Research Article

Deep Vein Thromboses in Injecting Drug Users: Meanings, Bodily Experiences, and Stigma

Qualitative Health Research
1–10

DOI: 10.1177/1049732319849026
journals.sagepub.com/home/qhr
SAGE

Charles Cornford[1], Lorraine Fraser[2], and Nat Wright[3]

Abstract

Deep vein thromboses (DVTs) are common sequelae of injecting drugs into the groin. We explored meanings and experiences of DVTs in a group of 19 patients from the North East of England with a DVT and in treatment for opioid use. We report three themes: (a) DVT meaning making, (b) embodied experience, and (c) Stigma. Patients attributed DVTs to groin injecting, though thought other factors were also partially responsible. Medication performed both treatment and preventive functions. The most pertinent worry was amputation. Patients recognized stopping injecting as important, but it did not necessarily occur. Stigma resulted in delayed admission to hospital and feelings of isolation; support groups might alleviate the latter. Although groin injecting was undertaken partly to avoid the censure of being a drug user, ironically, a DVT led to long-standing stigmata that were discrediting signs of that exact status.

Keywords

substance use; stigma; risk; perceptions; risk; behavior; sex workers; interviews; semistructured; illness and disease, experience; lived experience; lived body; marginalized population; deep vein thromboses; qualitative descriptive method; North East England

Deep vein thromboses (DVTs)—clots developing in the deeper veins of the legs—commonly result from injecting drugs into the groin. A study of patients treated for opioid use in the north east of England showed a DVT prevalence of 14% and an estimated incidence of 3% per year—approximately 100 times greater than an equivalent group in the non-opioid-using population (Cornford, Mason, & Inns, 2011). DVTs in opioid users have significant financial implications, with high attendance rates at emergency departments, high admission rates, and long periods of inpatient care (Cooke & Fletcher, 2006; McColl, Tait, Greer, & Walker, 2001; Syed & Beeching, 2005).

But, the costs to the individual concerned are also high. Patients with DVTs from drug injecting have a significant morbidity, reporting worse physical and psychological health compared with patients in treatment for opioid use but without a DVT (Cornford et al., 2011). Pain is an important cause of impaired functioning in patients with DVTs from drug injecting (Pieper, Kirsner, Templin, & Birk, 2007). Leg ulcers are known to be upsetting both from appearance and smell in the general population and are reported as present in 16% to 25% of drug-using groups (Cornford et al., 2011; Coull, Atherton, Taylor, & Watterson, 2014).

Professional views about causes of DVTs in general, and in the drug-using groups in particular, are surprisingly uncertain (Mackenzie, Laing, Douglas, Greaves, & Smith, 2000; Malone & Agutter, 2006; McColl et al., 2001). DVTs are particularly common in sex workers who use drugs, perhaps because of the high level of crack cocaine use which is particularly damaging to veins (Cornford et al., 2011; Jeal & Salisbury, 2007; Wright, Allgar, & Tompkins, 2016). Femoral vein damage is associated with longer duration of groin injecting and use of thick needles (Senbanjo & Strang, 2011). Preventing further DVTs involves, first, refraining from further injecting (because injecting increases the likelihood of additional DVTs (Cornford et al., 2011)) and, second, compliance with anticoagulant therapy (Campbell et al., 2007). Treatment with standard drugs such as warfarin is usually inappropriate because of the difficulties in monitoring coagulation (Russell & Dawson, 2004) and so daily Heparin injections have been used as a treatment to prevent further DVTs; the newer oral factor X inhibitors have provided an alternative treatment option. Prevention

[1]Fulcrum Medical Practice, Middlesbrough, United Kingdom
[2]Starfish Health and Wellbeing Teesside, Stockton-on-Tees, United Kingdom
[3]Transform Research Alliance, Wakefield, United Kingdom

Corresponding Author:
Charles Cornford, Fulcrum Medical Practice, Acklam Road, Middlesbrough, TS5 4EQ, United Kingdom.
Email: Charles.cornford@gmail.com

of the morbidity caused by DVTs involves exercise, support stockings, and effective pain relief (Shrier, Kahn, & Steele, 2009).

Lay ideas about risks from drug-taking can be significantly different from professional views (Leppo, 2012), and therefore, understanding patients' views about prevention of further DVTs and about treatment options is important. Currently, little is known about patients' views about DVTs in this group locally or internationally and which is necessary to provide effective tailored advice.

The approach adopted was descriptive; the DVTs were investigated by how they were experienced and given meaning by the individual concerned. Diversity and variability in the meanings were assumed. The aims of the study were, for patients who had experienced a DVT from drug injecting, to explore beliefs and understanding about how DVTs arose, how repeated DVTs might be prevented, how treatment works, the benefits and drawbacks of treatment, the impact of the DVT on functioning, and how patients currently manage the associated physical and mental health problems.

Method

Setting

The participants had all experienced at least one DVT and were in treatment for opioid use. Patients receiving treatment for opioid use at a general practice located in a deprived, postindustrial town in the north east of England provided the setting for the study. The practice specifically catered for the needs of patients using opioids, principally heroin. The general practice provided prescription of Opioid Substitution Therapy (OST), which is either methadone or buprenorphine, to all patients in the surrounding area. Patients receiving such therapy had a choice of either registering at the practice for the usual general practice services or registering at other practices in the area. Other services for drug users, including free needle exchange facilities, were available elsewhere in the town. Each patient receiving OST had an allocated drug worker (nurse or clinical support worker) who arranged the appropriate prescription. A previous study investigating DVTs at this service showed that there were 734 patients receiving treatment for opioid use registered at the practice and 627 patients receiving treatment for opioid use registered at other practices in the area (Cornford et al., 2011). The mean age of the 734 participants was 34 years, 73% were men, and heroin was used by 90% of the group. The prevalence of DVT was 14%.

Procedures

The study was approved by a National Health Service (NHS) ethical committee. Adopting a purposive sampling strategy, we aimed to identify patients to interview with a range of characteristics. A snowballing technique was used with the drug workers to identify suitable patients. The drug worker discussed the study with the nominated patient, and if he or she agreed, booked the patient in for the interview with the researcher. A written information sheet was provided for the patient. The interview was at least 1 week in advance of the initial invitation to allow the patient sufficient time to decide whether he or she wished to withdraw. Exclusions included patients currently receiving psychosocial interventions, patients likely to be too intoxicated to participate, patients with organic brain disease severe enough to make participation difficult, and anyone posing a significant risk to the interviewer. The patients were offered £10.00 for the interview with additional travel expenses on production of a receipt.

The Interviews

The interviewer arranged signing of the consent form. Various procedures protected patient confidentiality including audiorecording of the semistructured interviews directly into a password-protected folder in the shared drive of the NHS practice computer and transcribing by the practice typist into the password-protected shared drive. All paper versions of transcripts were kept in locked cabinets. The interview schedule for the semistructured interviews included exploring beliefs and understanding about the cause of the DVT, how repeated DVTs might be prevented, risks of future injecting, the participants' understanding of how treatment works, the benefits and drawbacks of treatment, the impact of the DVT on functioning and how the participants managed associated physical and mental health problems.

Data Analyses

Analysis followed the descriptions provided by Miles and Huberman (1994). Each transcript was read and 'codes'—labels that described 'units of meaning'—identified. Codes included purely descriptive codes arising directly from the transcripts and more interpretive codes. After analyzing four interviews in this way, a "scatter diagram" (Riley, 1990) was used to identify "pattern codes" or themes bringing together groups of descriptive and interpretive codes (Miles & Huberman, 1994). Rereading of the transcripts occurred at several times in the study, but was formally carried out after four interviews by writing up a preliminary report. Areas thought worthy of further exploration in the remainder of the interviews were identified. After writing up, all transcripts were reread for identification of disconfirmatory data. The coding was carried out by two researchers, and areas of agreement and disagreement were discussed.

Results

We invited a total of 51 patients with DVTs for interviews. Of these, 19 attended. We interviewed 14 male and 5 female patients. The average ages of the men and women interviewed were, respectively, 40 and 39 years. The average age of the men invited to participate but not attending was 40 years and for the women was 44 years. The characteristics of those interviewed are given in Table 1.

We had available transcripts for 16 interviews. Recordings for three interviews were inadequate, so the interviewer wrote notes after the interviews. We identified three main overlapping themes: DVT meaning making, embodied experience, and shamed identity.

Table 1. Table of the Participants' Clinical Characteristics.

Description	Numbers
More than one DVT	8
Ulcer history	3
On analgesia for postthrombotic complications	3
Currently injecting	6
Abstinent from injecting for considerable time	4
Current or previous sex worker	2
Not registered at the practice	1
Female	5
Age less than 30 years	0
Age more than 45 years	3

Note. DVT = deep vein thromboses.

DVT Meaning Making

The theme of DVT meaning making included how the participants made sense of the DVT. Many of the codes followed directly from the questions asked, such as beliefs about why the DVT occurred, worries about the DVT, and views about the treatment.

Beliefs about the causes. The respondents were quite clear and uniform in attributing the DVT to injecting, and, in particular, to injecting in the groin. The respondents had used the groin area for a variety of reasons including the unavailability of other veins, an easy and quick access for frequent injection of large volumes of drugs, and to hide evidence of injecting from others. Sites such as arms were less easily hidden. The attempt to hide drug use by injecting into the groin was perhaps ironical, because the effects of the DVT became a clear sign of drug use. One respondent was an exception; she did not believe that injecting drugs had caused her DVT. She had developed the DVT from a nondrug-related problem. Her account provided a useful contrast in analyzing other transcripts. For instance, there was considerable evidence of the shaming effect of DVTs for other respondents, but this was largely absent from her account.

Although injecting into the groin was understood to be the cause, this needs qualification. Using blunt or dirty needles (sometimes necessary to hide drug use either from family or while in prison) or using adulterated heroin were also thought significant. One participant believed he had particularly "vulnerable" veins. The following respondent expresses some of these ideas:

> I dare say if I had if I've used sharp and clean pins I wouldn't have got it . . . It was just a matter of having to I was hiding my, my equipment so sometimes I was I was hiding it behind the sinks and all that it wasn't in very clean places.

An important attribution made by many respondents was a "missed" injection (where the fluid is not injected into the vein itself). Several respondents described an unusual pain immediately on injecting, which they attributed to a "missed injection" and which might occur from inexperience in injecting technique or from intoxication. The following respondent, on being asked why the DVT had occurred, describes a "missed" injection:

> My DVT occurred through me injecting, ehm heroin into my groin with obviously IV needles. I think what I done wrong is I'd actually when I pulled back I thought I was in it must have come out when I was in and I've pushed it in. I'd because of the miss and obviously if somethings been mixed in with the gear[1] at the time or whatever . . . that's when like an infection set in I think it was at first.

Other attributions made by the respondents included bad luck, hereditary factors, a particular body type and physical injuries. A few patients thought the DVTs were the result of long-standing general "misuse" of the body from drug use and associated lifestyle. Using a variety of drugs over a period of time and "misses" in veins in parts of the body other than the groin contributed to the likelihood of causing the DVT. This respondent provided an example:

> No, no, no, I think going everywhere I think all the misses you get and everything like that I think they all contribute to it.

There was no evidence that any one particular drug, such as cocaine, was considered more likely to cause a DVT than any other drug.

Treatment. Several participants described physical methods of treatment, such as lifting the leg to reduce swelling. One went as far as describing a "RICE" approach (rest, ice, compression, and elevation) because the symptoms of the DVT seemed similar to a musculoskeletal injury. He explained,

> It was just like proper doing my head in so I took it off and basically I was just ehm self-treating me self I've like, I've done sports ehm, injuries and stuff like that before. And I just followed the, the rice ehm thing the rest, ice, compression and elevation.

The respondents had been on a variety of medications including injectable medications such as heparin or dalteparin and tablet medications such as the NOAC (novel oral anticoagulant) drug rivaroxaban; some had been on both injectable and oral medication. One respondent was surprised that drug users would be given injectable medication. For her, the use of needles was a trigger for drug use, and she expressed surprise that this was something of which professionals were unaware. She preferred oral medication. A different respondent made the comment that being on anticoagulation was a protection against a further DVT and hence provided a reason to continue to inject drugs. In discussing how illogical it was to continue using drugs having had a DVT, he made this comment, though partly because he realized it was illogical:

> I think now because I'm on rivaroxaban I think that I'm safe. I can do what I want.

There were no obvious differences in how the injectable and tablet medications were thought to work. A common meaning was that they "thinned the blood" and made it easier to circulate. Another common belief was that they helped break down the clot. This respondent, on discussing the instructions about taking rivaroxaban—a higher "loading" dose for two weeks followed by a lower dose—said,

> So it sounded like maybes within the two weeks it will break the clot down.

The idea that medication treated the clot was important in reasons to take, or stop, medication. The medication, rather than just preventing a further DVT or preventing a pulmonary embolus developing—the conventional "medical" rationale—became a treatment to dissolve the clot and relieve symptoms. For some patients, the medical advice to take the medication for a specified period of 3 or 6 months was illogical if symptoms continued to exist. Other patients, once symptoms started to diminish, became less strict about taking the medication or stopped it completely. This patient blamed himself for stopping the treatment early:

> Kind of I did for a bit and then some of it went down and I started missing it here (and) then. . . . What I think was the worse thing to do because now all of my legs down I've got like blotchy marks and all that on my skin and stuff like that you know what I mean?

Worries about the DVT. As well as ideas that medication worked by dissolving the clot, clots themselves were understood to grow and travel. Frequent beliefs were that they might travel to other organs including the brain and lungs, but most particularly, the heart. The clots might travel further down the leg and cause another DVT. The following respondent was still experiencing symptoms and, although a scan had failed to show a new DVT, was still worried about its 'growth':

> It won't go on its own accord; it will stay where it is. If you don't do anything it can grow up to ya heart or head.

In view of these fears—and in particular traveling clots to the heart—many were worried about death. A further and almost universal worry was amputation, partly because drug users with leg amputations represent a highly visible reminder of the dangers of groin injecting, as explained by this respondent:

> Cause I've seen people with like limbs lost and it's not nice.

Prevention of further DVTs. Stopping injecting was recognized by the majority as important in preventing a further DVT, just as they recognized that injecting in the groin had been the cause of the previous DVT. Neither the knowledge about prevention of further DVTs nor worries about amputations and death necessarily resulted in stopping injecting. For those patients still injecting, some were continuing to inject with no changes. One respondent considered she would lose her leg whatever she did. Some patients noted that drug-taking overrides all other considerations. Some patients felt that issues arising in their lives warranted continuing use. Other patients continuing to inject claimed they were injecting less frequently than before. A few patients continuing to inject indicated they would inject now only if there was a particular reason to do so or would inject only with clean or new needles. Fresh needles were thought to glide into the vein more easily and hence reduce the chance of a recurrence. This respondent, when asked what advice he would give to prevent a DVT, said,

> that's gotta be the cause because ya hitting a nerves through having a bad needle ya you've got to fish about if it's a bad needle where a new needle you know where ya site is you're in straight away no messing about so, yeah just always use brand new needles.

Several patients claimed that now they had experienced one DVT, they were more aware of the diagnosis and consequently would not delay in seeking help if there was a recurrence. The experience of having a DVT made the person more aware of his or her body, and more aware of sensations and symptoms that might indicate a new

DVT. The increased awareness might partly explain how a few recipients indicated that they would continue to inject, but promptly stop if symptoms develop or if new varicose veins develop, as for this subject:

> Just check legs for varicose veins, could be a sign.

Embodied Experience

The DVT was experienced in the body, as symptoms; but as already discussed, the experience of a DVT changed how new symptoms were perceived. The damaging effects on self-identity will be discussed in the next section, but here, we discuss the experience of the DVT on bodily sensations.

Symptoms at diagnosis. Symptoms at the start of the DVT included both predictable symptoms (at least from a medical view) and some surprises. Pain at diagnosis was commonly mentioned, as was swelling in the leg. A couple mentioned breathing problems. Some patients were very unwell at the point of diagnosis and had no option but be admitted; a couple had collapsed. In other patients, the symptoms were more minimal and they claimed expertise with their body experiences by recognizing that something wasn't quite right. Possibly because many DVTs were accompanied by infection, several patients described symptoms attributable to infection.

There was frequently a delay in acting on symptoms. As will be described more fully later, stigma was one reason, but some patients delayed because of worry about amputation or dying. Several patients claimed they did not realize it was a DVT and a few initially attributed it to a "missed" injection. Some patients waited for confirmation that the problem was worsening, as for the following respondent:

> So, I just presumed it was like a miss as I said. What I'd done at the time was I got a felt tip and marked where the red mark was myself on me groin. And then gradually looking at it, it was coming outside that mark so I knew it wasn't getting better it was getting worse.

Two openly admitted the delay was either to obtain heroin or because of intoxication.

Long-term bodily experiences. Long-term symptoms and physical effects caused by the DVT were extensive. Pain was mentioned frequently—pain in the leg, and for a couple, pain all over the body—as was swelling. Commonly pain markedly interfered with walking, climbing stairs, playing sport, working, looking after children, and for one, shoplifting. The next participant described the effects:

> Just walking and like doing stuff with the kids. You like even just walking to the school an I only live around the corner. My leg would be absolutely throbbing. And it swelled as well so well so when I wear my skirts and things I couldn't cause one leg was bigger than the other. My leg was massive.

For many patients, the pain was constant and for a couple interfered with sleep. This man tried to treat it by buying illicit pregabalin:

> Buying like pregabalin off the streets and stuff like that and trying (to) see any medication really that seems to work.

The pain was given as a reason to use heroin by several respondents, including one patient while still in hospital. The physical problems caused difficulties leaving the house. One respondent mentioned the extra finances required for taxi fares. For some patients, the loss of independence including the need to ask others to do tasks was difficult. Only one respondent mentioned ulcers, but a more common symptom was bruising from heparin or dalteparin injections. The leg changes meant that the respondents felt more aware of their legs than they would otherwise have been. The leg felt in a subtle way different, and this was a reminder that something was not quite right. Consequently, some patients were unclear as to how many DVTs they had developed. A further consequence was that the risk of it returning was always present, as for this respondent:

> I'm always at risk of it coming back. I know I'm always gonna suffer with them.

The experience of using support hosiery. Many patients claimed they were not told about support hosiery, and some thought that they should have been told. This patient, according to his account, received ambivalent advice about using stockings from the hospital:

> Well they said, you can use them but it's totally up to you (they) said see your doctor about them.

Many patients trying support hosiery found it uncomfortable or embarrassing and stopped using it quickly. One person pointed out the difficulty using it in the midst of drug-taking. Some patients, however, did find support hosiery helpful, as for this participant:

> They're marvelous. When you've got fitted when they're fitted rubbish and they're falling down your leg and they're they're not but when they're all like measured. What a difference they make. Like every time I touch my leg it hurts especially when it swells, All over my leg hurts. When I've got that stocking on it doesn't, does oh, it does hurt but not as much.

Shamed Identity

The development of a DVT was almost always a shock. It represented an opportunity to reassess life, of growing older and of mortality. Although recognizing that nondrug users might develop DVTs, almost all understood DVTs to be the sign of intravenous drug use. The personal development of a DVT was, therefore, associated with feelings of shame which showed itself in different ways.

Delays in presentation to hospital. The feelings of shame sometimes resulted in delay in presentation and admission to hospital. This participant explained the delay because of labeling as a drug user:

> I didn't want em to, like think that I, I haven't never been like that before and I didn't want them to think anything. . . other than what it was. You know what I mean. So, it hurts and for like the two weeks but in a way I was glad . . . I went to the hospital like after that time 'cause I don't think I could have lasted much longer to be honest.

Other patients did not want to go to hospital because they wished to hide their drug injecting from the family, as for the following participant:

> Do you know that was it, you know the reason why I did (not) go to the doctors straight away it's because I was try(ing) I was hoping that it was going to go away, and I was gonna be OK because I didn't want none of my family to know eh my partner to know because it was just something that I was hiding away from everybody. And I didn't want it to flag up. So I didn't I didn't go anyway as soon as soon as they found out that was me you know back under scrutiny.

Stigmata. The permanent signs of the DVT had significant implications for how the participants thought of themselves. Injecting drugs intravenously was regarded with shame, and the DVT was a sign of this. The knowledge that it was self-induced—and which other people did not hesitate to tell them—might make the feelings of shame worse. Injecting into the groin was regarded with even greater shame. The groin was regarded as a dirty place. Holes in the groin, developing with repeated injecting, provided a permanent reminder. The following participant, in describing the reasons for hiding the DVT from his family and which caused the delay in admission, said,

> I'd been using and just the stigma with injecting as well, it's just more embarrassing as well. . . Especially around the groin and do you know like it's hard to explain do you know why I'm doing it. Why I'm doing it in that area and because they're think "what the bloody hell you doing?"

This participant, when asked about the effects of the DVT, said,

> Sex life's affected straight away because you've got this huge hole in your groin, you can't, if you meet someone new how do you explain that?

"Holes" in the groin were but one sign of drug injecting. Other permanent signs of a DVT included swelling, scarring from operations, and varicose veins. All these signs acted as visible and permanent indicators to others, and to the individual concerned, of injecting drug-taking behavior, and worse, injecting drug-taking behavior in the groin area. For instance, this respondent when asked about the problems the DVT caused, said,

> They're like old peoples' feet I've got really, I think he said to me, I've got this the system of a old person, you know what I mean? Through groin injecting in my groin and having DVTs it's I've got varicose veins at the backs of my legs an that you know . . . It's like I've aged my legs.

The swelling in particular caused women to avoid wearing skirts and men shorts during the summer. The frequency with which the need to avoid wearing shorts in men was mentioned seemed disproportionate to the actual problem. A possible explanation is that, rather than being a practical problem, the changed appearance represents an internalized sign of shame, as for this man:

> I've tried a few things yeah so now I just think, oh, but I see loads of old, well men my age in their late 40s in the shop. And I see loads of them with bad things wrong their legs and they're not bothered. I think it's just 'cause I know myself what it is. 'Cause I, they're all, last time I did tryen wear shorts it was just the beginning of this summer and I only went to the chemist. I remember this family walking past and every single one of them looked down at my leg straight away, now I wasn't imagining it, I seen them look and I seen their little kids look up at their mum and dad an all that. So they must have went, "Dad," you know like that's what kids do don't they?

Interaction with others. The stigma of having a DVT from drug use resulted in some patients lying about it, some trying to hide it, some to avoid telling family members, and others trying to explain it away. Hiding the DVT was presented as one reason to avoid leaving the house. Some respondents went to some lengths to attribute the various symptoms to something other than the true cause. Attempts to hide the cause by not telling people about it led to feelings of isolation because there was no one with whom to discuss it. At least one respondent was reluctant to let others know about the DVT because she was frightened it would have implications for keeping her children. This respondent, when asked about the effects of the DVT, including effects on his mental health, gave examples of these points:

> Cause I was tryna play it down saying I'd done it at work and got swelling and got poisoning in me leg and what have ya. Because I didn't want people to know what it was, you know what I mean. I just went along the lines that I got a spell in it. It got infected and swelling was all poison. . .It was hard at the time, made me really shameful. It's the only way I can explain it . . . I just buried me head and tried to stay in, keep out the road. So, stay away from everyone.

The DVT also potentially represented a weakness for other people to exploit. In a culture where being, or appearing to be, physically imposing is important, having a DVT represents a vulnerability, as for this respondent:

> I was just, I forgot all about it you know, never mentioned it to anybody, 'cause obviously making means in this type of game and the more people that know about a DVT like I've had it, I've had someone turn on us and try and kick me in the groin because they know that's there.

The changed appearances of the leg—swelling, veins, scarring, ulcers and holes in the groin—were potentially a problem for sexual relationships. This did not apply to everyone—for instance, two sex workers indicated that their sex work was not affected, one of whom minimalized the changed appearance of her legs by comparing them favorably to other drug users. Non–sex workers though thought differently. The embarrassment of "holes" in the groin has been mentioned, and several participants noted that the swelling might affect their confidence in developing new sexual relationships, as for this man:

> I've got my legs are my legs, last three, four year, my legs are rotten. I wouldn't dare have shorts, I wouldn't even dare have a girlfriend now.

Just as the changed physical appearance of the leg might need to be explained to new sexual partners, so also did the bruising apparent from using injections of Heparin to treat the DVT. This respondent, when discussing the medications involved in treating the DVT, said,

> Yeah, there, there's sumit else there I mean impacts your sex life again, you've gotta' you've got a band of bruises permanently around your belly and it's how do you explain it to someone if you just met them?

Interaction with health care workers. As described, many respondents were concerned about the reception they would receive by hospital staff. The cursory information received about DVTs was sometimes attributed to drug use, as for this respondent:

> You know did nothing was explained apart from pins (in) your stomach and then, they didn't even tell me how to discard the needles bit, I know anyway so safely in the bin. So no it was just basically drug user given what he needs to get rid of his blood clot and kick him out.

One participant was sure that he was delayed dispensing of his methadone while in hospital as a punishment, and a further participant felt he was deliberately kept on a low dose of methadone. One respondent mentioned that experiencing opioid withdrawal symptoms made it difficult for him to remain in hospital. For one participant, the perceived adverse attitudes of staff were a disincentive for him to return for a follow-up appointment, which—as a different respondent argued—was difficult enough if you are taking heroin. However, not all participants reported negative attitudes, and at least one participant was pleasantly surprised by positive attitudes of hospital staff.

Suggestions made for improvements. When asked for suggestions for improvements in services, more information was suggested. Other suggestions related to issues involving stigma. For instance, one suggestion included a dedicated professional at hospital available to arrange the scans and provide information in a nonjudgmental way. Support groups were mentioned. It was suggested that support groups would provide opportunities to exchange stories between people with similar experiences and also be an opportunity to obtain practical help and advice:

> I think it could be improved mostly by like if people would be like willing to come in and do like kind of like group together so you can hear other peoples' thoughts and feelings about it and how they cope with it and what they done.

An important reason for the group would be to overcome the stigma and resulting isolation resulting from a DVT. The following respondent, when asked about how services might be improved, poignantly remarked that the research interview was the first opportunity for him to discuss the DVT with anyone:

> Yeah, maybes to talk about it 'cause there's like I say there are, I think, I was 20 when I got mine. I'm 34 now and this is the first time I've spoke about it.

Discussion

The respondents were aware of the association of DVTs with injecting drug use and the increased risk of recurrence with continuing injecting (Cornford et al., 2011). Amputations represented the most visible sign and the main worry. The DVT was a significant event and a few patients stopped injecting as a result. Many patients continued injecting despite knowing about the cause of the DVT and increased risk of recurrence. As some patients indicated, even the risk of an amputation does not necessarily change behavior. From the participants' accounts,

simply providing information about the risks of further DVTs with injecting is unlikely to be helpful. Exploring current injecting behavior through an approach such as motivational interviewing is likely to be more appropriate (Miller & Rollnick, 2013).

Despite the frequency of DVTs, a few patients claimed to be surprised by the diagnosis. There may be several explanations for this apparent discrepancy. The most obvious is a rationalization—to dismiss the unwelcome diagnosis and attempt to ignore it. A further explanation is that the stigma of having a DVT means that discussion is limited with other drug users and the true risks of developing a DVT are hidden.

Admission was frequently delayed to avoid the stigma of being labeled as a drug user by hospital staff and to avoid family members knowing. Delays are important because they adversely affect outcomes for severe infections associated with DVTs from drug use (Mittapalli, Velineni, Rae, Howd, & Suttie, 2015). The stigmatizing effects of DVTs may partly explain the reported high mental health morbidity (Cornford et al., 2011). Injecting drug use has been shown to be stigmatizing in many studies (Lloyd, 2013; Radcliffe & Stevens, 2008; Rhodes, Briggs, Kimber, Jones, & Holloway, 2007). Internalizing of guilt, described by Goffman (1973) and shown to be significant in the choice of treatment provider for pregnant drug users (Kramlich, Kronk, Marcellus, Colbert, & Jakub, 2018), was shown to be important in this study as well. Confidence in future sexual relationships was affected, though not for two sex workers. There are several possibilities for why the two sex workers did not think their work was affected. It is possible that this was an attempt to rationalize injecting behavior. A further explanation may be that feelings of embarrassment are not relevant in sex work.

Health professionals should be mindful of the participants' perception of prejudice against them by hospital staff. In particular, the feelings of shame are internalized and so any evidence of prejudice will be readily perceived by the individual concerned. The variation in how the participants experienced the attitudes of hospital staff would suggest that there is a problem with some staff and which confirms other research (Van Boekel, Brouwers, van Weeghel, & Garretsen, 2013). The need for effective and prompt treatment with OST within the hospital setting was confirmed.

The reasons for the high levels of physical morbidity previously reported (Cornford et al., 2011) came across strongly. Pain, swelling, reduced mobility, and physical problems looking after children were all reported. Many participants had been prescribed heparin or dalteparin injections as medications for the DVT rather than warfarin, in keeping with previous recommendations (Russell & Dawson, 2004). Nevertheless, bruising from the repeated injections was a problem. Heparin injections for a patient with a DVT in the standard population might be given for a few days until established on warfarin, but for this population, the treatment would continue for 3 months or longer. The bruising is, therefore, a significant consideration.

The suggestion that continuing symptoms might act as a trigger to comply with medication was confirmed (Cornford et al., 2011). There were important differences between the conventional medical rationale for treating DVTs—reducing the risk of a recurrence and reducing the risk of a pulmonary embolus—and the participants' understanding of medication as a treatment of the DVT itself. The differences in meanings are a source of conflict with health care professionals, and further explanations about the role of anticoagulants might be helpful. The explanations would include the rationale for the purpose of medication—to prevent a further DVT in the risky period immediately after the DVT. Explaining carefully the lack of effect on the symptoms of the DVT and postthrombotic complications might be helpful.

The participants also seemed unaware of the increased risks associated with injecting specific drugs (Wright et al., 2016). Although there were no direct questions to determine beliefs about different drugs injected, there was no evidence to suggest that participants understood the different risks of specific drugs in forming a DVT. They seemed unaware of the increased risks with wider bore needles; such information might be helpful.

Treatments for DVTs include effective pain relief, exercise such as walking, and support stockings (Shrier et al., 2009). Our study was not designed to determine the effectiveness of analgesic prescribing, though the problems with pain were clearly reported. There was no evidence that the participants were taking more exercise as a treatment option; indeed, the suggestions were that they were more restricted both for physical reasons and because of isolation. Based on the responses of some participants, there appeared to be a lack of information about support stockings and a lack of effort to promote their use. Their role in preventing postthrombotic symptoms might be better stressed and more encouragement provided in their continued use. There was a variation in how comfortable the participants found support stockings. Services might be designed better to ensure that a higher percentage of patients are fitted with stockings and that the stockings fitted are comfortable. In any case, encouragement to return for further advice whether the stockings initially are uncomfortable might be helpful.

The need for a support group comprising individuals who had experienced a DVT was discussed by several participants. Support groups would potentially alleviate some of the isolation and stigma, and provide opportunities to exchange experiences. The exchange of experiences within

group settings for drug users has been noted as important by Yang, Perkins, and Stearns (2018). A service development of this kind should be feasible and would provide the basis for further study as well as providing an opportunity to follow up the individuals concerned over a longer period of time.

Strengths and Weaknesses

This is the first qualitative study of the experiences of drug users with DVTs. Because the study was based in the service through which they were receiving treatment and the interviews arranged while attending appointments, we were able to interview individuals from a group which is relatively difficult to access. We were able to recruit a cross section of patients with DVTs as a result of injecting. Despite this, we were unable to recruit anyone under the age of 30 years. Although the experiences of stigma came across strongly in the study, single interviews have limitations compared with repeated interviews. Some explanations provided may reflect what the interviewee believes the interviewer wishes to hear or be a rationalization of behavior. Embarrassment may have been a further issue and account, for instance, for the rare discussion of ulcers despite their prevalence (Coull et al., 2014). Repeated interviews might have helped clarification.

Conclusion

Almost all patients attributed the DVT to groin injecting, though other factors were thought partially responsible—including blunt and dirty needs, vulnerable veins, missed injections, and general misuse of the body. Medications were understood as a treatment for the existing DVT which, by dissolving the clot and allowing the blood to circulate more freely, would relieve symptoms. Taking medication for a predetermined length of time, therefore, seemed illogical. There were worries about traveling clots, including traveling to the heart and causing death; but the most pertinent worry, reinforced by contact with other intravenous (IV) drug users, was amputation. Although respondents understood stopping injecting as important in preventing further DVTs, this did not necessarily result in changed behavior. Justification of continuing injecting was made in various ways, including reduced injecting, injecting only for "good" reasons, injecting with clean and new needles, or being especially vigilant about the body. Indeed, being more aware of the body and more aware of a possible new DVT resulted from the experience of DVT. Other effects included significant pain and swelling and which impacted on physical activities and social roles. Although one reason to inject into the groin was to avoid the censure of being a drug injector, ironically the development of a DVT led to long-standing stigmata that were signs of that exact status. Injecting in the groin, shown by the development of "holes" was regarded as particularly "dirty." Partly because of the stigma, avoiding telling people and delays in admission to hospital were commonly reported. Once diagnosed, attempts to hide the diagnosis were also commonly reported. There were mixed reports about attitudes of hospital staff, and some were reluctant to be admitted because of perceived negative reactions. Feelings of isolation were common, and the participants suggested support groups for those with DVTs from injecting drug use.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The authors received a grant from South Tees CCG for financial support for the research.

Note

1. Heroin.

ORCID iD

Charles Cornford https://orcid.org/0000-0001-9284-518X

References

Campbell, I. A., Bentley, D. P., Prescott, R. J., Routledge, P. A., Shetty, H. G. M., & Williamson, I. J. (2007). Anticoagulation for three versus six months in patients with deep vein thrombosis or pulmonary embolism, or both: Randomised trial. *British Medical Journal*, *334*, 674–677. doi:10.1136/bmj.39098.583356.55

Cooke, V. A., & Fletcher, A. K. (2006). Deep vein thrombosis among injecting drug users in Sheffield. *Emergency Medicine Journal*, *23*, 777–779. doi:10.1136/emj.2005.033688

Cornford, C. S., Mason, J. M., & Inns, F. (2011). Deep vein thromboses in users of opioid drugs: Incidence, prevalence, and risk factors. *British Journal of General Practice*, *61*, e781–e786. doi:10.3399/bjgp11X613115

Coull, A. F., Atherton, I., Taylor, A., & Watterson, A. E. (2014). Prevalence of skin problems and leg ulceration in a sample of young injecting drug users. *Harm Reduction Journal*, *11*, Article 22. doi:10.1186/1477-7517-11-22

Goffman, E. (1973). *Stigma: Notes on the management of spoiled identity*. Harmondsworth, UK: Penguin Books.

Jeal, N., & Salisbury, C. (2007). Health needs and service use of parlour-based prostitutes compared with street-based prostitutes: A cross-sectional survey. *BJOG: An International Journal of Obstetrics & Gynaecology*, *114*, 875–881. doi:10.1111/j.1471-0528.2007.01379.x

Kramlich, D., Kronk, R., Marcellus, L., Colbert, A., & Jakub, K. (2018). Rural postpartum women with substance use disorders. *Qualitative Health Research*, *28*, 1449–1461. doi:10.1177%2F1049732318765720

Leppo, A. (2012). "Subutex is safe": Perceptions of risk in using illicit drugs during pregnancy. *International Journal of Drug Policy*, *23*, 365–373. doi:10.1016/j.drugpo.2012.01.004

Lloyd, C. (2013). The stigmatization of problem drug users: A narrative literature review. *Drugs: Education, Prevention and Policy*, *20*, 85–95. doi:10.3109/09687637.2012.743506

Mackenzie, A. R., Laing, R. B. S., Douglas, J. G., Greaves, M., & Smith, C. C. (2000). High prevalence of iliofemoral venous thrombosis with severe groin infection among injecting drug users in North East Scotland: Successful use of low molecular weight heparin with antibiotics. *Postgraduate Medical Journal*, *76*, 561–565. doi:10.1136/pmj.76.899.561

Malone, P. C., & Agutter, P. S. (2006). The aetiology of deep venous thrombosis. *QJM: An International Journal of Medicine*, *99*, 581–593. doi:10.1093/qjmed/hcl070

McColl, M. D., Tait, R. C., Greer, I. A., & Walker, I. D. (2001). Injecting drug use is a risk factor for deep vein thrombosis in women in Glasgow. *British Journal of Haematology*, *112*, 641–643. doi:10.1046/j.1365-2141.2001.02633.x

Miles, M., & Huberman, A. (1994). *Qualitative data analysis*. London: SAGE.

Miller, W. A., & Rollnick, S. (2013). *Motivational interviewing: Helping people change* (3rd ed.). New York: Guilford Press.

Mittapalli, D., Velineni, R., Rae, N., Howd, A., & Suttie, S. A. (2015). Necrotizing soft tissue infections in intravenous drug users: A vascular surgical emergency. *European Journal of Vascular and Endovascular Surgery*, *49*, 593–599. doi:10.1016/j.ejvs.2015.02.002

Pieper, B., Kirsner, R. S., Templin, T. N., & Birk, T. J. (2007). Injection drug use: An understudied cause of venous disease. *Archives of Dermatology*, *143*, 1305–1309. doi:10.1001/archderm.143.10.1305

Radcliffe, P., & Stevens, A. (2008). Are drug treatment services only for "thieving junkie scumbags?" Drug users and the management of stigmatised identities. *Social Science & Medicine*, *67*, 1065–1073. doi:10.1016/j.socscimed.2008.06.004

Rhodes, T., Briggs, D., Kimber, J., Jones, S., & Holloway, G. (2007). Crack-heroin speedball injection and its implications for vein care: Qualitative study. *Addiction*, *102*, 1782–1790. doi:10.1111/j.1360-0443.2007.01969.x

Riley, J. (1990). *Getting the most from your data*. Bristol: Technical and Educational Services.

Russell, M., & Dawson, D. (2004). Low molecular weight heparin for intravenous drug users with deep vein thrombosis. *Emergency Medicine Journal*, *21*, 711–713. doi:10.1136/emj.2004.019653

Senbanjo, R., & Strang, J. (2011). The needle and the damage done: Clinical and behavioural markers of severe femoral vein damage among groin injectors. *Drug and Alcohol Dependence*, *119*, 161–165. doi:10.1016/j.drugalcdep.2011.06.001

Shrier, I., Kahn, S. R., & Steele, R. J. (2009). Effect of early physical activity on long-term outcome after venous thrombosis. *Clinical Journal of Sport Medicine*, *19*, 487–493. doi:10.1097/JSM.0b013e3181bd11a3

Syed, F. F., & Beeching, N. J. (2005). Lower-limb deep-vein thrombosis in a general hospital: Risk factors, outcomes and the contribution of intravenous drug use. *QJM: An International Journal of Medicine*, *98*, 139–145. doi:10.1093/qjmed/hci020

Van Boekel, L. C., Brouwers, E. P. M., van Weeghel, J., & Garretsen, H. F. L. (2013). Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: Systematic review. *Drug and Alcohol Dependence*, *131*, 23–35. doi:10.1016/j.drugalcdep.2013.02.018

Wright, N. M. J., Allgar, V., & Tompkins, C. N. E. (2016). Associations between injecting illicit drugs into the femoral vein and deep vein thrombosis: A case control study. *Drug and Alcohol Review*, *35*, 605–610. doi:10.1111/dar.12359

Yang, Y., Perkins, D. R., & Stearns, A. E. (2018). Barriers and facilitators to treatment engagement among clients in inpatient substance abuse treatment. *Qualitative Health Research*, *28*, 1474–1485. doi:10.1177/1049732318771005

Author Biographies

Charles Cornford, DM, is a retired General Practitioner (GP) and former Senior Lecturer in General Practice and Primary care at the University of Durham, UK.

Lorraine Fraser, MSc, has had over 20 years of experience of working within forensic psychology, substance misuse, general counseling, children's counseling, and Improving Access to Psychological Therapies (IAPT) services.

Nat Wright, PhD, has over 20 years of experience providing treatment to, and undertaking research among, drug-using populations.