

Attitudes towards retinoscopy and the relative accuracy of different kinds of retinoscope

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Introduction

- History of retinoscopy
- Hypotheses
- Previous work
 - Ret “always” on pre-school children 92% (CPS 2008)
 - Ret inaccuracy: spot +0.75, streak +0.45 (Guillon 1986)
 - Auto not as accurate as ret (Jorge 2005)
 - Ret & Subj compare favorably (Grosvenor et al 1985)
- Research conducted: UK & International survey, Clinical trial

Methods - UK survey

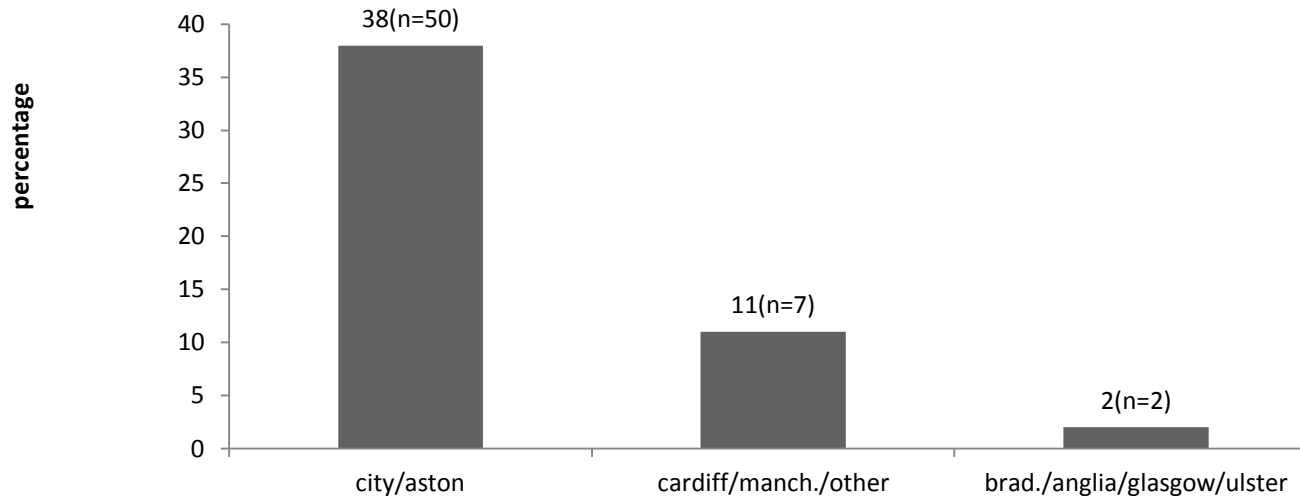
- 1000 College members March 2010
- 23-item electronic survey
- tick-box multiple choice
- option to make comments
- Prize draw incentive
- Analysed using Chi-squared Automatic Interaction Detection (CHAID)

UK survey results

- 298 replies (30%)
- Ret considered important (94%)
- Keeler popular; 79%
- spot 20% vs streak 79%
- Combi: young 51%, old 18% (19% unsure)
- 82% no opinion whether combi accurate
- Useful for cataract (88%) & keratoconus (94%)

UK survey results

spot retinoscopy use

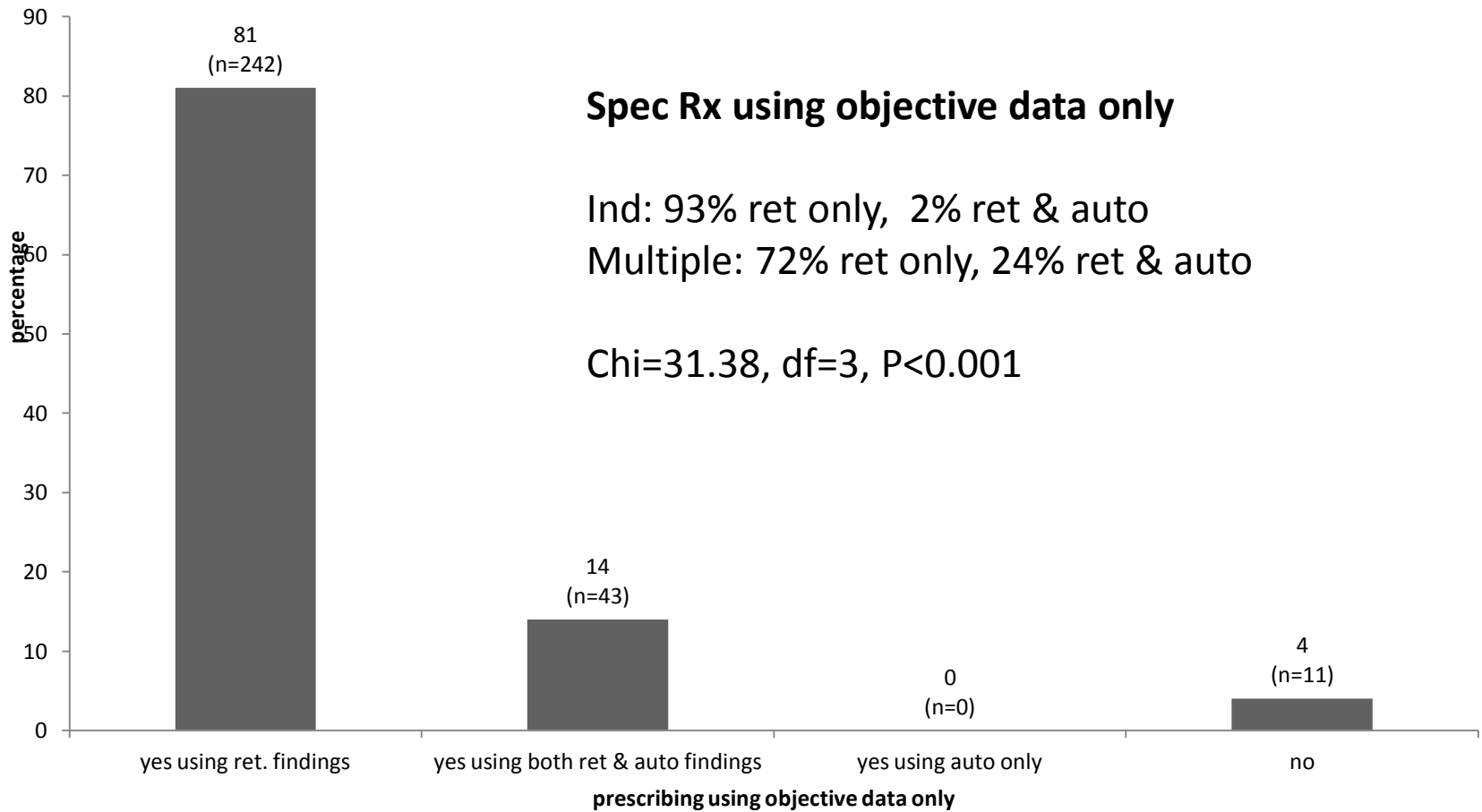


Chi = 62.25, df = 6, P < 0.001

Also, City & Aston spot use:
young 25%, old 51%

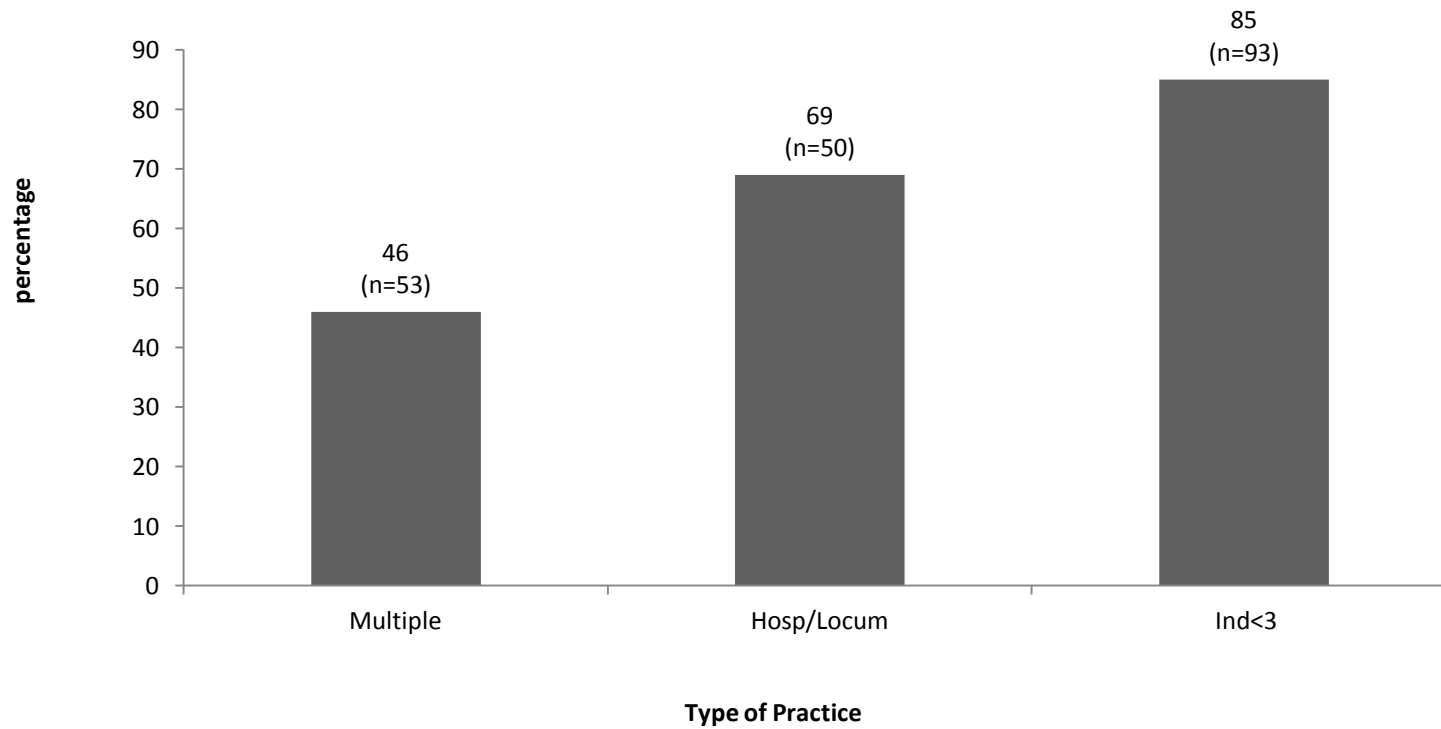
Chi = 9.41, df = 1, P < 0.01

UK survey results



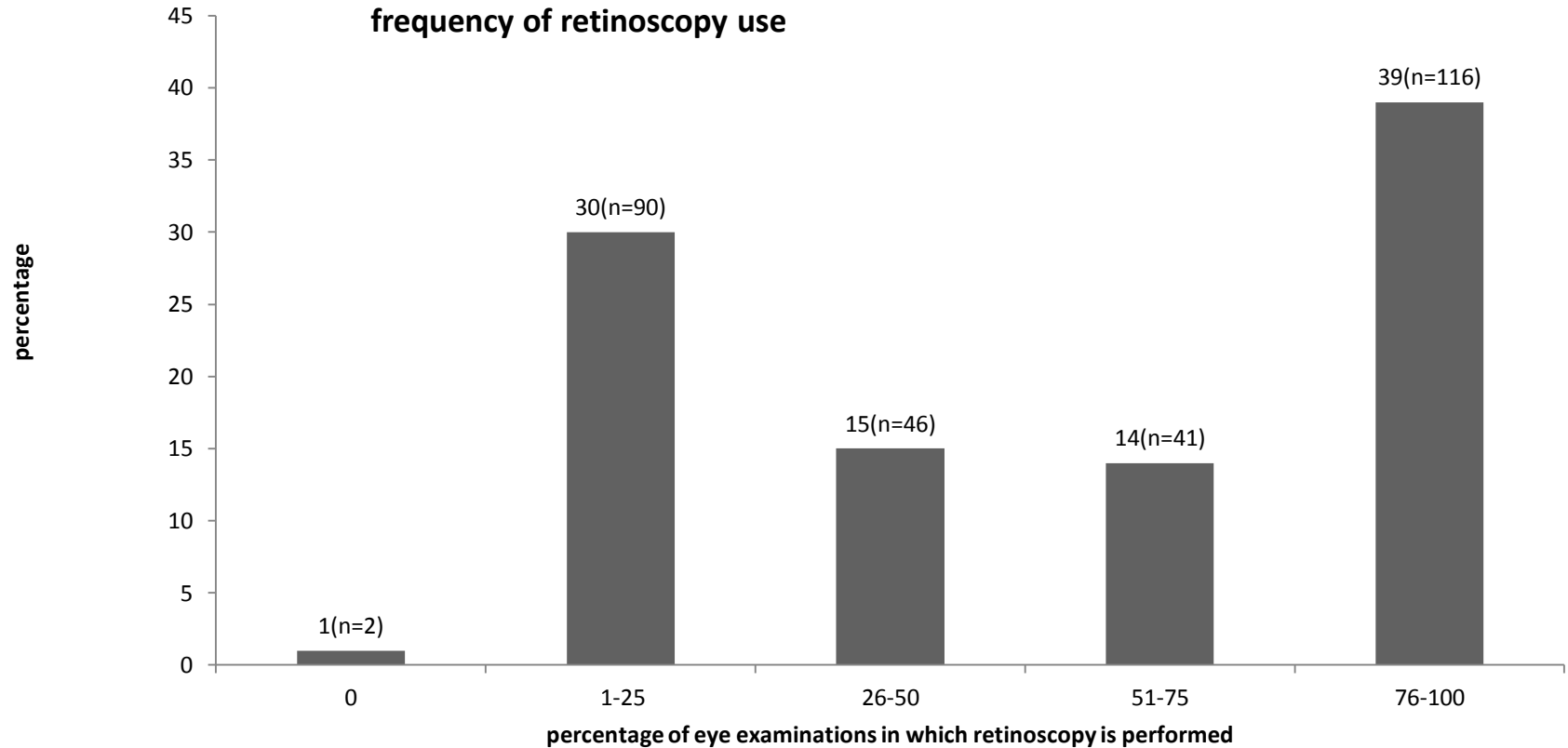
UK survey results

Retinoscopy as primary method of objective refraction

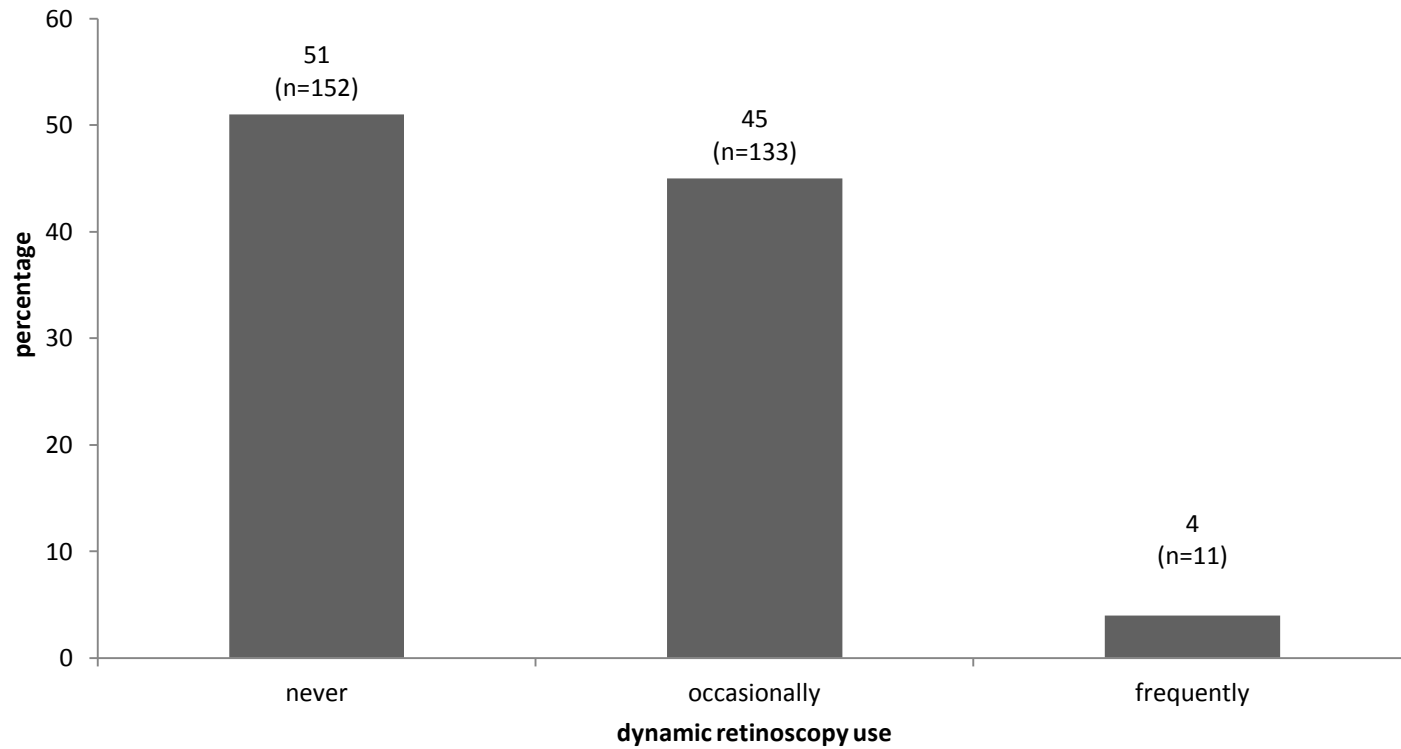


Chi = 63.8, df = 6, P < 0.001

UK survey results



Dynamic retinoscopy use



UK Survey Conclusions

- retinoscopy considered useful by majority
- 92% satisfied; multiple/HES 14% dissatisfied, ind/locum/education 2% dissatisfied
- Auto use varies with practice type
- 31% of optoms use ret in < 25% of exams
- 'Age' not influential.....apart from younger use > combi and streak
- Dynamic techniques used by half (48%)

Methods - International survey

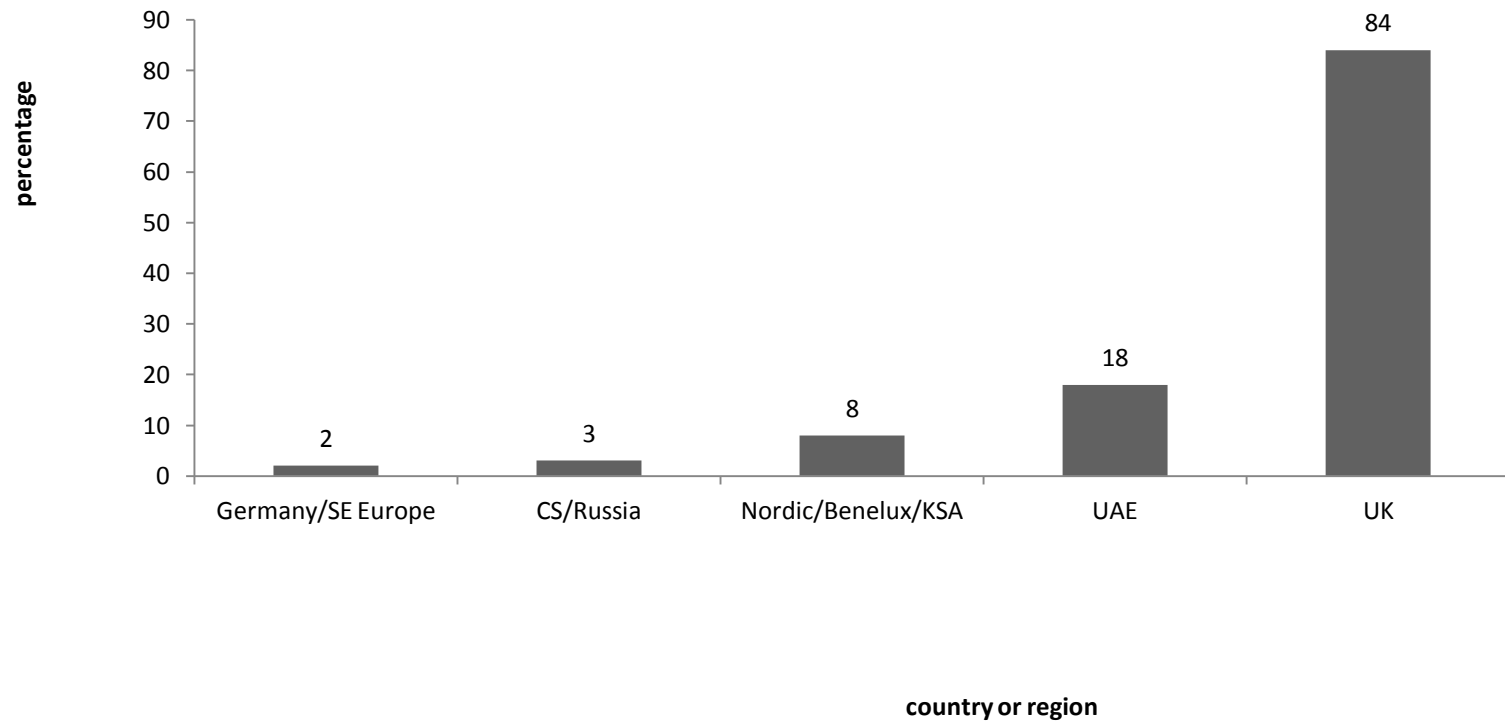
- J & J attendees in UK, Prague and Dubai
- Delegates with an interest in contact lenses
- 5-item paper survey
- tick-box multiple choice
- CHAID analysis

International survey results

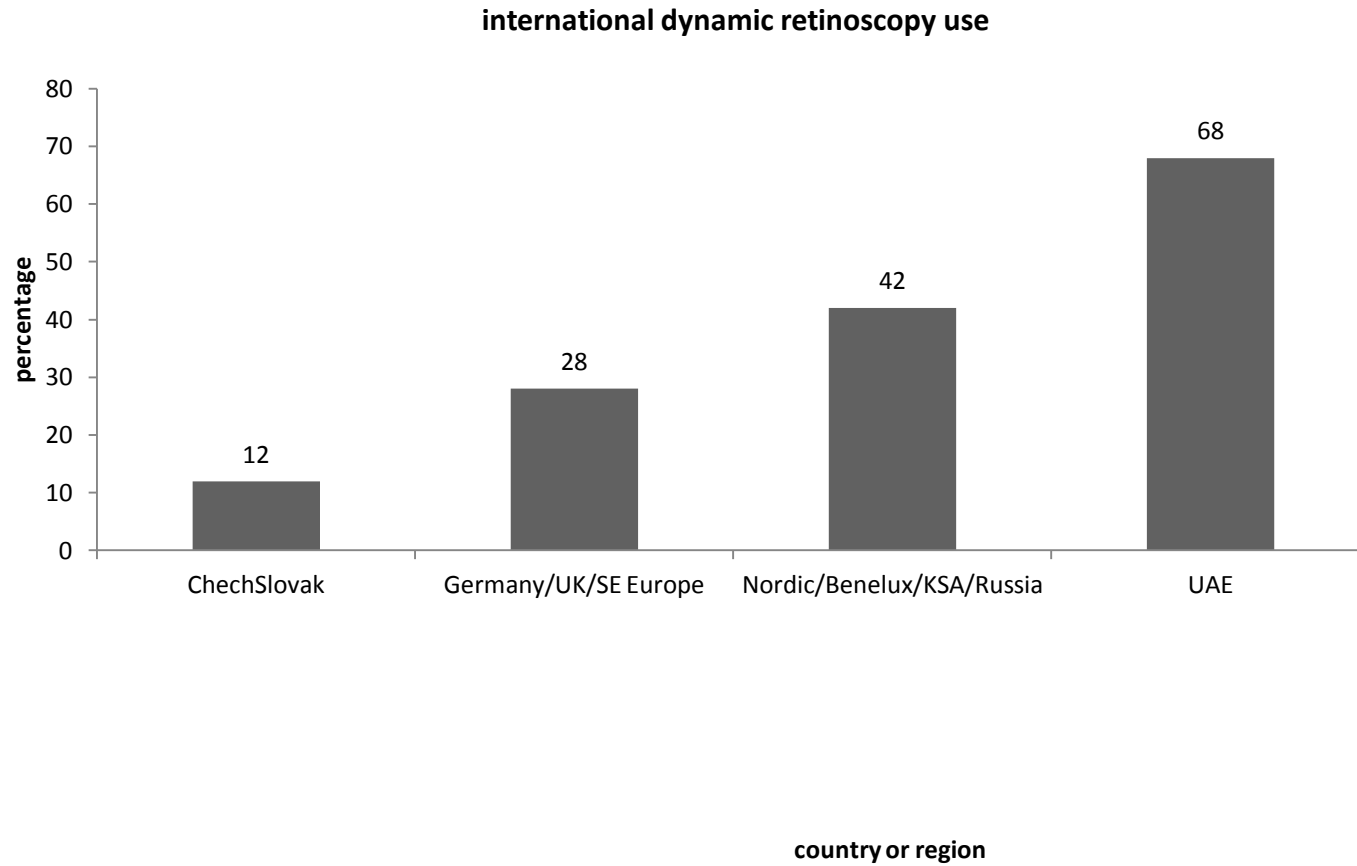
- 583 responses (334 optoms)
- date of qualification and profession not influential
- Infrequent use of static retinoscopy – apart from UK
- Low use of dynamic technique

International survey results

retinoscopy as main method of objective refraction



International survey results

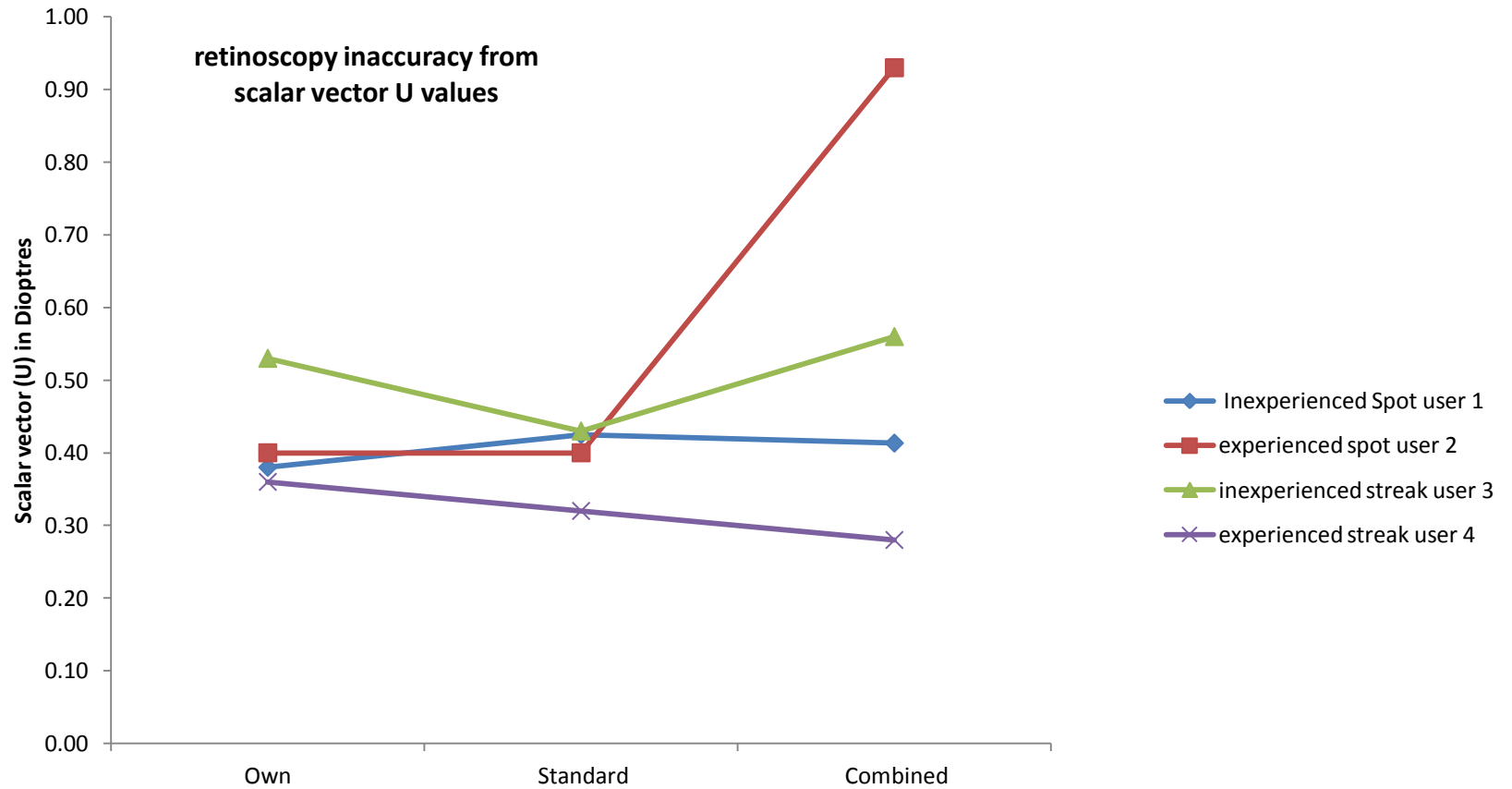


Clinical trial methods

- 4 optoms (2 streak, 2 spot)
- 6 subjects
- Each optom used 3 rets on every patient (RE)
- Accuracy compared with subjective result
- Analysed using 2-factor factorial ANOVA



Clinical trial results



Retinoscopy Techniques

Techniques

- Static
- Binocular Method of Barratt
- Mohindra
- Dynamic
- Estimation of Rx without using lenses
- Modified monoc indirect ophthalmoscopy!
- Carter method
- Incident neutral
- Cycloplegic

Dynamic retinoscopy

- Monocular Estimation Method (MEM) ^(del Pilar Cacho 1999)
- Modified Nott ^(Woodhouse 2012)
- > reproducibility compared with subj for AA ^(Leon et al 2012)
- Low and High Neutrals – variation! ^(Whitefoot & Charman 1992)
- Computer retinoscopy ^(Nielson 2002)
- Insufficiency = amp >1.50DS lower than expected for age
or lag >+1.00D ^(Eperjesi, Bartlett & Dunne 2007)
- Investigate if >0.50D asymmetry ^(Allen, Fletcher & Still 1991)
- Hoffstetters formula ^(Borish 1975)

Indications for retinoscopy

- Quick objective data
- Qualitative assessment of media, incl CL checks
- Objective assessment of accommodation, especially:
 - Down's ^(Woodhouse 1993) & Cerebral Palsy ^(Leat 1996)
 - reading difficulties ^(Evans 2009)
 - dyslexia ^(Evans 2003)
 - GH/drugs
- Consider B/F for DS ^(Nandakumar & Leat 2010)

UK SurveyComments

- “I wouldn't be without my ret”
- “retinoscopy is underused by practitioners that use auto refractors”
- “Colleagues who use autorefractor and don't retinoscopy regularly have struggled if autorefractor not working. Useful skill to have even though I think autorefractors are going to become the norm”
- “I am not quite sure as to what the point of this survey is”

Acknowledgements

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- Keeler UK
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