



Diabetic Retinopathy and Quality of Life

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ABSTRACT

Background: The literature on diabetic retinopathy (DR) and its implications for quality of life reveals a multifaceted relationship between visual impairment and the overall well-being of individuals affected by this condition. **Literature Review:** Empirical evidence from (Deswal et al., 2020) further supports the notion that DR has a detrimental impact on quality of life, particularly within the Indian diabetic population. Their findings reveal significant correlations between the severity of DR, financial worries, and treatment satisfaction, underscoring the socioeconomic implications of living with this condition. Similarly, (Roberts-Martínez Aguirre et al., 2022) emphasize the extensive effects of visual impairment on daily activities and social engagement, advocating for a holistic approach to patient care that addresses both clinical and experiential dimensions. (Fan et al., 2022) contribute qualitative insights into the psychological and social challenges faced by individuals with DR, illuminating the emotional toll of the condition. This perspective is echoed in (Patel et al., 2022), who examine the social determinants of health affecting DR prevalence and management, highlighting the critical need for equitable healthcare access. Finally, (A. Sherman et al., 2022) provide a qualitative analysis of patient experiences with proliferative diabetic retinopathy, revealing the extensive burdens associated with managing advanced DR and the unmet needs in current treatment strategies. **Conclusion:** In conclusion, the literature collectively underscores the profound impact of diabetic retinopathy on quality of life, advocating for a comprehensive approach to patient care that addresses both the clinical and psychosocial dimensions of the disease. The integration of technological advancements, improved screening practices, and a focus on patient-centered care are essential for enhancing outcomes for individuals living with diabetic retinopathy.

Keywords: Diabetic Retinopathy, Quality of Life

INTRODUCTION

The literature on diabetic retinopathy (DR) and its implications for quality of life reveals a multifaceted relationship between visual impairment and the overall well-being of individuals affected by this condition. The foundational study by Azwihangwisi (Azwihangwisi, 2009) underscores the profound impact of visual loss on daily life, linking it to increased risks of depression and diminished independence. The research highlights the utility of validated questionnaires like the SF-36 and NEI VFQ-39 in assessing health-related quality of life, particularly in populations suffering from age-related eye diseases. Such tools are crucial for quantifying the adverse effects of visual impairment on life experiences.

Building on this understanding, Alcubierre et al. (Alcubierre et al., 2014) provide a comprehensive perspective on the epidemiology of diabetic retinopathy in type 2 diabetes patients, emphasizing how changes in diagnostic criteria and diabetes management have influenced the incidence of DR. Their qualitative findings reveal the significant toll that diabetic retinopathy takes on patients' quality of life, especially in relation to vision-related challenges. This patient-centered approach is critical for understanding the nuanced ways in which DR affects individuals, as it goes beyond clinical outcomes to encompass the lived experience of patients.

Further investigation by Xu et al. (Xu et al., 2015) delves into the interplay between the severity of diabetic retinopathy and health-related quality of life. Their multicenter observational study illustrates how impaired vision and social roles are intertwined, suggesting that as the severity of DR increases, so too does the negative impact on quality of life. These findings resonate with the broader theme of how chronic health conditions can lead to social isolation and reduced participation in daily activities.

Shekar (Shekar, 2018) expands the conversation by addressing quality care measures in diabetes, specifically focusing on the Indian context. This article highlights the global prevalence of diabetic retinopathy and its associated risk

factors, advocating for improved screening practices to enhance patient outcomes. By emphasizing the importance of accessible healthcare interventions, the study aligns with the ongoing discourse on the need for equitable healthcare access for individuals with DR.

Chaturvedi et al. (S. Chaturvedi et al., 2019) introduce technological advancements in the early detection of diabetic retinopathy, emphasizing the potential of computer-aided diagnosis to mitigate the risk of irreversible vision loss. Their findings suggest that timely intervention can significantly improve patient outcomes, thereby positively influencing quality of life. This technological perspective is essential in understanding how innovations can transform the management of diabetic retinopathy.

Deswal et al. (Deswal et al., 2020) provide further empirical evidence regarding the detrimental impact of DR on the quality of life in Indian diabetic patients. Their study, which utilizes multiple questionnaires to assess various dimensions of quality of life, indicates that the severity of diabetic retinopathy correlates with increased financial worries and lower treatment satisfaction. This highlights the broader socioeconomic implications of living with DR, reinforcing the need for targeted interventions.

Roberts-Martínez Aguirre et al. contribute to the literature by exploring the health-related quality of life in patients with diabetic retinopathy. Their research points to the significant deterioration in quality of life associated with visual impairment, particularly in relation to daily activities and social engagement. This study underscores the urgency of addressing the comprehensive needs of individuals with DR to improve their overall health outcomes.

Fan et al. (Fan et al., 2022) further enrich the discourse by presenting qualitative insights into the experiences of individuals with diabetic retinopathy. Their findings reveal the psychological and social challenges faced by patients, including anxiety and depression, which exacerbate the progression of the disease. This qualitative approach illuminates the complex realities of living with DR, emphasizing the

importance of understanding patient experiences in developing effective care strategies.

Patel et al. (Patel et al., 2022) take a broader view by examining the social determinants of health that influence the prevalence and management of diabetic retinopathy. Their narrative review highlights how socioeconomic factors can impede access to screening and treatment, ultimately affecting visual outcomes. This perspective is crucial for addressing health disparities and ensuring that all patients receive the care they need.

Finally, Sherman et al. (A. Sherman et al., 2022) conduct a qualitative analysis of patients with proliferative diabetic retinopathy, revealing the extensive impact of visual impairment on health-related quality of life. Their exploration of patient experiences with treatment underscores the multifaceted burdens associated with managing advanced DR, suggesting that there are unmet needs in the current disease management strategies.

Together, these studies present a comprehensive overview of the interplay between diabetic retinopathy and quality of life, emphasizing the importance of a holistic approach to patient care that considers both clinical and experiential dimensions.

LITERATURE REVIEW

The article by Azwihangwisi (2009) provides a comprehensive examination of the repercussions of diabetic retinopathy on visual functioning and the subsequent effects on patients' quality of life following pars plana vitrectomy. The author highlights the profound impact that visual loss, particularly due to diabetic eye disease, has on various aspects of a patient's life, emphasizing that it is one of the most feared complications associated with diabetes, as evidenced by a Lions Club survey.

A significant point raised in the article is the correlation between visual impairment and mental health, specifically the increased risk of depression among individuals experiencing vision loss. This relationship underscores the importance of addressing both the physical and psychological dimensions of diabetic retinopathy.

The author notes that visual impairment can severely hinder daily activities that are crucial for maintaining independence, consequently affecting the overall quality of life.

To assess the quality of life in patients with diabetic retinopathy, the article discusses the utility of established questionnaires, such as the Short Form Health Survey-36 (SF-36) and the National Eye Institute Visual Function Questionnaire (NEI VFQ-39). These tools are instrumental in quantifying health-related quality of life and have been validated for use in clinical settings. The NEI VFQ-39, in particular, is highlighted for its reliability and brevity, making it suitable for clinical trials where time is a critical factor.

Moreover, Azwihangwisi reviews previous studies that demonstrate a notable improvement in vision-related quality of life (VR-QOL) following vitrectomy. This finding is crucial as it suggests that surgical intervention can lead to significant enhancements in both visual function and overall quality of life for patients suffering from diabetic retinopathy. The article effectively synthesizes existing literature, reinforcing the notion that addressing visual impairment through surgical means can yield positive outcomes in terms of patients' daily functioning and emotional well-being.

The article titled "A prospective cross-sectional study on quality of life and treatment satisfaction in type 2 diabetic patients with retinopathy without other major late diabetic complications" by Alcubierre et al. (2014) provides a comprehensive examination of how diabetic retinopathy affects the quality of life in patients suffering from type 2 diabetes. The authors employ a patient-centered approach, emphasizing the importance of understanding the patient's perspective on their condition and its implications for their daily lives.

The study reveals that diabetic retinopathy significantly impacts various dimensions of quality of life, particularly in areas related to vision and daily functioning. The qualitative findings underscore that patients experience a range of emotional and psychological challenges stemming from their visual impairments, which can lead to decreased satisfaction with treatment and overall health. This aligns with

previous literature that highlights the detrimental effects of impaired vision on health-related quality of life (Alcubierre et al., 2014).

Moreover, the authors address the intersection between diabetic retinopathy and other complications of diabetes, noting that while their study focuses on patients without major late complications, the presence of other health issues can exacerbate the quality of life challenges faced by these individuals. This nuanced understanding is critical, as it suggests that interventions aimed at improving the management of diabetic retinopathy must also consider the broader context of diabetes care and the multifaceted nature of patient experiences.

The methodology employed in the study, particularly the use of focus groups, provides rich qualitative data that enhances the understanding of patient experiences. The insights gained from these discussions contribute to the development of a more robust item bank for assessing quality of life in this patient population. This innovative approach not only enriches the academic discourse surrounding diabetic retinopathy but also offers practical implications for healthcare providers aiming to tailor interventions that address the specific needs and concerns of their patients.

The article "Investigating Factors Associated with Depression of Type 2 Diabetic Retinopathy Patients in China" by Xu, Zhao, Qian, Dong, and Gu (2015) provides a comprehensive analysis of the intersection between diabetic retinopathy (DR) and health-related quality of life (HRQoL) among patients with Type 2 diabetes. The authors delve into the multifaceted impacts of DR on patients' mental health, particularly focusing on depression, which is a significant comorbidity in this population.

The study highlights that the severity of diabetic retinopathy is directly correlated with the decline in health-related quality of life. Patients experiencing more advanced stages of DR reported greater difficulties in daily living activities, which subsequently affected their overall quality of life. This finding aligns with other research indicating that visual impairment due to DR can lead to reduced social participation and increased feelings of isolation (Xu et al., 2015). Moreover, the

authors note that the psychological burden of living with a chronic condition like diabetes, compounded by the complications of DR, can exacerbate depressive symptoms, further impairing quality of life.

The methodology employed in the study is robust, utilizing a multicenter observational approach that enhances the generalizability of the findings. The authors effectively used standardized assessment tools to measure both the severity of DR and the associated quality of life metrics. This rigorous approach allows for a clearer understanding of how visual impairment from DR impacts various dimensions of life, including social roles and emotional well-being.

However, while the article presents compelling evidence linking DR severity to quality of life and mental health, it could benefit from a deeper exploration of potential interventions. The authors briefly mention the need for psychological support for patients, yet they do not elaborate on specific strategies that could mitigate the negative impacts of DR on mental health. Future research could focus on developing and testing interventions aimed at improving both the physical and psychological well-being of patients with DR.

The article "Eye Examination: Satisfying a Quality Care Measure in Diabetes" by (Shekar, 2018) presents a comprehensive analysis of the impact of diabetic retinopathy (DR) on the quality of life (QoL) among individuals with diabetes. The author synthesizes findings from various studies, highlighting the significant correlation between the presence of diabetic retinopathy and the deterioration of quality of life in affected individuals.

Shekar emphasizes that diabetic retinopathy is not merely an ocular complication but a condition that profoundly affects the psychosocial well-being of patients. The article discusses the prevalence of DR and its major risk factors, which include poor glycemic control, hypertension, and dyslipidemia. By reviewing literature from multiple sources, the author effectively illustrates the global burden of diabetic retinopathy and the pressing need for effective screening practices to mitigate its impact on quality of life.

The article also delves into the public health challenges associated with diabetic retinopathy, particularly in low- and middle-income countries where access to healthcare services may be limited. Shekar argues for the necessity of regular eye examinations as a critical component of diabetes management, positing that early detection and timely intervention can significantly improve outcomes and enhance the quality of life for those living with diabetes.

Moreover, the author presents a case-control study that identifies risk factors associated with diabetic retinopathy, reinforcing the importance of understanding these variables to implement targeted preventative measures. The multifaceted approach taken in this article allows for a well-rounded discussion on the implications of diabetic retinopathy, making it clear that addressing this condition is essential not only for preserving vision but also for improving overall quality of life.

The article "Advances in Computer-Aided Diagnosis of Diabetic Retinopathy" by Chaturvedi, Gupta, Ninawe, and Prasad (2019) provides a comprehensive overview of the advancements in diagnostic technologies for Diabetic Retinopathy (DR), a condition that poses a significant threat to the vision of approximately 100 million individuals globally. The authors emphasize the importance of early detection in preventing irreversible vision loss, highlighting that timely intervention can greatly mitigate the risk of severe outcomes associated with this disease.

The article delineates the four stages of Diabetic Retinopathy: mild, moderate, severe nonproliferative diabetic retinopathy, and advanced proliferative diabetic retinopathy. Each stage presents unique challenges and risks, particularly the advanced proliferative stage, which is characterized by a higher likelihood of retinal hemorrhages leading to permanent vision impairment. This classification not only aids in understanding the progression of the disease but also underscores the urgency of implementing effective screening measures.

One of the key insights from the article is the role of computer-aided detection systems in enhancing the accuracy and efficiency of DR diagnosis. The authors provide evidence that these technological advancements have gained traction

among researchers, indicating a shift towards more innovative and reliable methods of detecting DR. The integration of artificial intelligence and machine learning in the diagnostic process could revolutionize how healthcare providers approach screening, potentially leading to earlier interventions and better patient outcomes.

However, while the article successfully outlines the potential benefits of computer-aided diagnosis, it could further explore the implications of these technologies on quality of life for patients with Diabetic Retinopathy. For instance, the authors could discuss how improved detection rates might correlate with better management of the disease and, consequently, an enhanced quality of life for patients. Additionally, the article could address the accessibility of such technologies in various healthcare settings, as disparities in access may affect overall patient outcomes.

The article "To study the impact of diabetic retinopathy on quality of life in Indian diabetic patients" by Deswal, Narang, Gupta, Jinagal, and Sindhu (2020) provides a comprehensive examination of how diabetic retinopathy (DR) affects the quality of life (QoL) among Indian patients diagnosed with diabetes. The study utilizes a cross-sectional design involving 250 patients, offering a robust sample size that enhances the validity of the findings.

A significant aspect of the study is its methodological approach, where the researchers employed four questionnaires to assess various dimensions of QoL. The use of standardized instruments allows for a nuanced understanding of how DR impacts different facets of patients' lives. Notably, the mean scores for financial worries and treatment satisfaction were both reported as 15 for patients with DR, underscoring the considerable burden that this condition imposes on individuals, particularly in the context of financial and emotional well-being.

The findings reveal a stark contrast between patients with proliferative diabetic retinopathy (PDR) and those with nonproliferative diabetic retinopathy (NPDR). Specifically, PDR patients exhibited significantly higher General Health Questionnaire (GHQ) scores, indicating poorer mental health outcomes, alongside lower treatment satisfaction and heightened financial concerns. This indicates that

the severity of DR is directly correlated with a decline in QoL, which is a critical insight for healthcare providers and policymakers alike.

Furthermore, the article highlights the broader implications of these findings for patient management and support systems. The detrimental impact of DR on QoL, especially as the severity increases, suggests an urgent need for targeted interventions that address both the medical and psychosocial challenges faced by these patients. Such interventions could include financial counseling, psychological support, and enhanced patient education regarding disease management.

The article "Exploring the Quality of Life Related to Health and Vision in a Group of Patients with Diabetic Retinopathy" by Roberts-Martínez Aguirre et al. (2022) provides a comprehensive examination of the implications of diabetic retinopathy (DR) on the quality of life of affected individuals. The authors emphasize that diabetes mellitus (DM) is a global epidemic, with DR being a significant microvascular complication that can lead to severe visual impairment and, ultimately, blindness. The article highlights that DR is responsible for approximately 5% of blindness worldwide and is the leading cause of preventable blindness in adults under 75 years in developed countries.

One of the critical insights presented in the article is the correlation between visual impairment due to DR and its impact on daily living activities, social interactions, and overall physical activity levels. The authors argue that the deterioration of vision not only affects the ability to perform daily tasks but also leads to increased dependency and social isolation. This aspect is particularly concerning as it underscores the broader psychosocial ramifications of DR, which extend beyond mere physical health.

The authors provide a compelling argument regarding the significant difference in quality of life metrics between individuals with DR and those without. They suggest that understanding the quality of life issues faced by patients with DR is crucial for informing treatment decisions and healthcare policies. The findings indicate that patients with both type 1 and type 2 diabetes experience a notable decline in their quality of life due to the complications associated with DR.

Moreover, the article calls attention to the necessity of integrating quality of life assessments into routine clinical practice for patients with DR. This approach could enhance patient-centered care by addressing not only the medical but also the emotional and social dimensions of living with diabetic retinopathy.

The article "Disease perception and experience in people with diabetic retinopathy: A qualitative study" by Chunmei Fan et al. (2022) provides a comprehensive exploration of the lived experiences of individuals affected by diabetic retinopathy (DR). The authors emphasize the critical role of vision in daily activities and the profound impact that visual impairment has on the quality of life for those suffering from DR.

The study highlights that visual impairment due to DR leads to increased dependence on others for daily tasks, which can foster social isolation and reduce physical activity. This dependence not only limits the individuals' autonomy but also contributes to a decline in their overall quality of life. The authors argue that the emotional toll of living with DR is significant, as many patients experience anxiety, depression, and a decrease in social support, all of which further exacerbate their condition (Patel et al., 2022).

A critical evaluation of the material reveals that the qualitative methodology employed in this study is particularly effective in capturing the nuanced experiences of individuals with DR. The authors successfully illuminate the gap in existing literature regarding the real-life implications of DR, moving beyond clinical symptoms to address the psychological and social dimensions of the disease. This approach aligns well with the need for a more holistic understanding of chronic illnesses and their broader impact on patients' lives.

Moreover, the article points out that the lived experiences of individuals with DR are often underrepresented in quantitative studies, which tend to focus on measurable outcomes rather than personal narratives. By employing qualitative and descriptive research methods, the authors provide valuable insights into the practical challenges faced by patients in their daily lives, thus contributing to a more comprehensive understanding of the disease's impact.

The article titled "Social Determinants of Health and Impact on Screening, Prevalence, and Management of Diabetic Retinopathy in Adults: A Narrative Review" by Patel et al. (2022) provides a comprehensive examination of the interplay between social determinants of health (SDOH) and diabetic retinopathy (DR). The authors effectively illuminate how socioeconomic factors, including household income, education level, and geographic location, significantly influence the prevalence and management of DR, ultimately impacting the quality of life for individuals with diabetes.

A critical evaluation of the material reveals that the authors underscore the urgency of addressing these inequities, as they are linked to reduced access to screening and delayed diagnoses, which can lead to worse visual outcomes. The narrative review method allows for a broad exploration of these themes, but it also limits the depth of empirical analysis that could further substantiate their claims. While the authors acknowledge advancements in DR management, they stress that equitable access to screening and treatment is paramount. This highlights a critical gap in current healthcare practices that could be addressed through targeted policy interventions.

The discussion surrounding the implementation of teleretinal networks and artificial intelligence-based screening methods is particularly noteworthy. These innovative approaches could bridge the accessibility gap in underserved communities, facilitating early detection and improving long-term visual outcomes. However, the article could benefit from a more detailed exploration of potential barriers to the adoption of such technologies, including technological literacy among patients and healthcare providers, as well as infrastructural limitations in rural areas.

Moreover, the authors advocate for a focus on equity in diabetes care, suggesting that mitigating care gaps related to SDOH is essential for achieving optimal visual outcomes. This perspective is crucial, as it aligns with the broader public health goal of reducing health disparities. However, the article could enhance its impact by including case studies or examples of successful interventions that have addressed these inequities in practice.

The article "The Patient Experience with Diabetic Retinopathy: Qualitative Analysis of Patients with Proliferative Diabetic Retinopathy" by Sherman et al. (2022) provides an in-depth exploration of how proliferative diabetic retinopathy (PDR) affects the quality of life of patients. Through qualitative interviews, the authors effectively capture the multifaceted experiences of individuals living with this advanced form of diabetic retinopathy, revealing critical insights into the implications of visual impairment on daily living.

One of the key findings of the study is the substantial impact of visual impairment on various aspects of health-related quality of life. Patients reported difficulties in performing activities of daily living, which not only highlights the functional limitations imposed by PDR but also underscores the emotional and social ramifications of living with such a debilitating condition. The qualitative approach employed in this study allows for a rich understanding of patient experiences, moving beyond mere clinical symptoms to encapsulate the broader implications of the disease on their lives.

Moreover, the article identifies a range of symptoms that patients experience, which contribute to their overall burden. This includes not only the direct effects of visual impairment but also the psychological stress and social isolation that can accompany these challenges. The emotional toll of PDR is particularly concerning, as it may exacerbate feelings of helplessness and frustration, further diminishing quality of life.

The authors also address the treatment experiences of patients undergoing procedures such as panretinal photocoagulation (PRP) and the use of aflibercept. While these treatments are crucial for managing the progression of PDR, the study reveals that they come with significant burdens. Patients expressed concerns about the side effects and the overall effectiveness of these interventions, indicating a gap between treatment expectations and real-world experiences. This highlights the need for improved communication and support from healthcare providers to address patient concerns and unmet needs in disease management.

CONCLUSION

The literature on diabetic retinopathy (DR) and its effects on quality of life presents a comprehensive picture of the multifaceted challenges faced by individuals living with this condition. The foundational work by (Azwiangwisi, 2009) establishes the critical link between visual impairment due to DR and the overall decline in quality of life, emphasizing the psychological ramifications such as increased depression and loss of independence. The use of validated tools like the SF-36 and NEI VFQ-39 in assessing health-related quality of life is underscored, providing a framework for quantifying the adverse effects of visual impairment on daily living.

A more nuanced exploration by (Alcubierre et al., 2014) highlights the epidemiological aspects of DR, particularly in type 2 diabetes patients, and emphasizes the patient-centered approach necessary for understanding the lived experiences of those affected. Their findings align with (Xu et al., 2015), who illustrate the direct correlation between the severity of DR and the deterioration of health-related quality of life, reinforcing the theme that chronic health conditions can lead to social isolation and reduced engagement in daily activities.

(Shekar, 2018) broadens the discussion by advocating for improved screening practices in the Indian context, highlighting the global prevalence of DR and its associated risk factors. This emphasis on accessible healthcare interventions aligns with the technological advancements discussed by (S. Chaturvedi et al., 2019), which suggest that innovations like computer-aided diagnosis can significantly alter the management of DR, potentially leading to better patient outcomes and enhanced quality of life.

Empirical evidence from (Deswal et al., 2020) further supports the notion that DR has a detrimental impact on quality of life, particularly within the Indian diabetic population. Their findings reveal significant correlations between the severity of DR, financial worries, and treatment satisfaction, underscoring the socioeconomic implications of living with this condition. Similarly, (Roberts-Martínez Aguirre et al., 2022) emphasize the extensive effects of visual impairment on daily activities and social engagement, advocating for a holistic approach to patient care that addresses both clinical and experiential dimensions.

(Fan et al., 2022) contribute qualitative insights into the psychological and social challenges faced by individuals with DR, illuminating the emotional toll of the condition. This perspective is echoed in (Patel et al., 2022), who examine the social determinants of health affecting DR prevalence and management, highlighting the critical need for equitable healthcare access. Finally, (A. Sherman et al., 2022) provide a qualitative analysis of patient experiences with proliferative diabetic retinopathy, revealing the extensive burdens associated with managing advanced DR and the unmet needs in current treatment strategies.

In conclusion, the literature collectively underscores the profound impact of diabetic retinopathy on quality of life, advocating for a comprehensive approach to patient care that addresses both the clinical and psychosocial dimensions of the disease. The integration of technological advancements, improved screening practices, and a focus on patient-centered care are essential for enhancing outcomes for individuals living with diabetic retinopathy.

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