

Introduction

- Multifocal contact lens visual performance can vary with add-power and lens design.¹

Purpose

- To compare logMAR acuity (VA) and subjective ratings in habitual multifocal lens (HabMF) wearers refitted with a daily disposable multifocal lens (DDMF) of center-near progressive design, with two intermediate zones.²

Methods

Baseline:

- VA with HabMF was measured at 4 working distances. HabMF were not confirmed to be optimised distance or add powers.
 - distance (DV 6m)
 - long-intermediate (LI=1.5m)
 - short-intermediate (SI=0.75m)
 - near (NV= 0.4m)

Fitting visit:

- The clariti 1 day multifocal (DDMF) in somofilcon A material (CooperVision) was fit using the manufacturer's fitting guide.

Optimisation visit:

- After 3-10 days: DDMF power reviewed and changed to optimise (if required).

2-week Follow-up:

- LogMAR VA at the 4 working distances
- Vision clarity rating (VC-rating) at each of the 4 working distances
 - Exceeded expectations
 - Met expectations
 - Fell-short of expectations
- Changes in VA were analysed:
 - For each working distance
 - For each working distance for subjects grouped according to VC-rating.

Results

- The study included 48 presbyopes (38F:10M) with a mean (\pm SD) age of 55.6 ± 7.3 , ranging from 41 to 67 years.
- HabMF: 32 silicone hydrogel [26 reusable : 6 daily disposable] 16 hydrogel [14 reusable : 2 daily disposable].
- Subjective refraction ranged from +5.25 to -6.75DS, with cylinder ≤ -1.00 D. Reading add was between +1.25 to +2.50D.
- VA was better at every working distance with DDMF compared to HabMF (all $p < 0.032$).

Results (cont.)

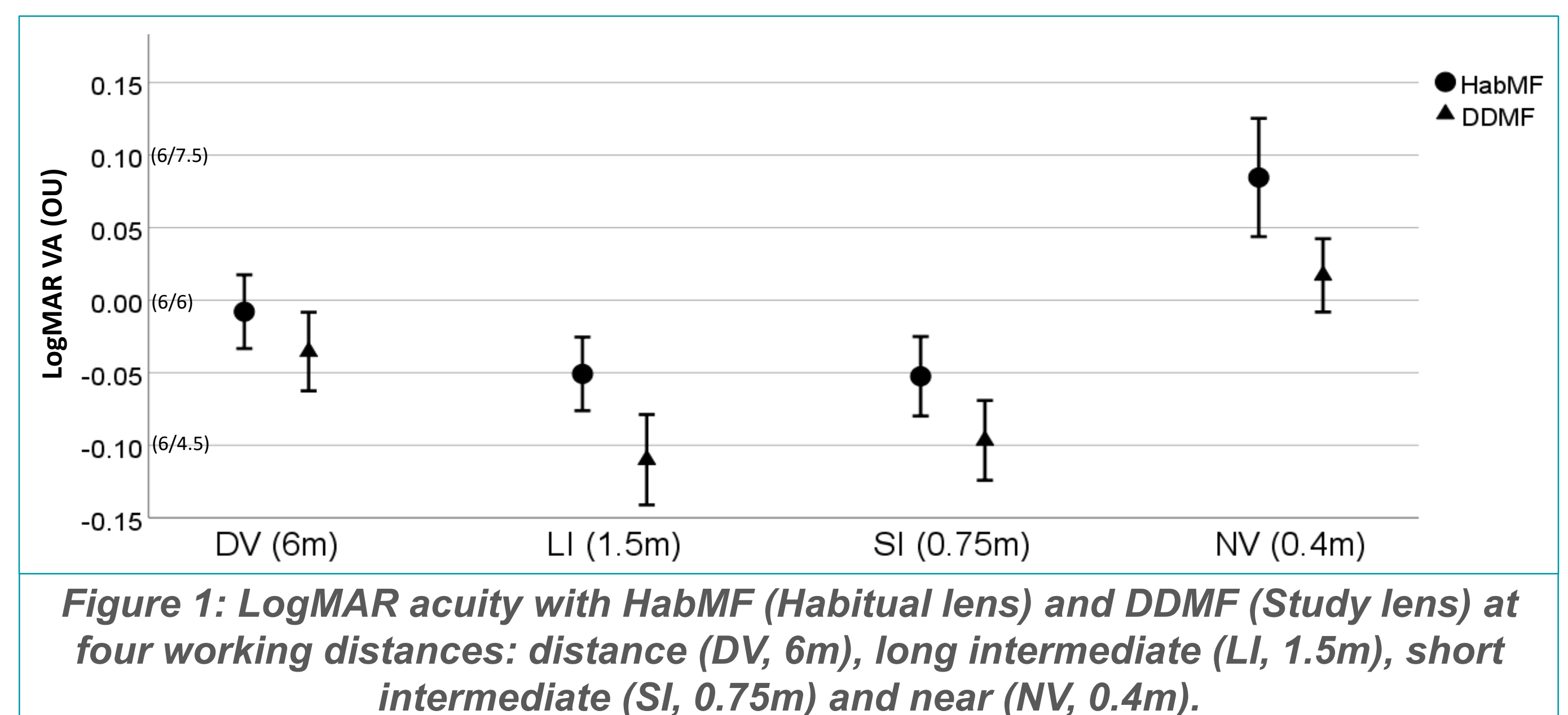


Figure 1: LogMAR acuity with HabMF (Habitual lens) and DDMF (Study lens) at four working distances: distance (DV, 6m), long intermediate (LI, 1.5m), short intermediate (SI, 0.75m) and near (NV, 0.4m).

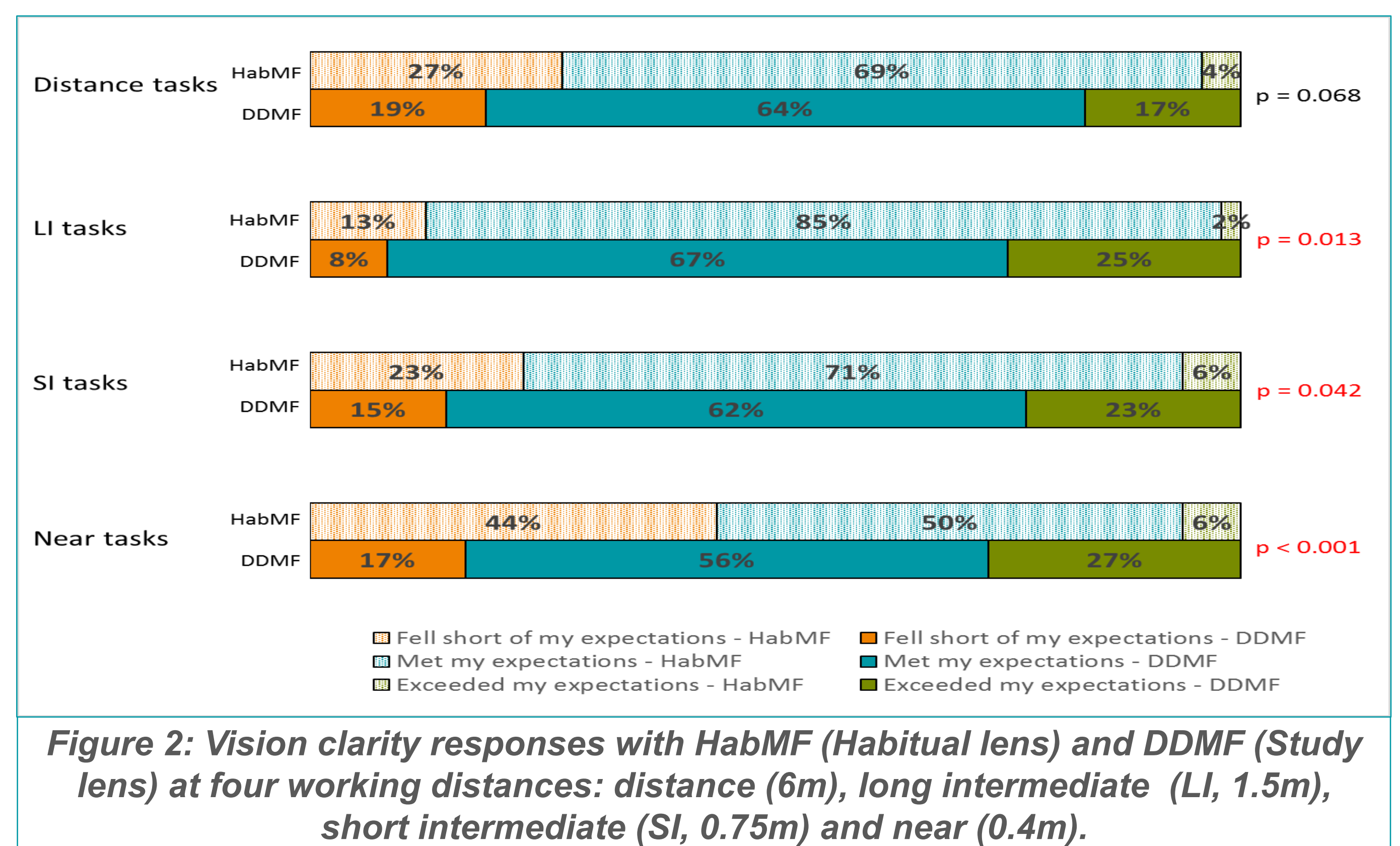


Figure 2: Vision clarity responses with HabMF (Habitual lens) and DDMF (Study lens) at four working distances: distance (6m), long intermediate (LI, 1.5m), short intermediate (SI, 0.75m) and near (0.4m).

Table 1: Subjective VC response rate to DDMF (%) and corresponding difference in VA (logMAR)

Fell short of expectations ☹️	Working Distance	Met & Exceeded expectations 😊
19% DDMF worse by 0.03 (1.5 letters)	6m	81% DDMF better by 0.05 (2.5 letters)
8% DDMF worse by 0.04 (2 letters)	1.5m	92% DDMF better by 0.07 (3.5 letters)
15% DDMF better by 0.02 (1 letter)	0.75m	85% DDMF better by 0.05 (2.5 letters)
17% DDMF better by 0.05 (2.5 letters)	0.40m	83% DDMF better by 0.08 (4 letters)

1 letter = 0.02 logMAR

Conclusions

- This design of MF lens provided good vision, both for acuity measured in-office, as well as in real-world experience.
- Positive subjective responses for all working distances were always associated with improved VA.
- Negative subjective responses were not always associated with reduced VA.
- It is important to allow the wearer to experience a MF lens in their habitual environment to determine overall acceptance, rather than rely solely on VA measures in the consulting room.

Reference

- Bergenske P, Rappon J. Influence of required spectacle ADD on success with a multifocal contact lens. *Cont Lens Anterior Eye*.2010;33:278-9.
- <https://coopervision.com/practitioner/our-products/clariti-1-day-family/clariti-1-day-multifocal>

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