

How Much Do Patients Attending a Secondary Care Diabetes Clinic Know About The Safe Principles of Driving?

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Acknowledgements

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Background

- Driving is a complex task requiring high levels of concentration, visual-spatial awareness, and cognitive function in a rapidly changing environment
- Counter regulatory mechanisms activate when the blood glucose drops to 3.7mmol/L or less
- Cognitive dysfunction begins to occur when the blood glucose drops to less than 3.0mmol/L

Background

- Hypoglycaemic unawareness increases with
 - Increased duration of diabetes
 - Frequent, recurrent hypoglycaemia
- However, cognitive dysfunction remains an issue after hypoglycaemia correction
- Low blood glucose levels have been shown to impair driving skills

Cox D Diabetes Care 2000;23(2):163 - 70
McCrimmon RJ Brain 1996;119:1277 - 87
Cox D Diabetes Care 2003;26(8):2329 - 34

DVLA Guidelines on Diabetes and Driving

- Do not drive if blood glucose is less than 4.0 mmol/L
- Only resume driving 45 minutes after blood glucose has returned to normal
- To check blood glucose before driving (even on short journeys) and test regularly (every 2 hours) on long journeys
- If blood glucose is 5.0 mmol/L or less, take a snack before driving

2010 Norfolk Constabulary Data

- Under a FOI request, three road traffic accidents occurred in Norfolk as a direct consequence of low blood glucose levels
- 1 case was referred to the coroner – a 25 year old man knocked off a motorcycle despite having been explicitly told not to drive because of his hypoglycaemic unawareness

Knowledge Amongst Patients

- Previous work has shown that the levels of knowledge about driving amongst patients attending diabetes clinics has been variable
- We wanted to determine what the level of knowledge was amongst the patients attending the Elsie Bertram Diabetes Clinic at the Norfolk and Norwich Hospital

Elsie Bertram Diabetes Centre



- The Norfolk and Norwich University Hospital has a catchment population of 600,000
- Population of ~75,000 people with diabetes
- Mostly see people who are insulin treated or a few primary care patients seen for urgent foot problems

Methods

- A 16 item, 1 page questionnaire was handed to all patients attending the Elsie Bertram Diabetes Clinic between 11th January 2010 and 5th of February 2010
- Inclusion & exclusion criteria
- Patients filled in the questionnaire whilst waiting for their appointment
- Ethical approval was not required because this was an anonymous service review

Please take a few minutes to fill out this survey concerning **DIABETES AND DRIVING** whilst you are waiting for your appointment. This is completely **ANONYMOUS** and your answers will be kept **CONFIDENTIAL**. Please return to the reception before you see the team. **Elsie Bertram Diabetes Centre** welcomes your feed back. Thank you for you participation.

How old are you? []

Please circle: Male / Female

Please enter age at diagnosis: []

Please circle Type of diabetes: Type 1 or Type 2

Please circle your treatment:

Diet only

Tablets only

Insulin only

Insulin & Tablets

If insulin only, were you on tablets for your diabetes for more than six months before starting insulin

YES
[]

NO
[]

Please write the name of your tablets:

Please write the name of your insulin:

Do you drive? [YES]

[NO] → END OF SURVEY THANKYOU FOR YOU PARTICIPATION

Details can be found on poster P273

What is your estimated annual mileage? Please circle:

Less than 5000miles 5000 to 10,000miles 10,000 to 20, 000miles More than 20,000miles

Does the DVLA know that you have diabetes? Please circle: YES NO

If you drive, do you test your blood glucose levels within a half hour of driving?

YES NO
[] []

If YES, How often do you do this?

Every time Almost always Almost ½ the time Almost Never Never
[] [] [] [] []

If you do test, what level of blood glucose would you consider is too low to drive?

2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0
[] [] [] [] [] [] [] [] []

Details can be found on poster P273

If your blood glucose were too low to drive and you have taken steps to correct your blood glucose, how long would you wait before retesting?

10mins 20mins 30mins 40mins 50mins 60mins

How long would you drive at a single stretch before re-testing you blood glucose?

30MIN 1 ½ HR 2HR 2 ½ HR 3HR 3 ½ HR 4HR 4 ½ HR 5HR 5.5HR 6.0HR

Have you had a road traffic incident as a result of your blood glucose being too low?

YES NO

Have you received advice from the diabetes team regarding blood sugars and driving?

YES NO

If yes, from whom. Please circle:

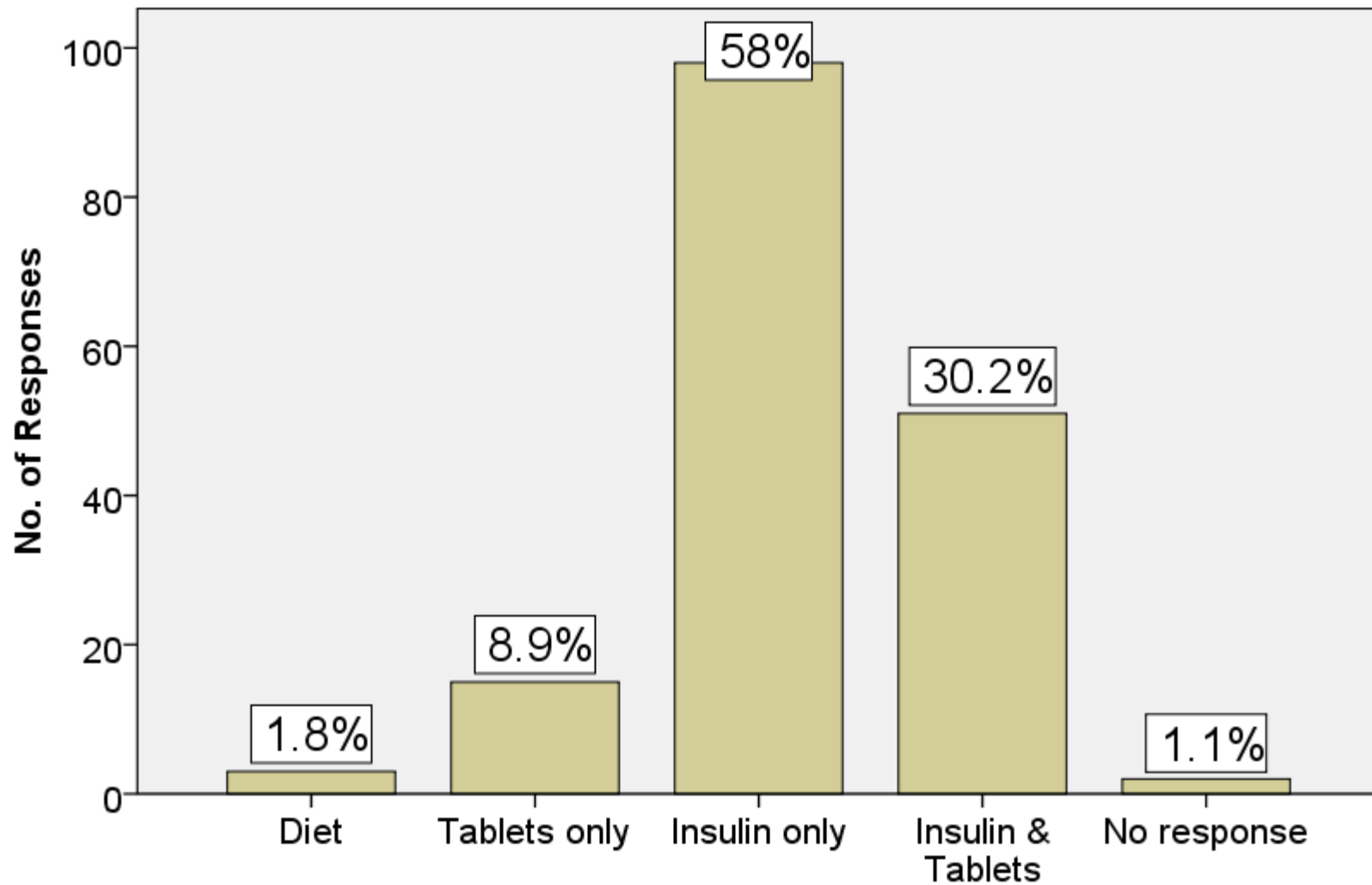
Diabetes Consultant Diabetes Nurse Podiatrist Diabetes leaflets DVLA Other:

Details can be found on poster P273

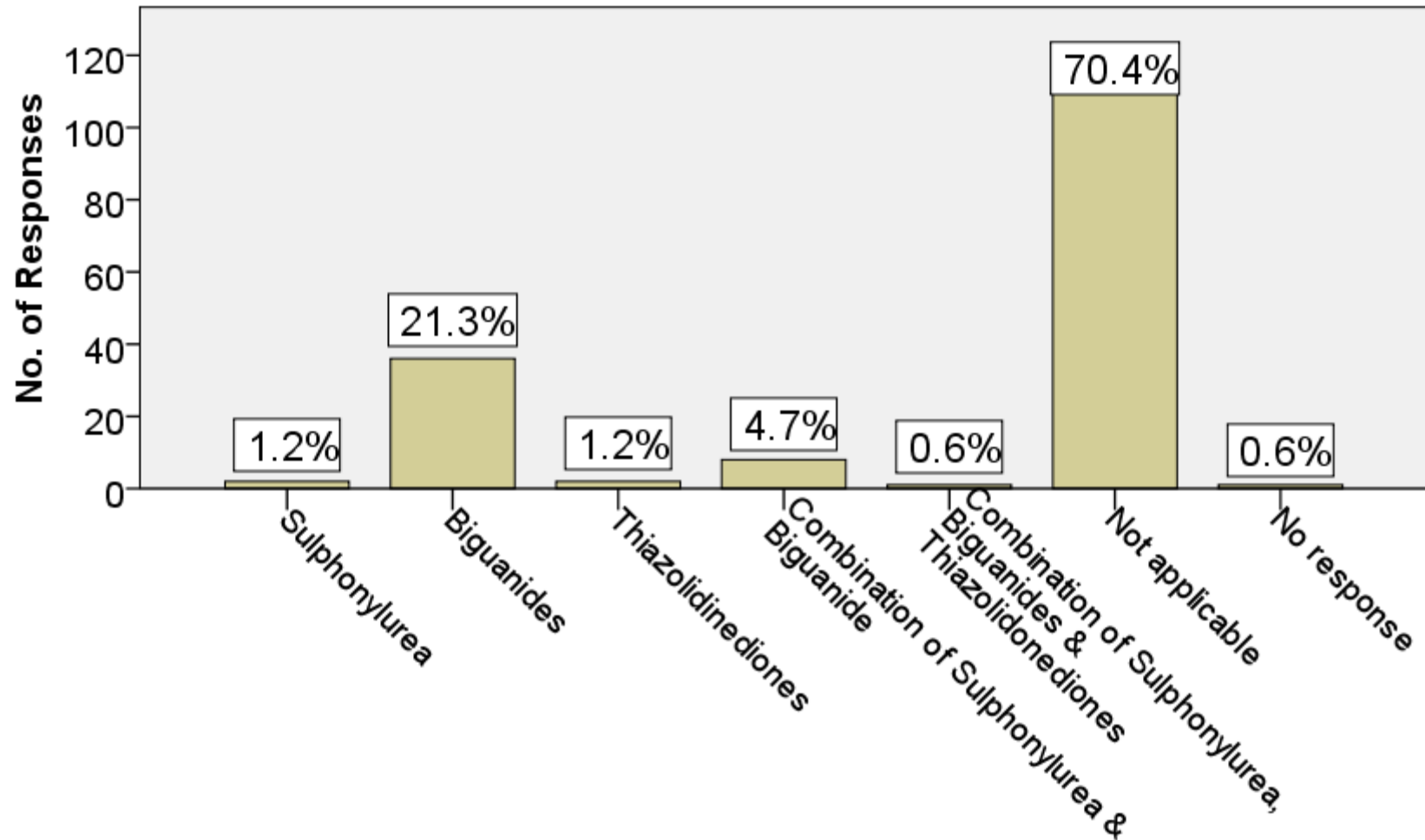
Results

- 300 questionnaires were given to receptionists, with 195 responses returned
- Of these, 26 were excluded as per criteria
- M:F 114 (67.5%):48 (28.4%) – NR: 7 (4.1%)
- Type1:2 79 (46.7%):49 (29%) – NR: 41 (24.3%)
- Mean age of respondents 54.2 years (19-85)

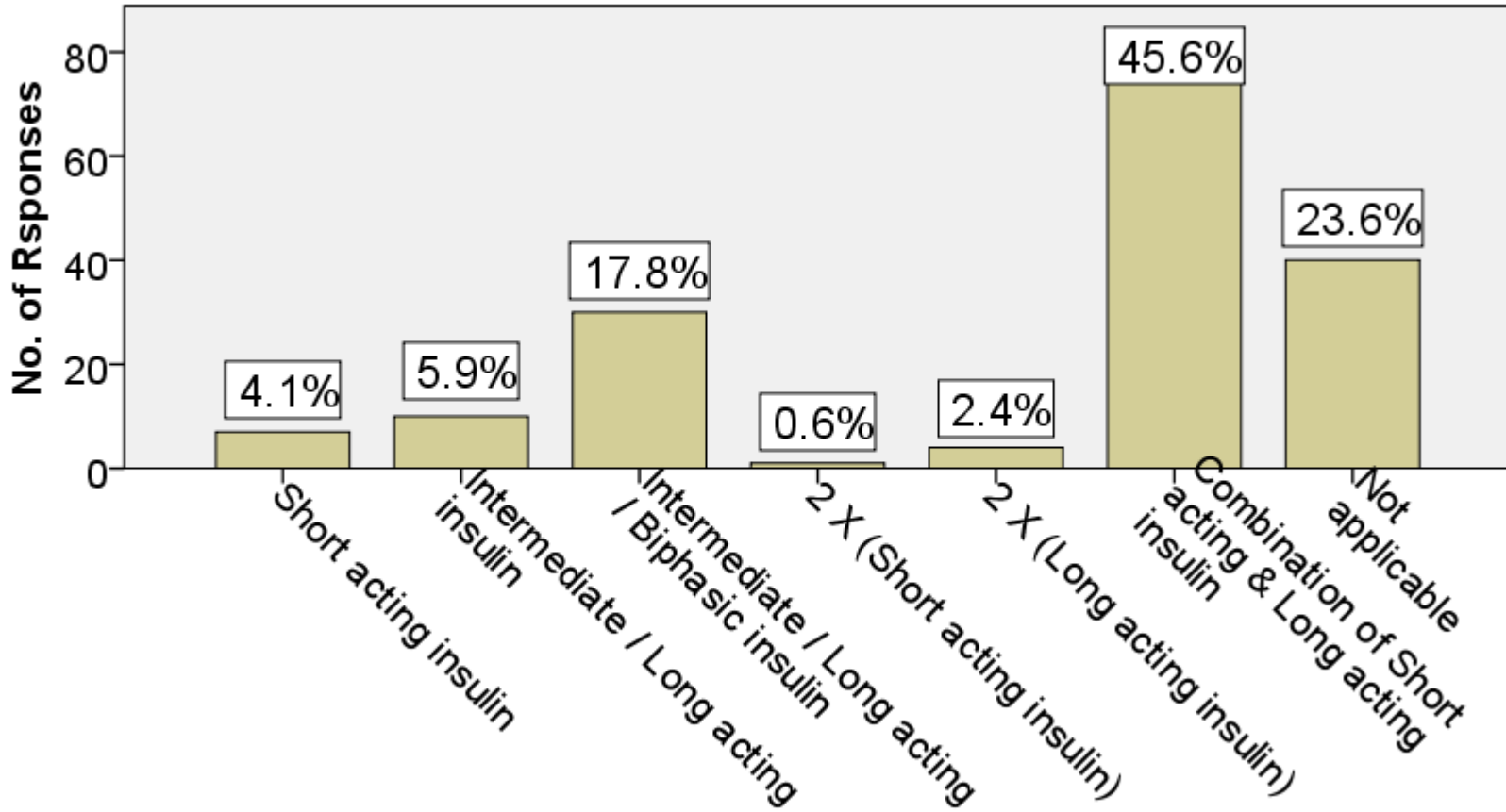
Type of Treatment



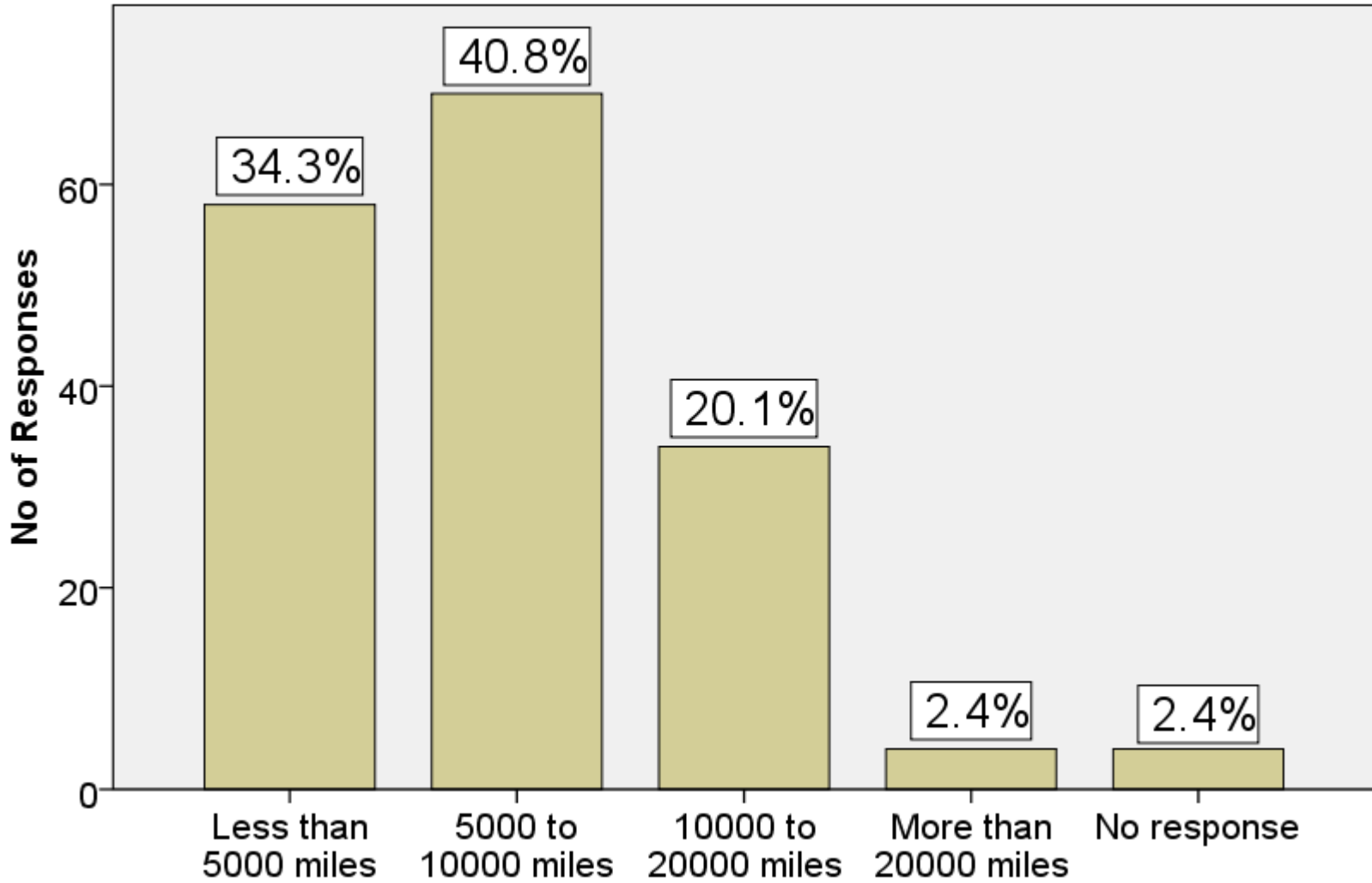
Class of Oral Hypoglycaemic



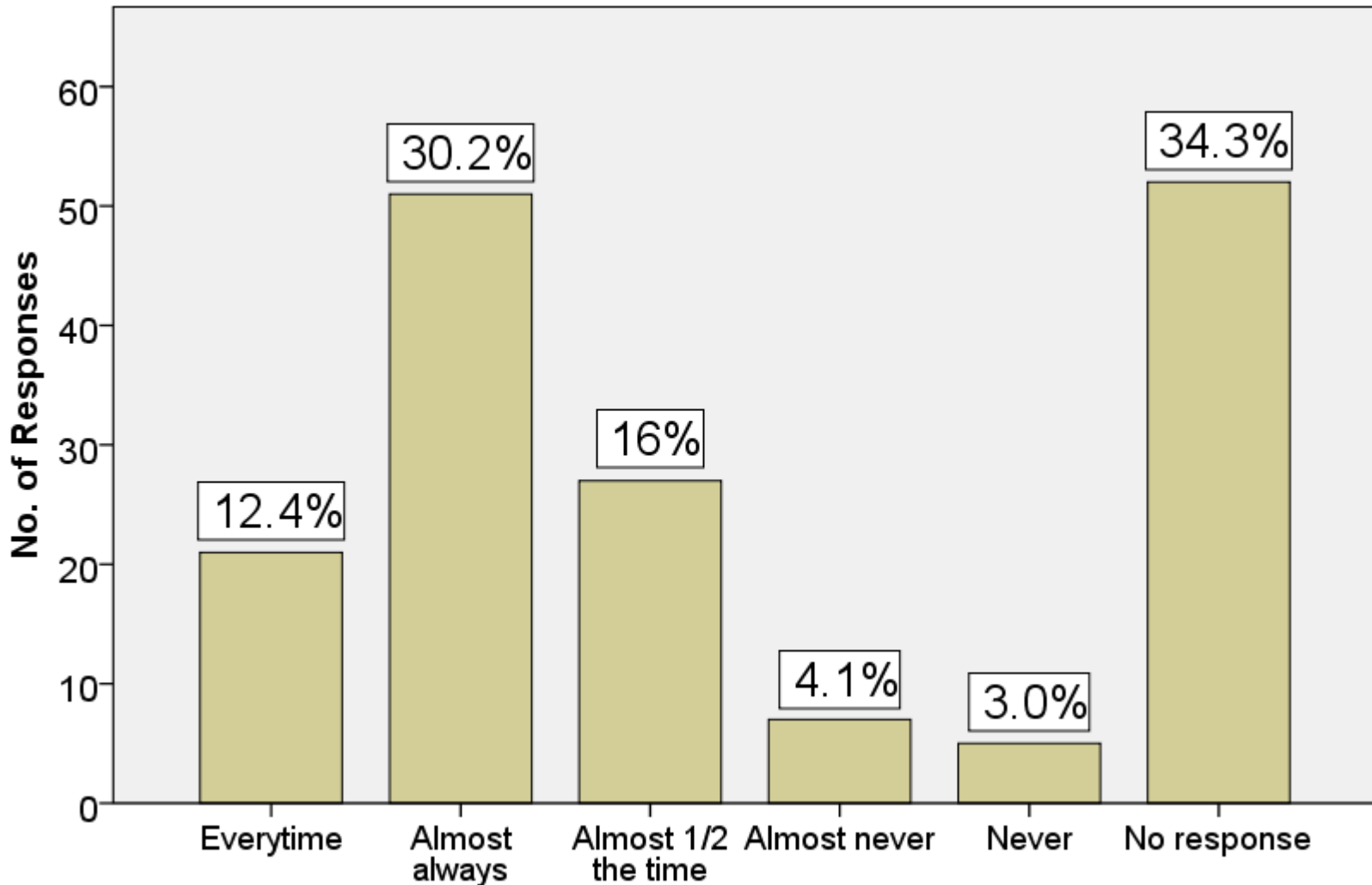
Class of Insulin



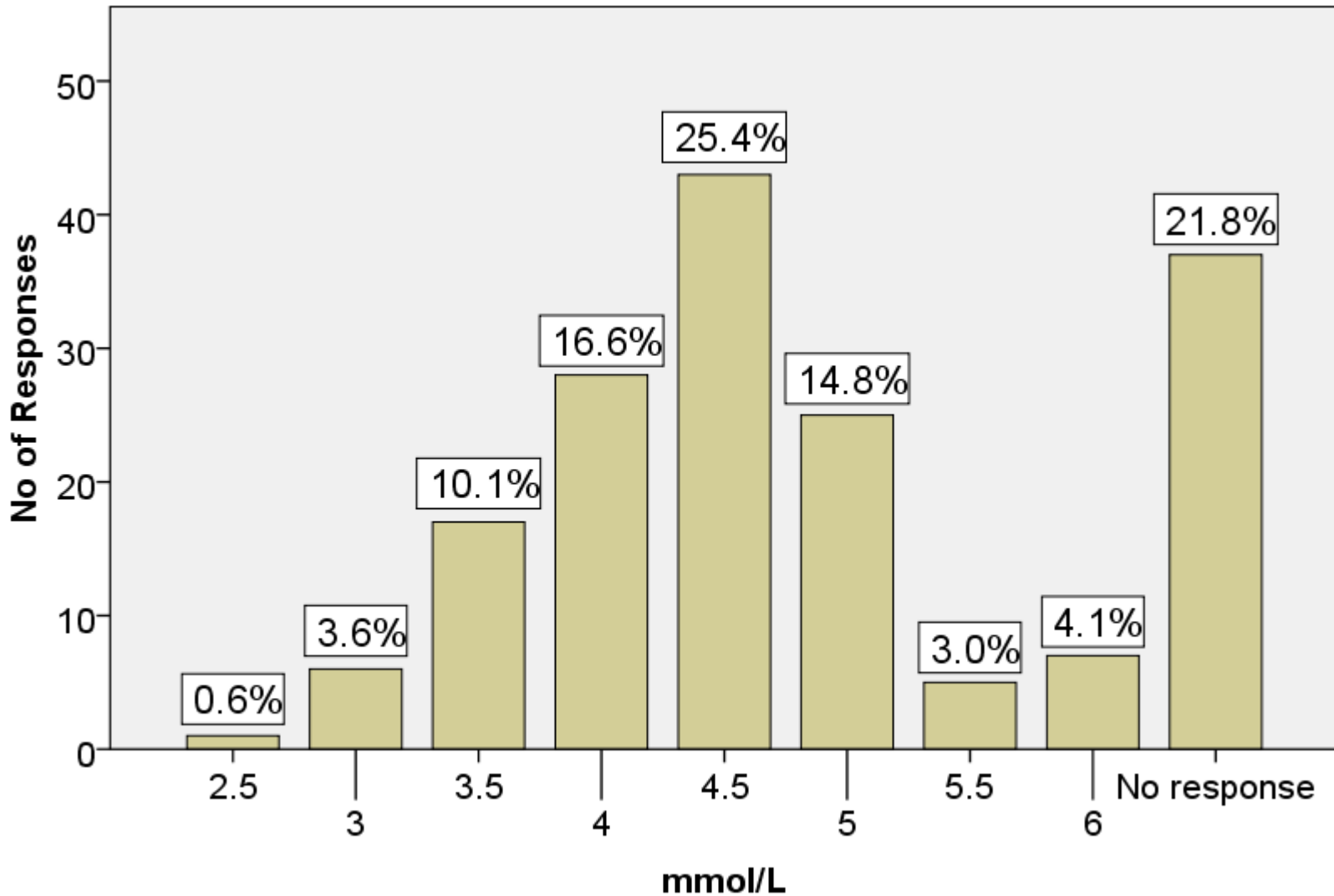
Estimated Annual Mileage



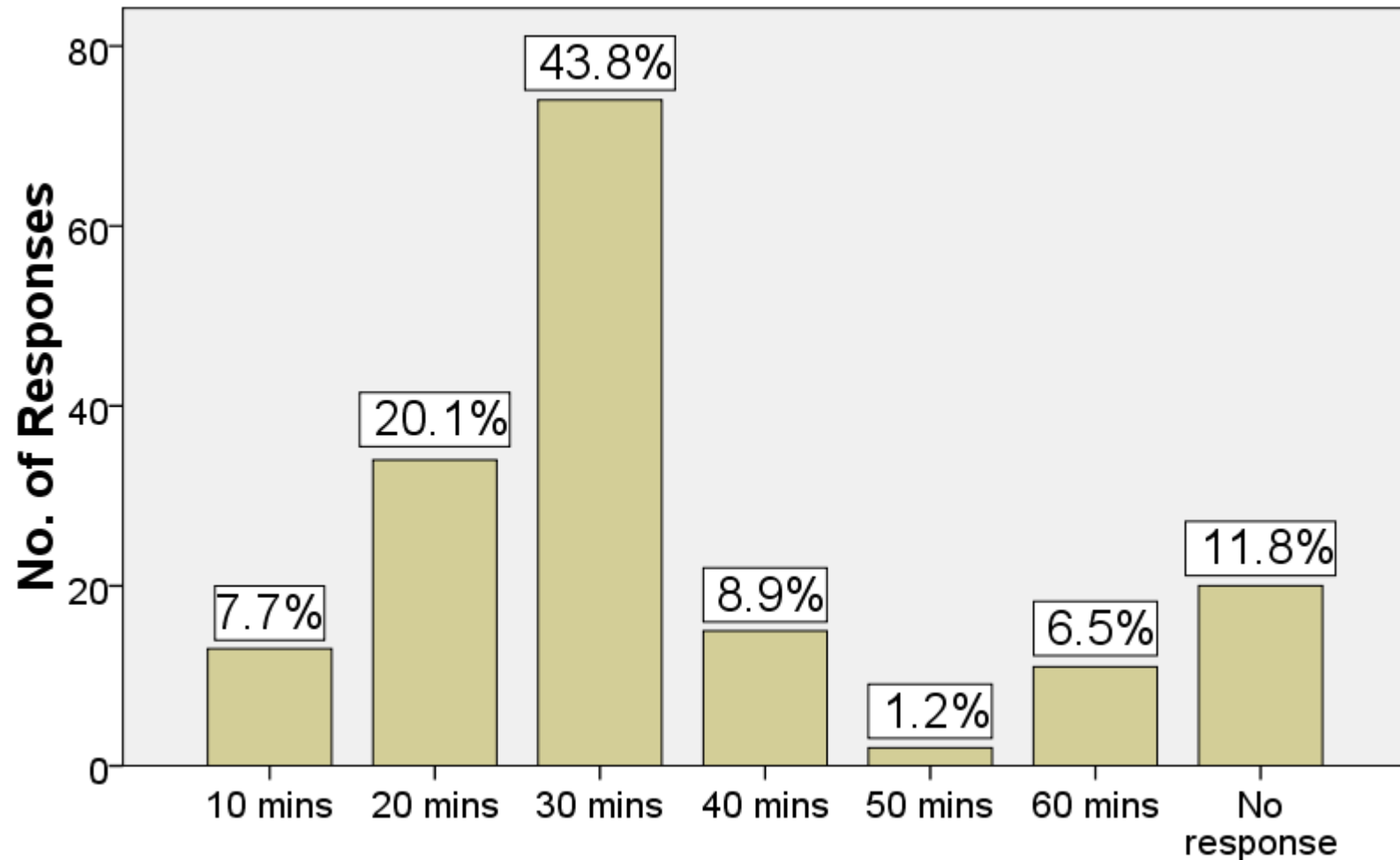
How Often Do You Test 30 minutes Before Driving?



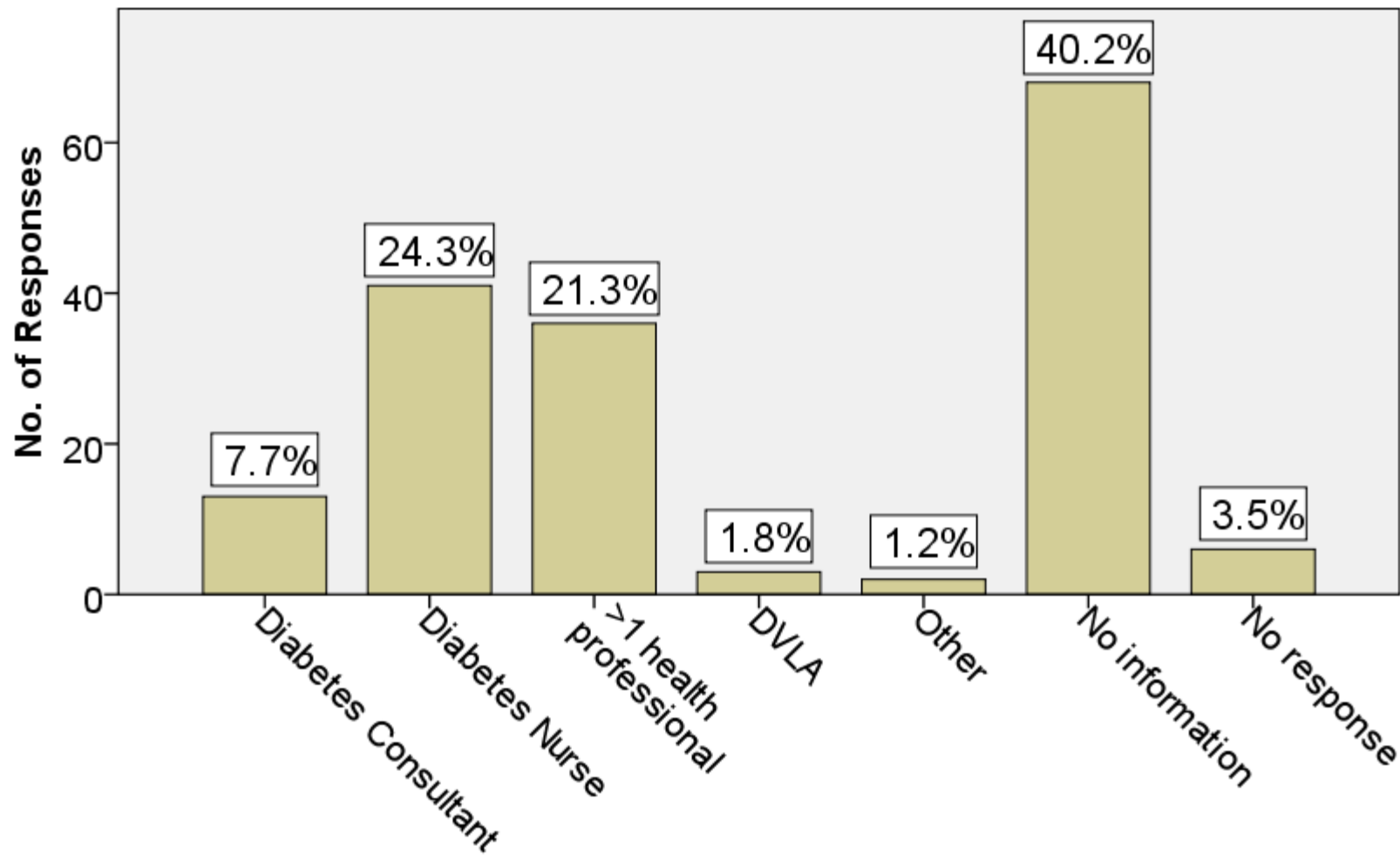
What is a 'Low Blood Glucose Level'



How Long Would You Wait Before Driving?



Where Did You Get Your Information From?



Limitations

- Target had been to collect 300 questionnaires
- There may have been bias at the point of recruitment
- Other individuals who did not adhere to the principles may have declined to participate

Future Work

- There is a new IT system being installed at EBDC, this has mandatory fields in relation to driving
- Determine which demographics require targeting
- Forms part of an audit cycle with further review in 12 – 15 months

Conclusions

- Most patients had some awareness of the DVLA regulations
- There remain many opportunities to increase their awareness of these regulations
- It is incumbent that all health care professionals continue educating their patients, thus ensuring the safety of all road users

Thank you for your attention