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Introduction

Age-related macular degeneration (AMD) is the leading cause of blind registration in the western world, and the number of people with this condition continues to rise due to the aging population. Current treatment options for AMD, while effective in some patients, are costly and present a massive financial challenge for the healthcare service. There is a need, therefore, for attention to be directed towards the prevention of AMD and its progression. This online survey was conducted to investigate current practice for the detection and management of AMD in the Republic of Ireland and the United Kingdom (UK) by Optometrists.

Methods

The Association of Optometrists in Ireland and the College of Optometrists in the UK invited their members to participate in this online AMD survey. 750 emails were circulated in Ireland and 8,049 were circulated in the UK. Reminder emails were sent after 6 weeks.

The survey was open for a total of 3 months. In total, 724 respondents (8.2%) completed and submitted the survey online. The questions in the survey were designed to obtain information regarding AMD assessment techniques and nutritional supplements used to manage AMD.



Normal Vision

AMD Vision

Results

AMD assessment

Optometrists reported that 10.8% of their patients presented with AMD, with some reporting that AMD prevalence was in excess of 20%. The most routinely performed methods of assessment for AMD were the Amsler grid, fundus photography, macular pigment (MP) measurement and ophthalmoscopy [Figure 1].

Supplementation

90.6% of practices recommend eye supplements for patients with AMD and 73.2% recommend supplements for patients at risk of AMD. Interestingly, 52.8% of optometrists recommend Icaps and 48.5% recommend Macushield for AMD [Figure 2]. Supplements were recommended to patients based on disease state and risk of development [Figure 3]. 'Strong scientific evidence' was the main reason for recommending supplements for patients with AMD and at risk of developing AMD [Figure 4].

A high percentage of practices (>70%) recommend supplements for patients at risk of AMD (i.e. currently not presenting with disease but believed to be at risk due to a positive family history or other combined risk profile). 22% of practices reported some form of improvement in at least one of their AMD patients following supplementation with nutritional supplements [Figure 5 and Table 2].

Figure 1 Assessments performed to monitor AMD

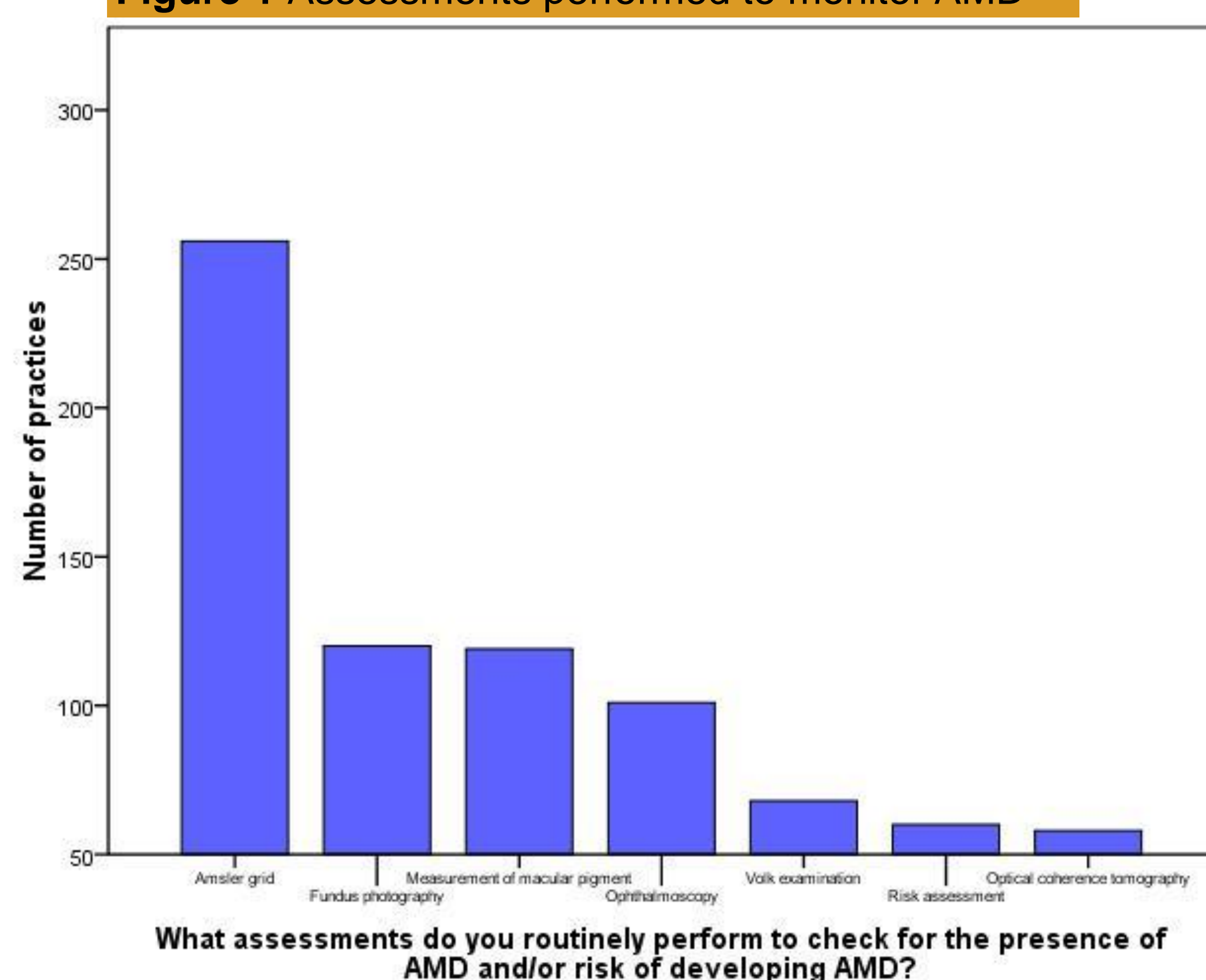


Table 1 List of supplements recommended in optometry practice

Supplement	Vitamin A (IU)	Vitamin C (mg)	Vitamin E (IU)	Zinc (mg)	Copper (mg)	Lutein (mg)	Zeaxanthin (mg)	Meso-zeaxanthin (mg)
Icaps	28640	452	400	69.6	1.6	0	0	0
Macushield	0	0	0	0	0	10	2	10
Ocuvite								
Lutein	0	60	30	15	2	6	0	0
Ocuvite								
Preservision	0	226	200	34.8	0.8	5	0	0
Viteyes†	0	250	200	40	1	3	0	0
Vitalux†	12500	250	200	40	1	3	0	0
Nutrivision*	5000	120	120	10	1.5	6	0	0
Visivite	25000	500	400	80	2	0	0	0

*Also include selenium (70 mcg) and manganese (2 mg); †instructions to take two tablets a day

Table 2 Improvement in AMD reported for supplements

Supplement	No	Yes	Total
ICaps	66	46	112
Macushield	42	68	110
Ocuvite Lutein	6	6	12
Ocuvite Preservision	5	5	10
Other	15	6	21

Figure 2

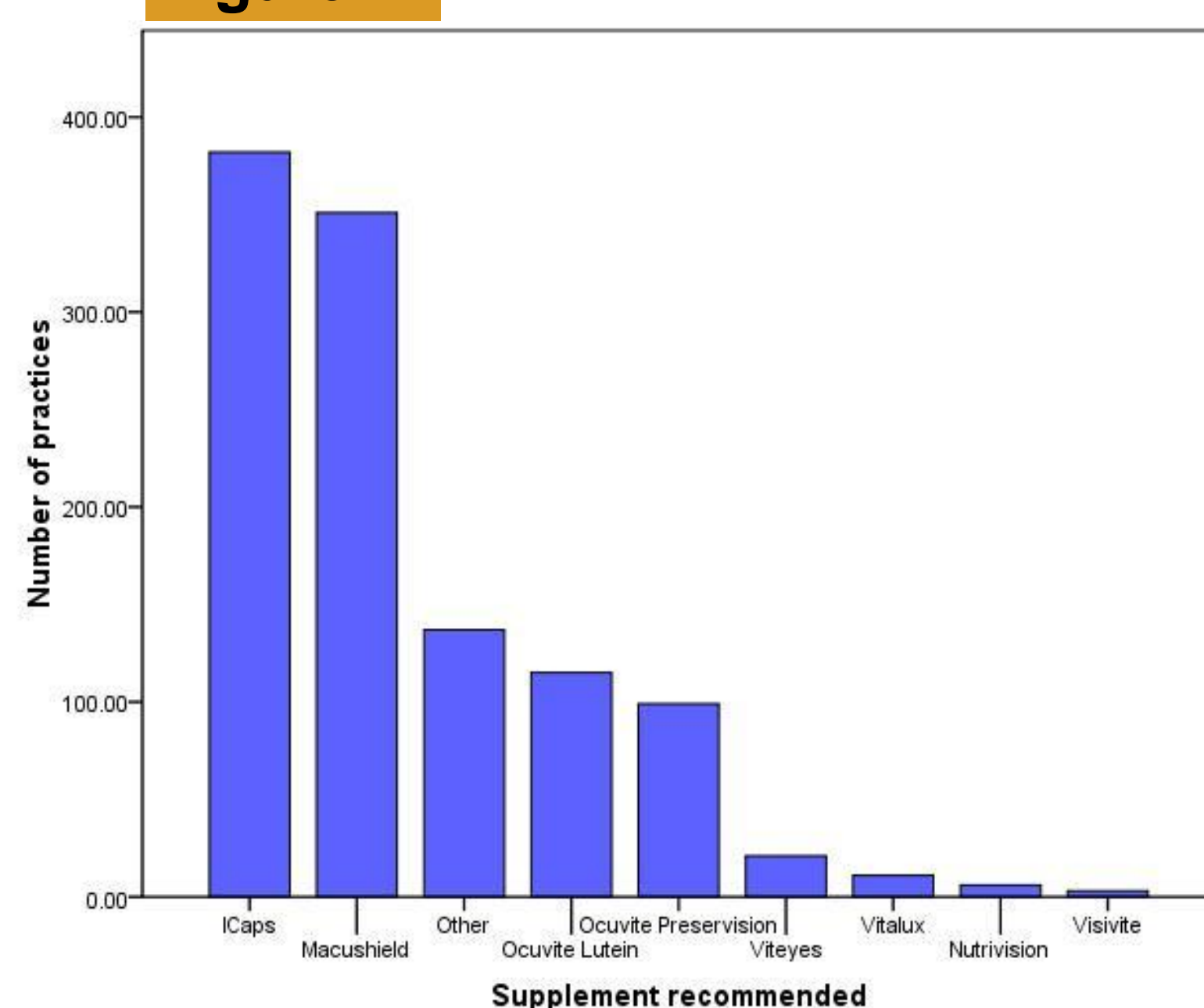


Figure 3

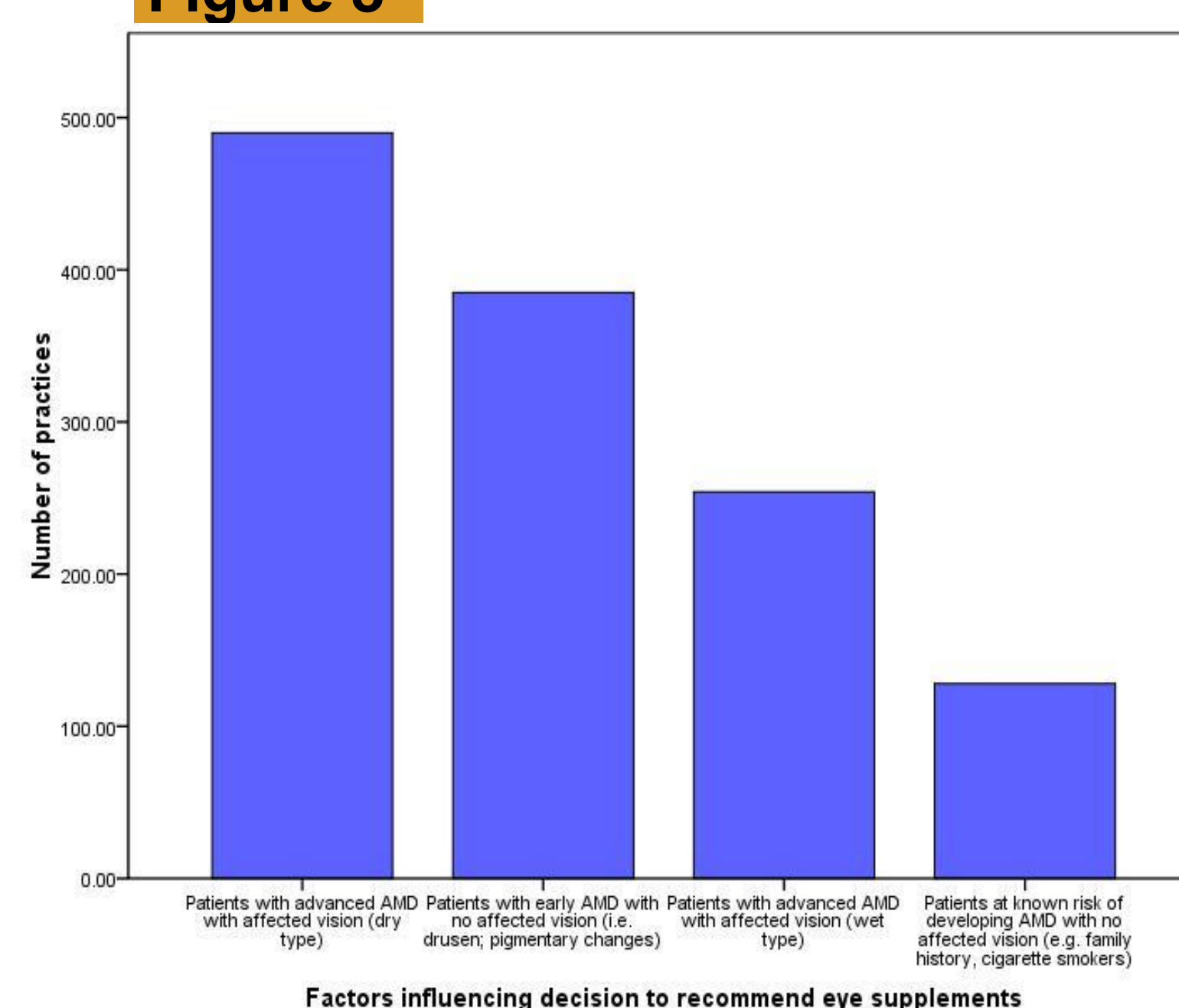


Figure 4

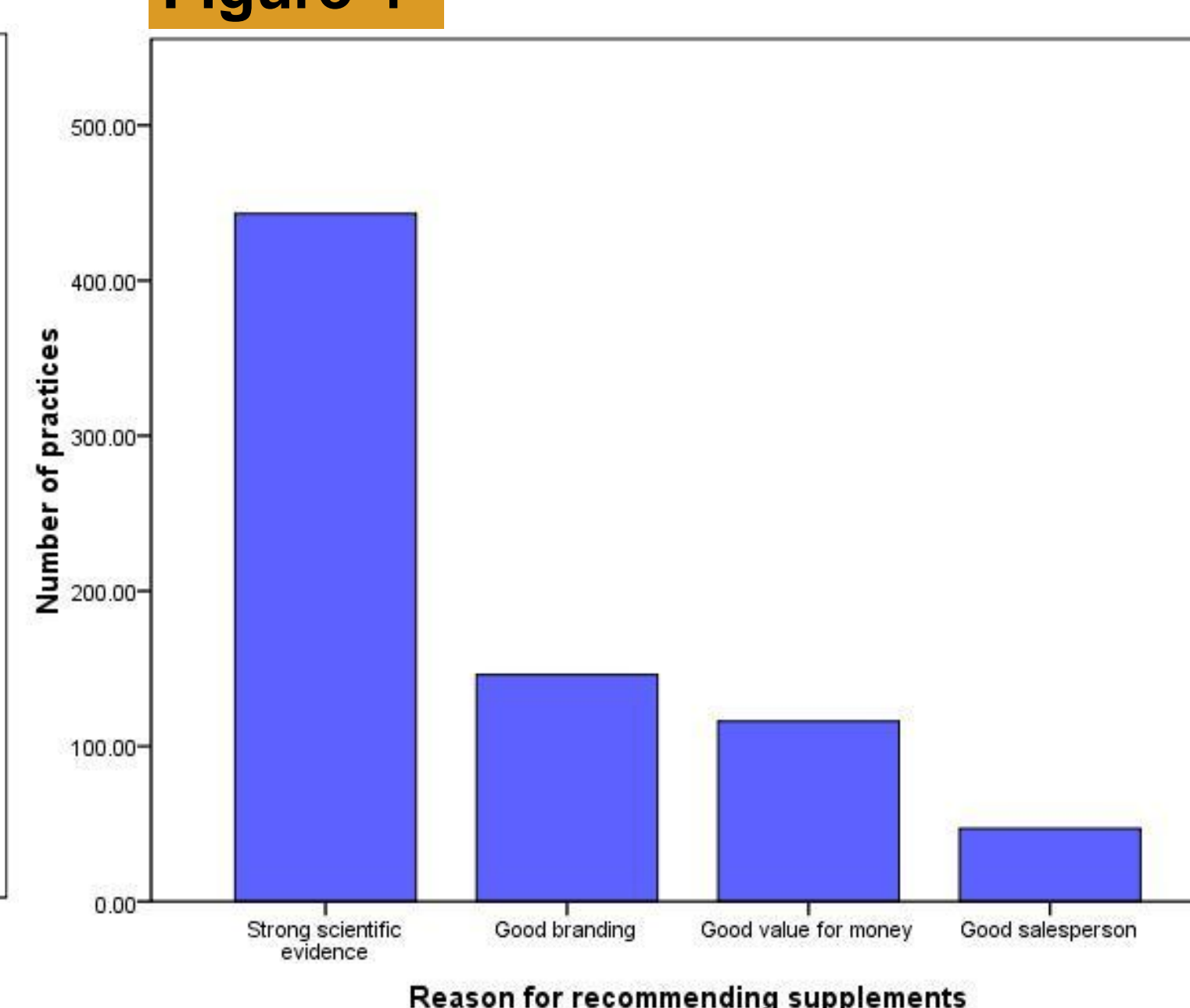
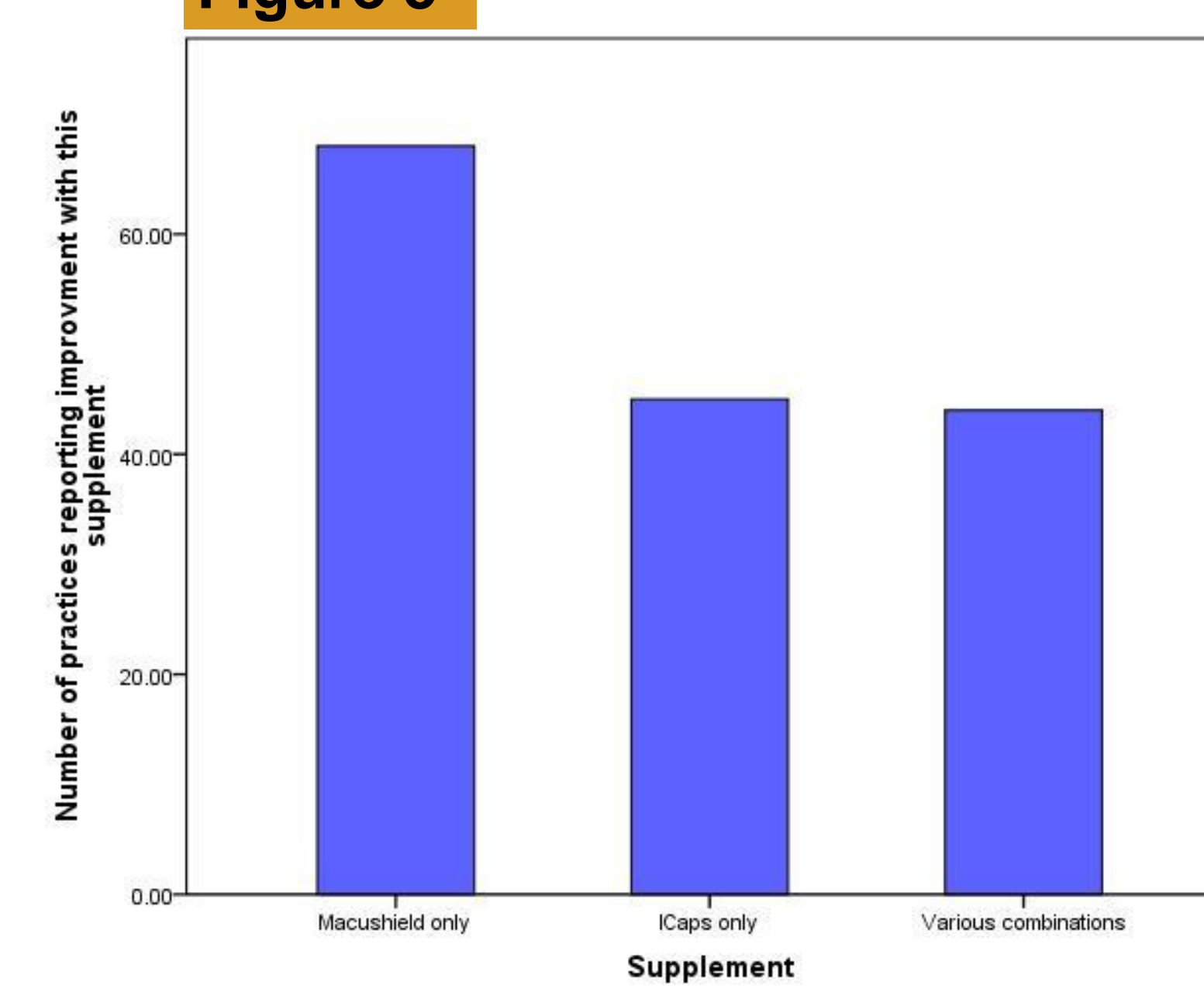


Figure 5



Conclusion

This online AMD research study was uniquely designed to investigate current practice for AMD assessment and subsequent prevention techniques amongst the ophthalmic communities in the Republic of Ireland and the United Kingdom. It is clear that AMD continues to present a challenge to the optometry community. Interestingly, the average number of patients presenting with some signs of AMD was around 10%. The Amsler grid remains the most widely used test for AMD, with less optometrists using ophthalmoscopy or any of the more advanced techniques, such as optical coherence tomography.

Although a large percentage of optometrists are prescribing eye supplements to patients deemed to be at risk of developing AMD, it is not clear that many optometrists are performing a detailed and appropriate AMD risk analysis routinely. The inclusion of MP measurement into routine clinical practice would further enhance the capacity of optometrists to identify those patients most at risk of AMD. New technologies such as the Clinical Densitometer represent a user friendly means to achieve this.

This survey identified that 22% of practices report some form of visual improvement in patients with AMD who consume eye nutritional supplements. Particularly, supplements containing the macular carotenoids lutein, zeaxanthin and meso-zeaxanthin are significantly related to improvement in patients with AMD. Research in the area of AMD prevention, particularly around nutrition and macular carotenoids, is ongoing, and supports (albeit inconclusively) the role of the macular carotenoids for AMD and for the at risk patient. The optometrist is encouraged to review the scientific evidence in support of such a notion.