

# Broken Hand Sewing Needle Injuries in the Northeastern Region of Nigeria – A Five-Year Retrospective Review

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## Abstract

**Background:** In the Northern part of Nigeria, the North-East in particular, the weaving of traditional caps by the people is a common practice and it is associated with injuries to various parts of the body. **Aim:** The study is aimed at finding out how common is broken hand-sewing needle injuries amongst these group of artisans and why and what part of the body is usually involved and suggest a way out. **Materials and Methods:** All the case note of the patients who had broken hand sewing needles removed from any part of their bodies were retrieved and analyzed. **Results:** A total of 192 case notes were retrieved. One hundred and twenty eight, (66.7%), were females while 64, (33.3%) were males, giving a male to female ratio of 1:2. All were aged 1 to 60 years. One hundred and fifty two, (79.2%) of all the patients were below the age of 30 years while 38 (19.8%) were age 31 to 50 years. Those aged above 50 years accounted for 2 (1%). Children of school going age who were out of school accounted for 77 (40.1%), followed by those in school 47 (24.5%). Pre-school age group and those above fifty years of age accounted for 34 (17.7%) and 10 (5.2%) respectively; The foot accounted for 81 (42.2%), followed by the knee 47 (24.5%), hand 31 (16.1%), gluteal area 17, (8.9%), thigh 7 (3.6%), elbow 5 (2.6%) and ankle (2.1%); There was no complication in 168 (87.5%) of the cases after the removal of the broken piece (s), 22 (11.5%) had some degree of wound infection that delayed healing and 2 (1%) had tetanus that required longer hospital stay but were eventually discharged home; 190 (99.9%) of the patients had removal attempted elsewhere before coming to us. Only 2 (1.0 %) came with no attempt at removal and 2 (1%) came with symptoms of tetanus. **Conclusion:** The art of producing native caps by hand has come to stay. The dangers associated with the art may just be getting worse. Government must do something about it.

**Keywords:** Associated dangers, broken-hand-sewing needle, incidence, removal

## INTRODUCTION

Each profession has its hazards. In the northern part of Nigeria, the northeast in particular, the weaving of traditional caps by the people is one of such. Borno in particular is known for being the best in sewing traditional male caps that are being transported to many countries in Africa, Asia, and Europe [Figure 1]. This is because they are beautiful, durable, and adorable.<sup>[1]</sup> The people make use of a hand sewing needle to produce these beautiful caps and sell to the public to make a living. More often, however, these needles are not properly stored up and they end up being marched or sat upon and often get broken either initially or in an attempt to remove them by the individual. Children were found to be more affected than the adults in our study. This is followed by an apprehension on the part of the victims who usually go to medicine stores to have them removed and eventually end

up in a hospital with a failed attempt at removal, sometimes with septic wounds that often lead to complications ranging from wound infection, abscesses to overt tetanus.

## Aim

The study is aimed at finding out how common is broken hand sewing needle injuries among these groups of artisans and what part of the body is usually involved. We also tried to proffer solutions that will lead to avoiding these injuries amongst these artisans.

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## MATERIALS AND METHODS

After obtaining approval from the Research and Ethics Committee of the hospital, all the case notes of patients who had broken hand sewing needles removed from any part of their bodies were retrieved and analyzed. Information on sociodemographic characteristics was also obtained from the health records department and analyzed.

**Table 1: Sex distribution**

Sex	n (%)
Male	64 (33.3)
Female	128 (66.7)
Total	192 (100)

**Table 2: Age distribution**

Age (years)	n (%)
1-10	20 (10.4)
11-20	92 (47.9)
21-30	40 (20.8)
31-40	30 (15.6)
41-50	8 (4.2)
51-60	2 (1.0)
Total	192 (100)

**Table 3: Part of body affected**

Site	n (%)
Foot	81 (42.2)
Knee	47 (24.5)
Hand	31 (16.1)
Gluteal area	17 (8.9)
Thigh	7 (3.6)
Elbow	5 (2.6)
Ankle	4 (2.1)



**Figure 1:** Finished caps

## RESULTS

A total of 192 case notes were retrieved. One hundred and twenty-eight (66.7%) were females, whereas 64 (33.3%) were males, giving a male-to-female ratio of 1:2 [Table 1].

All were aged 1–60 years. One hundred and fifty-two (79.2%) of all the patients were below the age of 30 years, whereas 38 (19.8%) were aged 31–50 years. Those aged above 50 years accounted for two (1%). Children of school-going age who were out of school accounted for 77 (40.1%), followed by those in school 47 (24.5%). Preschool age group and those above 50 years of age accounted for 34 (17.7%) and 10 (5.2%), respectively [Table 2].

The foot accounted for 81 (42.2%), followed by the knee 47 (24.5%), hand 31 (16.1%), gluteal region 17 (8.9%), thigh 7 (3.6%), elbow 5 (2.6%), and ankle (2.1%) [Table 3].

In 135 (70.4%) cases, removal was done without the aid of an image intensifier (C-arm), while this was used in 57 (29.6%) of the cases. Spinal anaesthesia was used in 132 (68.8%), 36 (18.8%) were done under general anaesthesia, 24 (10.4%) under local anaesthesia, and 4 (2.1%) under sedation [Table 4a and b].

One hundred and seventy-six patients (91.7%) presented to the hospital within one week of the injury, ten (5.2%) after one week, four (2.1%) after one month, while two (1%) came after two months [Table 5].

There was no complication in 168 (87.5%) of the cases after the removal of the broken piece (s), 22 (11.5%) had some degree of wound infection that delayed healing, and 2 (1%) had tetanus that required a longer hospital stay but were eventually discharged home [Table 6].

One hundred and ninety (99.9%) of the patients had removal attempted elsewhere before coming to us, mostly at a medicine store or government clinic. Only two (1.0%) came with no attempt at removal. One hundred and ninety (99.0%) of the patients came with complaints of a retained broken needle with an attempt at removal, whereas two (1%) came with symptoms of tetanus.

## DISCUSSION

Almost all professions are associated with some hazards, especially if they are done in the traditional way. While, in other climes, these have been improved scientifically, most African countries still do them the traditional way. This is because of the belief that caps made by hand are more valuable and often more expensive. They are also believed to preserve tradition and always have a story to tell.<sup>[2]</sup> It is therefore not surprising that caps won by men which are sewn by hand are still popular in this part of the world and always more expensive (often ten times more) than those that are mass-produced by machines, making this trade to remain with us. They are also known to have some special effects on most people.<sup>[3,4]</sup> Despite the huge man-hour required to

produce these items by hand, more and more people go into this profession since the reward is much. This exposes people to various forms of injuries from the needles used. It is more so because there are no formal schools where this trade is learned so that safety measures will be taught. It was noted that children who did not have access to good western education were mostly engaged in the trade [Figure 2]. Our findings also showed that caps from a particular part of the northeast are more patronized and most of the patients are residents there or migrated to other areas with their trade.

**Table 4a: Technique of removal**

Technique	n (%)
Unaided	135 (70.4)
C-arm aided	57 (29.6)
Total	192 (100)

**Table 4b: Type of anesthesia**

Anesthesia	n (%)
Spinal	132 (68.8)
General	36 (18.8)
Local	24 (10.4)
Sedation	4 (2.1)
Total	192 (100)

**Table 5: Duration of injury**

Duration	n (%)
Less than one week	176 (91.7)
More than one week	10 (5.2)
Up to one month	4 (2.1)
More than one month	2 (1)
Total	192 (100)

Women who are not usually allowed outside the house and most often uneducated are the ones mostly engaged in this art and are the majority of those injured. The men, though also are engaged, usually fall victims when they step on the needles that are not properly store-up or left carelessly by the women [Table 1]. The victims are usually between the ages of 11 and 40 years, at which age they are either learning or are fully engaged in the trade [Table 2 and Figure 2 and 3]. Our study showed that the foot was mostly affected, 82 (42.2%), because the needle and the unfinished cap are usually left on the floor in usually poor lit rooms and are then stepped upon even by those that left them there. This was followed by the knee and the hand, 47 and 31 or 24.5% and 16.1%, respectively. This is because these parts of the body are used to sit down from the standing position or hold the unfinished cap and the needle, respectively [Figure 3]. The gluteal region, thigh, elbow, and ankle were least affected as seen in our study [Table 3].

In our study, we noticed that most of the broken piece (s) was seen on plain radiographs [Figure 4] which should always be employed<sup>[5]</sup> and removed under a tourniquet. The bloodless field made it possible for the piece to be seen because it always changed to black due to the reaction of the silver coating with body fluids.<sup>[6]</sup> The point of entry was also easily identified due to earlier attempt at removal by other people. This was possible in 135 (70.4%) of the cases. In 57 (29.6%) of the cases, however, an image intensifier (C-arm) was used for locating the piece (s) because it has migrated deep into the tissues [Table 4a]. The C-arm also was seen to minimize the amount of dissection required to locate the piece (s) and hence reduced tissue damage.<sup>[7,8]</sup> In 132 (68.8%), spinal anaesthesia was used so that a tourniquet could be applied to provide a bloodless field. The spinal anaesthesia also helped to prevent pain from the tourniquet. General anaesthesia was used in all the children, 36 or 18.8%, in whom spinal anaesthesia was not appropriate. Local infiltration with



**Figure 2: Youths making caps**



**Figure 3: Caps weaving**



**Table 6: Outcome of treatment**

Outcome	n (%)
Uneventful	168 (87.5)
Wound infection	22 (11.5)
Infection+tetanus	2 (1)
Total	192 (100)



**Figure 4:** 4a and 4b showing lateral and antero-posterior X-ray views with the broken needle prior to removal

Xylocaine was possible in few cases where the piece (s) was in an area devoid of deep subcutaneous tissue, such as the ankle and elbow, mostly in older patients [Table 4b]. Majority of the patients, 176 (91.7%), reported within one week of the injury, while others came in after one week or much later, 10 (5.2%) and 2 (1%), respectively [Table 5]. It was in this later group that we observed complications such as wound infection and mild tetanus. One of the patients that presented with tetanus was given a broken piece of needle and told that the piece was removed by a mallam (native doctor), but on X-ray, the piece was still in the foot. We later found out that he gave them a fake broken piece. Therefore, a good history and thorough examination is important in all cases of suspected retained metallic objects in the body.<sup>[9,10]</sup> All the cases that reported early, 168 (87.5); had uneventful recovery after the broken piece was extracted while those that came late had some degree of wound infection or life threatening condition like tetanus.

People have described the use of magnets for the removal of metallic objects from body planes and cavities<sup>[11,12]</sup> or locating the position of these objects in the subcutaneous planes.<sup>[13]</sup> None of the modalities was used in all the cases reviewed. Surgical removal and plain X-rays were the only modalities used. Furthermore, there was no evidence of child abuse or psychiatric disposition in our findings.<sup>[14,15]</sup>

This problem may appear simple. However, it may assume a bigger dimension if solutions are not proffered now. Poverty is getting worse coupled with the rise in insecurity in this part of

the country, and more and more people will surely get involved, injured, end up with quacks, and later add to the burden of work for qualified people. We suggest that the art of making these caps be formalized by government and should be in the curricular of schools where it can be made safer. This should be applied to such trades and art all over the country.

## CONCLUSION

The art of producing native caps by hand has come to stay. The dangers associated with the art may just be getting worse. Government must do something about it.

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## Conflicts of interest

There are no conflicts of interest.

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