HOW EFFECTIVE IS THE NEW COMMUNITY BASED WELSH LOW VISION SERVICE?

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ABSTRACT

Aims: To determine if there is a significant difference between user-centred and clinical outcomes in people with low vision who attend the new Community based Low Vision Service (CLVS) and the Hospital based Low Vision Service (HLVS).

Methods: A prospective controlled before and after study. Participants were recruited from the CLVS (n=343; 96 male, 247 female; median age 82) and from the HLVS (n=145; 55 male, 90 female; median age 80). The primary outcome measure was change (baseline-3 months) in visual disability as evaluated by the seven-item NEI-VFQ. Secondary outcome measures included: use of low vision aids, satisfaction with the service provided and change in near visual acuity before and after the provision of low vision aids.

Results: There were no significant differences in user-centred and clinical outcome measures between the CLVS and HLVS. Self-reported visual disability was significantly reduced after low vision service intervention for participants in both groups by 0.46 and 0.57 logits in the HLVS and CLVS respectively.

Conclusion: This study provides strong evidence that the community and hospital based low vision services are effective methods of service provision in Wales.

INTRODUCTION

Visual impairment is associated with falls,[1-4] depression,[5] reduced capacity to carry out everyday activities,[6] the need for residential care[7] and is one of the highest risk factors for functional status decline in community-living people.[8] Current estimates suggest that more than one in 10 of the older UK population suffer from significant visual impairment.[9] Since most of the causes of visual impairment are age-related, the number of people with a visual impairment in the UK is expected to continue to rise. This will increase the demand for low vision rehabilitation services.

Until recently, untreatable visual loss in Wales was managed by the Hospital Eye Service. Typically, after seeing an ophthalmologist, people would be provided with low vision aids (LVAs) such as magnifiers that optimise their residual vision.[10] Sometimes people would also be referred to social services for a home based needs assessment. This 'hospital based low vision service' (HLVS) has been typical of low vision service provision across the UK.[11] Unfortunately, the hospital based service in Wales has had difficulties in meeting the substantial demand and waiting times had become unacceptably high. Additional problems were caused by substantial distances people had to travel to access the service,[12] which is the primary reported barrier to eye care for older people.[13]

In recognition of these problems, the Welsh Assembly Government decided to re-organise the service. In 2004, a nationwide Community based Low Vision Service (CLVS) was established as part of the Welsh Eye Care Initiative (WECI) to run in parallel with the hospital based service.[14] The primary care

low vision service model enshrines many of the positive features identified in "The Review of Health and Social Care in Wales".[15] It is based in the community, waiting times are short, improved links have been developed with social services and there is equity of service across Wales [16].

Although the 170 optometrists providing the CLVS have been trained and accredited, some are less experienced than their colleagues working in the HLVS, and due to the large number of services many will see less than 20 patients a year. These factors may have an effect on the quality of the service delivered to patients. Therefore, although there are logistical advantages, there remains a question about the effectiveness of the service..

Early studies used improvements in the clinical measurements of visual acuity and reading speed [10,17-19] to measure the effectiveness of low vision rehabilitation interventions or services. Over the last few years there has been a move towards evaluating services based upon patients perception of ability after rehabilitation, rather than solely relying on clinical measures.[20-22]

This is a report of a prospective controlled before and after study of user centred and clinical outcomes in people with low vision who attended the community based low vision service (CLVS) or a hospital based low vision service (HLVS) within a similar catchment area.

The aims of the study were to determine if there is a significant difference in; 1) patient centred outcomes (change in self-report visual disability, use of low vision aids and satisfaction with the low vision service) and, 2) clinical

outcomes (change in near visual acuity before and after the provision of low vision aids) between HLVS and CLVS participants.

MATERIALS AND METHODS

Sample

Participants were recruited on a consecutive basis from the low vision waiting list at the University Hospital of Wales and from the community based low vision service between October 2007 and December 2008. The inclusion criteria of participants for both services were: >18 years of age, distance visual acuity (VA) of 6/12 or worse and/or; near acuity of N6 or worse or; significant contraction of visual field and a requirement for low vision rehabilitation. Vulnerable groups unable to provide informed consent were excluded from the study.

In order to minimise any difference between the two groups, CLVS participants were only recruited if they lived in and attended a practice within a similar catchment area to the hospital. Specifically, CLVS participants were only recruited if they had a CF postcode and went to a practice within a CF postcode (with a registered practitioner from 07/12/2006). This represented 36% of the total patients seen by the CLVS between October 2007 and December 2008.

Ethical approval was obtained from the All Wales Research Ethical Committee and all procedures adhered to the tenets of the Declaration of Helsinki.

Interventions

The intervention provided by the CLVS is based on the 'traditional' hospital low vision service model. This includes: assessment of a patient's understanding of their ocular condition and prognosis; discussion of needs and initial goal setting; assessment of vision; provision of low vision aids, on loan and free of charge; advice about lighting and other methods of enhancing vision; provision of information about the ocular condition and other rehabilitative services; referral to additional services; re-appraisal of goals; and arrangement for follow up.[23] Not all patients attend for a follow-up appointment, but these are arranged if a clinical need is identified. Being based in the community means that the service is often close to home, available six days a week and waiting times are short. All practitioners in the CLVS were optometrists.

The main components of the HLVS are similar to the CLVS. However, the HLVS differs in the following respects; there is a greater range of low vision devices on offer, the practitioner is significantly more experienced, if referral to local social services is made it is generally done by an ophthalmologist, not all patients are followed up and there is no protocol for re-assessment. The HLVS is an optometrist-only service which is principally run by a practitioner with over 10 year's hospital experience.

Protocol

Information about participants was obtained using self-report questionnaires and from information collected as part of the low vision assessment. For both

services, patient consent to take part in the study was 1) obtained via questionnaire completion and 2) signed consent for record card information to be used was obtained at the end of the consultation by the optometrist.

Questionnaires

HLVS participants were posted a pre-service questionnaire 1-2 weeks prior to their appointment. CLVS participants also received a pre-service questionnaire which was either posted or given to them when the appointment was booked. After three months both HLVS and CLVS participants were sent a post-service questionnaire.

All questionnaires were produced in large font (Arial 16) and complied with the format suggested by Wolffsohn.[24]

Record card data

All optometrists who provided the CLVS completed a standard record card which was faxed to Carmarthen Local Health Board (LHB) and then entered into a database. Clinical and demographic data required for this study were then extracted from the database.

A standardised form was designed for use in the hospital to record participant VA, ocular pathology and demographical data. This was additional to the routine completion of hospital notes.

Demographic, visual and social information

The following data was recorded at enrolment: age, gender, distance VA, near VA, previous use of CLVS or HLVS, cause of visual loss, registration status, home circumstances, transport to service and post code.

A question about the participant's ethnic group, a general health item (from the NEI-VFQ 25) and the location of questionnaire completion were also included in the pre-service questionnaire.

Outcome measures

Visual disability measure

The primary outcome measure was change (baseline-3 months) in visual disability as evaluated by the seven-item NEI-VFQ.[25] This is a short, reliable, psychometrically robust and highly focused measure which was developed specifically to enable evaluation of the CLVS.[25] Higher scores (from 1-5) indicate higher visual disability and a score of 6 ("stopped doing this for other reasons or not interested in doing this") was treated as missing data.[26]

Other patient centred measures

Use of LVAs and participant satisfaction were measured by four items from the validated Manchester Low Vision Questionnaire (MLVQ)[22] at three months after service provision (post-service questionnaire).

Clinical measures

Measurement of the change in near VA resulting from low vision service provision was defined as the near reading ability at the end of low vision service provision compared to the presenting near reading ability.

Analysis

Baseline characteristics were compared between the two groups using the Chi-square or Fisher's exact test for categorical variables and Wilcoxon Rank-Sum test for continuous data. Fisher's exact test was used to assess whether the proportion of patients in each group with missing data was similar for each characteristic.

Significant differences in baseline characteristics were examined to determine if there was evidence of any association between the differing characteristics and study outcomes. Stratification, ordinal logistic and quantile multi-variable regression were used to assess whether unadjusted results were robust to the possible effects of confounders.

Non parametric methods were used throughout because of marked departures from normality which could not be remedied by simple transformation. All of the questionnaire data and record card data were entered into SPSS Ver. 12 for analysis. Data from the 7-item NEI-VFQ was converted to a logit linear scale using a pre-published conversion table.[25]

Responses to open ended questions about satisfaction were analysed with a qualitative approach. Specifically, two clinicians reviewed responses and

identified recurring themes in the data. One of these clinicians then reviewed the responses with a research assistant and coded the data (see table 1).

The study was powered to detect a clinically significant difference between services of 0.2 logits (independent samples, 80% power at the 5% level).

Positive themes	
Code	**Description**
SV	**The (good) service overall / Everything** The help given/ received
PR	**Good practitioner attributes**: Patience, Empathy, Care/caring/ attention/ helpfulness/ personal touch/ kindness courteousness/ attitude
TS	**Time spent**
RF	**Referral to other services / or for equipment** (social services, talking books, resource centre, gadgets e.g. speaking clock, talking newspapers, monomouse, registration) Referral for cataract operation
LVA	**The low vision aids (optical and non**)- magnifier(s): Light/ head lamp; Magnifier that patient could hold (e.g. stroke/ arthritis); Non-optical LVAs, such as reading stand and typoscope; Distance LVA; Range of LVA's; Tinted overshields; Being able to change magnifiers
ACC	**Easy to access**
EX	**Having a good test of vision/ examination**
AD	**Information/ explanation/ advice** including about eyesight and prognosis, contrast
WT	**Prompt service/ short waiting time**
HV	**Home visit**
SR	**The pleasant surroundings/ premises**
Negative themes	
VIS	**Unable to improve vision** Couldn't give stronger glasses / Unable to improve vision / treat eye condition
LWT	**Slow service/ long waiting time** e.g. Delay in receiving LVA
LLV	**Limitation of LVA design and uses** Magnifier viewing area not big enough / Unable to get a magnifier for the computer / Magnifier hard to handle / use Magnifier light too bright/blue
INF	**Not enough information/ advice**
NG	**Overall not good a good/ useful service** g. Not a lot of interest/help; Limited service; Everything
DAC	**Hard to access** e.g. car parking, public transport
OS	**Limitations of other services** e.g. Waiting time for other services including; hospital, social services following referral
COM	**The practitioner/communication**
RES	**Restriction in range of LVAs available** e.g. Electronic aids and computer software not available free and too expensive to buy/ Range of magnifiers produced is limited

Table 1: Coding for the main positive and negative themes relating to patient satisfaction with the services

RESULTS

A total of 488 participants took part in the study (HLVS n=145, CLVS n=343). The groups were similar for the majority of baseline characteristics (table 2). However a slightly higher proportion of females attended the CLVS, more participants were accompanied when visiting the HLVS, a higher percentage of registered patients attended the HLVS and more participants completed the questionnaire alone in the HLVS. There was also a statistically significant difference between the two groups for mode of transport.

	HLVS (N=145)	CLVS (N=343)	Statistical comparison
Age (median; IQ)	80 (75-85)	82 (75-86)	Rank Sum: p=0.230
Female %	90 (62%)	247 (72%)	Fisher's exact: p=0.032
Reported registration %			
Blind	28 (20.0%)	36 (11.8%)	Fisher's exact: p=0.013
Partially sighted	43 (30.7%)	76 (25.0%)	
Not registered	69 (49.3%)	192 (63.2%)	
Not reported	5 (3.5%)	39 (11.4%)	P < 0.001
Ocular pathology %			
Glaucoma	15 (10.3%)	49 (14.3%)	Fisher's exact: p=0.304
Cataract	49 (33.8%)	108 (31.5%)	Fisher's exact: p=0.672
AMD	114 (78.6%)	241 (70.26%)	Fisher's exact: p=0.060
Home circumstances %			
Alone	57 (42.2 %)	164 (49.0%)	Fisher's exact: p=0.085
With partner/spouse	55 (40.7%)	123 (36.7%)	
with other relative	18 (13.3%)	31 (9.3%)	
sheltered accommodation	0 (0%)	10 (3.0%)	
Residential care	4 (3.0%)	4 (1.2%)	
Other	1 (0.7%)	3 (0.9%)	
Not reported	10 (6.9%)	8 (2.3%)	P = 0.03
Mode of transport to appointment %			
Car	68 (51.1%)	179 (53.6%)	Fisher's exact: p<0.001
public transport	33 (24.8 %)	62 (18.6%)	
Taxi	7 (5.3%)	24 (7.2%)	
Ambulance	23 (17.3%)	1 (0.3%)	
Walked	2 (1.5%)	50 (15.0%)	
Domiciliary	0 (0.0 %)	18 (5.4%)	
Not reported	12 (8.3%)	9 (2.6%)	P = 0.012
Accompanied to appointment %			
Yes	97 (73.5%)	198 (59.5%)	Fisher's exact: P=0.005
No	35 (26.5%)	135 (40.5%)	
Not recorded	13 (9.0%)	10 (2.9%)	P = 0.008

Ethnicity			
White	140 (97.9 %)	327 (98.5 %)	Fisher's exact: p=0.416
Asian or Asian British	1 (0.7 %)	4 (1.2 %)	
Black or Black British	1 (0.7 %)	0 (0.0 %)	
Other ethnic groups	1 (0.7 %)	1 (0.3 %)	
Not recorded	2 (1.4 %)	11 (3.2 %)	P = 0.36
Distance acuity (LogMar) median, IQ	-0.78 (-1.00, -0.48)	-0.65 (-1.00, -0.40)	Rank Sum: p=0.311
Missing number (% of N)	31 (21.4 %)	5 (1.5 %)	P < 0.001
Presenting near acuity: median, IQ	N12 (N8-N24)	N12 (N8-N24)	Rank Sum: p=0.206
Missing number (%)	3 (2.1 %)	5 (1.5 %)	P = 0.70
Visual disability (Logits) median, IQ	1.09 (-0.72-2.17)	1.07 (-0.48-2.11)	Rank Sum: p=0.929
Missing number (%)	2 (1.4 %)	1 (0.3 %)	P = 0.21
General health item			
Excellent	7 (4.9%)	6 (1.8%)	Rank Sum: p=0.420
Very good	13 (9.0%)	33 (9.7%)	
Good	36 (25.0%)	84 (24.8%)	
Fair	56 (38.9%)	132 (38.9%)	
Poor	32 (22.2%)	84 (24.8%)	
Missing	1 (0.7 %)	4 (1.2 %)	P = 0.999
Mode of questionnaire completion			
By patient alone	63 (44%)	92 (27%)	Fisher's exact: p<0.001
With help from another person	80 (56%)	245 (73%)	
Missing (n, % of N)	2 (1.4 %)	6 (1.7 %)	P = 0.999

Table 2: Baseline characteristics of the participants by type of low vision service (HLVS and CLVS). Percentages reported are out of available data except for the numbers of missing / not reported which are out of N.

Interventions

Participants in the CLVS were given significantly more LVAs than those attending the HLVS (range 1-8 and 1-6 respectively, Medians: 3 and 2 respectively, Rank-Sum test: P<0.001). The proportion of LVA types dispensed in the HLVS and CLVS were also significantly different (figure 1). Spectacle mounted LVA's were significantly more commonly dispensed in the HLVS (29 % vs. 7 %, Fisher's exact: P<0.001) but 'other' LVA's (which include non-optical LVA's and lamps) were significantly more commonly dispensed in the CLVS (37.3 % vs 16.6 %, Fisher's exact: P=0.001). There was some evidence that stand magnifiers were more commonly dispensed in the HLVS (68.5 % vs 59.3 %), although this was not statistically significant (P = 0.06, Fisher's Exact). There was little evidence of any difference in the proportion of hand magnifiers (Fisher's exact: P=0.827) or distance aids (Fisher's exact: P=0.090) dispensed in the HLVS or CLVS.

At three months, when the post-service questionnaire was administered, there was little evidence that the proportion of follow-up appointments provided by the HLVS (43.3%) and CLVS (45.9%) was different (Chi square: P=0.546).

Losses to follow up

Questionnaire response rate at three months was 87.6% and 82.5% in the HLVS and CLVS respectively. The proportion lost to follow up did not differ in the two groups (Fisher's exact test, P=0.178).

Self-report outcomes

Measurements of visual disability, use of LVAs and satisfaction are presented in table 3.

	HLVS (N=126)	CLVS (N=281)	
Visual disability			
baseline (median, IQ)	1.09 (-0.72 - 2.17)	1.07 (-0.43 – 2.09)	
3 month (median, IQ)	0.28 (-1.07 – 1.18)	-0.08 (-1.76 – 1.62)	
Change (median, IQ)	-0.46 (-1.32 - 0.24)	-0.57 (-1.59 -0.20)	Rank-Sum p=0.347
	HLVS (N=123)	**CLVS (N=281)**	
Patient satisfaction item			
Extremely helpful	71 (57.7%)	162 (58.7%)	Wilcoxon p=0.822
Quite a bit helpful	30 (24.4%)	55 (19.9%)	
Moderately helpful	15 (12.2%)	31 (11.2%)	
Slightly helpful	5 (4.1%)	21 (7.6%)	
Not at all helpful	2 (1.6%)	7 (2.5%)	
	HLVS (N=122)	**CLVS (N=281)**	
Use of LVA's			
>4 times per day	59 (48.4%)	127 (44.9%)	Wilcoxon p=0.403
1-4 times per day	28 (23.0%)	78 (27.6%)	
at least weekly	13 (10.7%)	34 (12.0%)	
< once a week	9 (7.4%)	20 (7.1%)	
Never	6 (4.9%)	18 (6.4%)	
No magnifier	7 (5.7%)	6 (2.1%)	

Table 3: Measurements of pre- and post-intervention visual disability, patient satisfaction and use of LVAs for HLVS and CLVS participants

Primary patient-centred outcome: visual disability

There was a significant reduction in visual disability of 0.46 logits and 0.57 logits in the HLVS and CLVS respectively between baseline and 3 months (Wilcoxon Signed rank test : P <0.001). The measurements of visual disability pre- and post- intervention are presented in figure 2. There was no evidence of a statistically significant difference in the change of visual disability between HLVS and CLVS participants (table 3).

Due to differences between the groups at baseline, there was potential for confounding with; gender, registration status, transport, accompanied status and whether the patient completed their questionnaire alone. However, there was little evidence of any association between these variables and visual disability ($P > 0.05$), suggesting that the findings are robust to baseline differences.

Secondary patient-centred outcome: Patient satisfaction

There was no significant difference in reported patient satisfaction between the two services (table 3). The characteristics of the service with which the participants were most satisfied in both the CLVS and HLVS were very similar (fig 3).

The potential for confounding by baseline covariates that differed between the groups was explored. There was some evidence of an association with transport ($P = 0.07$), accompanied status ($P = 0.03$) and whether patients completed their questionnaires alone ($P = 0.016$). However, after adjusting for these variables there was no evidence that satisfaction scores differed between patients attending HLVS and CLVS.

Third patient-centred outcome: Use of LVAs

There was no significant difference in usage of LVAs in the two groups (table 3). Although there was some evidence of an association with travel, registration and accompanied status, an ordinal logistic regression analysis to control for these differences indicated that there was no significant difference in LVA usage between groups.

Clinical outcomes

Table 4 shows that there was no statistically significant difference in the change of near VA between groups. Participants in both groups improved from a median visual acuity of N12 at presentation to N5 with an LVA. There was potential for confounding with: accompanied status, method of travel, whether the questionnaire was completed alone and registration status. However, a quantile multi-variable regression analysis showed that there was little evidence of any difference between the HLVS and CLVS with regards change in near vision.

	HLVS (N=127)	**CLVS (N=283)**	**Statistical comparison**
Presenting* near visual acuity (median, IQ)	N12 (N8-N24)	N12 (N8-N24)	
Missing	4 (3.1 %)	5 (1.8 %)	
'Best' near visual acuity with LVA (median, IQ)	N5 (N5-N5)	N5 (N5-N8)	
Missing	9 (7.1 %)	18 (6.4 %)	
Change in near visual acuity (median)	-7 (-19, -3)	-6 (-16, -3.7)	Rank-Sum
	10 (7.9 %)	23 (8.1 %)	P=0.93

Table 4: Near vision outcomes after low vision assessment. * Note: The near visual acuity at presentation was measured using the person's habitual reading correction and their habitual viewing distance with that correction.

DISCUSSION

This study has shown that both community and hospital based low vision services produce a clinically significant reduction in self-report visual disability (as measured with the 7-item NEI-VFQ). The study also shows that both services are associated with high levels of patient satisfaction, use of LVAs and a significant improvement in near visual acuity. The differences in outcomes were not significantly different between services.

Change in visual disability was the primary patient-centred outcome measure. The 7-item NEI-VFQ includes seven items which are targeted to that part of a patient's visual disability that low vision service provision can do something about i.e. near and distance vision.[26-28] The results suggest that the improvement in visual disability is not significantly different between CLVS and HLVS participants. In other words, the results support the notion that the CLVS is as effective as the HLVS.

The results also show that satisfaction levels for both services were high. Aspects with which individuals were dissatisfied with mainly related to factors outside the control of both services e.g. the limitations of low vision aid design. The satisfaction results reported here compare favourably with other UK studies, which also report satisfaction levels from 92-96%.[18,29-31]

Reports of daily use of LVAs were 71.4% and 72.5% for the HLVS and CLVS participants respectively. Interestingly, results from a recent randomised controlled trial, which measured the effectiveness of an enhanced low vision

service in the UK (which included up to three home visits) found a similar result of daily LVA use (72.6%).[23] However, unlike the present investigation, that study reported no improvement in vision-related quality-of-life after low vision service intervention. One possible reason for the apparent increased efficacy of these services compared to those studied by Reeves et al (2004) is that we measured outcomes at 3 rather than 12 months. Functional decline over the 12 months of that study could have confounded any improvement in vision-related quality-of-life associated with low vision rehabilitation. Furthermore, as noted by the investigators, the primary outcome measure (VCM1) may have been insensitive to the intervention. We note that Reeves et al, (2004) recommended the use of the NEI-VFQ which was unavailable at the start of their study.

Change in near visual acuity before and after the provision of low vision aids was the clinical measure used in this study. In both services average reading ability improved from N12 to N5. This finding is in line with previous reports on the effect of low vision aid use on reading ability.[32]

Although we found no significant differences in the effectiveness of the community and hospital based low vision services in terms of patient centred and clinical outcomes, there were some interesting differences between the services. The number and type of low vision aids dispensed and the means of getting to the services were significantly different.

The results show that patients attending the community service received significantly more aids. However, it should be noted that this is not a comparison of 'like with like', because the types of aids dispensed were different. There were significantly more 'other' aids dispensed in the community including less expensive non-optical aids such as clipboards and lights. In contrast, complex spectacle mounted aids were dispensed more frequently in the hospital. These differences may reflect that hospitals tend to see more complex cases whose low vision aid requirements are different.

Another difference between the two services was the means by which people got to the service (Table 2). The HLVS is the only service option for people requiring ambulance transport whereas the CLVS was the only service providing home assessments for people who are housebound. About 15% of people walked to the community service compared to just 1.5% in the hospital. The community service due to its multi-centre nature, has increased access[14] enabling many more people to walk to low vision rehabilitation.

A further difference between the services was that there were significantly more participants who were registered blind or partially sighted within the HLVS (approximately 51%) compared to the CLVS (approximately 37%). However, this is unsurprising since participants within the HLVS would have seen an ophthalmologist, who could certify the patient, before their low vision assessment. Whereas, participants within the community, who are eligible for registration, would be referred to an ophthalmologist as a result of their assessment.

The community low vision service was established in Wales because hospital low vision services were not available in many areas of Wales and those hospitals that were providing services were not meeting the demands of the growing number of people with low vision.[14] The findings of this study provide an evidence base which strongly supports both forms of low vision service provision. The results suggest that where both services exist they each play a distinct strategic role in the provision of low vision rehabilitation in Wales. The HLVS is well placed to see more complex cases and cases requiring ambulance transport. The community service, due to its multi-centre nature,[14] has made it possible for many people to walk to low vision rehabilitation and provides a domiciliary service for housebound people which was not available before. It would be useful to review referral pathways for people with low vision to take account of these findings.

One potential limitation of this study was that we are unable to describe the characteristics of those patients who declined to participate. Of those patients who did not complete a questionnaire, a proportion did not provide consent for the researchers to look at their record card data. Therefore we are unable to compare this group with those who did participate in the study. However, we have previously identified that in a larger sample of people using the CLVS, there appears to be little difference in demographic and visual functioning characteristics between those who do/don't complete a pre-service questionnaire [25].

Conclusions/future work

In conclusion, the results of this study provide strong evidence of the effectiveness of both community and hospital based low vision service provision in Wales.

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FIGURE LEGENDS

Figure 1: Proportion of LVA types dispensed in both the CLVS and HLVS

Figure 2: Box plots of baseline and 3 month post-service visual disability in the HLVS and CLVS. Higher visual disability values equates to greater disability.

Figure 3: Bar charts showing the percentage of positive and negative comments concerning patient satisfaction with both HLVS and CLVS (Positive themes: SV=good overall service, PR=good practitioner attributes, TS=time spent, RF=referral to other services, LVA=low vision aids, ACC=easy to access, EX=good test, AS=advice, WT=waiting time, HV=home visit, SR=pleasant surroundings. Negative themes: VIS=unable to improve vision, LWT=slow service, LLV=limitation LVA, INF=not enough information, NG=overall not good, DAC=hard to access, OS=limitations other services, COM=practitioner communication, RES=range of LVAs available).

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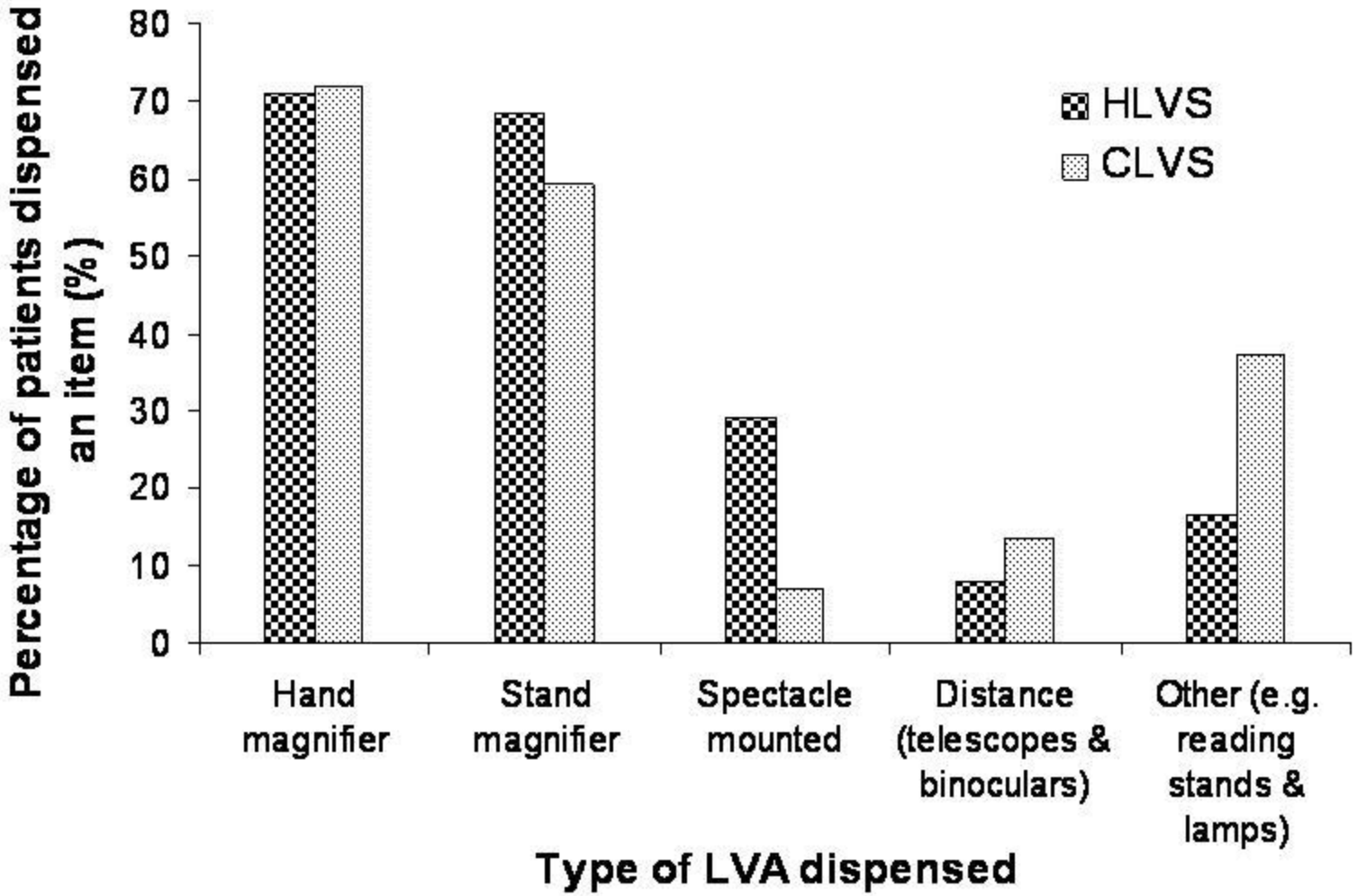
Competing Interest

None to declare



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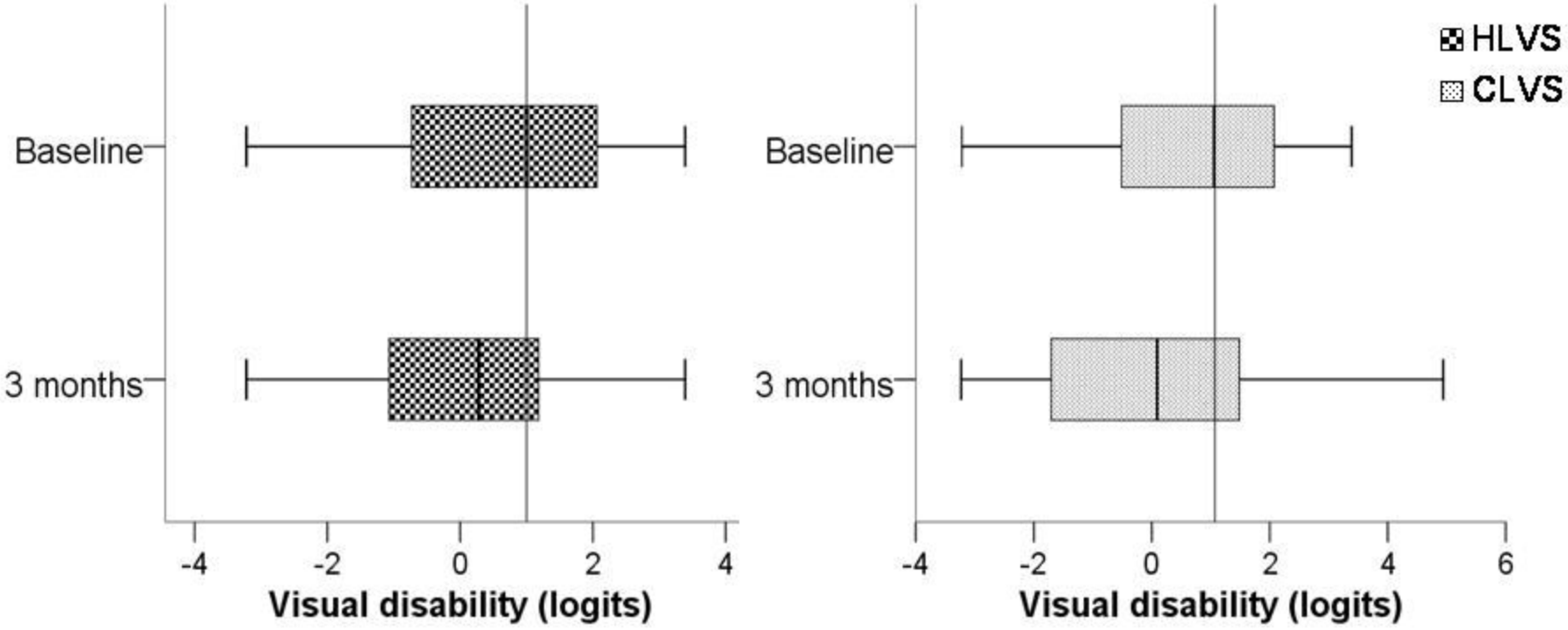

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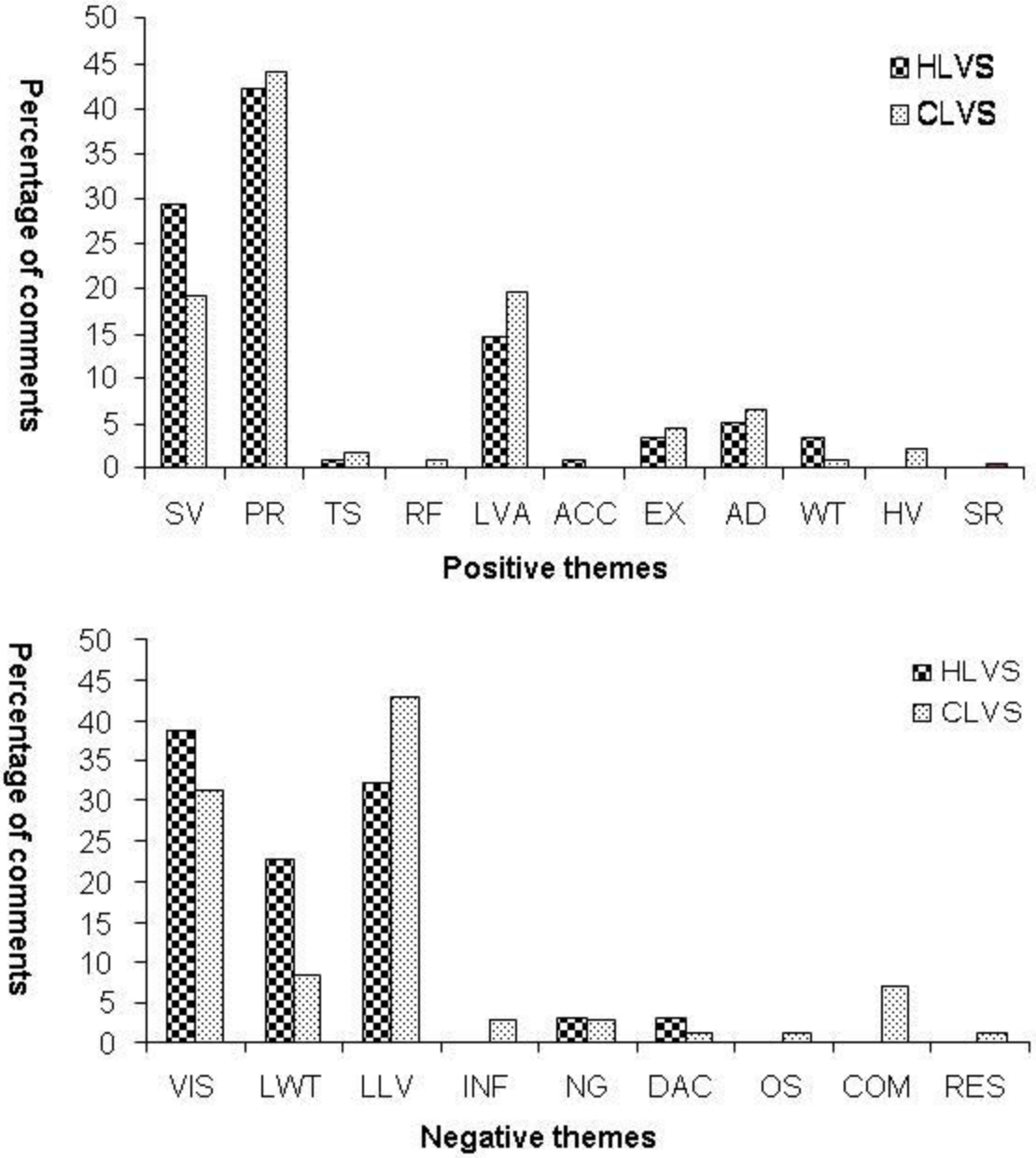

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