluations are, however, rarely summative. By their nature, they are formative, providing a map for how interventions can be revised and adapted to reduce barriers and improve outcomes (Waterman et al., 2020). The overarching aim in any process evaluation is to systematically evaluate the systems and processes that influence the level of implementation and identify if and how these contribute towards impact. Process evaluation can for example examine adaptation from the original design (Durlak & DuPre, 2008), acceptability of the intervention among the participants (Bowen et al., 2009), barriers and facilitators (Damschroder, 2009), and outcomes. This study examined the process by which the Street Doctors training was implemented, the level of satisfaction with the training and the outcomes related to its implementation in the Northern Ireland context.

A pragmatic and mixed-methods process evaluation framework was adapted from that developed by Hickey et al. (2016). Drawing on the Medical Research Council (MRC) framework (Moore, 2015) for process evaluations, qualitative data was collected alongside quantitative data (Munro et al., 2010) to allow the author to understand the context in which the activities were undertaken, the implementation process (i.e. what was delivered, how and over how long), the mechanisms of impact, and the outcomes. This triangulation of qualitative data collected alongside quantitative data allowed the author to make wider interpretations regarding the intervention (Haynes et al., 2014). The consolidated Framework for Intervention Research (CFIR) (Damschroder, 2009) guided the investigation of barriers and facilitators to Street Doctors intervention. CFIR provides a 'menu' of operational constructs that facilitate or impeded the implementation process. The specific research questions are outlined in Table 1.

3.1. Measures

In line with recommendations from previous evaluations of Street Doctors (Warner, 2016), a pre-post survey instrument was designed to capture the profile of the participants engaged in the Street Doctors training, their exposure to violence, their knowledge of treating violent injuries and their willingness to administer first aid at baseline and to compare these at end-point. The survey was administered online (Jot-form). The survey was completed by each participant online using their own mobile phones. All participants had access to a mobile phone and the use of internet. Youth workers were provided with a QR code which linked to the survey. Once submitted, the author was alerted and each response was collated. Once the training had been completed, the author downloaded the responses in excel format, coded them in excel and copied this into SPSS (V24) for analysis. The excel sheet was then destroyed and the SPSS file was held on a secure, web-based cloud server

Table 1
Overview of the study framework.

Implementation Area/s	Research Questions	Data Source/s
Recruitment and reach	Was the intended target group engaged?	Pre-post-test survey data
Context, fidelity and dose	How was Street Doctors training implemented and was it implemented as intended?	Focus group interviews
Barriers and facilitators	What factors facilitated and impeded delivery?	Focus group & interviews,
Satisfaction	Was the training acceptable for the participants?	Focus group interviews
Outcomes	What was the impact of the training?	Pre-post-test survey

approved by and licenced by the institution (Office 365).

A range of items captured personal and demographic data including gender, age, ethnicity, political identity, and educational and employment status (see Table 3). The General Self Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1995) is a ten-item, self-report measure with good internal reliability (Alphas.76–0.90). The GSE score is calculated by summing all ten items. Total scores range between 10 and 40 with higher scores indicating greater self-efficacy. The Attitudes to Non-Violence Scale (ANVS) (Craven et al., 2015) is a brief, positively oriented measure of attitudes towards non-violence that has been tested with youth samples and can be easily administered via self-completion. It has good reliability with cognitive and affective sub-scales demonstrating reliability estimates of.83 and.75 respectively. A modified version of My Exposure to Community Violence Scale (My-ETV) (O'Hagan et al., 1998) was included. MY-ETV is a screening survey of exposure to victimisation and witness community violence with high internal consistency (alphas of.68–0.93). Items are dichotomised (have you ever been beaten up, mugged or threatened badly in the last three months), with affirmative responses prompting a follow-up question to capture how many times the respondent has experienced this. The Likelihood of Violence and Offending Scale (Flewelling, Paschall & Ringwalt, 1993) is an eight-item ordinal self-report measure intended to capture a range of violent and risk taking behaviours by youth. An aggregate score can be achieved by summing and averaging, however, a number of relevant items were asked in this survey, with the specific responses coded, e.g., 'in the next month how likely is it you will get into a fight'?

In addition to the validated measures, a number of additional questions were included. Participants were asked two questions with binary responses (yes/no) about their attendance at ED in the previous three months; their attendance at ED due to a violence related injury; a series of questions regarding their knowledge (hurt, cut, unconscious) and; their willingness (first aid), with responses ranging from 'strongly disagree' to 'strongly agree'.

3.2. Interviews

Qualitative data was captured during semi-structured focus group interviews (n = 4). Focus group interviews were facilitated with youth participants (n = 2), youth workers who were engaged in supporting Street Doctors (n = 1), and Street Doctors Volunteers who facilitated the training (n = 1). In total, 24 individuals participated in focus group interviews (see Table 2).

These were facilitated on-line to accommodate individual's being in different geographical locations. Focus groups included three broad themes for each group: about you; about the training and; about the future. These themes were designed to triangulate multiple perspectives on the needs and experiences of the young people, satisfaction with the training, factors that facilitate and impede effective delivery, and perspectives on the future contribution of the training in the context of Northern Ireland. Detailed notes were taken during the interviews by the author and later stored on NVivo X for analysis.

3.3. Data analysis

3.3.1. Quantitative analysis

First, univariate analysis was performed to characterise the study

Table 2
Characteristics of the focus group participants.

Group	Gender		Total
	Male	Female	
Street Doctor volunteers	2	3	5
Youth Workers	5	3	8
Youth	5	6	11

population using select variables including gender, age, ethnicity and, due to the Northern Ireland context, political identity is also reported. Second, bivariate analysis with chi-square and group mean comparisons are reported. Thirdly, to compare intervention effects, paired mean comparisons are reported.

3.3.2. Qualitative analysis

Thematic analysis was undertaken for identifying themes and reporting patterns (Braun and Clarke, 2006). The themes that emerged from the focus groups were pieced together to form a comprehensive picture of the collective experience. Given the dearth of empirical evidence related to this type of approach to reducing violence, themes emerged inductively (Miles & Huberman, 1994). That is, themes were data driven and not confined to prescribed coding systems (Walsh & Best, 2019). Results from both elements are described according to their chronological order in the implementation process, in which key observations from both qualitative and quantitative data are highlighted (Harns et al., 2021).

3.3.3. Ethical issues

Data was collected as part of a service evaluation, so no formal ethical approval was sought (NRES, 2009). Despite this, ethical issues were considered and informed the design. Participants were provided with an information sheet via their youth worker and given the choice whether to opt into the study. Those who did not wish to be included, did not complete the pre and post survey. There are no details on what proportion of the participants were omitted. Once provided with the information sheet, the potential participants were given one week to consider their engagement. No personal data was held. Participants chose their own ID when completing their baseline and asked to remember it for completing the end-point survey. All data was held on a secure cloud-based server, with access only available to the author. For the qualitative data, detailed notes were taken during the interviews. Routinely collected data (such as session records) were screened before being shared and redacted of any identifiable details.

3.4. Study population

All participants (N = 82) were exposed to Street Doctors. As Table 3 illustrates, the participants were on average sixteen years, and more than two-fifths were female. The overwhelming majority of participants identified as ethnically white, reflecting the composition of the communities that they were recruited from. More than 80% of participants identified along traditional religious grounds. Again, this reflects the identities of the communities that the participants were recruited from. What is interesting, however, is that despite living in the same

Table 3
Participant demographics.

		N/M	%
Gender	Male	45	55.6
	Female	35	43.2
Age		15.6 (R=12 =25)	
Political identity	CNR*	37	45.1
	PUL* *	33	40.2
	Neither	12	14.6
Ethnicity	White	76	92.7
	Mixed ethnicity	3	3.7
	Black Caribbean	1	1.2
	Bangladeshi	1	1.2
Education status	Full time education	57	70.4
	Part time education	6	7.4
	Full time employment	1	1.2
	Part time employment	10	12.3
	NEET* **	7	8.6

* CNR= Catholic/nationalist/republican; * * PUL = Protestant/unionist/loyalist; * **NEET = Not in education, employment or training

communities, over 10% of participants did not identify along religious grounds.

4. Findings

4.1. Recruitment and reach

(i) Did the programme reach the ‘right’ target group?

Street Doctor’s overarching aim is to save lives and empower young people to keep their communities safe (Street Doctors, 2022). Given that Street Doctors aims to reach those youth most likely to be exposed to violence and in particular, victims of violence, the ‘right’ target group must therefore be those with greatest risk of exposure. During this pilot, Street Doctors was delivered in areas of Northern Ireland that had been identified by the Education Authority Youth Service and the Police Service of Northern Ireland (PSNI) as having elevated rates of community violence (PSNI, 2023a). This was based upon police recorded crime and security statistics data as well as previous empirical investigations commissioned by youth services and other agencies. Combined, these studies have shown that the areas from which the participants were drawn experience a clustering of community violence - that is - multiple types of interpersonal (Walsh, 2022) and collective violence (Walsh, 2021). A distinctive feature of these areas is the presence of paramilitary groups that continue to exert control over young people via coercion, manipulation and physical violence (Walsh, 2023) and whose activity appears to have escalated within the communities identified (PSNI, 2023b). A recent study examining the impact of their enduring presence in communities demonstrated a range of psycho-social effects, including reduced community safety and wider forms of trauma induced community violence (Walsh & Cunningham, 2023). Data from this sample shows that more than one-quarter had been victims of violence in the previous three months and over half had been witness to a violent incident (see Table 4).

Those who reported being beaten up in the previous three months had on average experienced such violence on average 3.6 times, suggesting that for many, these were not isolated incidents. Indeed for some, this exposure ranged up to as many as fifteen times in the three months prior to the Street Doctors training. For those participants who reported being attacked with a weapon in the previous three months, they had on average experienced such violence on average 3.2 times, again, an indication of the frequency as well as severity that this sample had been exposed to. For some, this was as many as ten times.

Although young men were more likely than young women to report experience being beaten up (40.62% higher), being attacked with a weapon (66.7% higher), and being witness to violence (27.6% higher), this was not at the point of statistical significance. Age was not related to either directly or indirectly being exposed to violence, however, this observation could be related to the relatively small range across the sample.

Close to two-fifths of participants (n = 32, 39.5%) had reported ever attending the emergency department (ED) and more than one in ten (n = 10, 12.3%) reported attending ED due to a violence related injury. Those who attended ED due to a violence related injury had done so on

Table 4
Exposure to violence.

	N	%
Beaten up, mugged or seriously injured in previous 3 months	21	25.9
Attacked with a weapon in previous 3 months	5	23.8
Witness someone being beaten up, mugged or seriously injured in previous 3 months	44	54.3
Witness someone attacked with a weapon in previous 3 months	19	23.8
Get into a fight in the next month	30	37
Carry a weapon in the next month	7	9.1
Hurt someone in the next month	21	27

average 2.7 times. This ranged between one and nine times. A chi-square test illustrated that young men were statistically more likely to attend ED than young women ($X^2(2, N = 80) = 8.4, p = .015$).

The previous sections highlight the rate of exposure to violence across many of the sample and nod at the likelihood that many may be the victim in the future. However, the data also illustrate that some participants also reported a likelihood that they could perpetrate violence against someone else. As Table 4 illustrates, more than one-third of the participants (n = 30, 37%) believed that they would be in a physical fight in the next month and close to 10% believed that they would carry a weapon. This was particularly the case for males who were 42% more likely to report getting into a fight and 60.7% more likely to report an intention to carry a weapon than the female participants.

At baseline, participants were generally confident about their own knowledge and many felt secure in training serious injuries including cuts/wounds, and attending to victims of violence who were unconscious (See Fig. 1). For example, more than two-thirds of participants at baseline reported that they were willing to provide first aid before the intervention. This may in part be due to the rates of exposure to violence across the sample.

4.2. Context, fidelity and dose

(i) How was the Street Doctors training implemented, and was it implemented as intended?

Street Doctor volunteers are expected to avail of training delivered by Street Doctor staff and then be supported by coaching as they become familiar with the role. Several themes emerged from the focus group with the volunteers. Firstly, consistency with training and support featured highly. For several volunteers, they described a ‘rigid’ and in-depth training, followed by on-site coaching from a more experienced volunteers. For others, the experience was described as more inconsistent.

“I was recruited very close to the training day and had other commitments so missed the face-to-face training. It’s better being thrown in to the deep in thought. You can have your own script or you can go with the flow” (Street Doctor, FG4).

There also appeared to be inconsistencies in the material being used with some volunteers focussing on particular aspects for longer while others opted to move on more quickly.

“We sat in on two sessions. They were delivered by two different groups. The first one was great-really engaging. The second one, not so much and they used completely different material” (Youth Worker, FG3)

From the perspectives of some participants, the issue of inconsistency was critical and contributed to highly contrasting experiences depending on who was delivering the training and the approaches that they used.

“It was relevant and engaging for them. It was practical and even if it was silly things like the cup. He had a cup and it was filled and trying to tell you about bleeding and showing with the cup what happens and the kids were really engaged in it, but it’s about the skills of the person doing it, because we had a few others and they didn’t do all that and it wasn’t very interesting” (Youth Worker, FG3)

Whilst both perspectives (more/less rigorous; more/less consistent), the focus group interviews highlighted a potential challenge to fidelity. In essence, if the training of volunteers and subsequent support is a core component of the model, to what extent can these elements be diluted or adapted before the model is no longer being implemented and outcomes are less likely? This question cannot be fully answered because it is unclear how much of training and support is considered core and

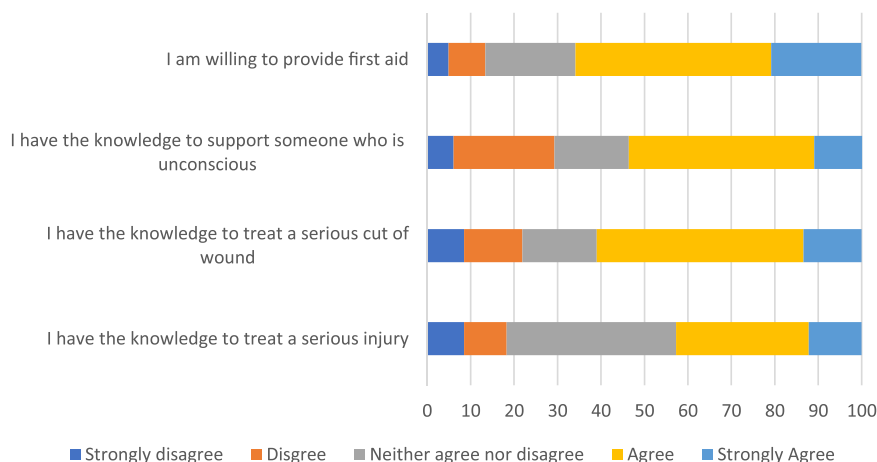


Fig. 1. Street Doctors metrics at baseline.

therefore, how much can be diluted and adapted. This could be an important implementation point for Street Doctors to consider. All trainings were facilitated within a community setting. Recruitment of youth participants was wholly the responsibility of youth workers. All engagement was voluntary and as noted by one youth worker, this core principal of youth work practice contributed towards greater motivation and less attrition that might be associated in different settings where participation is mandated.

“It’s like this-if they didn’t want to take part they wouldn’t. Yes, you get some mucking about, but generally, they’re all here because they want to be. It’s voluntary like all of our youth work activities. Nobody is making you be here” (Youth worker, FG3)

“The most important thing is the peer learning environment. It doesn’t feel like school and they can volunteer information, enjoy the process of learning” (Street Doctor, FG4)

The training was adapted for the Northern Ireland context to include a preparatory session prior to the Street Doctors volunteers providing the standard training. Findings from the focus group with youth workers illustrated that there was a pragmatic reason for this, primarily because despite their exposure in the community, the groups of youth identified to engage in the programme had little experience of engaging around the theme of violence.

“We know it works in different ways over there, but for us, we thought it would be better to start the session with a youth worker who they knew and then bring in them [the street doctor volunteers] to do the specific training. It worked well like that (Youth Worker, FG3)”

The first session was facilitated by a professionally trained youth worker who covered three key themes: what is violence?; what are the causes of violence? and; how can violence be prevented. Feedback from Street Doctors volunteers during one focus group indicated that this adaptation was particularly useful, as it appeared to orient youth participants towards the theme.

“Having the youth workers be there and have that session before we came in was really good. We got a sense that young people were ready for our input by the time we came out. We didn’t have to spend a lot of time during the early part of the session trying to explain what we were doing and why” (Street Doctor, FG4)

The second and third sessions were facilitated by Street Doctors volunteers. The focus for those two sessions were on responding to wounds such as stabbing and also responding to a victim who is unconscious. On average, participants reported engaging in 2.6 sessions, indicating low attrition and relatively high levels of engagement for those who attended each session.

“I was a little nervous before my first session, but I was surprised how much the youth took part and how much they were interested in what I was doing” (Street, Doctor, FG4)

4.3. Barriers and facilitators

(i) What factors facilitated and impeded delivery?;

Leveraging constructs from the CFIR, the focus groups data on barriers and facilitators was thematically organised across three domains: the inner setting domain; the individual domain and; the implementation domain.

Inner setting domain: Relational connections and coordination:

An important facilitator appeared to be the communication between Street Doctors and EA who were coordinating the implementation with local groups. During focus groups it was evident that during the inception, this was coordinated by two individuals and appeared to be effective.

“The partnership with EA is quite unique and could really help us move it forward and NI is a unique context” (Street Doctor, FG4)

However, as time progressed and circumstances changes, the coordination expanded and Street Doctors staff who were based in England took on more of a direct role. This created some confusion and EA staff reported finding it difficult to communicate as effectively.

“Initially we had one coordinator in NI and that worked perfectly. Teething problems then set in when it was moved to England, but it did smooth out eventually” (Youth worker, FG3)

This relational connectedness did not end with the design, however, as it appeared to be highly important for Street Doctor volunteers that youth workers were present during their two sessions.

“The most helpful thing is that there is someone who knows the group well are present in the room. It helps that there is someone. The sessions are interactive and designed to get the kids going. The problem is when the kids get too carried away is the problem.” (Street Doctor, FG4)

“When the kids are asked to do CPR and some of them might be messing around, the youth worker can say, ‘sit your ass back down’” (Street Doctor, FG4)

Culture and shared beliefs:

What appeared to be an important facilitator was that both EA youth service and Street Doctors had a similar vision and genuine desired to achieve similar outcomes. Street Doctor’s overarching aim is to save lives and empower young people to keep their communities safe (Street

Doctors, 2022). This alignment was evident across several focus groups and appeared to particularly strong facilitator for effective implementation.

“These kids are not your routine centre kids. They’re kids that have so much trauma-have been victimised and beat up and excluded. We are there if they need us, yes, but we can’t be there all the time. If we can help them keep each other safe then I can sleep better at night” (Youth Worker, FG3)

“This training allows vulnerable young people to be more confident in treating injury. If they are more likely to see injuries, then harm can be reduced if they’re trained in what to do until expert help arrives” (Street Doctor, FG4).

This alignment appeared to enhance other implementation areas (e.g., relational connections) thus contributing to a more positive implementation experience.

“They’re all lovely. I’ve had no issues with any of them. They just good to work with and the kids seem to enjoy the experience” (Youth Worker, FG3).

Individuals domain: Mid-level leaders:

Implementation of the pilot into Northern Ireland at the scale that it was facilitated was wholly the result of mid-level leaders who had the authority to make a call on resource allocation as well as instruct youth work teams to engage in the process. It was evident from focus groups that without these leaders, neither the resources nor the directive would have been applied.

“It was all down to [name]. She drove this whole thing. She got it. You know? She just got what Street Doctors were trying to do and thought it would be something that our young people would take to. She made the call and that was it. The ball started rolling” (Youth worker, FG3)

Implementation facilitators and implementation support:

Having individuals with subject matter expertise is critical. These individuals can provide expert delivery, with insights not available to the participants. Others may provide support and coaching to enhance implementation. There was examples of both. During focus groups, it appeared that drawing volunteers from cohorts of existing medical and nursing students added credibility to the process.

“They’re all just normal people but are going to be doctors and stuff. I don’t really want to do that but university sounds like a bit of craic” (Young person, FG1).

From the perspective of young participants engaged on the training, it was being facilitated by their peers, but peers with specialist knowledge and experience. This not only enhanced perceptions of subject matter expertise, but also appeared to model what might be possible.

“I think that they see us as young people doing health care degrees and that can be quite inspiring, and can think ‘these guys are cool and teaching us cool things’ and that can inspire them” (Street Doctor, FG4)

4.4. Capabilities

Many recognised that this training was very new in the context of Northern Ireland. The number of experienced individuals that were on-hand to provide coaching and support was highly limited. Whilst one focus group member indicated that most had a requisite communication skills to undertake this role, several others noted that having a coach with more experience would have helped increase their competence and confidence more quickly.

“It’s a catch-22. If you had someone with you, you would be less nervous and know what you’re doing, but if you just ‘wing it’ and get threw in at the deep end, you can make it your own”. (Street Doctor, FG4)

4.5. Implementation domain: Teaming

A significant facilitator appeared to be on the joined up coordination of the training between EA youth service and Street Doctors. Whilst logistically complex, a dedicated coordinator liaised between these groups and the local communities to help ensure that the training was facilitated at a time and way that was feasible for the volunteers, young people and youth workers.

“We realised early on that this wasn’t going to happen on its own. The entire process was becoming a beast and needed someone to take hold of it. We approached [name] who was then given the role of doing all the linking between people and that worked well”. (Youth worker, FG3)

4.6. Satisfaction

(i) Was the training acceptable for young people and for youth workers?;

Young people reported feeling satisfied with the preparatory session as well as the formal Street Doctors training.

“There was a real good chat about different types of violence. Like the ways that it happens and everyone had something to say. You don’t get a chance to talk about this in school or what”. (Young person, FG2)

The preparatory training also appeared to be important to orient participants towards the theme and prepare them for recognising the reality that violent injury was common in their communities.

“When you think about all the things you see and just forget about and all the reasons why things like this happen, you kind of realise, you probably need to be talking about this more and get prepared to help people”. (Young person, FG1)

Several commented about the new skills that they had learnt and others reflected on the small insights that could potentially make a big difference to the victims of violence.

“Hearing about the diamond shape when you put pressure on a wound was something I’d never knew before” (Young person, FG1)

Several young people commented on their experiences of school and how, in their opinion, the training was pitched at a level that they could understand and felt comfortable engaging with.

“There was nine of us who did it and we’ve all, like, we’ve all not done well in school and most of us don’t go to school. We could understand it so anybody could [laughs]”. (Young person, FG1)

4.7. Outcomes

(a) **What was the impact of the Street Doctors training on reducing youth violence?**

97.5% of participants completed at least two sessions of the training. A series of paired samples t-tests were conducted. Firstly, the tests were used to evaluate the impact of the intervention on participants **self-efficacy** (M (t1) = 15.7; M (t2) = 16.6) and **non-violent attitudes** (M (t1) = 30.56; M (t2) = 32.15) between baseline and end-point. Based on these analyses, there was no overall effect on any of these measures. The analysis was then disaggregated by: 1. sense of safety; 2. gender; 3. previous direct victimisation and; 4. previous witness to victimisation. Across most metrics, there was no statistically significant mean difference across the two time-points for these disaggregated groups. The exception was on the measure of attitudes to non-violence (ANVS). There was a statistically significant increase in non-violent attitudes for those who reported being beaten up, mugged or seriously threatened (M =30.77, SD =7.6), compared with those who did not report such an

experience ($M = 32.92$, $SD = 8.1$), $t(12) = -2.23$, $p = .046$). However, the eta squared statistic (0.29) indicated a small effect size (Cohen D, 1988).

On the more subjective measures that are routinely used by Street Doctors, there did appear to be some attitudinal change in a positive direction. Whilst these participants were relatively confident in their knowledge and skills to respond to violence related injuries at baseline, the space between confidence and lack-there-of narrowed even further following the sessions (see Fig. 2). This appears to demonstrate that young people were more willing to administer emergency first aid and also more confident in their ability to do so. However, this must be tempered with the fact that the questions from which these responses are generated from are not validated.

Further, a series of Wilcoxon Rank Test's revealed that there was no statistically significant increase in participants sense of safety (i.e. they did not tend to feel any safer or less safe as a result of this intervention); knowledge of how to treat a serious wound or cut; knowledge of how to support someone who is unconscious; or willingness to provide emergency first aid (see Table 5).

However, there was a statistically significant reduction in participants' perceived knowledge of how to treat a serious injury following the intervention, $z = -2.4$, $p = .02$. It is not clear why there was such a change in regard to this outcome, and in this direction, but not others, and interview data did not elucidate any potential explanations. Interestingly this reduction only held for males, $z = -2.63$, $p = .008$, and not for females, $z = -52$, $p = .61$ when the data was disaggregated. These findings echo findings from the qualitative interviews. While most young people appeared to enjoy the training, there was a consistent message that the training neither made the young people feel safer nor enhanced their confidence to deal with violence related injuries.

“Before I was 6 and now I'd say I'm a 7. Probably need more information. I didn't really learn anything about bleeding out. The only thing we learned was about recovery position. We asked about the bleeding and they followed up a wee bit, *but na, I don't think I know more now than I did before...*” (Young Person, FG2)

5. Discussion and conclusion

Youth violence is a significant public health issue given its prevalence and impact. Evidence supported responses are critical to reducing both incidences of violence, and the related harms caused by exposure (Fowler et al., 2009). Research in the context of Northern Ireland has shown that violence is highly prevalent (Bunting et al., 2020), but also highly clustered (Walsh, 2021; Walsh & Smyth, 2022), with some

Table 5
Street Doctor metric-Wilcoxon Signed Rank Tests.

Variable	Pre-test M (SD)	Post-test M (SD)	Z	Sig.	r
Sense of safety	4.12 (0.92)	4.33 (0.84)	-2.39	0.31	0.12
Knowledge-treat a serious injury	3.28 (1.1)	4.4 (1.12)	-2.93	0.02	0.27
Knowledge-serious cut or wound	3.3 (1.15)	3.68 (1.1)	-0.5	0.61	0.06
Knowledge-treat someone who is unconscious	3.3 (1.13)	3.71 (1.2)	-0.6	0.55	0.07
Willingness to provide emergency first aid	3.68 (1.05)	4.06 (0.72)	-0.91	0.36	0.12

communities at elevated risk of exposure. It may be within these communities that interventions can have the greatest impact. Given that youth are particularly vulnerable (Struyk et al., 2021), youth work approaches have significant utility (Walsh & Harland, 2019; Walsh, 2023). Harnessing the youth worker-young person relationship, those most in need of support have a greater chance of being connected to that support (Duffy et al., 2021).

Street Doctors have designed a short but novel intervention intended to reach youth most at risk of being exposed to violence in order to enhance potentially lifesaving skills and increase young people's confidence around administering critical first aid (Street Doctors 2022). This novel approach, with several interesting elements (awareness raising and cognitive and behavioural change via peer led methodologies), has been demonstrated in previous evaluations to be well received by participants and to contribute to attitudinal change (McCartan et al., 2013; Red Quadrant, 2015). Street Doctors own impact reports are also highly positive. However, as several reviews have noted, the previous methods have often lacked a robust methodological frame, relied mostly on qualitative data and were often heavily weighted towards the more positive feedback (Warner, 2016). This study sought to situate the intervention within a theoretically driven framework, embed theoretically grounded metrics and validated measures, and to combine quantitative data with qualitative data.

As with many complex interventions, an implementation perspective is required (Fixsen et al., 2009). In line with previous evaluations, a number of implementation facilitators appeared to be important in this study. For example, as with the observations of Keele University, the triangulation of Street Doctors, volunteers and youth is a useful approach. Leveraging peer educators with subject matter credibility appears to be highly useful at engaging youth vulnerable to violence

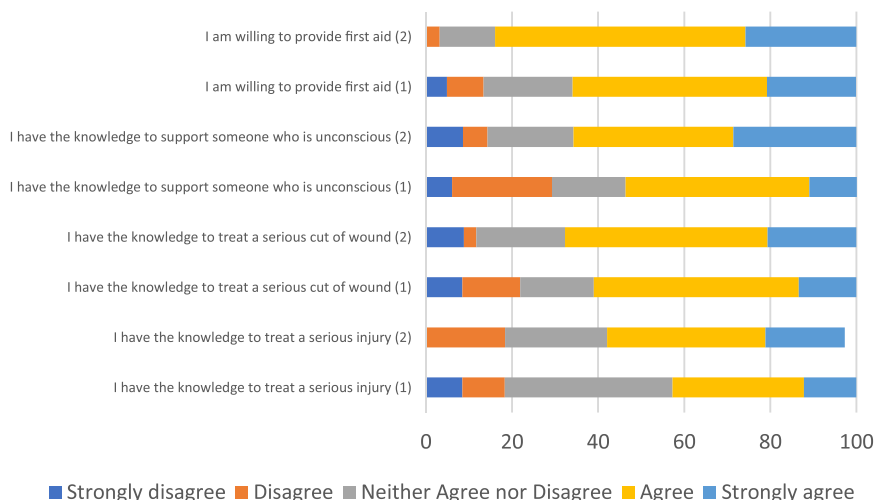


Fig. 2. Street Doctors metrics- baseline and endpoint.

(Red Quadrant, 2015), and has been demonstrated in other violence reduction interventions as important (Butts et al., 2015). As noted by Durlak and Du Pre (2008), context is also important, and given that this was replicated into a new context (i.e. Northern Ireland) several adaptations facilitated this (Mihalic et al., 2004; Brekke et al., 2009). The qualitative feedback from all three groups appear to show that adaptations were very useful and nods at the need for agility in programme design and flexibility with non-core components. Fidelity is another important element of implementation (Bowen et al., 2010) and is central to success (Ogden et al., 2009). Understanding the core components is central to this (Fixsen et al., 2005). This study did not find that Street Doctors have a clear fidelity measure, and previous examples of theories of change (E.g., Red Quadrant, 2015) appear to be overly complex. This study highlighted some of the barriers associated with the inconsistencies in training and delivery that could be at least partially addressed via the development of a well specified fidelity measure. Whilst the qualitative feedback was highly positive about the Street Doctor volunteers, it did not appear that coherent criteria exists for recruiting these individuals and therefore could present as a barrier to implementation. Despite being such a fundamental part of the implementation process, a specific focus on recruitment is a neglected area of implementation research (Fixsen et al., 2005). Is it really practical to expect that all medical or students who are motivated by various reasons are equally capable of engaging with vulnerable youth in a community setting (Aarons et al., 2009; Manuel et al., 2009; Rubin, 2011)? It could be useful to consider the characteristics of Street Doctor volunteers that are most salient for effective engagement and delivery.

This study sought to extend the single time-point data used by Street Doctors to include a baseline assessment of the same metrics. The data confirms the annual impact reports, but also suggests that for this sample, baseline confidence, knowledge and willingness to administer first aid is similarly high obscuring the added value of Street Doctors on these outcomes. Interestingly, participants at baseline, appeared confident about their own knowledge regarding the treatment of violent injuries and many reported that they felt able to treat serious injuries including cuts/wounds, and attending to victims of violence who were unconscious (See Fig. 1). This may in part be due to the rates of exposure to violence across the sample. As Fowler et al. (2009) note, increased exposure can lead to increased numbing that could be contributing to an overconfidence in regard to violent injury. Previous studies investigating the communities that these participants were recruited from also show elevated rates of stress related disorders (Walsh, 2021). It is possible therefore that this confidence actually reflects the normalisation of violence related harm and the emotional numbing that can follow prolonged and acute exposure. It may also be useful for the development of additional measures with greater specificity around the specific outcomes that Street Doctors envisage could be attained via this intervention. This study added to the existing metrics through the inclusions of a measure of self-efficacy and attitudes towards non-violence, however, there were no effects.

Street Doctors is a very brief intervention and potentially economical, however, that is not the same as being cost-effective. Its unique contribution to violence prevention remains unclear. There is a need to be clear on the specific contribution that Street Doctors intervention makes either in isolation or in concert. The added value of Street Doctors within the violence reduction space may lie in its contribution to a wider range of activity delivered over a longer period, using a variety of modes and targeted a range of protective and risk factors. Of course at this stage this is untested and merely hypothetical, but could prove a useful avenue for future research, particularly as Street Doctors becomes more embedded in the violence reduction units in England and Wales.

6. Limitations

Whilst this study captures the first replication of Street Doctors into Northern Ireland and as far as the authors are aware, is the first study to

be published of Street Doctors anywhere in the UK, it is not without its limitations. The authors acknowledge that whilst the qualitative data captures the level of acceptability sufficiently well, the quantitative data relies on a relatively small sample and potentially a lack of specificity with regard to the outcomes. The findings do however point to the need for greater specificity with regard to those outcomes envisaged, and for the need for further robust evaluation of the Street Doctors model.

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CRedit authorship contribution statement

Colm Walsh: Conceptualization, Methodology/Study design, Formal analysis, Investigation, Writing – original draft, Project administration, Funding acquisition. **Emma Roche:** Data curation, Writing – review & editing. **Kylie Gill:** Data curation, Writing – review & editing.

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