CASE REPORT

Psychological intervention for a person living with amblyopia: a case study from home-based integrated care

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Abstract

Amblyopia is a common developmental disability resulting in reduced visual acuity and gaze stability; it occurs in approximately 5% of the general population. Here, we present the case of an 18-year-old girl diagnosed with amblyopia. Subsequent to her diagnosis of amblyopia, she developed a depressive episode with co-morbid anxiety symptoms. She was treated with low intensity psychological intervention, Problem Management Plus, as home-based intervention. This intervention was associated both subjectively and objectively utilising psychometric measures (i.e. psychiatric interview, depression, anxiety and stress scale, general health questionnaire) with a significant amelioration of her mental state. This case provides preliminary evidence for the effectiveness of Problem Management Plus intervention and suggests that this intervention should be considered for other individuals with similar clinical presentations.

Keywords: Disability, amblyopia, low vision, Patient Management Plus.

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Introduction

Amblyopia is a developmental disorder and a common cause of reduced visual acuity in one eye in children worldwide.[1,2] The most common risk factors for development of amblyopia are anisometria (a difference in refraction prescription for glasses between two eyes) and strabismus (misalignment of visual axes).[3] Amblyopia is associated with an imbalance of input into the brain from both eyes leading to deficits in visual acuity and gaze stability.[4] Consequently, amblyopia can lead to reduced motor skills, poorer depth perception, and reduced functional ability with preclusion of some vocational pursuits such as piloting aeroplanes in adulthood.[5,6] Amblyopia is also associated with significant psychological sequelae, including low self-esteem, a negative self-image, and, on occasion, depressive episodes.[7-9] Indeed, visual impairment due to any cause is associated with higher rates of major depressive disorder,[10] further reducing the quality of life and functionality for those affected. However, the delivery of evidence-based psychosocial support can improve disability and improve the individuals' quality of life and independence.[11] The World Health Organisation (WHO) has recommended low-intensity psychological intervention for individuals with visual impairment and associated depressive symptomatology,[12] deliverable by members of a psychiatry mental health multi-disciplinary team.

Problem management plus (PM+) is one low intensity manualised psychological intervention designed for individuals diagnosed with depressive and anxiety disorders,[13,14] and has been utilised effectively in a Pakistani population.[15] PM+ is based on behavioural techniques with its' intervention sessions relating to problem solving, stress management, behavioural activation, and accessing social support techniques.[16] It is usually conducted in five sessions, which are approximately of one-hour duration and can be conducted by any trained person (i.e. community health worker, social worker). Consequently, in the current study we examined the effectiveness of a PM+ intervention for the amelioration of depressive symptoms that occurred secondary to a diagnosis of amblyopia.

Case Report

Ms AB, an 18-year-old student, was referred by her treating ophthalmologist to the psychiatry outpatient clinic, which specialises in supporting individuals with mental health difficulties at the community-based inclusive development (CBID) centre in November 2021, Aid to Leprosy Patients, Rawalpindi, Pakistan, due to the presence of depressive symptoms.

AB reported that she first became aware of her visual acuity difficulties, when she was six years of age. She required glasses for myopia from the age of six years, with

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her right eye demonstrating significantly reduced visual acuity compared to her left eye. She did not have strabismus and no other ocular pathologies were diagnosed. Correction of her refractory difficulties with glasses did not improve her visual deficits, with her visual acuity slowly deteriorating over time. She never wore a patch or had pharmacological blurring of the better-seeing right eye. She has not experienced any injuries to her right eye, but reports ongoing loss of visual acuity and reduced functionality, which she relates in part to her loss of visual acuity and blurring of vision but also over the last six months to a reduction in her motivation levels.

Her personal history includes a normal full-term delivery and achievement of all developmental milestones appropriately, and a good academic performance at school. She denies any major physical illness or trauma during her childhood, with no bullying or other family conflicts. There is no family history of psychiatric or neurological problems and no history of amblyopia or other significant ocular pathology.

AB describes symptoms consistent with a depressive episode for approximately six months with anergia, reduced hedonic capacity and prominently depressed mood. Additionally, she described reduced concentration, self-confidence, and libido in recent months. Her symptoms are more prominent in the mornings. Her sleep pattern is consistent with early morning wakening and she has lost approximately 3kg over the last six months which she relates to a reduced appetite. She has no history of self-harm and denies suicidal ideation. She has no history of psychotic symptoms, such as delusions or perceptual abnormalities, including visual hallucinations (or illusions). She describes some associated anxiety symptoms which are not related to any fixed location or scenario and commenced after her depressive symptoms began. She demonstrated a good insight into her mental health difficulties and was happy for an appropriate intervention.

AB provided informed written consent for publishing the case report and ethical approval was attained from the Department of Psychology (IIU-FSS/PSY-DPEC/2021-252) and Bioethics Committee of the International Islamic University, Islamabad (IIU/2021-Exams-6511), to submit the case report for publication.

On review at the outpatient clinic, a number of psychometric measures were performed in the month of November 2021 to ascertain her level of symptomatology and associated functional impairment. General Health Questionnaire (GHQ-12) is a 12-item self-report scale that is used to assess the psychological distress. In Pakistani population, the GHQ-12 is widely used to determine the presence or absence of psychological distress.[17] This was only performed for baseline assessment. WHO Disability Assessment Scale (WHO-DAS 2.0) is a self-report scale used to assess disability among six domains: (i) cognition (i.e. communication skills), (ii) mobility, (iii) self-care (iv) getting along (i.e. ability to interact with others), (v) life activities (i.e. domestic responsibilities, leisure, and vocational or educational activities), and (vi) participation (i.e. engagement in community activities).[18] Furthermore, Depression, Anxiety and Stress Scale (DASS) is a 21-item self-report, encompassing three subscales (depression, anxiety, and stress) with each item measured on a 4-point Likert scale.[19] The WHO-DAS and DASS were repeated immediately after the intervention and 14 weeks later to ascertain if any potential positive impacts of Problem Management Plus (PM+) were maintained. The PM+ is a psychological intervention which consist of five one-hour sessions, on a weekly basis by a community health worker, with full participation throughout the session. Key aspects of these sessions for AB resolved around problem solving, anxiety management skills, and increased socialisation.

The outcome of PM+ intervention was associated with a significant amelioration in disability levels as measured with the WHO-DAS. In particular, an improvement was noted at the completion of PM+ intervention in the domains of problems solving, self-care, getting along, life activities, and participation, with further improvements noted 14 weeks later. Improvements in depressive anxiety and stress symptoms were noted

Table-1: Assessment scales and administered time point

Scales	Measures	Screening	Baseline Assessment	7th week Assessment	20th week Assessment
GHQ	Psychological distress	√			
WHODAS	Functioning	√		√	√
DASS	Depression, Anxiety and Stress disorder	-	-	-	-
Depression	Depressive symptoms		√	√	√
Anxiety	Anxiety symptoms		√	√	√
Stress	Stress symptoms		√	√	√

GHQ = General Health Questionnaire, WHODAS = WHO Disability Assessment Scale, DASS = Depression, Anxiety and Stress Scale

Table-1: Assessment scales and administered time point

Scales	Baseline Assessment (20th week)		Outcome Assessment (7th week)		Follow-up Assessment (20th week)	
	Raw Score	Range	Raw Score	Range	Raw Score	Range
WHODAS	24	-	7	-	2	-
DASS	37	-	18	-	6	-
Depression	15	Severe	6	Mild	2	Normal
Anxiety	7	Moderate	4	Normal	2	Normal
Stress	15	Severe	8	Mild	2	Normal

WHODAS = WHO Disability Assessment Scale, DASS = Depression, Anxiety and Stress Scale

utilising the DASS with a further improvement noted at the follow-up visit (Table 2).

AB herself noted that she was sleeping better (i.e. no early morning wakening) and described greater concentration levels for her course-work. She also noted that she was more confident in herself and was less anxious with less prominent physical symptoms of anxiety, though these were occasionally present (i.e. occasional tremulousness and nausea in social situations). Her symptoms continued to ameliorate following the completion of the PM+ intervention with only negligible symptoms evident at follow-up. She reported, "I *found after the therapy sessions that I am more confident about myself and less preoccupied about my poor eye-sight*" and "*I felt some change in my life including mixing with people and increase in interaction with friends and relatives.*"

Discussion

In this case we investigated if PM+ was associated with an improvement in a range of symptomatology in an 18-year-old lady who was diagnosed with a depressive episode due to long-standing amblyopia. This intervention was associated with a significant amelioration in both depressive and anxiety symptoms with these improvements maintained at 14-week follow-up. Additionally, her overall functioning was improved with greater sociability, community engagement, and engagement in college work. The behavioural aspect of this intervention was optimal for this patient given the association of her symptoms to an obvious underlying stressor (amblyopia), with the characteristics of PM+ relating to anxiety management, problem solving, and accessing social support techniques appropriate for this lady's difficulties. After the intervention concludes, individuals can continue to engage in practicing these techniques which was probably the scenario in this case.

Community health workers observed improvement in her symptoms to an obvious underlying stressor (amblyopia) as similar effects were noted in individuals with psychological distress.[20] Moreover, the PM+ intervention was noted to be user-friendly by health workers during implementation.

Conclusion

This case report demonstrates that PM+ is a potentially effective psychological intervention for individuals experiencing depressive and anxiety symptoms due to amblyopia.

Recommendation: Randomised controlled trials (RCTs) are recommended in future to more clearly delineate the clinical efficacy of the PM+ in this patient cohort. The establishment of an integrated management plan for individuals diagnosed with amblyopia between ophthalmologists and mental health professionals to provide earlier access to psychological interventions is additionally recommended.

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