

# A Study to Assess the Intensity of Pain Experienced by Respondents Following Vein Flow Insertion in a Selected Hospital of New Delhi

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## Abstract

In hospital practice, intravascular cannula is used for various purposes like administration of drugs, fluids and to draw out blood. Pain inflicted by the insertion of cannula into the skin is a significant concern. Efforts should be made to assess and manage acute pain related to cannula insertion as, by doing so, nurses can reduce pain, increase patient comfort, satisfaction and improve patient's outcome. Venous cannulation is painful but is often performed without any analgesia. Cannulation pain has been ranked fifth out of 33 low-morbidity adverse clinical outcomes listed by expert anesthetists, when both clinical importance and frequency were considered. A study was conducted to assess the intensity of pain experienced by respondents following vein flow insertion. Descriptive survey approach was adopted to gather data. Purposive sampling technique was used and the sample comprised 30 patients admitted in surgical ward and undergoing vein flow insertion were chosen as sample subjects. A structured interview schedule and visual analog scale was used to collect the data. The major findings of the study revealed that the respondents undergoing vein flow insertion had moderate to severe degree of pain following insertion. The patients undergoing vein flow insertion have moderate to severe degree of pain following insertion and thus appropriate nursing measures should be taken to reduce the pain.

**Keywords:** Pain, Vein flow insertion

## Introduction

The word pain is derived from the Greek word *poine*, which means penalty or punishment. Pain is a sensory experience associated with actual or potential damage of tissues, with physiological and psychological responses. Pain is a personal experience and varies from person to person. It is manifested in verbal and nonverbal behaviors, physiological responses like pulse rate, respiratory rate, blood pressure, emotional and spiritual reactions.<sup>1</sup>

Nearly 80% of the population in the world has either insufficient or no access to treatment for severe and moderate pain during IV cannulation. Every year millions of people around the world suffer from pain without treatment. Reasons for proper pain management failure include cultural, religious, societal and political attitudes, including acceptance of torture.<sup>1</sup>

Intravenous parenteral therapy is a very common procedure in modern medicine. Thousands of patients throughout the world receive intravenous cannulas (IVCs) used to administer drugs, solutions or blood substitute and for life-saving treatment. However, this procedure is painful and for some patients the pain is almost intolerable and anxiety-provoking for many.<sup>2,3</sup>

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Most research literature on intravenous cannulation focuses on technical practice and mechanistic care of PIVC; however, only a few studies highlight concerns of patients' experiences.<sup>3</sup>

According to Knepel, venous cannulation for IV starts and blood drawn is the most common procedure in the acute care setting, and cannulation causes moderate to severe pain in a significant number of patients. Infusion nurses have been issued guidelines for both adult and pediatric patients by national and international organizations regarding assessment and the predictable pain of IV initiation.<sup>4</sup>

Procedures performed on the patients are to be considered biopsychosocial experiences for the patient rather than simply tasks to be completed. As such, thorough assessment of pain and maintaining patient comfort before, during, and after procedures by collaborating with the patient and family in the creation of an individualized plan of care for comfort and coping should be a priority and should occur before the procedure begins. If the patient is likely to experience repeated procedures, optimal assessment and comfort management with the initial procedure is crucial.<sup>5</sup>

## Materials and Methods

The study was conducted at Deen Dayal Upadhyay Hospital, Hari Nagar, New Delhi in post-operative ward (ward-6). The rationale for selecting this hospital was familiarity with the hospital and permission granted by hospital authority for conducting study and also keeping in mind the economy of time, energy and cost of this research. The research approach used for the study was descriptive survey approach. 30 samples, who were undergoing intravenous

cannula insertion and were between age group of 30 and 70 years in surgery ward-6 in DDU Hospital, were selected for the study. A purposive sampling technique was used to select the samples undergoing vein flow insertion. After obtaining formal permission for the study, the process of data collection procedure was started between October 2016 and November 2016. Informed consent was taken from the sample subjects. The purpose of study was made clear to the clients and they were assured of the confidentiality of the responses in order to get full cooperation. Data was collected by asking questions face to face in Hindi language. A two-part structured interview schedule was used to collect the demographic data and clinical profile of the respondents. A visual analog scale (VAS) was used to assess the pain of the respondents. The visual analog scale is a standardized tool for assessing pain. It consists of 100 mm line with the left anchor representing "No pain" and the right anchor representing "the worst possible Pain". The clients were asked to place a mark indicating the degree of their current pain on the line at the assessment time, i.e., soon after insertion. Content validity of the tool was obtained to ensure the validity of the structured interview schedule.

## Results

The data revealed the following results

### Sample Characteristics

The sample characteristics included in the study for the purpose of obtaining background information were: age, gender, personal habits, educational status, occupation, type of family and type of diet.

## Section: 1

Table 1. Frequency and Percentage Distribution of Respondents Undergoing Vein Flow Insertion according to Their Background Information

S. No.	Criteria	Frequency	Percentage (%)
1	<b>Age</b>		
1.1	30–40 years	16	53
1.2	41–50 years	6	20
1.3	51–60 years	5	17
1.4	61–70 years	3	10
2	<b>Gender</b>		
2.1	Male	16	53
2.2	Female	14	47
3	<b>Personal Habits</b>		
3.1	Alcoholic	1	3.3
3.2	Chewing tobacco	4	13.3
3.3	Both smoking and alcohol	2	6.6
3.4	Both alcohol and chewing tobacco	2	6.6
3.5	Taking alcohol, smoking and chewing tobacco	1	3.3
3.6	None	20	56
3.7	Other illicit drug user	0	0
4	<b>Educational Status</b>		
4.1	Illiterate	8	26.6
4.2	Primary	8	26.6
4.3	Secondary	6	20
4.4	Higher Secondary	3	10
4.5	Graduated and above	5	16.8
5	<b>Occupation</b>		
5.1	Unemployment	12	40
5.2	Government service	2	7
5.3	Private service	8	27
5.4	Retired	0	0
5.5	Business	4	13
5.6	Daily wages	4	13
6	<b>Type of Family</b>		
6.1	Nuclear	22	73
6.2	Joint Family	8	27
7	<b>Type of Diet</b>		
7.1	Vegetarian	19	63
7.2	Non-vegetarian	11	37

Section: 2

Table 2. Frequency and Percentage Distribution of Past Illness and the Reaction towards Illness and Problems in the Life of Respondents Undergoing Cannula Insertion

S No.	Criteria	Frequency	Percentage (%)
1	<b>Is there a history of any previous surgery?</b>		
1.1	Yes	10	33
1.2	No	20	67
2	<b>Do you have any pre-existing illness?</b>		
2.1	Hypertension	3	9
2.2	Diabetes	4	12
2.3	Bleeding disorder	1	3
2.4	None	24	73
3	<b>Are you presently on any medication?</b>		
3.1	Yes	6	20
3.2	No	24	80
4	<b>What is your reaction during strange situation?</b>		
4.1	Address the problem immediately	2	6.6
4.2	Think about what to do and then take action	20	66.6
4.3	Sit back and let think workout themselves	8	26.8
5	<b>Do you usually do your work in hurry?</b>		
5.1	Yes	8	26.6
5.2	No	17	56.6
5.3	Depends on work	5	16.8
6	<b>What is your reaction during illness/problem?</b>		
6.1	Visit the doctor	9	30
6.2	Self-treatment	9	30
6.3	Wait for self-improvement	12	40

n=30

Section: 3

Table 3. Pain Assessment of the Respondents Using Visual Analog Scale (VAS)

S. No.	Criteria	Frequency	Percentage
1.	<b>Pain rating scale</b>		
1.1	No pain	0	0
1.2	Mild	6	20
1.3	Moderate	14	46.7
1.4	Severe	10	33.3
1.5	Extreme	0	0

n=30

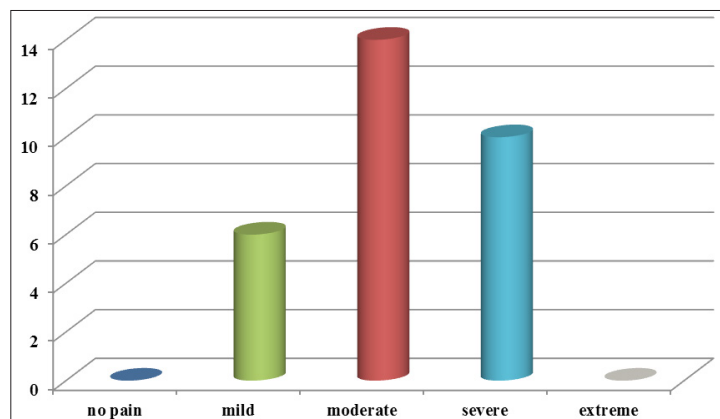


Figure 1.A Cylindrical Bar Diagram Depicting the Pain Assessment of the Respondents Using Visual Analog Scale

The data presented in Table 3 and Fig. 1 shows that none of the respondents had painless vein flow insertion. Likewise, none of them had extreme pain during vein flow insertion. Only a few respondents, i.e., 6 (20%) had mild pain, while most of the respondents, i.e., two-thirds (24 out of 30) had moderate to severe pain during vein flow insertion.

## Discussion

More than 50% of the respondents were in the age group of 30–40 years of age, which indicated that the majority of the patients were in the middle age developmental group. Most of the patients (53%) in this study were male. Pain was experienced by 80% of the patients during vein flow insertion. This finding is similar to a study conducted by Tee, which reported that 95% of patients experienced pain when the vein flow was placed.<sup>3</sup> This is also supported by a study done by Beck et al., who also revealed that insertion of an intravenous (IV) catheter is required for most surgical procedures and can provoke anxiety and pain. Vein flow insertion is a very painful and distressing procedure, which may even stop patients from seeking healthcare and refusing to undergo cannulation.<sup>6</sup>

In the study, the pain was assessed by using visual analog scale (VAS) which was similar to a study done by Svensson et al.<sup>2</sup> In this study, the patients were asked to report pain intensity on a VAS measuring no pain (zero) to maximum possible pain (ten). The VAS was chosen because it is a validated and reliable instrument and has been used in other interventional studies of pain on IVC insertion.

## Conclusion

Vein flow insertion is a very common procedure in the hospital settings and intensity of pain experienced by

people is different and depends upon many factors. Pain assessment and management is primarily a nurse's responsibility. Thus it is important for nurses to assess the pain properly so that appropriate non-pharmacological and pharmacological measures can be implemented timely.

**Conflict of interest:** None

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