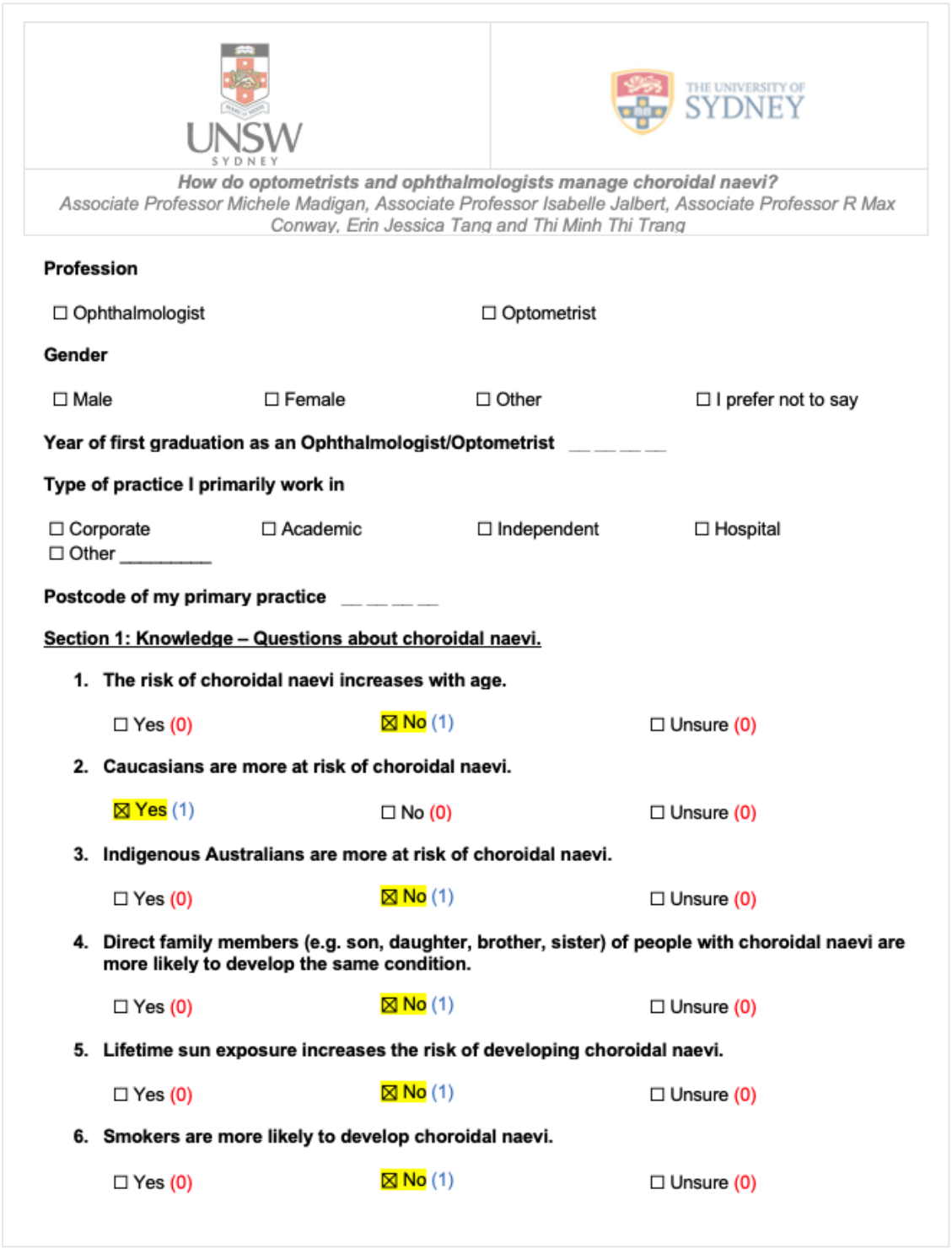
Supplemental Material: Survey of primary eyecare management of choroidal naevus patients

Supplementary Figure 1. KAP survey used in this study. The correct answers for the knowledge questions (K1 to K9) are highlighted in yellow. The scores of each answer in the survey sections are noted as follows: correct (blue), incorrect (red) and numeric assignment to the Likert scale (brown).



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How do optometrists and ophthalmologists manage choroidal naevi?

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Profession

☐ Ophthalmologist ☐ Optometrist

Gender

☐ Male ☐ Female ☐ Other ☐ I prefer not to say

Year of first graduation as an Ophthalmologist/Optometrist __ __ __ __

Type of practice I primarily work in

☐ Corporate ☐ Academic ☐ Independent ☐ Hospital
☐ Other _____

Postcode of my primary practice __ __ __ __

Section 1: Knowledge – Questions about choroidal naevi.

1. **The risk of choroidal naevi increases with age.**

   ☐ Yes (0) ☒ No (1) ☐ Unsure (0)

2. **Caucasians are more at risk of choroidal naevi.**

   ☒ Yes (1) ☐ No (0) ☐ Unsure (0)

3. **Indigenous Australians are more at risk of choroidal naevi.**

   ☐ Yes (0) ☒ No (1) ☐ Unsure (0)

4. **Direct family members (e.g. son, daughter, brother, sister) of people with choroidal naevi are more likely to develop the same condition.**

   ☐ Yes (0) ☒ No (1) ☐ Unsure (0)

5. **Lifetime sun exposure increases the risk of developing choroidal naevi.**

   ☐ Yes (0) ☒ No (1) ☐ Unsure (0)

6. **Smokers are more likely to develop choroidal naevi.**

   ☐ Yes (0) ☒ No (1) ☐ Unsure (0)

Supplementary Figure 1 (continued)

7. **Presence of retinal symptoms (e.g. visual blur, distortion, floaters or flashes) is associated with choroidal naevi.**

☐ Yes (0) ☒ No (1) ☐ Unsure (0)

8. **Drusen on the surface of a pigmented fundus lesion is a risk factor for malignancy.**

☐ Yes (0) ☒ No (1) ☐ Unsure (0)

9. **Orange pigment on the surface of a pigmented fundus lesion is a risk factor for malignancy.**

☒ Yes (1) ☐ No (0) ☐ Unsure (0)

Section 2: Attitude – Questions about your thoughts and feelings regarding managing choroidal naevi.

1. **I have the knowledge and skills required to detect choroidal naevi.**

☐ Strongly Agree (4) ☐ Agree (3) ☐ Neutral (2) ☐ Disagree (1) ☐ Strongly Disagree (0)

2. **I am confident at identifying at risk choroidal naevi.**

☐ Strongly Agree (4) ☐ Agree (3) ☐ Neutral (2) ☐ Disagree (1) ☐ Strongly Disagree (0)

Section 3: Practice – Questions about eyecare delivery.

1. **I routinely dilate the pupils when I notice a pigmented fundus lesion.**

☐ Most of the time (2) ☐ Sometimes (1) ☐ Never (0)

2. **I rely on undilated wide field photography to detect choroidal naevi.**

☐ Most of the time (0) ☐ Sometimes (1) ☐ Never (2)

3. **The imaging technique(s) that I predominantly use when examining such lesions are: (Tick all that apply).**

☐ Colour Fundus Photography
☐ Optical Coherence Topography (OCT)
☐ Wide-Field Retinal Imaging
☐ Other _____
☐ Fundus Autofluorescence
☐ Enhanced Depth Imaging OCT
☐ B-Scan Ultrasound
☐ None

4. **I am familiar with and use the "To Find Small Ocular Melanoma" system to assess the risk for malignancy.**

☐ Always (2) ☐ Most of the time (2) ☐ Sometimes (1) ☐ Never (0)

5. **I am familiar with and use the "To Find Small Ocular Melanoma Using Helpful Hints Daily" system to assess the risk for malignancy.**

☐ Always (2) ☐ Most of the time (2) ☐ Sometimes (1) ☐ Never (0)

Supplementary Figure 1 (continued)

6. **I am familiar with and use the "To Find Small Ocular Melanoma Doing Imaging" system to assess the risk for malignancy.**

☐ Always (2) ☐ Most of the time (2) ☐ Sometimes (1) ☐ Never (0)

7. **I refer at risk choroidal naevi.**

☐ Always (2) ☐ Most of the time (2) ☐ Sometimes (1) ☐ Never (0)

8. **I review choroidal naevi with no risk factors in:**

☐ <6 months (0) ☐ 6-12 months (1) ☐ 1-2 years (1) ☐ I don't review (0)

9. **I review choroidal naevi with 1 or more risk factors in:**

☐ <6 months (1) ☐ 6-12 months (1) ☐ 1-2 years (0) ☐ I don't review (0)

10. **At follow up, I use the following imaging technique(s) to examine such lesions: (Tick all that apply).**

☐ Colour Fundus Photography
☐ Optical Coherence Topography (OCT)
☐ Wide-Field Retinal Imaging
☐ Other _____
☐ Fundus Autofluorescence
☐ Enhanced Depth Imaging OCT
☐ B-Scan Ultrasound
☐ None

11. **When I see a new pigmented fundus lesion with no previous documented history, I perform further assessments (including but not limited to contacting previous practitioner, performing further imaging techniques, reviewing presentation).**

☐ Always (2) ☐ Most of the time (2) ☐ Sometimes (1) ☐ Never (0)

12. **I would refer a 60 year old male patient with a flat pigmented fundus lesion, with margins 10mm from the optic disc and diameter <4.5mm.**

☐ Yes (0) ☒ No (1) ☐ Unsure (0)

13. **I would refer a 30 year old female patient with mushroom shape pigmented fundus lesion with overlying confluent orange pigment and unexplained vision loss.**

☒ Yes (1) ☐ No (0) ☐ Unsure (0)

14. **I would refer a 20 year old Asian ethnic male patient with a newly presented pigmented fundus lesion, located 2mm from the optic disc.**

☐ Yes (0) ☒ No (1) ☐ Unsure (0)

15. **I would refer a 50 year old female patient with a previously documented pigmented fundus lesion, showing 1mm diameter growth over 12 years.**

☐ Yes (0) ☒ No (1) ☐ Unsure (0)

Thank you very much for your help with our study. Please return the completed questionnaire in the reply paid envelope enclosed as soon as possible.

Supplementary Table 1. Gender distribution of optometry and ophthalmology workforce.

	Optometrist		*Ophthalmologist*	
	Participants, n (%)	*AHPRA, June 2021, n (%)*	*Participants, n (%)*	*NHWDS, 2016, n (%)*
Female	49 (53)	3575 (57)	16 (20)	193 (21)
Male	43 (47)	2713 (43)	64 (80)	726 (79)
Total	**92**[a]	**6288**	**80**[b]	**919**

[a]One optometrist did not answer.
[b]One ophthalmologist did not answer and one preferred not to say.

Supplementary Table 2. KAP study participants' primary practice location. Categorised by Modified Monash Model category (MMM, 2019).

Modified Monash Model Category (MMM, 2019)	*The Australian Standard Geographical Classification Remoteness Area (2016)*	*Optometry participants primary practice location n (%)*	*Ophthalmology participants primary practice location n (%)*
MM 1	Metropolitan	59 (72.8)	54 (81.8)[a]
MM 2	Regional centres	8 (9.9)	4 (6.1)
MM 3	Large rural towns	3 (3.7)	0
MM 4	Medium rural towns	0	0
MM 5	Small rural towns	10 (12.3)	8 (12.1)
MM 6	Remote communities	0	0
MM 7	Very remote communities	1 (1.2)	0
Total		81 (87.1)	66 (80.5)
Not specified by the participant		12 (12.9)	16 (19.5)

[a]Including participant who recorded "VIC metro".

Supplementary Table 3. Knowledge of risk factors for the development of choroidal naevi and risk factors for malignant transformation of choroidal naevi: optometrists, ophthalmologists and combined, presented as a table. Frequency of correct responses (n) and percentage (%) of participants for the knowledge section of the KAP survey. (Total n = 175; optometrists n = 93, ophthalmologists n = 82).

Item number	*Profession*	*Frequency (%)*	*Mean (SD)*	*Independent sample t-tests (significant $p \leq 0.006$)*
K1. The risk of developing choroidal naevi increases with age.				
	Optometrists	45 (48.4)	0.32 (0.47)	0.184
	Ophthalmologists	54 (65.9)	0.23 (0.42)	
	Combined	99 (56.6)	0.28 (0.45)	
K2. Caucasians are more at risk of developing choroidal naevi.				
	Optometrists	69 (74.2)	0.74 (0.44)	0.363
	Ophthalmologists	55 (67.1)	0.68 (0.47)	
	Combined	124 (70.9)	0.71 (0.45)	
K3. Indigenous Australians are more at risk of developing choroidal naevi.				
	Optometrists	51 (54.8)	0.55 (0.50)	0.030
	Ophthalmologists	58 (70.7)	0.71 (0.46)	
	Combined	109 (62.3)	0.62 (0.49)	
K4. Direct family members of people with choroidal naevi are more likely to develop the same condition.				
	Optometrists	19 (20.4)	0.19 (0.40)	0.225

Ophthalmologists	22 (26.8)	0.27 (0.45)	
Combined	41 (23.4)	0.23 (0.42)	
K5. Lifetime sun exposure increases the risk of developing choroidal naevi.			
Optometrists	18 (19.4)	0.18 (0.39)	**0.000***
Ophthalmologists	40 (48.4)	0.49 (0.50)	
Combined	58 (33.1)	0.33 (0.47)	
K6. Smokers are more likely to develop choroidal naevi.			
Optometrists	30 (32.3)	0.31 (0.47)	0.027
Ophthalmologists	39 (47.6)	0.48 (0.50)	
Combined	69 (39.4)	0.39 (0.49)	
K7. Presence of retinal symptoms is associated with choroidal naevi.			
Optometrists	74 (79.6)	0.80 (0.41)	0.051
Ophthalmologists	74 (90.2)	0.90 (0.30)	
Combined	148 (84.6)	0.85 (0.36)	
K8. Drusen on the surface of a choroidal naevi is a risk factor for malignancy.			
Optometrists	81 (87.1)	0.87 (0.34)	0.131
Ophthalmologists	77 (93.9)	0.94 (0.24)	
Combined	158 (90.3)	0.90 (0.30)	
K9. Orange pigment on the surface of a choroidal naevi is a risk factor for malignancy.			
Optometrists	89 (95.7)	0.95 (0.23)	0.273

	Ophthalmologists	74 (90.2)	0.90 (0.30)
	Combined	163 (93.1)	0.93 (0.26)
Overall mean (SD)		Cronbach alpha (α)	Overall ANOVA/t-test p-value
Optometrists	4.91 (1.75)	0.57	0.394
Ophthalmologists	5.59 (1.73)		
Combined	5.23 (1.77)		

Supplementary Table 4. Distribution of primary practice location for optometrists and ophthalmologists. The distribution is compared with data from AHPRA (Australian Health Practitioner Regulation Agency) and NHWDS (National Health Workforce Data Set) (retrieved June 2021).

	Optometrist (n = 93)		*Ophthalmologist (n = 82)*	
State	*Survey Participants, n (%)*	*AHPRA, June 2021, n (%)*	*Survey Participants, n (%)*	*NHWDS, 2016, n (%) (44)*
NSW	27 (29.0)	2064 (33.7)	24 (29.3)	289 (39.1)
VIC	24 (25.8)	1671 (27.2)	23 (28.0)[a]	188 (25.5)
QLD	12 (12.9)	1264 (20.6)	8 (9.8)	121 (16.4)
WA	6 (6.5)	477 (7.8)	5 (6.1)	57 (7.7)
SA	9 (9.7)	399 (6.5)	3 (3.7)	51 (6.9)
TAS	0	115 (1.9)	3 (3.7)	18 (2.4)
ACT	3 (3.2)	110 (1.8)	0	9 (1.2)
NT	0	33 (0.5)	0	5 (0.7)
Total	**81[b]**	**6133[c]**	**66[d]**	**738**

[a]Includes the participant who recorded "VIC metro".
[b]12 optometrists did not answer the question.
[c]Excluding 155 registrants without principal place of practice.
[d]16 ophthalmologists did not answer the question.

Supplementary Table 5. Multiple linear regression results for the predictors of gender, years of practice, regionality and type of practice on knowledge scores, attitude scores, practice scores and total KAP Score.

All variables	*Estimated b*	*95% CI*	*p*	*Estimated b*	*95% CI*	*P*
Model	***Knowledge***			***Attitude***		
Gender	-0.612	[-1.221, 0.003]	0.049	-0.163	[-0.587, 0.260]	0.447
Years of practice	-0.004	[-0.029, 0.022]	0.777	0.010	[-0.008, 0.028]	0.259
Metropolitan	0.302	[-0.136, 0.739]	0.175	-0.058	[-0.362, 0.247]	0.708
Model	***Practice***			***Total KAP Score***		
Gender	0.469	[-0.540, 1.478]	0.359	-0.306	[-1.786, 1.174]	0.683
Years of practice	-0.020	[-0.063, 0.022]	0.346	-0.014	[-0.076, 0.049]	0.662
Metropolitan	0.170	[-0.554, 0.895]	0.642	0.414	[-0.649, 1.477]	0.442

*Statistically significant result. Significance was set at alpha 0.05.
Gender is coded 0 (male) and 1 (female) in the model