


The Effectiveness of Counselling by Pharmacists in Improving Diabetic Patients' Insulin Injection Technique in A Malaysian State Hospital

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Research Background


- Diabetes mellitus (DM) has become a health problem in many countries, including Malaysia. (WHO, 2007)¹

Prevalence	Year	
	2000 (million)	2030 (million)
Global	171	366
Malaysia	0.94	2.48

1. World Health Organization – Prevalence of diabetes. World Health Organization c2007. Available at http://www.who.int/diabetes/facts/world_figures/en/ [Assessed on July 2007]

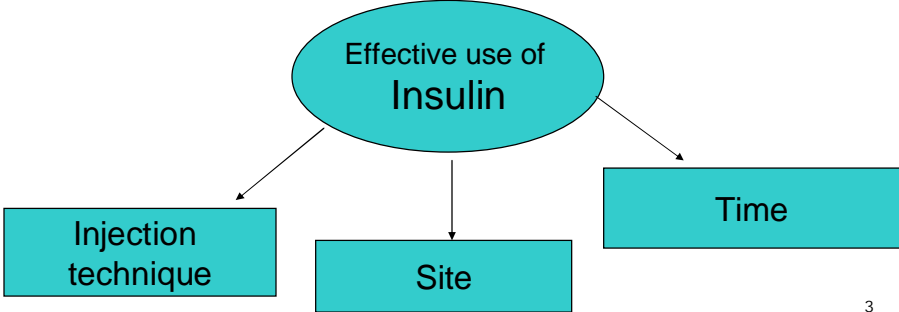
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Research Background

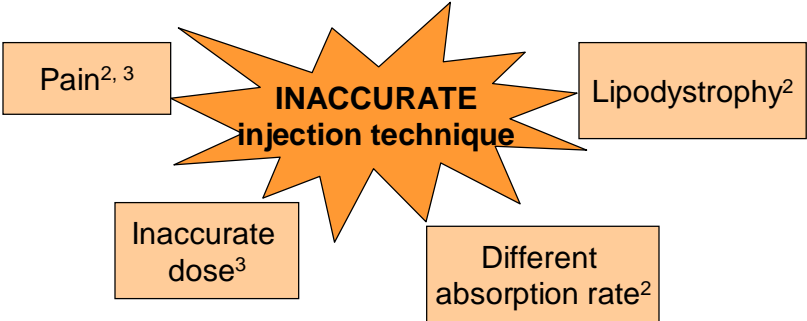
- Insulin – commonly prescribed for Type 1 & Type 2 DM.
- Effective use of insulin is required for good glycaemic control



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Research Background



- Optimal injection technique is essential for good diabetes control. (King, 2003)⁴

2. Partanen TM, Rissanen A. Insulin injection practices. *Practical Diabetes Int* 2000;17(8):252-254
3. Dunning T. Insulin delivery devices. *Australian Prescriber* 2002;25:136-138
4. King L. Subcutaneous insulin injection technique. *Nursing Standard* 2003;17(34):45-52

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Literature Review

- *Tankova et al, (2001)*⁵, 207 insulin treated patients were given education on
 - basic knowledge on diabetes
 - meal planning
 - physical exercise
 - complications
 - injection technique
- Significant improve of QOL, metabolic control & ↓ risk of complications

5. Tankova T, Dakovska G, Koev D. Education of diabetes patients – a one year experience. Patient Education and Counseling 2001;43:139-145

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Research Objectives

- 1) To assess patients' insulin injection technique.
- 2) To determine the effectiveness of counselling by pharmacists in improving patients' insulin injection technique.

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Methods

Type of study	Cross-sectional study
Settings	Medical Out-Patient Department Hospital Tuanku Ja'afar, Seremban (MOPD)
Sample size	143
Duration	2 months (August & September 2007)

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Methods

- Inclusion criteria:
 - ≥ 18 years old
 - diagnosed with DM (either type 1 or type 2)
 - using insulin for > 3 months
 - self-administering insulin
- Exclusion criteria:
 - < 18 years old
 - not using insulin for > 3 months
 - not self-administering insulin
 - with GDM

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Methods

An interview guide was developed, pre-tested and validated.


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Subject selection—convenience sampling

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Demonstration of injection technique

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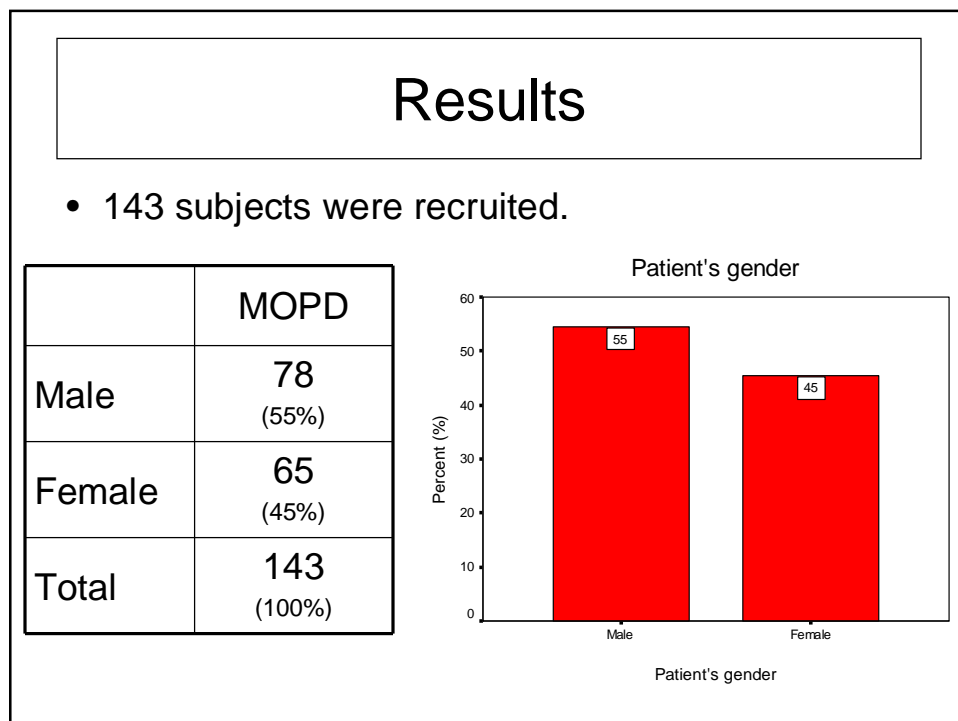
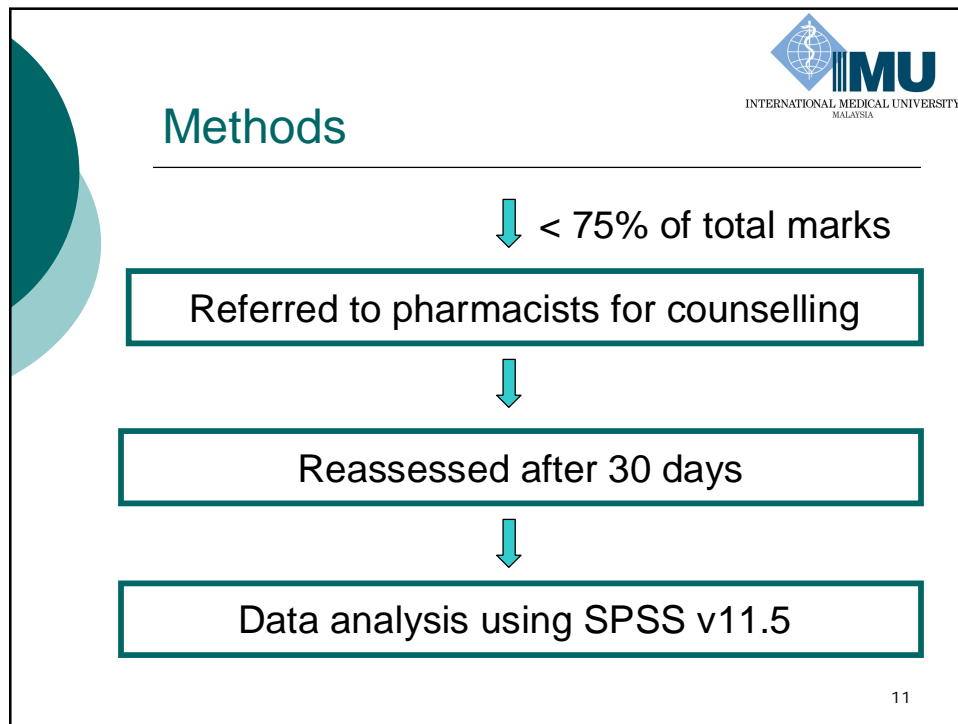


Methods

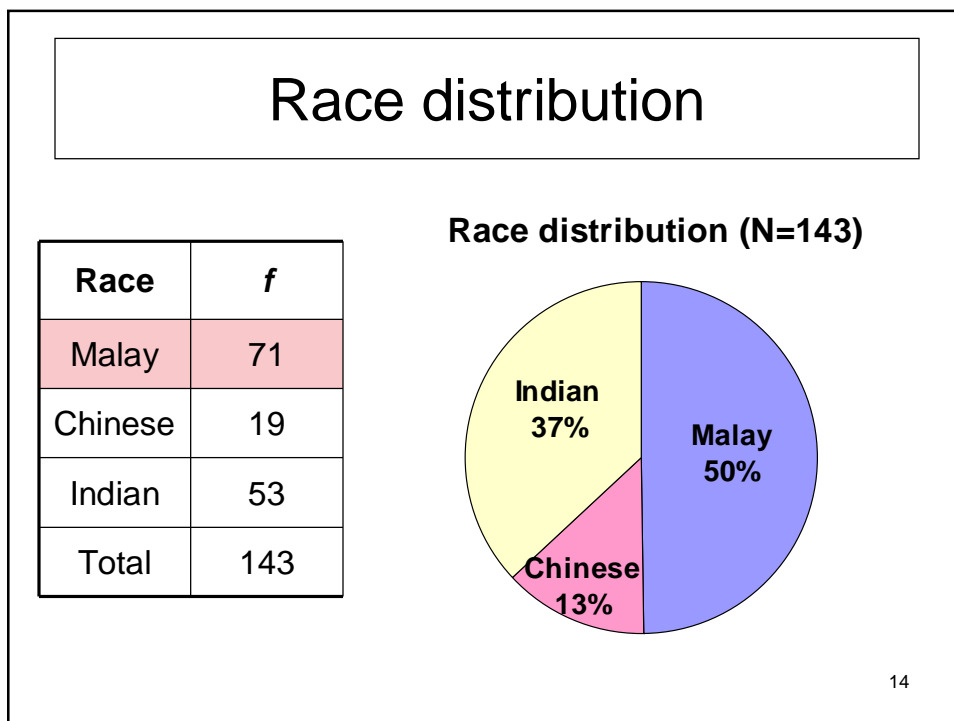
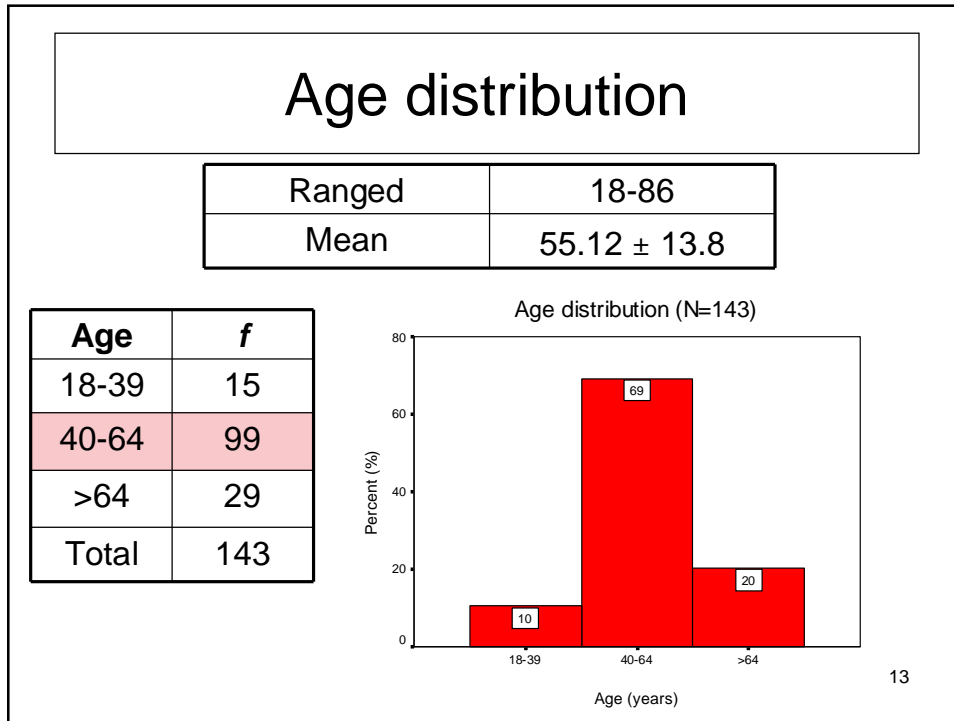
- 12 steps of injection technique were identified.
- Each step accounts for 1 mark

Marks	Percentage	Classification
0-2	0-24%	Poor
3-5	25-49%	Moderate
6-8	50-74%	Satisfactory
9-12	75-100%	Good

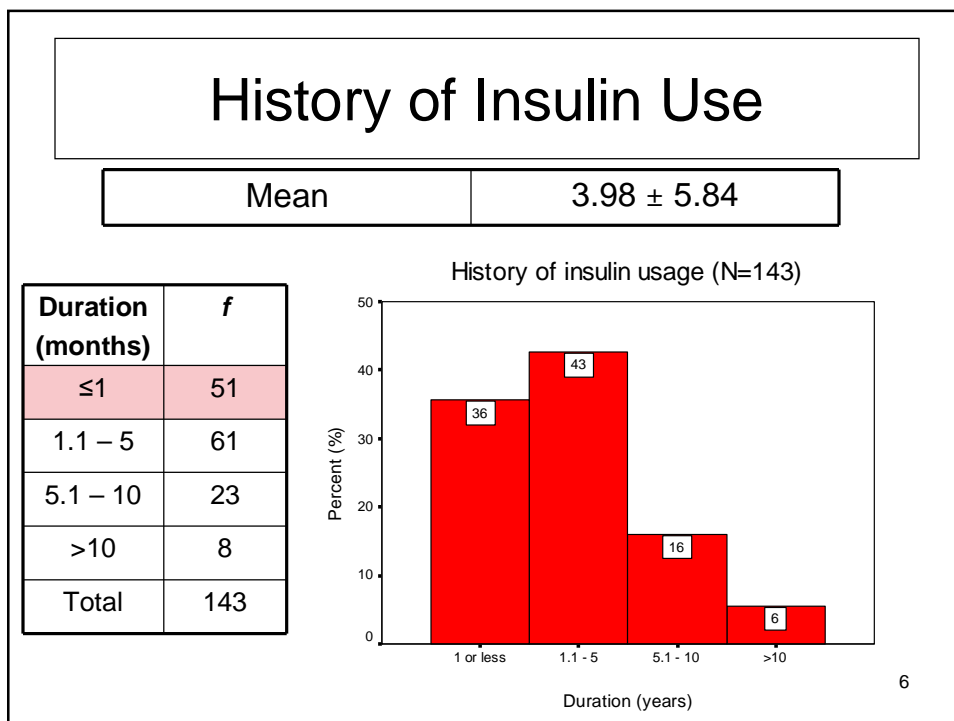
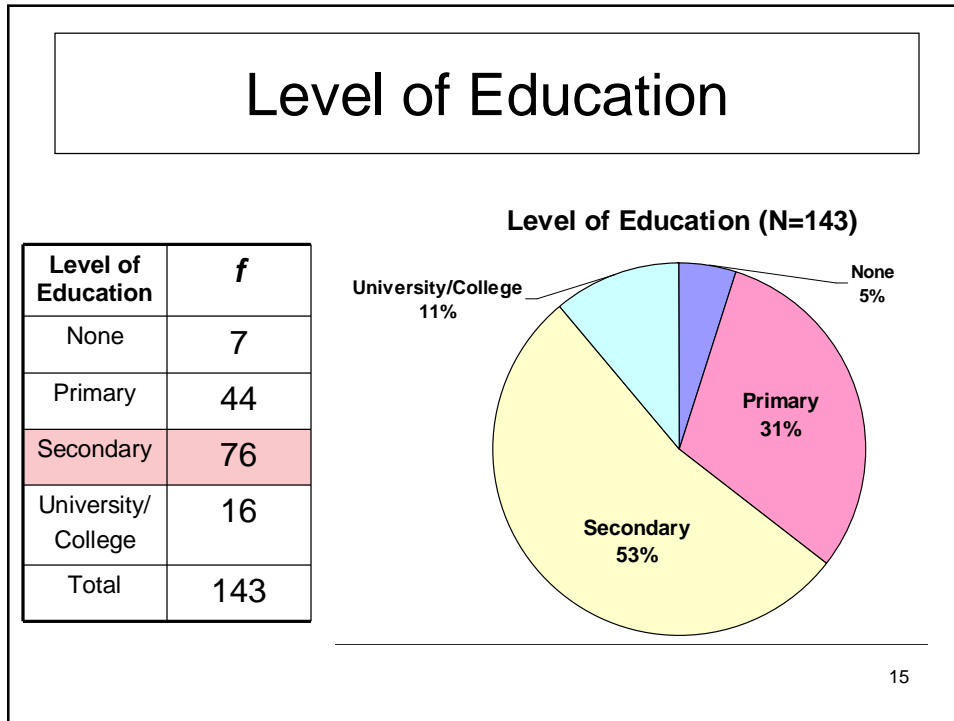
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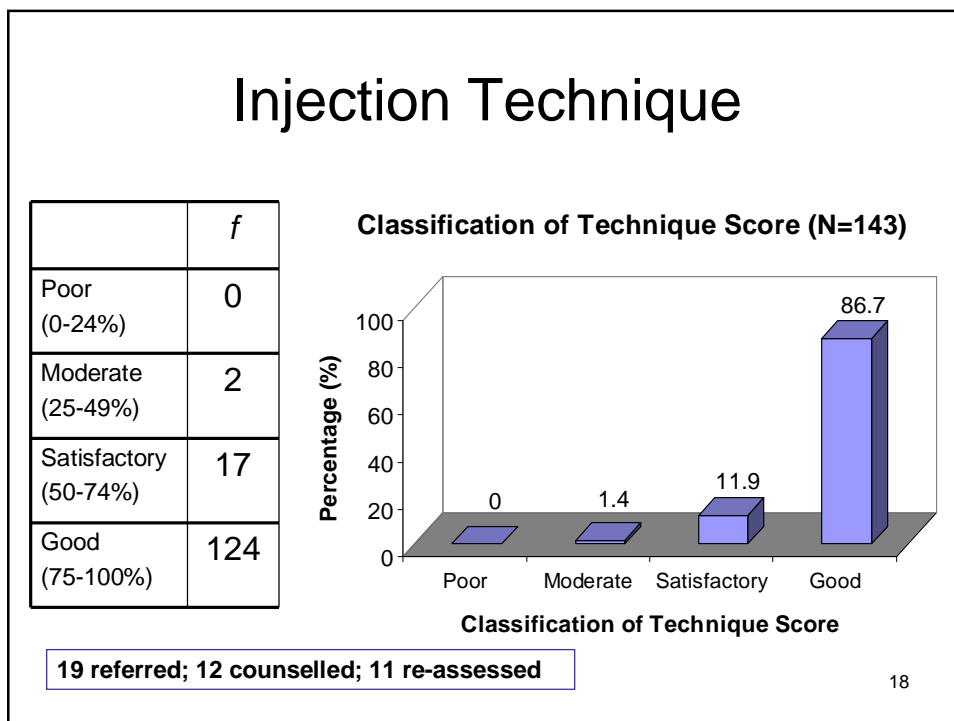
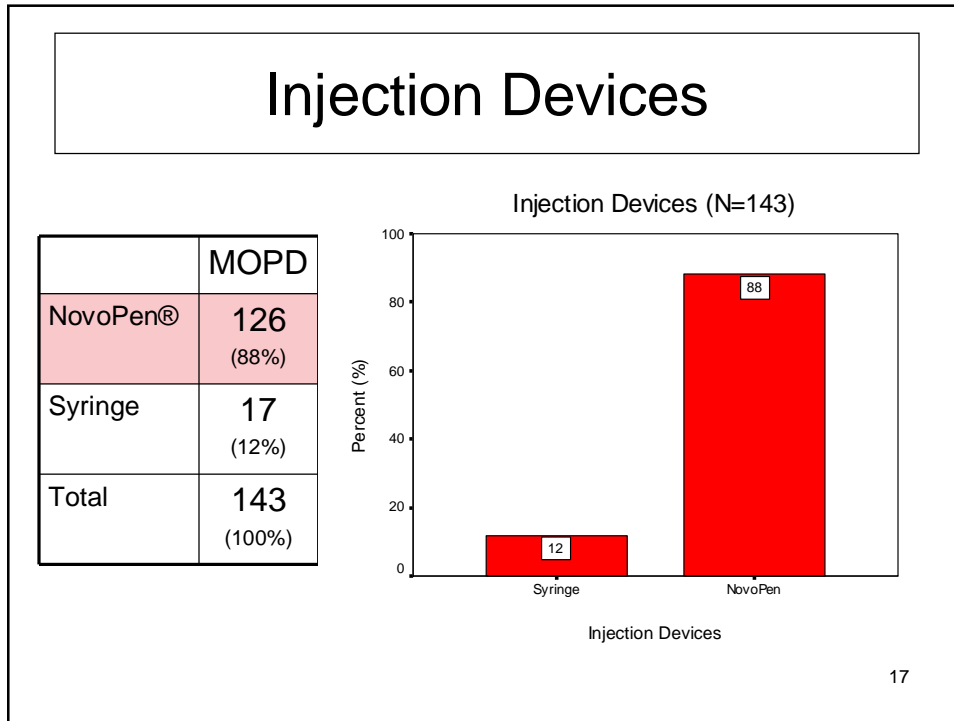
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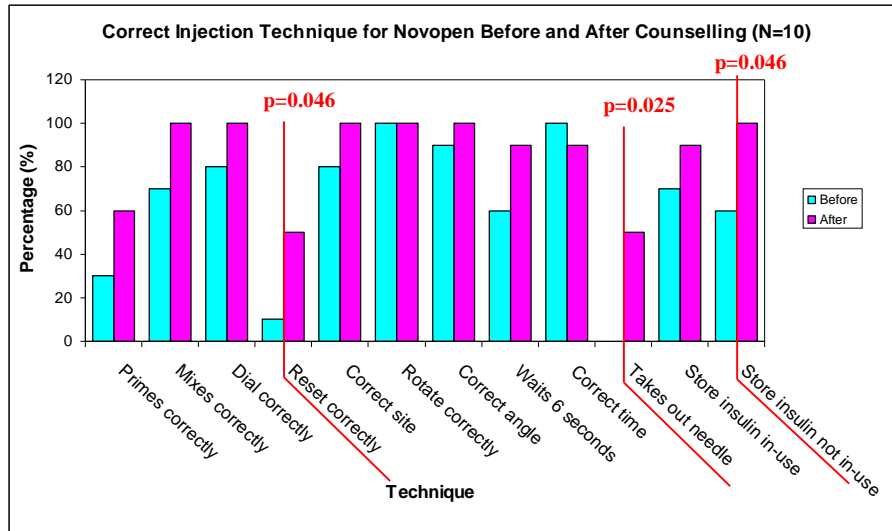
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Injection Technique-NovoPen® (After counselling)



Comparison Technique Score before & after Counselling (N=11)

Wilcoxon Signed Ranks Test

Settings	Mean Score
Pre-counselling	7.17 ± 1.53
Post-counselling	10.27 ± 1.19

p = 0.003

- There is a significant difference in technique score before and after counselling.

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Conclusions

- The majority of the patients in MOPD HTJ have a good insulin injection technique and only 8% of the patients needed to be re-educated by the pharmacists.
- Counselling by pharmacists significantly improve the patients' insulin injection technique.
Therefore pharmacists should be included in the diabetes care team.

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1. World Health Organization – Prevalence of diabetes. World Health Organization c2007. Available at http://www.who.int/diabetes/facts/world_figures/en/ [Assessed on July 2007]
2. Partanen TM, Rissanen A. Insulin injection practices. Practical Diabetes Int 2000;17(8):252-254
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5. Tankova T, Dakovska G, Koev D. Education of diabetes patients – a one year experience. *Patient Education and Counseling* 2001;43:139-145
6. George Argyrous. *Statistics for Social & Health Research with a Guide to SPSS*. Sage Publication; 2000.
7. M. Ragone. Errors of Insulin Commission? *Clinical Diabetes*. 2002;20(4).

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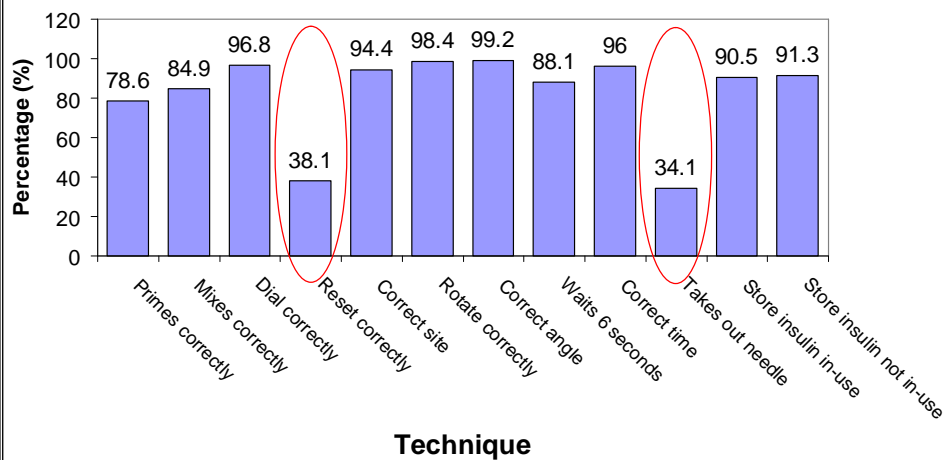
Literature Review

- *Partanen et al, (2000)*²
 - 100 patients with Type 1 diabetes
 - insulin injection technique
 - site of injection
 - 78% feel pain/bleed while injection due to blunt needles and incorrect technique
 - 65% of patients had lipodystrophy
- There is a need to assess patient’s technique regularly.

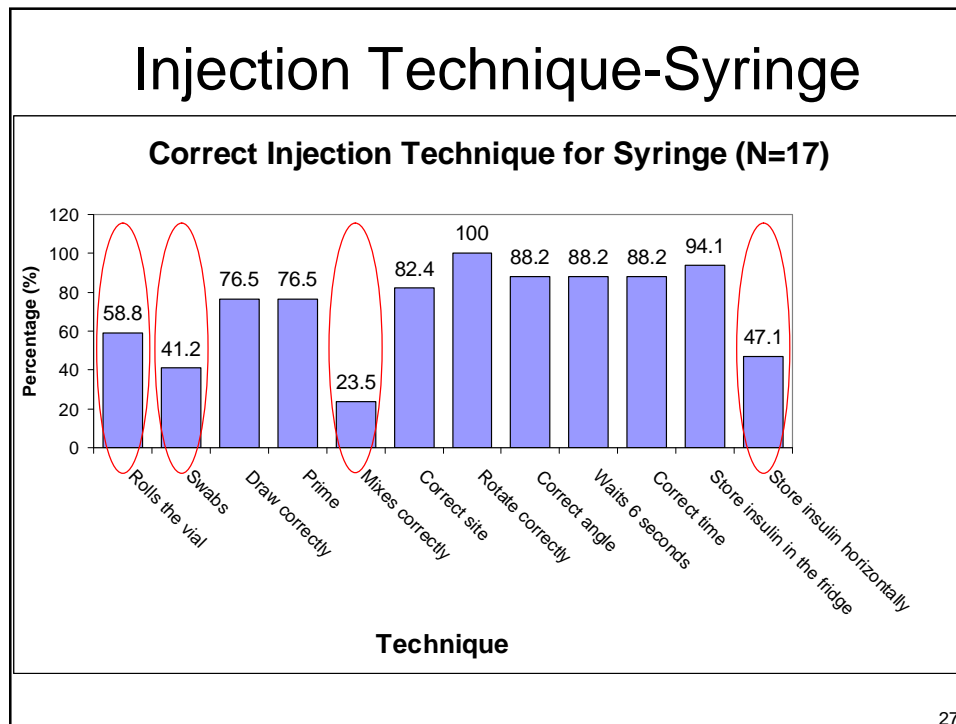
2. Partanen TM, Rissanen A. Insulin injection practices. *Practical Diabetes Int* 2000;17(8):252-254

Injection Technique-NovoPen®

Correct Injection Technique for NovoPen (N=126)



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Injection Technique

	No. of subjects who had low score (<75%)	No. of subjects who had been counselled	No. of subjects who had been re-interviewed
NovoPen (N=126)	15	10	10
Syringe (N=17)	4	2	1
Total (N=143)	19	12	11

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