Received: 26 May 2023 | Accepted: 13 November 2023 | Published online: 8 December 2023

DOI: 10.1111/opo.13258

OPO THE COLLEGE OF OPTOMETRISTS

ORIGINAL ARTICLE

Feasibility and potential effectiveness of the IdentifEYE training programmes to address mental health problems in adults with vision impairment

Edine P. J. van Munster[1,2,3] | **Ruth M. A. van Nispen**[1,2] | **Jeroen Hoogland**[4] | **Hilde P. A. van der Aa**[1,2,3,5]

[1]Ophthalmology, Amsterdam UMC Location Vrije Universiteit Amsterdam, Amsterdam, the Netherlands

[2]Amsterdam Public Health, Quality of Care, Mental Health, Aging and Later Life, Amsterdam, the Netherlands

[3]Robert Coppes Foundation, Expertise Innovation and Knowledge, Vught, the Netherlands

[4]Epidemiology & Data Science, Amsterdam UMC Location Vrije Universiteit Amsterdam, Amsterdam, the Netherlands

[5]The Lighthouse Guild NYC, New York, New York, USA

Correspondence
Edine P. J. van Munster, Ophthalmology, Amsterdam UMC Location Vrije Universiteit Amsterdam, Amsterdam, the Netherlands.
Email: e.vanmunster@amsterdamumc.nl

Funding information
ZonMw, Grant/Award Number: 637005116

Abstract

Purpose: Two training programmes about depression and anxiety in adults with vision impairment were developed to support eye care practitioners (ECPs) and low vision service (LVS) workers in identifying and discussing mental health problems. The purpose of this study was to evaluate the training programmes' potential effectiveness and feasibility.

Methods: The training programmes were offered to ECPs ($n = 9$) and LVS workers ($n = 17$). All participants completed surveys pre-, mid- and post-training, and at a 4 week follow-up about the training programmes' content, effectiveness, feasibility and implementation. The Kirkpatrick model was used as a theoretical framework; linear mixed models were used to determine the potential effectiveness, and outcomes were explored during three focus group meetings.

Results: Expectations were met in the majority of the participants (84.6%). Post-training, both ECPs and LVS workers reported increased confidence ($\beta = 3.67$, confidence interval (CI): 0.53–6.80; $\beta = 4.35$, CI: 1.57 to 7.14, respectively) and less barriers ($\beta = -3.67$, CI: −6.45 to −0.89; $\beta = -1.82$, CI: −4.56 to 0.91). Mental health problems were more likely addressed in both the groups (ECP $\beta = 2.22$, CI: −0.17 to 4.62; LVS $\beta = 4.18$, CI: 2.67 to 5.68), but these effects did not last in ECPs ($\beta = -3.22$, CI: −7.37 to 0.92). Variations of these learning effects between individual participants were found within both the groups, and LVS workers indicated a need to focus on their own profession. Participants provided information on how to improve the training programmes' feasibility, effectiveness and implementation.

Conclusion: The training programmes seemed feasible and potentially effective. Transfer of the lessons learned into daily practice could be enhanced by, for example, specifying the training programmes for healthcare providers with the same profession, introducing microlearning and incorporating mental health management into organisation policies.

KEYWORDS
anxiety, depression, low vision, mental health, ophthalmology, training, vision impairment

INTRODUCTION

About 17% of Dutch adults experience mild to severe symptoms of depression and/or anxiety.[1] Among adults with vision impairment (VI), 33% experience clinically relevant symptoms of depression and/or anxiety, which is about twice as often as their normally sighted peers.[2–5] Also, the daily lives of people with degenerative eye diseases, who are not yet visually impaired, can also be affected by these symptoms.[6–10] Adults with VI often experience difficulties in recognising and discussing mental health problems.[11] Both people with VI and those with degenerative eye diseases often do not receive mental support when experiencing mental health problems,[12,13] putting them at increased risk of developing a clinical depression or anxiety disorder.[14]

According to adults with VI, low vision service (LVS) workers, for example occupational therapists, social workers and counsellors, and eye care practitioners (ECPs), for example ophthalmologists and optometrists, could pay more attention to depression and anxiety.[11] Both LVS workers and ECPs can contribute to the detection of depression and anxiety in people with VI or degenerative eye diseases. LVS interventions are aimed at improving patients' access to information, emotional well-being, participation in society and/or quality of life. However, positive outcomes of these services seem to be hindered in patients experiencing mental health problems.[15–17] Therefore, it is of the utmost importance that LVS workers detect depression and anxiety in an early stage and refer patients for mental health support. Moreover, not every patient receives care from LVS organisations; individuals who are in the preliminary stages of their degenerative eye disease may not yet be eligible for low vision care. In turn, adults with VI are sometimes reluctant to receive these services or lack knowledge about the possibilities for receiving support.[11,12] Hence, ECPs should address mental health. Moreover, since they are often involved in providing the diagnosis, discussing visual functioning (e.g., visual acuity or visual field status) and explaining the availability or non-availability of a curative treatment, which are phases of the disease and treatment when many patients may experience mental health problems.[18–20]

To date, mental health problems often remain undetected in those with VI.[12,21,22] Despite the patients' need for healthcare providers to address mental health,[11] ECPs and LVS workers are often hesitant to do so. Even when they suspect mental health problems, 19%–25% do not always discuss their suspicion with the patient.[23–25] Moreover, previous studies have suggested that other steps, such as the use of screening instruments and providing information about depression or anxiety, are not commonly used by ECPs and LVS workers.[23–25] Consequently, mental health remains unaddressed. Professionals have indicated experiencing barriers in their working environment for discussing mental health, such as lack of time, high caseload and lack of clarity about their roles and responsibilities within the organisation.[26] Moreover, there seems to be a general belief among healthcare providers that patients do not want to discuss their mental health, and healthcare providers seem uncomfortable or insecure about discussing patients' mental health problems.[24,27,28] Healthcare providers are in need of knowledge and standard procedures regarding how to act in cases of suspected depression and/or anxiety and referring patients for support.[23,24,26]

Key points

- Combining management of depression and anxiety in adults with vision impairment in training programmes for ophthalmic professionals and low vision service workers seems feasible.
- The long-term effectiveness of these training programmes appears to be determined by the programmes' design, professionals' characteristics and working environments.
- Organisational policies on management of depression and anxiety in adults with vision impairment, including mental health training programmes, should be implemented.

Many healthcare providers are willing to receive training to improve their knowledge and skills to address mental health problems adequately.[24,26,29] Previous training programmes about depression in Welsh and Australian ECPs and LVS workers seemed effective. After training, practitioners reported an increased intention to identify depression, were more confident, experienced fewer barriers and used several depression management strategies more frequently.[30,31] However, previous training programmes only addressed depression and disregarded anxiety, which is also prevalent in people with VI.[5] Combining depression and anxiety in one training session might be efficient, since the same instrument can be used to screen for symptoms, and some early mental health interventions have been shown to be effective in addressing both depression and anxiety.[29,32]

ECPs on the one hand and LVS workers on the other seem to experience different needs and fulfil different responsibilities in managing patients' mental health.[33] Effective learning can be achieved when a training programme matches the learner's previous experiences and beliefs, and effectively contributes to their daily work performance.[34,35] Therefore, it seems important to provide a training programme tailored separately to ECPs and LVS workers. In order to enhance implementation and guarantee their future use, it is important to investigate the feasibility and potential effectiveness of these training programmes. The aim of this study was to evaluate both training programmes on their potential effectiveness and feasibility within hospitals and LVS organisations.

METHODS

Study design

A pragmatic mixed methods study was conducted to determine the potential effectiveness and feasibility of two training programmes concerning identifying and discussing depression and anxiety tailored to the needs of LVS workers and ECPs, that is the IdentifEYE training programme. A concurrent triangulation strategy[36] was used in which repeated measures were performed to assess the training programmes' feasibility and potential effectiveness. Simultaneously, qualitative data and process information were collected to understand these outcomes better, and to collect suggestions for improvement and implementation. The study protocol was approved by the Medical Ethics Committee (METc) of Amsterdam University Medical Centres (UMC), location VUmc, the Netherlands (ref: 2022.0127). The study was performed according the standards of the Declaration of Helsinki (1964) and its later amendments.

Theoretical framework

The Kirkpatrick model was used to design questionnaires and interview guides for this study, and to provide a framework for data analysis to assess the potential effectiveness of the IdentifEYE training programmes.[37] The Kirkpatrick model is a widely used model to evaluate training programmes based on four levels: (i) reaction, (ii) learning, (iii) behaviour and (iv) results. *Reaction* is about what participants think of the training programme. *Learning* describes what the participants have learned, whereas *behaviour* evaluates to what extent participants use their knowledge and skills in practice. Finally, *results* focus on the impact of the training programme; in this study, this meant the perceived impact on adults with VI.

Training programmes

Development

The two IdentifEYE training programmes focussed on improving the recognition and discussion of depression and anxiety in adults with VI by LVS workers on the one hand and ECPs on the other. Both groups can support patients by addressing mental health problems.[11] The training programmes were specifically developed for ECPs in hospitals and LVS workers in low vision rehabilitation settings, based on previous research findings and training programmes.[11,23–26,31] A distinction was made between these professional groups to address their specific needs, responsibilities and possibilities.[33] Previous research indicates that ECPs can benefit from increased knowledge and clarification of their responsibilities and patients' support options.[24,26] Therefore, training focussed on increasing ECPs' awareness and knowledge of depression and anxiety, and encouraging them to inform and refer patients for mental health support. In LVS workers it seemed important to focus on increasing their intention, self-efficacy and feelings of social support within the working environment.[25] Therefore, their training programme included ways to learn additional skills to recognise mental health problems, and to discuss them with patients and colleagues. Both concepts of the training programmes were presented to five healthcare providers and one patient representative who provided feedback. ECPs stressed the importance of a short online training programme that was feasible for ECPs to follow in current highly demanding working conditions. The final IdentifEYE training resulted in two different designs: ECPs followed a 15-min e-learning programme at their own pace, while LVS workers attended a planned course consisting of 1-h e-learning, 3-h contact training, reflective exercises and a 1-h peer consultation with other participants. An overview of the IdentifEYE training programmes is given in Table 1.

e-learning

The e-learning was part of the training programme for both groups and focussed on providing information about the prevalence and symptoms of depression and anxiety, its support options and ways to discuss mental health and refer patients for support. In addition, a brochure for patients and a reference book with practical handouts for healthcare providers were included. For LVS workers only, the e-learning contained additional background information about depression and anxiety, supplementary tips for discussing mental health and information about the Patient Health Questionnaire (PHQ)-4. The latter is a short and valid instrument to screen for depression and anxiety, which can be administered in adults with VI, and is applicable to use in LVS organisations.[29,38]

Contact training and peer consultation

LVS workers additionally followed a contact training and a peer consultation. During the 3-h contact training, participants focussed on applying information in practice by learning skills to address mental health problems through group discussions and role-play, and by defining their own roles and goals in daily practice. Six weeks after the contact training, the training programme was concluded by a 1.5-h-online peer consultation in which participants were able to exchange experiences and support each other, as well as to discuss specific situations they encountered in practice.

TABLE 1 Overview of the IdentifEYE training programmes.

Element	Duration	Content areas
Eye care practitioners		
E-learning	0.25 h	1.1 Importance of discussing depression and anxiety 1.2 Recognising depression and anxiety 1.3 Discussing mental health with patients 1.4 Support options and referrals
Low vision service workers		
E-learning	1 h	1.1 Importance of discussing depression and anxiety 1.2 Recognising depression and anxiety 1.3 Discussing mental health with patients 1.4 Support options and referrals
Contact training	3 h	2.1 Difficulties in recognising depression and anxiety in adults with VI 2.2 Using the Patient Health Questionnaire (PHQ)-4 2.3 Discussing depression and anxiety: do's and don'ts 2.4 Difficult situations to discuss mental health 2.5 How to provide a referral? 2.6 Setting goals
In practice	6 weeks	3.1 Reflective exercises
Peer consultation	1.5 h	4.1 Exchange experiences 4.2 Case discussions

Abbreviation: VI, vision impairment.

Participants and procedure

LVS workers of two Dutch LVS organisations and ECPs working at an ophthalmology department of an academic hospital in the Netherlands were asked to participate in this study. Contact persons from each organisation purposively invited LVS workers, that is occupational therapists, counsellors, social workers and professionals who performed eligibility assessments (problem assessors) and ECPs, that is, ophthalmologists, optometrists, orthoptists, ophthalmic nurses and technical ophthalmic assistants, by sending invitation emails, including an information letter and a consent form. LVS workers could follow the training programme during two pre-determined periods and received invitations in April and July 2022. Reminders were sent after 2 weeks. ECPs received an invitation in July 2022 and a reminder was sent in September 2022.

Participation consisted of following the training programme, completing surveys and participating in a focus group meeting, which was optional. Thirty eligible healthcare providers provided written consent to participate and 17 provided additional consent to participate in a focus group meeting with audio recordings. Participants were excluded from the study if they were only working with people with VI under the age of 18, or if they indicated in advance that they were not able to complete all the elements of the training programme.

An overview of the data collection process is given in Figure 1. Repeated measurements were performed pre-, mid- and post-training, and 4 weeks after completing the training programme. After providing consent, ECPs received a link to the first online 45-min survey. LVS workers were invited to complete the first survey 3–5 weeks before the planned contact training. This was done to limit the time between the pre-training measurement and the actual start of the training, still providing enough time to complete both the survey and the e-learning before the contact training. All participants received access to the e-learning after completing the first survey. The focus group meetings took place after completing the training programme and administering the post-training survey to ensure that evaluation of the training was not influenced by discussions held during the focus group meetings.

Measures

Questionnaires

Repeated digital surveys were used to examine the feasibility and potential effectiveness of the training programmes. Constructs and questions used in previous research were included to address the four levels of the Kirkpatrick model.[23–25,27,30,33] Open questions were added to the post-training and follow-up questionnaires to obtain more information. If these answers were inconsistent with the answers to the corresponding closed question, they were verified with participants by telephone. Before training, data on participants' demographics, employment and personal and training experiences related to depression and anxiety were collected through self-report. Following Kirkpatrick's model, participants' evaluations of the training programmes (reaction level) were collected post-training by asking participants to rate the training programme on several elements, that is overall, organisation and feasibility, content of the training and usability in practice. Potential effectiveness was measured by collecting data pre-, mid-, post-training and at the 4-week follow-up on confidence and self-efficacy (learning level) as well as

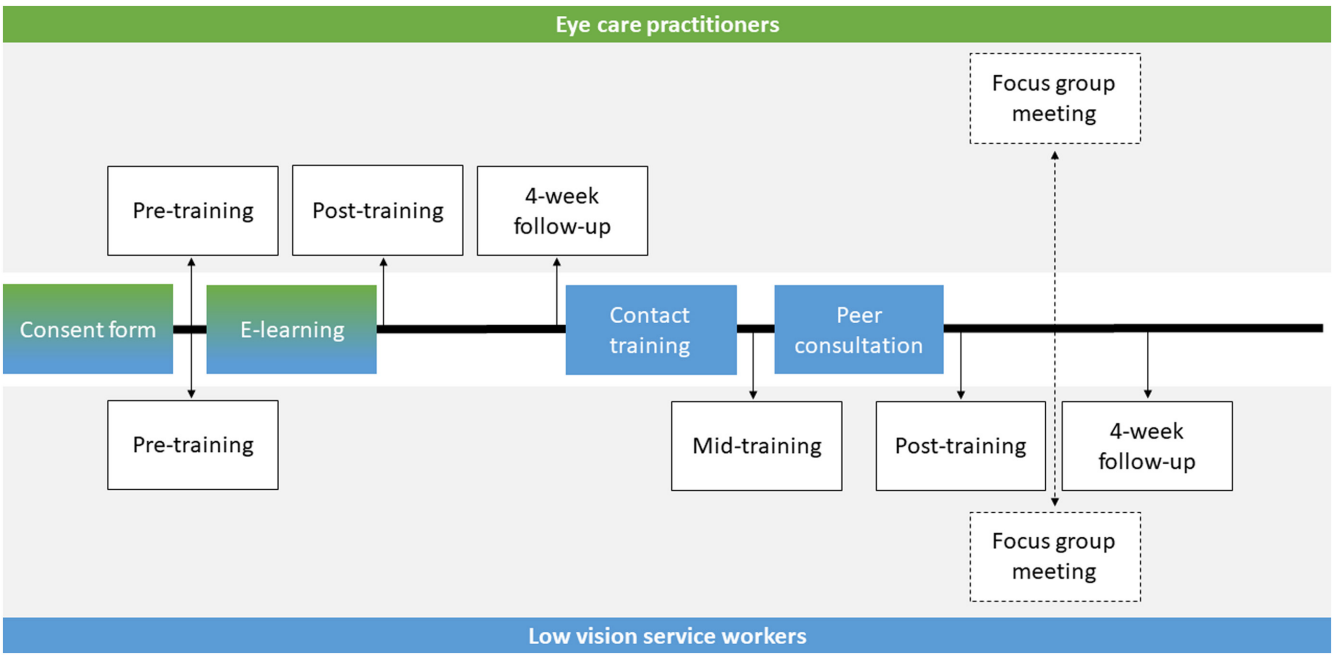

FIGURE 1 Overview of data collection through survey measurements and focus group meetings. The colours green and blue represent the training programmes for eye care practitioners (ECPs) and low vision service (LVS) workers, respectively.

barriers, social support, actions, that is, the use of depression and anxiety management strategies and referrals (behaviour level). Psychometric properties of these constructs were assessed in previous studies showing good reliability and unidimensionality.[24,25,33] All these constructs followed a four-point Likert scale. The perceived impact on adults with VI (results level) was collected by participants answering the question: 'My patients benefit from me taking this training' on a four-point Likert scale and explaining their response. A full version of the surveys can be found in Appendix S1.

Focus group meetings

To gain a deeper understanding of the potential effectiveness and feasibility of the IdentifEYE training programmes, additional qualitative data were collected by conducting three 1-h online focus group meetings. Since the design of the training programmes for LVS workers and ECPs differed, separate focus group meetings were organised. Participants discussed their experiences in the training programme, following an interview guide developed for this study (see Appendix S2). This guide addressed the four levels of the Kirkpatrick model, that is, reaction, learning, behaviour and results, the training programmes' feasibility and suggestions for improvement and implementation.

Process evaluations

Process evaluations were carried out to supplement participants' responses about the training programmes' feasibility with objective process information. It was measured by the percentage of completed training programmes, dropouts and (on time) assignment submissions. Moreover, evaluations with the trainers took place post-training to collect their educational and organisational suggestions to improve the interactive parts of the LVS workers' training programme. Changes suggested after the first training for LVS workers, with minimal impact, were immediately implemented to use in the second training, that is wordings and layout of sheets, and organising two parallel peer consultations to split the training group into smaller groups.

Data analyses

Statistical analysis

Descriptive statistics were used to present participants' demographic and employment characteristics, evaluation of the training (reaction level), perceived impact on adults with VI (results level) and process evaluations about feasibility. Effectiveness over time was assessed with linear mixed models for every outcome, that is confidence, self-efficacy, barriers, social support, actions and referrals and for both groups of professionals. The linear mixed models were specified with random (patient-level) intercepts to account for the repeated measures structure of the data, and with main fixed effects for (i) a slope for the training effect over time and (ii) a possible post-training deviation from this slope. The baseline, post-training and follow-up measurement corresponded with time stamps T0, T1 and T2. In LVS workers, the mid-training measurement was included as time point T0.5. Subsequently, individual observed trends and predicted trends were visualised for

each construct. Descriptive analyses were performed in SPSS (version 28; ibm.com) and linear mixed models in R (version 4.2.2; r-project.org).

Qualitative analysis

The three focus group meetings were audio recorded and transcribed non-verbatim. Analysing these transcriptions and participants' answers to open-ended survey questions followed the framework method to explore the training programmes' potential effectiveness.[39] To improve integration of quantitative and qualitative data, the Kirkpatrick model was used as a theoretical framework with additional themes regarding feasibility and implementation, resulting in six themes: feasibility, reaction, learning, behaviour, results and implementation. All qualitative data were assigned to one of these six themes, and thereafter checked for common topics taking the two separate professional groups into account. Subsequently, two researchers (EvM and HvdA) discussed the emerging topics to reach consensus on classification and to explore similarities and differences between ECPs and LVS workers. An overview and a codebook of the emerged topics are presented in Appendix S3. Following the concurrent triangulation approach, these themes and topics were linked to the results from the descriptive statistics and linear mixed models to provide more insight.

RESULTS

Twenty-six healthcare providers, that is, 9 ECPs and 17 LVS workers, were involved in this study. ECPs followed the training programme between August and October 2022. LVS workers followed the training programme from May to June 2022 ($n=5$) or from October to November 2022 ($n=12$). Twelve participants, that is 3 ECPs (33.3% of the total ECPs group) and 9 LVS workers (52.9% of the total LVS workers group), also participated in the focus group meetings, resulting in one focus group meeting for ECPs ($n=3$) and two for LVS workers ($n=4$ and $n=5$). Five participants (29%) who gave their consent did not attend the focus group meeting as they dropped out of the training programme or had too busy a schedule.

Participant characteristics

The group of ECPs consisted of ophthalmologists ($n=2$), ophthalmologists in training ($n=2$), an ophthalmic nurse ($n=1$), orthoptist ($n=1$) and technical ophthalmic assistants ($n=3$). The group of LVS workers consisted of occupational therapists ($n=3$), social workers ($n=2$), problem assessors ($n=2$), rehabilitation trainers ($n=2$), and outpatient counsellors or inpatient counsellors working at residential or day activity centres ($n=8$). Most participants were female (88.5%) and had an average age of 43 years. The average working experience was lower in LVS workers than in ECPs (8.7 and 17.7 years, respectively). Pre-training, almost all participants (92%) rated detection of mental health problems in patients as part of their job. LVS workers expressed more personal and educational experience with depression and/or anxiety than ECPs. ECPs reported seeing almost three times as many patients per week compared with LVS workers (43.3 and 12.7, respectively). Detailed participant characteristics are shown in Table 2.

Feasibility

All ECPs followed the entire training programme, while four LVS workers dropped out after providing consent (19%). Dropouts were related to the contact training not fitting their agenda ($n=2$) or unforeseen circumstances 1 day before the contact training ($n=2$). Sixteen of the remaining 17 LVS workers (94%) followed the entire training. One of them did not attend the peer intervention due to technical difficulties. Two LVS workers (13%) did not submit the assignment after the e-learning (in time), and nine LVS workers (53%) did not submit the reflective assignment. Almost all participants (96%) rated the training programme as easy to follow. ECPs indicated that the e-learning was short, concise and well-arranged, contributing to the ease of following the training, and LVS workers were positive about the organisation of each element of the training programme. However, not all LVS workers were used to working in the online environment in which the entire training programme was embedded. This complicated finding information related to the programme, or resulted in them needing to get access to the online environment of another organisation, which hindered quick access to the learning programme.

Level 1 Kirkpatrick model: Reaction

Table 3 shows a summary of the participants' satisfaction with the training programmes. More details can be found in Appendix S4. Participants praised the structure of the learning programme and the different learning methods that were used. Most participants thought the duration of the E-learning was just right (LVS workers 82%; ECPs 89%). Some LVS workers thought the contact training (24%) and the peer consultation (29%) were too short. In some cases, the peer consultation was not to their liking; reasons they gave were: (1) too much time between the contact training and peer consultation, which caused a decline in focus on managing depression and anxiety in daily practice, (2) excessive discussion of individual experiences leaving less time for mutual case discussions, (3) difficulty understanding the used peer consultation method, (4) a lot of the information was already known: too few new things were being discussed and (5) preferences for an in-person session.

TABLE 2 Participant characteristics ($n = 26$).

	ECPs ($n = 9$)	LVS workers ($n = 17$)
	***n* (%)**	***n* (%)**
Gender female	6 (67%)	17 (100%)
Educational level		
Vocational training or lower	3 (33%)	5 (29%)
Higher education	1 (11%)	11 (65%)
University or PhD	5 (56%)	1 (6%)
Personal experiences with depression and/or anxiety		
No	4 (44%)	4 (24%)
Yes, family	2 (22%)	6 (35%)
Yes, friends	2 (22%)	5 (29%)
Yes, personal	1 (11%)	7 (41%)
Previous training about depression and/or anxiety	0 (0%)	3 (18%)
	Mean (SD) [range]	**Mean (SD) [range]**
Age in years	47.4 (11.35) [32.9–64.0]	40.67 (10.40) [26.0–58.4]
Work experience in current profession in years	12.4 (13.60) [1–43]	8.9 (8.29) [1–28]
Work experience in low vision practice in years	17.7 (14.35) [1–43]	8.7 (7.02) [1–22]
Average patient contacts per week	43.3 (22.50) [20–80]	12.7 (6.40) [6–25]

Abbreviations: ECP, eye care practitioner; LVS, low vision service; *n*, number; SD, standard deviation.

The majority of the participants reported that the training programme met their expectations (84%). Others were expecting more specific information on mental health problems in people with VI and tools to detect and discuss these problems (12%) or thought the training was not suitable to their own profession (4%). Most participants rated the training and its information as useful (88%), suitable for their job (81%) and in line with practice (88%), and rated the difficulty of the information as just right (73%), but would have liked more information (LVS workers 30%; ECPs 44%). Despite being included in the training programme, some LVS workers still reported to miss information related to treatment methods and the distinction between visual complaints and symptoms of depression, would have liked to have learned how to follow-up on the outcomes of the PHQ-4 and needed information to hand over to patients. Three ECPs (33%) mentioned a need for additional information on how the detection of mental health problems suits hospital protocols and clinical practice, and suggested including additional information and examples or exercises. Some LVS workers expressed that the training programme was too generic as it focussed on all types of professionals and general patients, and it missed some specific relevance to apply it to their own profession. They suggested to shorten the joint learning methods, or to extend to specify further the information and tools.

> It is a pity that the training was offered to a large group of various professionals. Social workers, occupational therapists, etc. have a completely different role in the detection than residential counsellors. A residential counsellor sees different things. We are closer to the patient: we see that a patient is lying in bed, keeping the curtains closed. I assume a social worker, or a problem assessor, who only talks to someone three times, must be able to detect in a completely different way that something is wrong.
>
> (Residential counsellor, focus group meeting 1)

After training, 96% of the participants were motivated to address mental health problems in patients. All ECPs would recommend this training programme to their colleagues, and 18% of LVS workers thought colleagues already acted adequately and would not need additional training ($n = 2$), or they would not receive new information from following this intervention ($n = 1$).

Level 2 and Level 3 Kirkpatrick model: Learning and behaviour

LVS workers started the training programme with more confidence in addressing depression and anxiety than ECPs. Both groups reported a significant increase in confidence post-training (ECP $\beta = 3.67$, confidence interval (CI): 0.53–6.80; LVS $\beta = 4.35$, CI: 1.57–7.14, Table 4). This positive change continued in LVS workers at follow-up ($\beta = -2.35$, CI: −7.11 to 2.40) and levelled off in ECPs ($\beta = -4.11$, CI: −9.54 to 1.32), reflecting ECPs' confidence levels were consistent between post-training and follow-up. No significant changes

TABLE 3 Survey data on participants' reaction.

	ECPs (*n* = 9)	LVS workers (*n* = 17)
	***n* (%)**	***n* (%)**
Training programme met my expectations		
Strongly disagree	0 (0%)	0 (0%)
Disagree	1 (11%)	3 (18%)
Agree	6 (67%)	8 (47%)
Strongly agree	2 (22%)	6 (35%)
Duration of the e-learning was		
Too long	0 (0%)	2 (12%)
Just right	8 (89%)	14 (82%)
Too short	1 (11%)	1 (6%)
Amount of information		
Too much	0 (0%)	0 (0%)
Just right	5 (56%)	12 (71%)
Too few	4 (44%)	5 (29%)
Difficulty information		
Too easy	2 (22%)	4 (24%)
Just right	7 (78%)	12 (71%)
Too difficult	0 (0%)	1 (6%)
Useful information		
Strongly disagree	0 (0%)	0 (0%)
Disagree	1 (11%)	2 (12%)
Agree	3 (33%)	8 (47%)
Strongly agree	5 (56%)	7 (41%)
Training programme was in line with practice		
Strongly disagree	2 (22%)	0 (0%)
Disagree	1 (11%)	2 (12%)
Agree	1 (11%)	8 (47%)
Strongly agree	5 (56%)	7 (41%)
Information suitable for job		
Strongly disagree	0 (0%)	0 (0%)
Disagree	2 (22%)	1 (6%)
Agree	2 (22%)	8 (47%)
Strongly agree	5 (56%)	8 (47%)
Motivated to address depression and anxiety		
Strongly disagree	1 (11%)	0 (0%)
Disagree	0 (0%)	0 (0%)
Agree	7 (78%)	8 (47%)
Strongly agree	1 (11%)	9 (53%)
Recommend this training programme		
Yes	9 (100%)	14 (82%)
No	0 (0%)	3 (18%)

Abbreviations: ECP, eye care practitioner; LVS, low vision service; *n*, number.

were found in self-efficacy of ECPs and LVS workers after training (ECP $\beta = 2.56$, CI: −1.11 to 6.22; LVS $\beta = -0.53$, CI: −2.42 to 1.36) and follow-up (ECP $\beta = -6.22$, CI: −12.56 to 0.12; LVS $\beta = 2.14$, CI: −1.08 to 5.37). At follow-up, almost all participants (92.3%) reported an overall increase in confidence.

ECPs and LVS workers reported that the training programmes improved their awareness and knowledge about depression and anxiety related to its prevalence, symptoms and impact on adults with VI. Both groups mentioned they received helpful tools to address mental health, in which LVS workers specifically mentioned that the administration of the PHQ-4 had added value. ECPs were positive about tools for discussing mental health in a short period of time, but also preferred to receive more background information and additional tools to address mental health in patients. After training, LVS workers felt more comfortable discussing mental health, because they knew how to start a conversation, were able to ask more questions or learned about the importance of discussing mental health: 'Before I was reluctant to mention suspicions or check them in patients, because I was wondering if it was appropriate within my training' (Occupational therapist, focus group meeting 2).

However, many LVS workers wondered how to address patients' specific needs due to, for example, psychiatric comorbidities or intellectual disabilities, and how to apply the things they learned in their own profession: 'In the training it is suggested to refer to social work, well, that is me. I wanted to know how I should act after this referral. From my previous education I have ideas how to respond, but perhaps the training could provide more concrete tools, or provide suggestions on how to deal with the results of the PHQ-4' (Social worker, focus group meeting 1).

ECPs experienced more barriers than LVS before training. Post-training, both groups reported a decrease in experienced barriers, which was significant for ECPs (ECP $\beta = -3.67$, CI: −6.45 to −0.89; LVS $\beta = -1.82$, CI: −4.56 to 0.91). This decline persisted at follow-up, but was less strong in both groups (ECP $\beta = 2.44$, CI: −2.37 to 7.26; LVS $\beta = 0.32$, CI: −4.35 to 5.00). At follow-up, most participants (84.6%) reported experiencing less barriers. Before training, ECPs experienced less social support than LVS workers within their working environment. In both groups, changes in perceived social support were non-significant, both post-training (ECP $\beta = -0.11$, CI: −3.51 to 3.29; LVS $\beta = 1.65$, CI: −1.06 to 4.35) and at follow-up (ECP $\beta = 1.00$, CI: −4.89 to 6.89; LVS $\beta = -3.12$, CI: −7.74 to 1.50). At follow-up, LVS workers were more likely to feel fully supported in addressing mental health in patients (52.9%) than ECPs (22.2%).

Prior to training, ECPs and LVS workers thought detection was part of their job (89% and 94%). Post-training, both groups were more likely to act in suspected mental health problems, with a significant increase for LVS workers (ECP $\beta = 2.22$, CI: −0.17 to 4.62, LVS $\beta = 4.18$, CI: 2.67 to 5.68). These likelihoods levelled off at follow-up for LVS workers (LVS $\beta = -4.44$, CI: −7.01 to −1.87) and slightly decreased for ECPs ($\beta = -3.22$, CI: −7.37 to 0.92), which indicates that LVS workers responded to mental health problems as often at follow-up as after training, whereas ECPs did not fully retain their newly learned behaviour. A non-significant

TABLE 4 Linear mixed models for all constructs between pre- and post-training, and post-training and the 4-week follow-up for eye care practitioners ($n = 9$) and low vision service workers ($n = 17$).

	Fixed effects					Random effects	
Variable (scale)	Intercept	β1[a]	Confidence interval (CI)	β2[b]	Confidence interval (CI)	Between subjects (SD)	Residual (SD)
Eye care practitioners							
Confidence (0–48)	18.11	3.67*	0.53; 6.80	−4.11	−9.54; 1.32	6.03	3.41
Self-efficacy (0–42)	20.67	2.56	−1.11; 6.22	−6.22	−12.56; 0.12	5.59	3.98
Barriers (0–54)	35.78	−3.67*	−6.45; −0.89	2.44	−2.37; 7.26	7.45	3.02
Social support (0–42)	18.89	−0.11	−3.51; 3.29	1.00	−4.89; 6.89	6.58	3.70
Actions (0–36)	17.67	2.22	−0.17; 4.62	−3.22	−7.37; 0.92	2.39	2.60
Referral (0–36)	7.33	2.11	−1.03; 5.25	−5.44*	10.88; 0.00	4.17	3.42
Low vision service workers							
Confidence (0–48)	24.18	4.35*	1.57; 7.14	−2.35	−7.11; 2.40	4.92	4.15
Self-efficacy (0–42)	19.79	−0.53	−2.42; 1.36	2.15	−1.08; 5.37	5.56	2.81
Barriers (0–57)	20.74	−1.82	−4.56; 0.91	0.32	−4.35; 5.00	4.02	4.08
Social support (0–42)	32.59	1.65	−1.06; 4.35	−3.12	−7.74; 1.50	3.24	4.03
Actions (0–36)	21.74	4.18*	2.67; 5.68	−4.44*	−7.01; −1.87	4.21	2.24
Referral (0–33)	9.75	1.29	−0.25; 2.84	−1.92	−4.55; 0.71	3.40	2.30

Note: β1 reflects the (predicted) learning effect at post-training compared to baseline; β2 reflects the (predicted) change in learning effect at follow-up compared to β1. Example: in ECPs, β1 for confidence is 3.67, which represents learning effects of 3.67 between baseline and post-training. The β2 of −4.11 shows the learning effect found at post-training levelled off at follow-up (3.66−4.11 = −0.44). Visual representations can be found in Figure 2 and Appendix S5.

Abbreviations: CI, confidence interval; ECP, eye care practitioner; SD, standard deviation.

[a] Change per unit of time in construct between pre- and post-training, for example, this change happens from T0 to T1.

[b] Change per unit of time in construct between post-training and the 4-week follow-up, for example, this change happens from T1 to T2 * significant change.

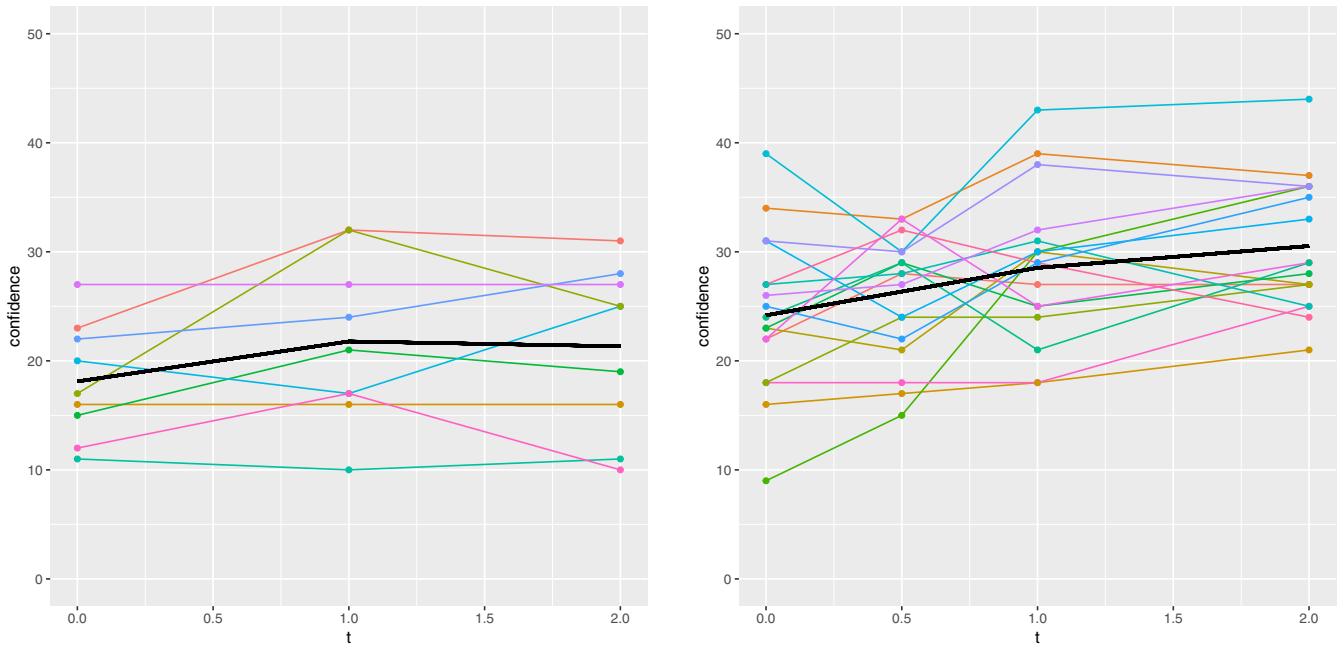

FIGURE 2 Visual representation of mixed effects model: predicted learning effects over time (t) in confidence for eye care practitioners (left, $n = 9$) and low vision service workers (right, $n = 17$). The black line represents the predicted learning effect on confidence between baseline (T0) and post-training (T1), and the change in learning effect between post-training and follow-up (T2). The coloured dots and lines represent the participants' individual scores and change in confidence over time. The low vision service workers had an additional score on confidence mid-training (T0.5), which represents their score directly after the contact training.

increase in referral behaviour post-training was found in both groups (ECP β = 2.11, CI: −1.03 to 5.25; LVS β = 1.29, CI: −0.25 to 2.84). In LVS workers, referral behaviour was sustained at follow-up (β = −1.92, CI: −4.55 to 0.71), but in ECPs the learning effects on referral behaviour was not maintained and dropped significantly (β = −5.44, CI: −10.88

to 0.00). At follow-up, more participants stated they would definitely discuss suspicions of mental health problems with patients: ECPs increased from 11% to 12% and LVS workers from 35% to 53%.

During focus group meetings, some LVS workers and ECPs stated specific behaviour related to depression and anxiety management was already present, such as LVS workers asking patients about mental health, detecting symptoms and providing referrals, and ECPs demonstrating openness towards patients' mental health, discussing support options and warning the ophthalmologist. For ECPs, the training programme still led to more focus on recognising symptoms, such as physical complaints and sadness, and more frequent and efficient discussions about mental health. A few indicated that the training programme helped them to refer patients more often and to follow-up on these referrals. For most LVS workers, the training helped them to detect and discuss mental health problems more often and in a more straightforward manner by asking additional questions on mental health, and normalising complaints by providing information. While several LVS workers started using the PHQ-4 in practice, some decided not to, since they felt uncomfortable using the PHQ-4 in their profession. Some indicated using the questions of the PHQ-4 as an inspiration.

> Now, I have the PHQ-4 in my mind. Normally, it was like 'How are you (feeling)?' Now I can specify my questions, and for example ask how much someone is worrying, which gives me more information about the severity of someone's complaints.
> (Occupational therapist, focus group meeting 2)

All reported effects on confidence, self-efficacy, barriers, social support, actions and referrals were average effects, in which there was variation between participants, with standard deviations between 2.39 and 7.45. The potential effectiveness of both training programmes is shown in Table 4 and visualised in Figure 2 and Appendix S5.

Level 4 Kirkpatrick model: Results

Almost all participants (96% after training, 88% follow-up) agreed that patients would benefit from them having completed this training programme. Participants mentioned that if they recognise, discuss and organise support more often, it will help patients to recognise, normalise and acknowledge their mental health problems. One ECP specifically stated that it could promote a patient's medical treatment as well: 'The more relaxed a patient is, the better a treatment works and it decreases the delays in the operating rooms. If you can easily decrease their fears by giving them insight into their own fears with one or two conversations, benefits will arise in several areas' (Technical ophthalmic assistant, focus group meeting 3).

Implementation training programmes

Both LVS workers and ECPs indicated a need for clear policies about the management of patients' mental health problems within their organisation, including an efficient division of responsibilities among healthcare providers involved. LVS workers addressed the necessity of decision making on when and how to use the PHQ-4 within their organisation and making choices on internal support options. ECPs reported a lack of consensus between professionals within the hospital to address mental health, and a need for low intensity mental health support to refer to, offered at LVS organisations or within the hospital itself.

> 'If an ophthalmologist can ask someone from the LVS organisation to contact the patient, it might be more efficient than just giving their telephone number to the patient.' … 'The psychologist from our retinoblastoma team sometimes calls patients or their parents. I think we should be able to offer this within the whole ophthalmology department. … Twice a week we have a consultation hour about visual aids. It would be nice to also organise consultation hours twice a week for those who are in need of psychological support related to their vision.'
> (Technical ophthalmic assistant and Ophthalmic nurse, focus group meeting 3)

Both groups suggested including the training programmes in the organisation's compulsory curriculum to improve the consensus for addressing this topic among colleagues. In addition, ECPs recommended addressing it in the curriculum for ECPs in training to make them aware of the importance of discussing mental health with patients at an early stage of their career. Standardised administration of the PHQ-4 and recurring peer consultations were suggested by LVS workers to enhance continued focus on mental health management. Furthermore, they expressed preferences to follow the training together with colleagues in same profession.

> I would find it useful if this course is offered within the organisation with my own colleagues. Then you do not have to travel, you have colleagues who can relate … like another participant said, you have the same way of working and similar things you run into.
> (Rehabilitation trainer, focus group meeting 1)

DISCUSSION

The purpose of this study was to evaluate the potential effectiveness and feasibility of two tailored training programmes to support ECPs and LVS workers in identifying and discussing depression and anxiety in patients,

the IdentifEYE training programme. In line with previous studies in Welsh and Australian healthcare providers,[30,31] participants were satisfied with the training programmes, which seemed feasible and showed potential effectiveness in terms of increased confidence, reduced experienced barriers and increased actions when suspecting mental health problems in patients, post-training. Positive effects on confidence and barriers were found in both groups, and actions and referrals in LVS workers endured at follow-up. However, no increase in self-efficacy and social support was found in either group, and ECPs seem to fall back into their old behaviour concerning actions that were taken and referrals provided. Healthcare providers mentioned they experienced difficulty in putting the skills they learned into practice. For example, some LVS workers questioned the appropriateness of using the PHQ-4 in their daily work, and some ECPs mentioned a need for alignment of responsibilities between professionals at the hospital and clear instructions on referral pathways for low intensity mental health support. Lessons learned from training do not automatically lead to improvements in practice but are under the influence of training design, trainee characteristics and the work environment.[40] Participants' feedback provides suggestions to understand the issues with transfer into daily practice, which is discussed below.

In general, participants were positive about the design of the training programmes. They thought it was important for their jobs and felt patients would benefit from them following this training programme. However, in both groups, several healthcare providers expressed a need for more information and extra tools to address mental health. ECPs followed a shorter online training programme to fit their current high demanding working conditions.[26] However, the brevity of the training programme might have compromised its ability to accommodate ECPs with the necessary information to address mental health problems adequately in the long term. Although more extensive training programmes may result in more positive outcomes, they seem unfeasible in the current Dutch ophthalmology practice. In the future, possibilities could be explored to implement a more extensive training programme. In the training programme for LVS workers, we followed recommendations from previous research on adding information on treatment options, case studies and a follow-up peer consultation.[31] While positive effects were found, there is still room for improvement. Some LVS workers already had basic information and wanted more focus on specific case studies to understand the diversity of patients' needs better. This calls for greater focus on the individual needs of each LVS worker. Furthermore, the need for more information could be related to a lack of information retention, that is, a person's ability to store and recall information. For example, LVS workers reported they remembered the PHQ-4 mainly as a tool to detect and discuss mental health problems, while other addressed strategies that appeared to have been forgotten by some. To address healthcare providers' individual needs for more information and to enhance its retention,[41] it might be useful to introduce microlearning to the training programmes' design. Microlearning means that healthcare providers learn about depression and anxiety through educational activities that are short, succinct and easy to digest.[42] Examples are infographics about the prevalence and symptoms of depression and anxiety, focussed videos to explain the development of mental health problems, online real-world examples or task-based simulations to practice a discussion about mental health, or just a short message for information retention. This might, for instance, be provided in email or text messages or at team meetings following the training. Previous studies showed that microlearning may result in higher satisfaction and improved knowledge and attitudes towards mental health in people with VI.[43] Moreover, microlearning could address healthcare providers' longing for repetition, while keeping feasibility of the training programme in mind.

Based on previous research, the training programmes were tailored to the needs of ECPs and LVS workers.[33] However, the varying learning effects between individual participants observed within each group indicate a need for additional customisation. Diverse learning effects may stem from varying confidence levels prior to training, or other individual characteristics including their professions. LVS workers mentioned the variety of professions that followed the training programme as a drawback. Each has a different type of bond with patients, and some support patients with specific characteristics such as intellectual disabilities or psychiatric comorbidities. Again, microlearning might be useful to provide information about mental health problems in the patients they predominantly work with. Moreover, tailoring the training programme to more specific professions could promote discussions focussed on situations encountered by this specific group, which is more in line with everyday encounters and may positively influence implementation in daily practice.[44,45] Task-specific exercises according to each profession could be introduced in the e-learning and contact training to fit the professional's responsibilities in mental health management. These alterations may also contribute to effectiveness in terms of social support and self-efficacy, which was lacking in the current version of the training programmes.

It seems feasible to offer the training programmes within LVS organisations and ophthalmology departments in hospitals. Most participants were able to complete the entire training programme and were positive about its organisation. The training programmes should be compatible with the working environment, and practical circumstances and a stimulating result-focussed organisational culture could help to transfer the lessons learned into daily practice.[46] Both groups reported insufficient support within the organisation to address mental health problems, and expressed a need for policies on depression and anxiety management. The organisation's policies could be determined in consultation with healthcare providers themselves, because they prioritise

objectives differently than managers.[47] These should at least incorporate definitions of role responsibilities, consider standard use of the PHQ-4, organise options for following up on potential mental health problems and include protocols to recognise and support patients with mental health problems, resulting in specific work objectives for each profession. This change in work objectives could reinforce the recommendation of ECPs and LVS workers to include the training programmes in the organisations' mandatory curriculum. A change in work objectives requires healthcare providers to be flexible and open for new knowledge, ideas and attitudes.[47] The training programme could help them to address these new challenges, which may enhance their intrinsic motivation and the training programme's effectiveness.[35]

Strengths and limitations

Adopting the Kirkpatrick model as an evaluation framework, and the use of questionnaires previously used in research in ECPs and LVS workers, added to the reliability of our outcomes and comparability with previous studies. Using a mixed methods design to evaluate the training programmes deepened our understanding of the programmes' feasibility and potential effectiveness, and facilitated collection of the learners' recommendations for improvement and implementation.

To assess the potential effectiveness of the training programmes, linear mixed models were used. This is the preferred method, since it takes the correlation of data within the individuals into account (allowing use of all measurements) and provides an opportunity to investigate and compare effectiveness over time for both training programmes. This allowed for the differentiation between pre- and post-training, as well as post-training and follow-up trends, which would have been missed with classical pre–post comparisons; thereby increasing insight into the effectiveness of the training programmes. Also, it allowed for the incorporation of the LVS workers' mid-measurement to enhance precision of the estimates. Furthermore, a small number of focus groups and number of participants in the group for ECPs were carried out.

Nevertheless, results on potential effectiveness of the training programmes should be interpreted with caution. Statistical analyses were performed in two small groups and hence come with high uncertainty about the outcomes. Generalisability to the total group of professionals might be compromised due to volunteer bias.[48] Despite their affinity based on previous experiences and current behaviour, positive effects were found, which may point towards potential effectiveness of the training programmes for future participants who are less familiar with the topic. However, they could also experience more difficulties transferring knowledge about mental health in people with VI to everyday practice. Despite the small number of focus group meetings and number of participants in the group for ECPs, these focus group meetings provided detailed insights into participants' thoughts about the training programmes' feasibility and potential effectiveness, as well as suggestions for improvement and implementation, which is an important addition to the quantitative data that we collected.

Implications for clinical practice and future research

The findings of this study could help to optimise both training programmes and provide insights into barriers and success factors that might increase support for implementation, not only within hospitals and LVS organisations, but also within other organisations that provide care for adults with eye diseases or VI. The current training programmes seem to be a good starting point for educationalists to tailor the training programmes to the needs of each organisation and their specific healthcare providers, keeping the organisations' policies, referral options and theory about effective education in mind. Subsequently, implementation seems to ask for an organisational shift towards more focus on mental health, clear depression and anxiety management policies, as well as facilitating working environments. These changes might stimulate more healthcare providers to address mental health problems and enhance their long-term effectiveness. Besides incorporating these training programmes in continuing education, they could be introduced to ophthalmology residents or included in other eye care educational programmes to encourage future healthcare providers to embed mental health management as part of their usual care.

The IdentifEYE training programmes appeared to enhance the detection and discussion of mental health problems in adults with VI. Subsequent to increased awareness and the use of the PHQ-4 as a screening instrument, more extensive (diagnostic) instruments could be used in patients with suspected depression and anxiety. However, the availability of mental health support is limited due to long waiting times, and referral options differ between countries.[33] Therefore, the implementation of training programmes also requires addressing these obstacles, for example, by offering self-management or low-intensity mental health support.[14,49,50] The training programmes' effectiveness and success of implementation could be investigated further after adjustments are made, organisations are better equipped to address mental health problems, and the training programmes are being offered to all involved healthcare providers. Besides a more robust evaluation of its effectiveness, this will also provide opportunities to explore microlearning, measure long-term effectiveness, compare participants' characteristics to those who volunteered in this pilot study and address barriers and facilitators regarding the transfer to the workplace.

CONCLUSION

The IdentifEYE training programmes for ECPs and LVS workers to identify and discuss depression and anxiety in adults with VI seem feasible and potentially effective in ophthalmology departments and LVS organisations. After training and at follow-up, ECPs and LVS workers seemed to be more confident and experienced less barriers in managing mental health problems in patients. It also appeared that they addressed and referred patients more often, but in ECPs this behaviour change did not persist at follow-up. Sustainable transfer into daily practice, and therefore the training programmes' effectiveness, could possibly be enhanced by addressing the specific needs of individual professions in future training programmes that include microlearning, and organisations introducing standard procedures and resources to manage and follow-up on mental health problems. Finally, it is recommended to use a clear implementation plan, with input from healthcare providers themselves, to address the organisational changes required to offer effective training to these providers.

AUTHOR CONTRIBUTIONS

Edine P. J. van Munster: Conceptualization (equal); data curation (equal); formal analysis (lead); funding acquisition (equal); investigation (lead); methodology (equal); project administration (lead); visualization (lead); writing – original draft (lead); writing – review and editing (lead). **Ruth M. A. van Nispen:** Conceptualization (supporting); visualization (supporting); writing – original draft (equal); writing – review and editing (equal). **Jeroen Hoogland:** Data curation (equal); formal analysis (equal); methodology (equal); visualization (supporting); writing – original draft (equal); writing – review and editing (equal). **Hilde P. A. van der Aa:** Conceptualization (equal); formal analysis (equal); funding acquisition (equal); methodology (equal); visualization (supporting); writing – original draft (equal); writing – review and editing (equal).

FUNDING INFORMATION

This work was supported by ZonMw, The Netherlands Organization for Health Research and Development (grant number: 637005116). The funders had no role in study design, data collection and analysis, decision to publish or preparation of the manuscript.

CONFLICT OF INTEREST STATEMENT

The authors report no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available upon reasonable request.

ORCID

Edine P. J. van Munster https://orcid.org/0000-0002-9250-055X
Ruth M. A. van Nispen https://orcid.org/0000-0003-1227-1177
Jeroen Hoogland https://orcid.org/0000-0002-2397-6052
Hilde P. A. van der Aa https://orcid.org/0000-0002-1853-5674

REFERENCES

1. van der Velden PG, Marchand M, Das M, Muffels R, Bosmans M. The prevalence, incidence, and risk factors of mental health problems and mental health service use before and 9 months after the COVID-19 outbreak among the general Dutch population. A 3-wave prospective study. *PLoS ONE*. 2022;17:e0276834. https://doi.org/10.1371/journal.pone.0276834
2. Van der Aa HPA, Comijs HC, Penninx BWJH, Van Rens GHMB, Van Nispen RMA. Major depressive and anxiety disorders in visually impaired older adults depression-anxiety in visually impaired elderly. *Invest Ophthalmol Vis Sci*. 2015;56:849–54.
3. Horowitz A, Reinhardt JP, Kennedy GJ. Major and subthreshold depression among older adults seeking vision rehabilitation services. *Am J Geriatr Psychiatry*. 2005;13:180–7.
4. Evans JR, Fletcher AE, Wormald RP. Depression and anxiety in visually impaired older people. *Ophthalmology*. 2007;114:283–8.
5. Heesterbeek TJ, van der Aa HPA, van Rens GHMB, Twisk JWR, van Nispen RMA. The incidence and predictors of depressive and anxiety symptoms in older adults with vision impairment: a longitudinal prospective cohort study. *Ophthalmic Physiol Opt*. 2017;37:385–98.
6. Casten R, Rovner BW, Leiby BE, Tasman W. Depression despite antivascular endothelial growth factor treatment of age-related macular degeneration. *Arch Ophthalmol*. 2010;128:506–8.
7. Hahm BJ, Shin YW, Shim EJ, Jeon HJ, Seo JM, Chung H, et al. Depression and the vision-related quality of life in patients with retinitis pigmentosa. *Br J Ophthalmol*. 2008;92:650–4.
8. Sainohira M, Yamashita T, Terasaki H, Sonoda S, Miyata K, Murakami Y, et al. Quantitative analyses of factors related to anxiety and depression in patients with retinitis pigmentosa. *PLoS ONE*. 2018;13:e0195983. https://doi.org/10.1371/journal.pone.0195983
9. Kahaly GJ, Petrak F, Hardt J, Pitz S, Egle UT. Psychosocial morbidity of Graves' orbitopathy. *Clin Endocrinol (Oxf)*. 2005;63:395–402.
10. Wickwar S, McBain HB, Ezra DG, Hirani SP, Rose GE, Newman SP. Which factors are associated with quality of life in patients with Graves' orbitopathy presenting for orbital decompression surgery? *Eye (Lond)*. 2015;29:951–7.
11. Van Munster EPJ, Van der Aa HPA, Verstraten P, Van Nispen RMA. Barriers and facilitators to recognize and discuss depression and anxiety experienced by adults with vision impairment or blindness: a qualitative study. *BMC Health Serv Res*. 2021;21:749. https://doi.org/10.1186/s12913-021-06682-z
12. van der Aa HP, Hoeben M, Rainey L, van Rens GH, Vreeken HL, van Nispen RM. Why visually impaired older adults often do not receive mental health services: the patient's perspective. *Qual Life Res*. 2015;24:969–78.
13. Nollett C, Ryan B, Bray N, Bunce C, Casten R, Edwards RT, et al. Depressive symptoms in people with vision impairment: a cross-sectional study to identify who is most at risk. *BMJ Open*. 2019;9:e026163. https://doi.org/10.1136/bmjopen-2018-026163
14. van der Aa HP, van Rens GH, Comijs HC, Margrain TH, Gallindo-Garre F, Twisk JW, et al. Stepped care for depression and anxiety in visually impaired older adults: multicentre randomised controlled trial. *BMJ*. 2015;351:h6127. https://doi.org/10.1136/bmj.h6127
15. Grant P, Seiple W, Szlyk JP. Effect of depression on actual and perceived effects of reading rehabilitation for people with central vision loss. *J Rehabil Res Dev*. 2011;48:1101–8.
16. Rovner BW, Casten RJ, Tasman WS. Effect of depression on vision function in age-related macular degeneration. *Arch Ophthalmol*. 2002;120:1041–4.
17. Iliffe S, Kharicha K, Harari D, Swift C, Gillmann G, Stuck A. Self-reported visual function in healthy older people in Britain: an exploratory study of associations with age, sex, depression, education and income. *Fam Pract*. 2005;22:585–90.

18. Jampel HD, Frick KD, Janz NK, Wren PA, Musch DC, Rimal R, et al. Depression and mood indicators in newly diagnosed glaucoma patients. *Am J Ophthalmol*. 2007;144:238–44.
19. Senra H, Balaskas K, Mahmoodi N, Aslam T. Experience of anti-VEGF treatment and clinical levels of depression and anxiety in patients with wet age-related macular degeneration. *Am J Ophthalmol*. 2017;177:213–24.
20. Boyle J, Vukicevic M, Koklanis K, Itsiopoulos C. Experiences of patients undergoing anti-VEGF treatment for neovascular age-related macular degeneration: a systematic review. *Psychol Health Med*. 2015;20:296–310.
21. Nollett CL, Bray N, Bunce C, Casten RJ, Edwards RT, Hegel MT, et al. High prevalence of untreated depression in patients accessing low-vision services. *Ophthalmology*. 2016;123:440–1.
22. Holloway EE, Sturrock BA, Lamoureux EL, Keeffe JE, Rees G. Depression screening among older adults attending low-vision rehabilitation and eye-care services: characteristics of those who screen positive and client acceptability of screening. *Australas J Ageing*. 2015;34:229–34.
23. Rees G, Fenwick EK, Keeffe JE, Mellor D, Lamoureux EL. Detection of depression in patients with low vision. *Optom Vis Sci*. 2009;86:1328–36.
24. Nollett C, Bartlett R, Man R, Pickles T, Ryan B, Acton JH. How do community-based eye care practitioners approach depression in patients with low vision? A mixed methods study. *BMC Psychiatry*. 2019;19:426. https://doi.org/10.1186/s12888-019-2387-x
25. Van Munster EPJ, Van der Aa HPA, Verstraten P, Heymans MW, Van Nispen RMA. Improved intention, self-efficacy and social influence in the workspace may help low vision service workers to discuss depression and anxiety with visually impaired and blind adults. *BMC Health Serv Res*. 2022;22:528. https://doi.org/10.1186/s12913-022-07944-0
26. Fenwick EK, Lamoureux EL, Keeffe JE, Mellor D, Rees G. Detection and management of depression in patients with vision impairment. *Optom Vis Sci*. 2009;86:948–54.
27. Rees G, Fenwick E, Keeffe JE, Mellor D, Lamoureux EL. Managing depression in patients with vision impairment: a descriptive study of practitioners' beliefs and confidence. *Australas J Ageing*. 2011;30:130–5.
28. Nollett C, Bartlett R, Man R, Pickles T, Ryan B, Acton JH. Barriers to integrating routine depression screening into community low vision rehabilitation services: a mixed methods study. *BMC Psychiatry*. 2020;20:419. https://doi.org/10.1186/s12888-020-02805-8
29. Elsman EBM, van Munster EPJ, van Nassau F, Verstraten P, van Nispen RMA, van der Aa HPA. Perspectives on implementing the patient health Questionnaire-4 in low-vision service organizations to screen for depression and anxiety. *Transl Vis Sci Technol*. 2022;11:16. https://doi.org/10.1167/tvst.11.1.16
30. Rees G, Mellor D, Heenan M, Fenwick E, Keeffe JE, Marella M, et al. Depression training program for eye health and rehabilitation professionals. *Optom Vis Sci*. 2010;87:494–500.
31. Bartlett R, Acton JH, Ryan B, Man R, Pickles T, Nollett C. Training results in increased practitioner confidence and identification of depression in people with low vision: a mixed methods study. *Ophthalmic Physiol Opt*. 2021;41:316–30.
32. Van der Aa HPA, Margrain TH, van Rens GHMB, Heymans MW, Van Nispen RMA. Psychosocial interventions to improve mental health in adults with vision impairment: systematic review and meta-analysis. *Ophthalmic Physiol Opt*. 2016;36:584–606.
33. Van Munster EPJ, Van Nispen RMA, Nollett CL, Holloway EE, Maarsingh OR, Heymans MW, et al. Discussing depression in patients with visual impairment differs across countries: validation of a prediction model in healthcare providers. *Acta Ophthalmol*. 2023;101:766–74.
34. Rouiller JZ, Goldstein IL. The relationship between organizational transfer climate and positive transfer of training. *Human Resour Dev Q*. 1993;4:377–90.
35. Knowles M, Holton E, Swanson R. The adult learner. Houston: Guld Publishing Company; 1998.
36. Creswell J. Research design: qualitative, quantitative, and mixed methods approaches. 3rd ed. Thousand Oaks, CA: SAGE Publications, Inc; 2009.
37. Kirkpatrick DL. Evaluating training programs: the four levels. San Francisco: Berrett-Koehler Publishers; 1994.
38. Kroenke K, Spitzer RL, Williams JB, Löwe B. An ultra-brief screening scale for anxiety and depression: the PHQ-4. *Psychosomatics*. 2009;50:613–21.
39. Pope C, Ziebland S, Mays N. Qualitative research in health care. Analysing qualitative data. *BMJ*. 2000;320:114–6.
40. Baldwin TT, Ford JK. Transfer of training: a review and directions for future research. *Pers Psychol*. 1988;41:63–105.
41. Shail MS. Using micro-learning on mobile applications to increase knowledge retention and work performance: a review of literature. *Cureus*. 2019;11:e5307. https://doi.org/10.7759/cureus.5307
42. Hug T. Microlearning: a new pedagogical challenge (Introductory Note). In: Hug T, Lindner M, Bruck PA, editors. Microlearning: Emerging Concepts, Practices and Technologies After E-Learning: Proceedings of Microlearning Conference 2005: Learning & Working in New Media. Innsbruck, Austria: Innsbruck University Press; 2006. pp. 9–11.
43. De Gagne JC, Park HK, Hall K, Woodward A, Yamane S, Kim SS. Microlearning in health professions education: scoping review. *JMIR Med Educ*. 2019;5:e13997. https://doi.org/10.2196/13997
44. Holton EF III. The flawed four-level evaluation model. *Human Resour Dev Q*. 1996;7:5–21.
45. Van den Ouden L, Haarlemmer T, Wolfkamp L. 7 succesfactoren voor Transfer ICM. 2016. https://www.icm.nl/incompany/learning-development/transfermodel/. Accessed 24 April, 2023
46. Tonhäuser C, Büker L. Determinants of transfer of training: a comprehensive literature review. *Int J Res Vocat Educ Train*. 2016;3:127–65.
47. De Groot SA. Presteren met professionals: prestatieverbetering binnen kennisintensieve organisaties. Deventer, the Netherlands: Kluwer; 2005.
48. Tripepi G, Jager KJ, Dekker FW, Zoccali C. Selection bias and information bias in clinical research. *Nephron Clin Pract*. 2010;115:c94–9.
49. van der Aa HP, van Rens GH, Verbraak FD, Bosscha M, Comijs HC, van Nispen RM. Anxiety and depression in patients who receive anti-VEGF treatment and the usability and feasibility of e-mental health support: the E-PsEYE pilot study. *Ophthalmic Physiol Opt*. 2021;41:808–19.
50. Brody BL, Roch-Levecq AC, Thomas RG, Kaplan RM, Brown SI. Self-management of age-related macular degeneration at the 6-month follow-up: a randomized controlled trial. *Arch Ophthalmol*. 2005;123:46–53.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: van Munster EPJ, van Nispen RMA, Hoogland J, van der Aa HPA. Feasibility and potential effectiveness of the IdentifEYE training programmes to address mental health problems in adults with vision impairment. *Ophthalmic Physiol Opt*. 2024;44:399–412. https://doi.org/10.1111/opo.13258