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Speice 3A

Independent Study and Mentorship

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OCT-A Technology Revolutionizes How We Look at Diabetic Eyes

Assessment 8- Research

Date: October 24, 2018

Subject: Choroidal and Retinal blood flow in diabetic eyes and how optometrists use new technology and techniques to address specific diabetic ocular issues

Works Cited:

Ferrucci, Steven, and Jay M. Haynie. "OCT-A for AMD, Diabetes and Beyond: Imaging retinal and choroidal bloodflow can have a significant impact on how you diagnose and treat any number of ocular conditions." *Review of Optometry*, 15 Sept. 2018, p. 40+. *Academic OneFile*, <http://link.galegroup.com/apps/doc/A557838283/AONE?u=j043905010&sid=AONE&xid=c4cdac04>. Accessed 25 Oct. 2018.

Assessment:

The assessment this week was initially centered around how diabetics are affected in regards to their vision. This topic was chosen because it correlates with the Original Work and what is planned to be executed over the next few months. With the Original Work being a vital part in ISM, additional research is needed in order to learn more about how optometrists are altering and adapting to diagnosing and assessing patients with diabetes.

When searching through a few articles, the text that stood out the most was how optometrists are using new types of technology, especially on diabetic individuals.

This article first began by explaining a few differences in comparison to normal and diabetic eyes. The primary difference is that patients with Diabetes Mellitus (DM) have eyeballs with leaky and reduced vessels. With this, capillary dropout increases, along with ischemia. These signs are dangerous and optometrists must make precautions in order to catch the symptoms early, to reduce the risk of a patient having vision loss or going blind. With that, there has recently been a piece of technology that helps doctors identify the issues before hand.

The OCT-A allows for doctors to see specific signs, such as macular degeneration, diabetic retinopathy, vein occlusions, and retinal vascular diseases. This technology is extremely beneficial to both the optometrist and the patient because of the alarming amount of individuals who are at risk of vision loss, due to DM. In the United States, about 11 million people have diabetic eyes (AMD) and about 10% of those are at risk of losing their vision, due to their conditions. OCT-A technology allows for optometrists to see the first signs of certain ocular issues and is easier and quicker, compared to past technology such as the FA. The FA required injections into the eye, which put the patient at even more of a risk in regards to their vision status. With the OCT-A, doctors are able to see a three-dimensional perspective of the eyeball, recognizing the levels of fluid, vascular structure of the retina, and disease signs such as spots and unusual images. Also, this technology helps see the CNVM lesion size and depth of the retina. With this type of new technology available in the United States, optometrists can diagnose specifically to the DM patient, while knowing their

condition of their eyes. In addition to the efficiency of this new technology, human input and correction is still needed. However, the OCT-A technology may become the future of optometry and may replace potential jobs for young adults entering the field.

The impressiveness of the OCT-A technology is blowing old machines and recognition devices out of the water because this new device is able to “...differentiate exudative AMD from masquerading conditions such as central serous retinopathy (CSR) and polypoidal choroidal vasculopathy” (Ferrucci & Haynie, 4). This information is extremely personal because my mother has DM and vision issues are a challenge she faces daily. With the new technology, it will be interesting to see how quickly this revolutionary piece spreads and how quickly optometrists choose to utilize it or not. Overall, “Diabetes is the leading cause of functional vision loss in the working population and second only to AMD as the leading cause of vision loss in adults” (Ferrucci & Haynie, 5). With age, the effects of DM worsen and vision loss and changing prescriptions are more likely to occur within individuals. With this problem comes treatment. The most vital step an optometrist can perform when diagnosing a patient with DM, is to evaluate the retinal vasculature. The usage of the OCT-A technology only leverages optometrists and only puts the patients in a better and safe position.

Lastly, in addition to the new information learned from this article, the authors included many cases of actual patients and how the advanced technology helped their diagnosis process, along with how diabetes affects their daily lives, both physically and mentally, but also in regards to vision. Along with real witnesses, the article added images showing various eyes and identified what was happening in each eye. Whether the vessels

were compressed, the retina was bumpy, or there were spots visible on the eye, the authors provided captions and descriptions of the pictures. This is helpful for the readers because people are able to relay the information read, into an actual scan of an eye, one similar to what an optometrist would be looking at.

Concluding the research conducted this week, the article picked is one that covered all the topics that were desired to learn more about. The additional knowledge gained about DM and poor eyesight will further help with the Original Work progress. Next week, an interview is scheduled, which means an Interview Assessment will be written. Ideally, the plan is to apply what was just learned into the next interview, in order to make sense of optometry. By making connections between what a professional says in an interview and what is being read while researching, this should solidify the information learned and help make what has been put into the assessments, more of a reality.

[Annotated Article](#)