

Reading Glasses: Knowledge, Use, and Access – A Survey of Communities Served by RestoringVision in Zacatecas State, Mexico and Imo State, Nigeria



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EXECUTIVE SUMMARY

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RestorinVision is a 501(c)(3) non-profit organization committed to addressing the unmet need of reading glasses globally. Warby Parker is an eyewear brand that pioneers ideas, designs products, and develops technologies that help people see, from designer-quality prescription glasses and contacts to eye exams and vision tests available online and in their retail stores. In early 2019, they entered into a pilot engagement. In this engagement funded by Warby Parker, RestoringVision dispensed new reading glasses to people in need through its in-country partners. Additionally, there was common interest in having a survey conducted that would look at aspects of availability and affordability of reading glasses in select communities where RestoringVision and its partners serve.

Accordingly, an independent consultant with expertise in global health monitoring and evaluation was contracted to design a survey for the beneficiaries of reading glasses as well as for local leaders within those communities. The consultant oversaw the implementation of the study, including training, data collection, and data analysis.

Two countries were mutually selected by RestoringVision and Warby Parker for the pilot engagement, using criteria provided by Warby Parker: Mexico and Nigeria. In each country, RestoringVision recruited one of its in-country partners who was willing and able to participate in the study. These partners were DIF¹ Zacatecas, the non-profit arm of the Mexico government that provides social services to people in need in Zacatecas State, and David Omenukor Foundation (DOF), a US-based nonprofit serving people in need in Imo State, Nigeria. Survey data were collected from both beneficiaries of reading glasses and community leaders during select, mobile health events organized by the project partners. Project partners recruited the enumerators and supervisors to conduct the study, and the consultant provided two-day training on survey administration. Survey management and logistics were the responsibilities of the project partner, although the consultant provided on-site support at four of the eight study sites.

From mid-September to mid-October 2019, data was collected in Mexico on four Fridays in rural or small-town communities in Zacatecas State, located in north-central Mexico. The dispensing of reading glasses was managed by DIF, which travels weekly to offer a “health fair” at one of the state’s 58 municipalities on a rotating basis. Demographic information was collected from all 740 beneficiaries of reading glasses, from which 481 beneficiaries were randomly selected to complete the full version of the survey; 59 community leaders were also interviewed.

During the second half of December 2019, data was collected in Nigeria in four rural communities in Imo State, located in southeastern Nigeria. Reading glasses were dispensed by DOF, which travels to Imo State once or twice yearly to provide health outreach through screenings (cancer, diabetes) and treatment services. Eye care was newly added as another intervention, and opticians were included among the members of the volunteer medical team so that vision testing could be provided for dispensing both prescription glasses and reading glasses. Due to erratic access to internet satellite signals, some data was lost although it was manageable in degree; for that reason, random selection of survey respondents was not possible. Demographic information was collected on 452 beneficiaries of reading glasses, while complete data was compiled from 395 individuals who submitted to the full version of the survey; responses were also gathered from the interviews of 64 community leaders.

In the four communities in Mexico, most of the respondents were women who were over the age of forty and primarily cared for the home and family. It is likely more men were absent that day due to obligations of work in which they were engaged either locally or remotely. For the local communities, the health fairs facilitated their access to needed health services, and the provision of reading glasses by a mobile government unit prevented their need to travel a distance to have their near vision impairment corrected. The data show that 84% of the beneficiaries of glasses at the health fairs required reading glasses and did not yet have them, mostly due to financial constraints; 57% were new wearers. Additionally, 80% of the beneficiaries stated that if the DIF health fair had not been organized, they would not have tried to get reading glasses from elsewhere or they would have relied on other government or charitable support to access reading glasses. Lastly, the data collected from community leaders show that two-thirds of community leaders thought that nearly all of their fellow residents would rather wait for free reading glasses than purchase them, while the maximum time period they thought that others would wait was reckoned to be “up to three months” (66%), “up to six months” (75%), and “up to one year” (83%).

¹ DIF is translated as the National System for Integral Family Development

In the four communities in Nigeria, there was a more diverse range of those by age and gender, although women represented 68% of beneficiaries. Compared to ones surveyed in Mexico, those in Nigeria represented a more highly educated population that works more often outside the home and with a greater number of individuals living in the household (6-7 in Nigeria versus 4 in Mexico). Vision testing and reading glasses were reported to be less available in these communities, as many had to travel outside of their communities for these services. The data show that 80% of the beneficiaries needed reading glasses and did not yet have them at the time of the mobile health events, mostly due to financial constraints; 31% were new wearers. Additionally, 90% of the beneficiaries stated that if the DOF mobile health event had not been organized, they would not have tried to get reading glasses from elsewhere or they would have relied on other government or charitable support to access reading glasses, primarily due to financial constraints.

As for the responses from the 64 leaders of the community in Nigeria who were surveyed, they were not as insightful as had been expected, given their limited knowledge of the availability and price ranges of reading glasses, those sold both locally and farther out. However, community leaders confirmed the impediments to obtaining reading glasses without external assistance, with concurrence that finding the money for travelling in order to buy reading glasses was almost as high a barrier as securing the sum of money for meeting the purchase price. As for the maximum time period for waiting by community members, this was reckoned to be “up to three months” (52% of the community leaders), “up to six months” (75%), and “up to one year” (86%).

From the survey data findings, it is surmised there has been no routine screening of vision impairment within the general population, as could be done, for example, through the public-school system, which received negligible mention. Additionally, knowledge of eye health is promoted not by public health initiatives, but by word of mouth; there is doubtlessly little in the way of mass marketing of eyewear, since reference to this never arose from the survey responses. Indeed, demand for eye care services seems to be driven by the individual who makes the effort to seek out eye care. Lastly the report also seeks to understand who among the surveyed populations had previously paid or would be willing to pay for reading glasses. The data suggests that there is likely a difference between what people are willing to pay versus what they are able to pay, as based on their responses to barriers to acquiring glasses. Lastly, only a small percentage of each population referenced acquiring glasses in the private sector and reported a preference for mobile services provided by the government or other charitable initiatives.

In short, there does not seem to be a reliable, regular, and affordable supply of services and goods related to correction of near vision impairment for many of the inhabitants in the communities that were visited by this survey. This appraisal refers to both vision testing and the provisioning of corrective eyewear, and it applies to potential outlets in both the public and private sectors. It seems that demand for eye care is seldom generated by the providers themselves. While both countries have the potential to form as emerging markets in the manufacturing and marketing of eye wear, it will likely be launched and centered around their urbanized areas, and its coverage would not likely reach the more rural areas of Zacatecas State and Imo State until some distant time in the future.

Overview: RestoringVision and Warby Parker

RestoringVision is a 501(c)(3) non-profit organization based in San Rafael, California that was founded in 2003 by Mark Sachs in response to his observations during an outreach trip to Mexico when he noted the significant efforts local residents made in seeking out eye care services. From this, he created RestoringVision, which has been committed to addressing the significantly unmet need of reading glasses for those around the world through robust coordination with two different groups of partners.

First, RestoringVision has cultivated partnerships with optical companies and manufacturers, which are the source of donated and purchased of reading glasses. Next, RestoringVision has built a network of more than 1,800 US based non-profit organizations and international NGOs ("project partners") that receive deliveries of these reading glasses under RestoringVision's oversight so that they, in turn, can dispense them to people around the globe whom these organizations have already targeted as beneficiaries of their humanitarian services. In this pivotal role, RestoringVision has been able to provide 16 million pairs of new glasses to inhabitants from 130 countries through the assistance of its more than 1,800 service delivery partners. Estimated levels of need for all types of eyeglasses worldwide are projected to upwards of 2.5 billion.²

In early 2019, RestoringVision engaged in a pilot project funded by Warby Parker, an eyewear brand that pioneers ideas, designs products, and develops technologies that help people see, from designer-quality prescription glasses and contacts to eye exams and vision tests available online and in their retail stores. For its own informational needs, Warby Parker expressed interest in funding a study to measure access to reading glasses and evaluate potential market disruption.

Context, Purpose, and Design of the Study

In late May 2019, RestoringVision recruited an external consultant with significant international public health experience to lead in the design and implementation of this type of survey work. Several telephone discussions organized by RestoringVision with the consultant and Warby Parker were held to gain greater clarification on the research topics, before drafts of the research instruments were prepared and submitted for review and finalization. Warby Parker expressed particular interest in learning whether or not the beneficiaries of donated reading glasses would have been able to have obtained them by other, local means, such as optometry shops in their communities or through other charitable organizations or social enterprises in the geographic area that are also trying to fill the need for reading glasses. As such, a key concern is physical availability to reading glasses and affordability to purchase them. Another consideration held by Warby Parker is the level of provision of follow-up care as it relates to correction of near vision. Questions of sustainability and aid dependency were raised. Finally, Warby Parker held Mexico and Nigeria as priority countries for this research.

RestoringVision and Warby Parker concurred that market conditions for reading glasses could be looked at in the framework of knowledge of reading glasses as well as access (in view of geographical and financial conditions) and use of reading glasses. As such, the study would measure levels of both past performance and future likelihood of individuals in the seeking out and attaining of reading glasses. RestoringVision specified that a set of questions be included in order to address the level of ease in replacing one's reading glasses (as in the case when the diopter is no longer strong enough or when the glasses are lost or broken); this coincided with the issue of follow-up care raised by Warby Parker.

From remarks made by the consultant, it was made clear that a measurement of outcomes from the use of reading glasses would not be the focus of the survey, although some inquiry on broad effect or 'impact' would be made through concluding questions in the instrument. Moreover, given the budget and limited access to sampling frame data, the survey would not be able to draw a representative sample of the national or sub-national populations, from which data findings could be presented within levels of statistical significance; instead, the survey would be designed as a formative assessment, from which quantitative and qualitative data would provide answers to Warby Parker's questions and rich insights for strengthening the strategies of RestoringVision in programming its distribution and promotion of reading glasses in developing countries.

With all parties in agreement, two survey forms were then drafted, reviewed, and finalized. One was created for conducting individual interviews with those from among all the attendees coming to a community event to be vision tested and dispensed reading glasses ("recipients"). Recruitment of those individuals to be interviewed would be undertaken with a process of randomized selection. Four hundred (400) surveys would be minimally collected from each surveyed country. Additionally, leaders from that same community would be administered a similar, but shorter, survey in order to serve as a second set of interlocutors for corroborating what was learned from the recipients. At least 50 surveys were sought from community leaders from within each country. For either group of these individuals, reference is made to them in this report as "respondent" for their role as providers of answers for the survey.

² Chris Wray, "How Many People Need Glasses but Don't Have Them," Centre for Vision in the Developing World, August 14, 2016, <http://cvdw.org/how-many-people-need-glasses-but-dont-have-them/>

Logistics

The selection of the two countries serving as sites for the survey was based on the preference of Warby Parker and, accordingly, Mexico and Nigeria were named. As it was, RestoringVision was committed through its Warby Parker sponsorship to having 75,000 reading glasses dispensed in these two nations by end of the project term. For RestoringVision, though, it had a range of choices from its roster of project partners working in each of these two countries concerning the engagement of one of them to collaborate with the consultant on the implementation of the survey.

As a prerequisite, a project partner would need to add to its own humanitarian work within the designated timeframe the vision testing of its beneficiaries and the dispensing to them of reading glasses that would have been provided by RestoringVision. The project partner would also need to coordinate with the consultant regarding the scheduling of the survey and the meshing of operational plans; the project partner was also responsible for the recruitment and management of the survey enumerators and supervisors for the collection of field data. As for the consultant, besides the design of the survey instruments and the eventual analysis and reporting of the data, the design and implementation of the training for the survey team members belonged to him, while he shared oversight of field operations.

Project Partner in Mexico

For this collaboration to be forged in Mexico, RestoringVision laid the groundwork for the consultant to work in Zacatecas State with the Sistema Nacional para el Desarrollo Integral de la Familia (DIF),³ a public agency providing social services and counseling to populations within each of the country's 32 states. Located on highly elevated lands in the north-central part of the country known for its mineral deposits of silver and other metals, Zacatecas State is home to more than 1.5 million inhabitants, 41% of whom live in rural areas⁴. DIF has sustained ties to its beneficiaries through its organization of a health outreach campaign ("health fair") that has been weekly scheduled on a Friday on a rotating basis⁵ at one of the 58 municipalities that comprise the state. It should also be mentioned that DIF has its informational methods for targeting the neediest residents in the communities during its outreach activities.

Since 2017, DIF has been provided reading glasses by RestoringVision for distribution during select health fairs in Zacatecas State; in 2019, four municipalities were designated to receive reading glasses during the period from mid-September to mid-October, and this provided an opportunity for the consultant to conduct the survey within that time frame as an activity that would run parallel to the scheduled health fairs. It should be noted that the consultant was well served by a RestoringVision staff person in being introduced to all parties at DIF Zacatecas and coordinating efforts during the planning stages and the two days of training that were held for the survey enumerators and supervisors, who were ten and two in number. This indispensable staff person also provided Spanish translation of oral exchanges and written materials.

Initial budget allocations for the survey were set at levels to minimize costs, and the training was originally conceived to be conducted remotely through off-line and on-line, computer sessions. However, with the date set for work to begin with DIF Zacatecas, it was considered prudent for the consultant to spend some limited time in Mexico during the first, scheduled week of this joint endeavor. With an in-country stay, the consultant could deliver in person the two-day training, resolve any late-arising survey design matters, and oversee field operations during the first health fair. Given the high regard held by RestoringVision for the strong management capabilities of DIF Zacatecas, it was believed that the consultant did not need to oversee the data collection thereafter during the next three health fairs, which were, after all, held a week apart from each other; the consultant did, however, have a follow-up, e-conference with DIF prior to the launch of the second health fair to ensure that all had been prepared. Accordingly, he spent six days in Mexico, being present at the first health fair organized in Valparaiso, while he awaited back in the US for data sets to be automatically uploaded from the subsequent survey sites.

³ DIF is translated as the National System for Integral Family Development

⁴ <https://en.wikipedia.org/wiki/Zacatecas>

⁵ Starting in mid-January 2020, health fairs will be scheduled twice a week by DIF/Zacatecas.

Dates of Survey Work	Survey Sites in Zacatecas State, MEXICO	2015 Population ⁶	Reading Glasses Dispensed	Surveys Completed	
				Recipients	Community Leaders
Sept. 20, 2019@	Valparaiso	32,606	218	117	15
Sept. 27, 2019	Trancoso	19,413	178	117	14
Oct. 04, 2019	Calera	45,294	136	118	15
Oct. 11, 2019	Morelos	12,354	208	129	15
@ Consultant present in the field			740	481	59

Project Partner in Nigeria

As relatively serene as the preparations and implementation of the survey in Mexico had been, numerous circumstances disallowed the same for the survey in Nigeria. The first project partner that RestoringVision had secured had withdrawn at the last minute due to unexpected organizational changes that prevented it from participating in the study. A second project partner was identified, however that partner's work was scheduled to be performed in Gombe, a state for which the US government had issued a high travel advisory due to security concerns. This required RestoringVision to identify and secure a third project partner in Nigeria. In addition there were also challenges with obtaining a visa for the consultant and high administrative costs associated with field work conducted in Nigeria.

Despite all this, RestoringVision, through the efforts of its key staff members, successfully negotiated with one project partner, the David Omenukor Foundation (DOF), to have the survey implemented in conjunction with the wide range of health outreach activities it had scheduled to undertake during a three-week visit to Imo State, Nigeria in December. DOF is a charitable organization that is based in Mesquite, Texas (outside of Dallas); it was founded in 2014 by a Nigerian-American woman to honor the untimely death of her husband from colon cancer. DOF is dedicated to enhancing access to the screening of health risks, such as different forms of cancer and diabetes, to residents of Imo State, located in southeastern Nigeria, where she has family ties. The estimated 2016 population of Imo State is 5.4 million.⁷

Along with doctors, nurses, lab technicians, DOF was planning to have optometrists and opticians with the team on this mobile health campaign trip so that optometric assessments could also be conducted for dispensing both reading and prescription. As an aside, even though DOF started its health mission work only in 2015, it has since traveled to 16 communities within Imo State before its engagement with this survey. Among the localities previously visited by DOF are the first three of the survey sites (Lude in 2016, Okwu and Ugirike in 2018).

As was the case in Mexico, the consultant was reliant upon the project partner for the recruitment and vetting of individuals to serve as survey enumerators and supervisors; when they arrived for their two-day training by the consultant, they numbered ten and two, respectively. The in-country project leader for DOF, who provided invaluable logistical and problem-solving skills during the course of the training and survey implementation, appointed himself as one of the two supervisors, and selected his co-manager. The consultant, who spent altogether nine days in Nigeria, was present at the first three survey sites to observe the operations of the field work, and was satisfied that work at the fourth site, to be visited days after Christmas Day, could be undertaken in his absence.

Dates of Survey Work	Survey Sites in Imo State, NIGERIA	Population ⁸	Reading Glasses Dispensed	Surveys Completed	
				Recipients	Community Leaders
Dec. 18, 2019@	Lude, Ahiazu Mbaise LGA [#]	235,200 (LGA)	402	109	12
Dec. 19, 2019@	Okwu, Aboh Mbaise LGA	268,200 (LGA)	395	84	3
Dec. 21, 2019@	Ugirike, Ikedura LGA	206,200 (LGA)	415	96	24
Dec. 27, 2019	Awo-Amama, Oru East LGA	153,900 (LGA)	501	106	25
@ Consultant present in the field	# LGA = Local Government Area (Imo State District)		1,713	395	64

⁶ https://en.wikipedia.org/wiki/Municipalities_of_Zacatecas

⁷ <https://citypopulation.de/php/nigeria-admin.php?adm1id=NGA017>

⁸ March 21, 2016 projections based on March 2006 census figures. Source: National Population Commission of Nigeria (web), National Bureau of Statistics (web). <https://www.citypopulation.de/php/nigeria-admin.php?adm1id=NGA017>

Training

The consultant developed a two-day training program for the teams of enumerator and supervisors who would be collecting data for the survey in Mexico and Nigeria. Training on the survey work to be done in Zacatecas State, Mexico was held in a large, airy conference room within the office complex of DIF that serves as its base location in the capital city of Zacatecas; all required amenities were provided, including food and beverages during break periods.

In Nigeria, instruction was given in a small meeting room on the ground floor of a hotel in Owerri, capital city of Imo State; this hotel was located alongside the one where the consultant was lodged. Break periods were scheduled somewhat erratically since DOF was contending with the unreasonably high costs for the hotel's catered food and the limited choices of food available, especially on the first day of training, a Sunday. While the electrical supply was fairly reliable at the hotel's meeting room, DOF providently brought a device that could serve as an internet hotspot, given the consistently weak signal offered by the hotel's own modem.

In both Mexico and Nigeria, training instruction was provided through presentations of PowerPoint slides, dialogue sessions for problem solving survey-related issues, topic review sessions, and hands-on practice in survey administration. Presentation topics included:

- overview of RestoringVision and its mission work
- unmet need for reading glasses worldwide
- background context for conducting the study
- role of the project partner in the study
- objectives and logistical concerns of the study
- protocols in survey administration
- full review of the content of the two surveys (for recipients of reading glasses and for community leader)
- random selection of respondents for the survey
- identification for the survey individuals who could be recognized as community leaders

The training in Mexico was conducted with simultaneous translation into Spanish by the RestoringVision staff person, with the PowerPoint slides already prepared in Spanish; the one in Nigeria was fully conducted in English. There was initial concern for whether or not the survey itself would need to be administered to respondents in a local language, but the consultant was given assurances, upon arrival in each country, that Spanish, and not, Nahuatl, is much more widely spoken in Zacatecas State, Mexico and that English is fully understood by the Igbo people in rural areas of Imo State, Nigeria.

A discussion point that was purposefully raised during the training sessions was the need of the enumerators to have respondents make the distinction between reading glasses and prescription glasses, given that the subject of the study is the knowledge and use of, and access to, reading glasses. For the survey in Mexico, a particular term in Spanish was coined to help with the differentiation ("*los lentas para vista cansada*"); this is translated as "*lenses for eyestrain*." However, a preliminary analysis of the data collected from Mexico revealed a small number of the quoted prices for reading glasses to be quite high, suggesting there may have been such a conflation between prescription glasses and reading glasses.

This matter was introduced during the training held in Nigeria, especially in light of plans for DOF's mobile health campaigns to dispense both types of eye wear. In response to this, after discussion with those in the training, there was some slight revision in the text of some of the survey questions — for example, "Where did you go to have your vision tested by a paper held at different lengths from your face?" — to further clarify the distinction between reading glasses and prescription glasses. But again, thereafter, there were instances found in the Nigerian data of excessively high levels of prices that had been cited for reading glasses. In all such instances, during the course of data analysis, these extreme data items were taken into account when reporting on response averages.

As for the trainees themselves, DIF recruited ten enumerators from outside its organization to collect data for the survey in Mexico, while designating two of its own senior staff members to serve as supervisors. The consultant was pleased to learn that all ten recruits, of varying ages but mostly those in their thirties, had had previous field research experience, whether with research conducted for the government or a university. This was apparent throughout the course of instruction, particularly during the problem-solving and practice sessions. This was especially made clear when they took the initiative in rearranging chairs and tables within the conference room to role play a scene from the upcoming survey where those who come for vision testing are registered and then interviewed prior to the dispensing of reading glasses. As gratifying for the consultant was the discovery that none had ever administered a survey using electronic devices, and that they all found great favor in testing out their skills using both laptops and smart phones during the practice sessions; in the field, for the actual survey, they uniformly used laptops, which were ones that they personally owned.

The ten trainees externally recruited by DOF for the survey work in Nigeria were a much younger, and livelier, set; three of them had previous survey experience — one had worked for an international, non-governmental agency (NGO) — and three others were schoolteachers who are particularly good in oral communications; another had been trained as a nurse. All showed ease in using their own smart phones as devices for collecting survey data, accommodating to the various difficulties that arose in the field during the survey, and taking numerous selfies to cap each day of field research work in a sense of triumphant accomplishment.

Software

Upon his hiring, the consultant was advised by RestoringVision that it already had purchased licenses of SurveyMonkey at the “Team Advantage Level,” and accordingly, this program for on-line survey data collection was accepted as the mode for compilation of data for this survey, and an additional license was purchased to allow for the consultant to be added as a user. However, once the consultant had drafted the content of the two surveys — one for recipients of reading glasses and one for community leaders — and transcribed it into SurveyMonkey, it became clear that the surveys, designed to contain numerous skip patterns in its logic of inquiry, required a higher level of that software program. Moreover, a Spanish translation of the survey could not be undertaken at that current level. Accordingly, RestoringVision agreed to elevate the level of its licensing agreement to “Team Premier,” which allowed for the functionality of all the planned, skips patterns and the use of wording in Spanish.

However, once the surveys’ content was finalized and transcribed into this higher level of SurveyMonkey, the consultant faced another serious issue related to the software during his discussions with DIF during the first day of training in Mexico; the project partner could not guarantee that there would be wi-fi access to the internet for the enumerators when using their laptops to conduct the surveys at the four sites with respondents. SurveyMonkey, at the “Team Premier” level requires constant, unbroken access to the internet, since data is uploaded into the software company’s servers in real time.

Urgent communications between the consultant and RestoringVision and between RestoringVision and SurveyMonkey resulted in an overnight switch to SurveyMonkey’s highest level, “Enterprise,” a rather expensive upgrade that allowed for off-line data uploading through its “kiosk” mode function. However, DIF, for its part, recognized the importance for the survey in having internet access and arranged for this through the efforts of its two IT technicians. Routers and computer data cables were transported to each site and a local area network was established by tapping into the network server that was available at the office that happened to adjoin each site where the health fair was organized. In this way, each of the enumerators’ laptops, with cabled connection to the router, was hardwired into this temporary, local area network, thus guaranteeing quick and assured access to the internet. Accordingly, uploading of data went flawlessly in Mexico.

As it turned out, the offline capabilities of SurveyMonkey at the “Enterprise” level were not required in Mexico; however, it was understood that Nigeria would most likely present the need to use them, given the less assured quality of that country’s telecommunications networks. Moreover, unlike those in Mexico, the enumerators in Nigeria did not all come with their own laptops (only two or three had them); instead, they had their smart phones (and data cards), which would work well when collecting survey data offline. Indeed, the “Enterprise” level of SurveyMonkey is intended to be used in the field with only smart phones and tablets, not laptops.

Again, while overseas and when conducting the training of the survey enumerators, the consultant realized in Nigeria yet another problem. The “kiosk” mode function of the “Enterprise” level of SurveyMonkey, which would allow for offline collection and subsequent uploading of data, once with internet access, is available to each enumerator — if a user license is first purchased for that individual. In all past discussions, on-line and phone, as well as referring to descriptions on its website, the consultant never fully understood this stipulation of SurveyMonkey for users of the “kiosk” mode function. Indeed, at SurveyMonkey’s lower level of “Team Premier,” there are no restrictions in sending weblinks of a survey to any person, registered or not as a licensed user of SurveyMonkey — as long as survey administration is conducted with internet access.

Given this challenge, and needing to begin the survey in Nigeria, DOF offered to make its best arrangements for ensuring that the survey enumerators would have internet access while in the field through the use of hotspot devices that would serve as the bridge for connecting to telecommunication satellites. These hotspot devices require electrical power, as would smartphones for recharging at interim periods, and, accordingly, DOF arranged to have a diesel-fueled generator be brought to each survey site. For providing to the enumerators ease of access to electrical power while conducting their work, power strip switches and extension cords were likewise transported.

Despite the great credit to be given to DOF for developing and implementing this strategy, actual access to the internet by the survey team was completely dependent on the strength of the signals from the telecommunication satellites under the control of the three providers operating in Nigeria: MTN, Glow, and Airtel. None seemed to provide internet access that was reliable in duration or in point of location; one could move thirty feet and have the signal go from strong to “dead.” Indeed, in the survey site community of Ukwu, the enumerators decamped three times and finally settled on the middle of a village road to conduct their interviews. Breaks in the access to

the internet occurred regularly, which resulted in the loss of some research data that could not be uploaded; this would not be revealed to the consultant only until his return to the hotel in Owerri at the end of the day, where internet access was good. In fact, there were quite a few instances of enumerators asking for patience from respondents when the survey had to be administered two or three times to them.

Transportation

For the travelling to the four sites in Zacatecas State, Mexico, the starting point was Zacatecas City and the mode of transportation was a minibus that DIF had at its disposal. Survey team members were instructed to meet together before all of them boarded the minibus, which did not have to spend more than one and one-half hours on the road, given the relatively close distances of 30 to 50 miles that each survey site was located from the state's capital. (see Annex)

In Nigeria, DOF made provisions for the consultant to be provided with transportation in the form of a rented, all-terrain vehicle that allowed him to travel from Owerri, Imo State's capital, to the survey sites and return each night. On the other hand, it made rather looser arrangements for the survey team members to convene at each survey site, providing them a common transport bus for only the last two sites. To travel to the first two locations, each person was responsible for taking public transportation to get there, although the consultant shared rides with a few of them in the all-terrain vehicle. Granted, the first two sites were both located within 25-35 miles range and were, supposedly, easily accessible by bus, van, or motorcycle taxi. Additionally, some of the enumerators remained in the field overnight and traveled from the first to the second point on their own.

Even with the third and fourth sites, located slightly farther afield from Owerri (35-50 miles) and not as well served by public transportation, DOF's bus did make a few, designated stops on the way to pick up members of the survey team. In the end, there was somehow not much of a problem with late arrivals of survey team members at the sites.

Survey in Mexico: Recipients of Reading Glasses in Mexico

Introduction

Over the course of four, weekly health fairs organized by DIF Zacatecas between mid-September and mid-October 2019, the survey was also conducted. Local residents at each of the four, designated sites within Zacatecas State had been informed in advance that DIF Zacatecas would be vision testing for need of reading glasses and would be providing them at no cost. This activity was one of numerous health outreach interventions, such as diabetes screening and family planning counseling, that were offered by a variety of health care providers at a central, sun-covered location within each community; it seemed, though, that attendees arrived in greater numbers to be seen by DIF Zacatecas.⁹

To all those who had come to be vision tested and were about to receive reading glasses, the demographic section of the survey was administered; this comprised 13 questions and took fewer than three minutes to complete. On a random selection basis, a proportion of these individuals were requested to also submit to the full set of survey questions, which represented another 36 questions and required about 15 additional minutes of their time.

As such, demographic information was collected on all 740 who received reading glasses during this four-week period, from whom 481 were fully interviewed. Additionally, DIF Zacatecas had arranged for a dozen or so local leaders from each community to visit the health fair site in order to be interviewed with a second survey instrument. The table below provides subtotals of the surveys conducted at each of the four sites of the health fairs:

Dates of Survey Work	Survey Sites in Zacatecas State, MEXICO	Population ¹⁰	Reading Glasses		
			Dispensed	Recipients	Surveys Completed Community Leaders
Sept. 20, 2019@	Valparaiso	32,606	218	117	15
Sept. 27, 2019	Trancoso	19,413	178	117	14
Oct. 04, 2019	Calera	45,204	136	118	15
Oct. 11, 2019	Morelos	12,354	208	129	15
@ Consultant present in the field			740	481	59

Demographic Information of Recipients of Reading Glasses in Mexico

Nearly all survey respondents reported that they reside locally; over 90% of them described their community as rural or small town.

	Rural	Small Town	Urban	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 740	305	369	66	740
	41.2%	49.9%	8.9%	100.0%
	Rural	Small Town	Urban	TOTAL RESPONSES
ONLY Those Fully Interviewed N¹ = 481	212	240	29	481
	44.1%	49.9%	6.0%	100.0%

The use of reading glasses to correct near vision is more commonly needed for adults over the age of 40. Research and field reports suggest that onset of near vision impairment begins about a decade earlier in developing countries – in the mid 30's when a person has many years of productivity ahead of them. As such, the age distribution of those who were vision tested by DIF Zacatecas reflects this,

⁹ This is based on the consultant's own observations in Valparaiso.

¹⁰ Population figures for municipalities within Zacatecas State are for 2015. Zacatecas State's overall 2015 population was listed at 1,579,209. https://en.wikipedia.org/wiki/Municipalities_of_Zacatecas

with over 93% older than 30 years. Also, there was little difference in the proportionalities of age cohorts among all those whose vision was tested and among those who submitted to the full survey. See **TABLE 3** below:

	< 21 Years of Age	21 - 30 Years of Age	31 - 40 Years of Age	41 - 50 Years of Age	51 - 60 Years of Age	61 - 70 Years of Age	> 70 Years of Age	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 740	5 0.7%	35 4.7%	53 7.2%	167 22.6%	238 32.2%	144 19.5%	98 13.2%	740 100.0%
ONLY Those Fully Interviewed N¹ = 481	4 0.8%	23 4.8%	31 6.4%	107 22.2%	168 34.9%	93 19.3%	55 11.4%	481 100.0%

Given that the health fairs were held on Fridays, and that able-bodied, non-retired men are more likely during a week day to be working outside the home (if not away at distant jobs for extended periods), it was not surprising to find a disproportionate representation of women as attendees at these health fairs. Additionally, higher rates of presbyopia are generally reported for women. Eighty percent (80%) of the recipients of glasses in Mexico during the study were women.

	Female	Male	Other	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 740	586 79.2%	154 20.8%	0 0.0%	740 100.0%
ONLY Those Fully Interviewed N¹ = 481	384 79.8%	97 20.2%	0 0.0%	481 100.0%

	Ave. Number
ALL Recipients of Reading Glasses	4.22
ONLY Those Fully Interviewed	4.23

The average number of individuals “usually” residing in the household was about four, and the responses given to the question of one’s highest level of education attained indicated that about 6% never attended any school, 20% attended some primary school, and 24% had completed only up to primary school. Schooling after junior high school — with about 40% of them having graduated at that level — was not common thereafter, with fewer than 10% having done so. This was a low educated population, with 93% having not continued past a junior high school education. See **TABLE 6**.

	No school	Some Primary School	Completed Primary School	Some Junior High School	Completed Junior High School	Some High School	Completed High School	Some Under-graduate Studies	Completed Under-graduate Studies	Some Graduate Studies	Completed Graduate Studies	TOTALS
ALL Recipients of Reading Glasses N = 740	47 6.4%	148 20.0%	170 23.0%	12 1.6%	299 40.4%	7 0.9%	45 6.1%	5 0.7%	6 0.8%	0 0.0%	1 0.1%	740 100.0%
ONLY Those Fully Interviewed N¹ = 481	29 6.0%	94 19.5%	116 24.1%	4 0.8%	204 42.4%	6 1.2%	21 4.4%	2 0.4%	4 0.8%	0 0.0%	1 0.2%	481 100.0%

Given their large proportionate share as women and their ages commonly of more than 30 years, survey respondents replied most often — at about 60% frequency — that keeping care of their homes and families best describes how they spend their days. Another 15% work at home or in the family fields, while a little more than 20% are externally employed. Three percent (3%) are at home as retirees (consistent with the data on age) or due to a disability or illness. (See **TABLE 7**)

	Working for a living outside the home and outside the family fields	Working for a living at home or in the family fields	Remaining at home, while taking care of the home and family	Unemployed, not working	Remaining at home, as a retiree or as someone with disabilities or long-term illness	Studying at school or at the university	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 740	168	101	436	6	26	3	740
	22.7%	13.6%	58.9%	0.8%	3.5%	0.4%	100.0%
ONLY Those Fully Interviewed N¹ = 481	102	72	287	3	14	3	481
	21.2%	15.0%	59.7%	0.6%	2.9%	0.6%	100.0%

	ALL Recipients of Reading Glasses N = 740	ONLY Those Fully Interviewed N = 481 ¹
TOTAL RESPONSES	740	481
	100.0%	100.0%
Farming or raising farm animals in order to feed oneself and family & to sell in the market	46	34
	6.2%	7.1%
Farming or raising farm animals in order to feed oneself and family only	31	21
	4.2%	4.4%
Working as a housewife	429	284
	58.0%	59.0%
Doing piece work (embroidery, artisanry) while at home	27	21
	3.6%	4.4%
Working in the household of another family	21	14
	2.8%	2.9%
Working as a cook in a restaurant, school, or community center	4	0
	0.5%	0.0%
Doing manual labor or construction	13	7
	1.8%	1.5%
Doing factory work	3	1
	0.4%	0.2%
Driving a taxi or truck	5	3
	0.7%	0.6%
Teaching at a school	1	1
	0.1%	0.2%
Serving at a health center	0	0
	0.0%	0.0%
Working for a local organization or house of worship	1	1
	0.1%	0.2%
Working in a business office or a government office	34	19
	4.6%	4.0%
Working as a merchant	68	42
	9.2%	8.7%
Working in any other capacity not mentioned here	17	13
	2.3%	2.7%
Remaining at home, as a retiree or as someone with disabilities or long-term illness	40	20
	5.4%	4.2%

The next question probed further into the type of work that the survey respondents do, and their answers, as presented in **TABLE 8**, corroborate what had been reported earlier; “working as a housewife” was cited by 60% of them. Other home-based occupations — selling piece work-made embroidery as well as raising crops or farm animals on the family grounds, whether for family consumption or for the local market — represented approximately 15% of the responses. As for the 20% who had reported being externally employed, they comprise those who pursue a variety of occupations, although about 9% are merchants, 4% work in offices, 3% serve as domestic help, and just under 2% are at construction sites.

As for their individual contributions to the family household income, 33% reported themselves as the primary earner (consistent with the 35% who reported that they work), while slightly less than 60% said they were not (consistent with the 60% who reported that they primarily took care of the home and family). An additional 7% acknowledged receiving financial support from other members of the family. See **TABLE 9**.

	Yes	No	No, I receive financial support from members of my family	I do not know / I am not sure	Blank	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 740	243	425	57	4	11	740
	32.8%	57.4%	7.7%	0.5%	1.5%	100.0%
ONLY Those Fully Interviewed N ¹ = 481	163	279	36	3	0	481
	33.9%	58.0%	7.5%	0.6%	0.0%	100.0%

	# Responses Given	# Non-Responses or "No Pesos" as Response	Blank	TOTALS	Average Weekly Earnings in Pesos
ALL Recipients of Reading Glasses N = 740	400	340	0	740	840
	54.1%	45.9%	0.0%	100.0%	
ONLY Those Fully Interviewed N ¹ = 481	258	223	0	481	853
	53.6%	46.4%	0.0%	100.0%	

When asked about their earnings, just over 50% responded (see **TABLE 10**), reporting an average of approximately 850 pesos,¹¹ about \$45 per week, or \$2,340 annual income. All respondents were asked this question, not just those who had responded previously that they are the primary earner. Among the 157 claiming to be the primary earner and providing information on weekly income (with six declining to do so), the average is 893 pesos (\$47), while for the 81 claiming not to be the primary earner, but still providing weekly income, the average is 791 pesos (\$42).¹²

Still on the topic of weekly income, disaggregation of response into categories defined by 250 Mexican peso amounts is shown in **TABLE 11**. This gives a slightly more nuanced analysis, with 6% earning less than 250 pesos or \$13 per week, 25% earning between 250-500 pesos or \$13-\$27 per week, 50% earning 500 to 1000 pesos or \$27-\$53, and fewer than 25% earning more than 1000 pesos, representing an annual wage of \$2,763.

¹¹ 18.8189 Mexican pesos to US \$1.00 (January 13, 2020) <https://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=MXN>

¹² There were 198 others claiming not to be the primary earner, along with 39 claiming inability to make such a declaration, who provided no income information.

TABLE 11: How Much Money on the Average do You Earn per Week?								
	1-250 PESOS (up to USD\$13.00)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 740	23	109	48	136	36	23	25	400
	5.8%	27.3%	12.0%	34.0%	9.0%	5.8%	6.3%	100.0%
	1-250 PESOS (up to USD\$13)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL RESPONSES
ONLY Those Fully Interviewed N ¹ = 481	15	64	27	92	30	16	14	258
	5.8%	24.8%	10.5%	35.7%	11.6%	6.2%	5.4%	100.0%

Summary of Demographic Data Collected from Surveyed Populations in Mexico

The vast majority (80%) of recipients of reading glasses who completed the survey were women. They are described as having low levels of education; about 25% had completed only primary school, while another 40% had gone no further than graduation from junior high school. Sixty percent (60%) are caregivers of the home and family and 35% work, consistent with 33% who reported that they were the primary earners of their households. Only half responded to the question on income, and some respondents may have answered the question of their weekly earnings with the weekly earnings of their collective household, which averaged in size to about four individuals. For the 157 respondents claiming to be the primary earner, the average weekly income is 893 pesos (\$47), while the 81 not making that claim but still providing earnings information, the average weekly income is \$42; the overall average is 853 pesos (\$45).

Design Logic of the Survey Questions

The first set of survey questions after the demographics section (Questions 15-33) explores whether or not the respondents had known about reading glasses before the day of the health fair and, if so, the length of time that they have since known about them, and the respondents' sources of information. Next, their past experiences with vision testing for reading glasses is explored, followed by prior use of reading glasses, including inquiries on their purchase venue, purchase price, and barriers related to acquiring them. Then another set of questions is posed, within the situational context that reading glasses had *not* been provided to them at this health fair — would they still seek out reading glasses, in which way, and for how much money they would be willing to pay.

In reference to those individuals who answer the demographics questions and who are then randomly selected to proceed with the full survey, they are first asked if they had known about reading glasses before the day of the survey. A negative response obviates the need to continue with this section; instead, respondents are directed to a separate line of questioning embodied in the next section (Questions 34-40), which are exclusive to them and which nearly mirrors those survey questions that had been posed to the others while considering the consequences of what they would do about getting reading glasses if they had *not* been dispensed to them.

The third set of questions after the demographics section, Questions 41-46, is posed to all respondents on their likelihood of replacing reading glasses that may have become lost, broken, or no longer effective in correcting vision for reading and looking at things close at hand. Lastly, Questions 47-49, again asked of all those interviewed, solicits their open-ended responses to:

- the anticipated effect that reading glasses would have on their lives (or experienced effect for those who had been wearing them)
- the public service-like message that they would suggest for promoting the benefits of reading glasses

Data Findings on Knowledge of Reading Glasses within Surveyed Populations in Mexico

	Did not learn about reading glasses before today	Less than one month ago	Between one month and one year ago	Between one year and two years ago	More than two years ago	I do not remember / I do not know	TOTAL RESPONSES
ONLY Those Fully Interviewed N ¹ = 481	57 11.9%	14 2.9%	54 11.2%	88 18.3%	238 49.5%	30 6.2%	481 100.0%

In reference to the 481 individuals who completed the full survey, about 88% of them (424) reported that they had known about reading glasses before the day of the health fair, with about one-half being cognizant of them for more than two years. Twelve percent (12%) had no previous knowledge, while 15% had learned within the past year. (See **TABLE 12**).

	Hospital Health Care Worker	Health Care Center Health Worker	Community-based Health Care Worker	School-teacher	Ophthalmologist / Optician at Private Eyeglass Shop	Worker from Government Agency	Worker from DIF Zacatecas	Worker from NGO, Faith-based Organization	Family Member or Neighbor	Someone Else	Don't Know/Remember	TOTAL RESPONSES
Those Previously Aware of Reading Glasses N ² = 424	7 1.7%	7 1.7%	8 1.9%	6 1.4%	15 3.5%	119 28.1%	90 21.2%	16 3.8%	113 26.7%	17 4.0%	26 6.1%	424 100.0%

Despite the lack of specificity of some “worker from a government agency,” other responses that fall under this same category — DIF Zacatecas, health care workers at either a hospital/health center/community level, schoolteacher — all suggest (56% of responses) that the Mexican Government is the major source of information concerning reading glasses. That is, the private sector, represented by the private eyeglass shop (3.5%), is not a significant information source for respondents in these communities. Among the 17 “someone else” answers, five alluded to mass media approaches, although it is unclear who organized them. It should be noted that word-of-mouth advocacy by family members and friends is an important source of information (27%) (See **TABLE 13**).

	Yes	No
Those Previously Aware of Reading Glasses N ² = 424	230 54.2%	194 45.8%

	Less than one month ago	Between one month and one year ago	Between one year and two years ago	More than two years ago	I do not remember / I do not know	TOTAL RESPONSES
	2 0.9%	43 18.7%	46 20.0%	128 55.7%	11 4.8%	230 100.0%

Almost half of respondents who knew about reading glasses had never had their vision tested previously. The remaining balance (230) reported having had their vision tested previously, and most of these individuals (75%) had had it done at least one year earlier. Sixty percent (60%) of those 230 with prior experience in vision testing (142) had this testing done locally. (See **TABLE 17**)

	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/Church Run Mobile Unit	Another Location	Don't Know/Remember	TOTAL RESPONSES
Those Previously with Vision Tested N ³ = 230	7 3.0%	16 7.0%	3 1.3%	34 14.8%	100 43.5%	6 2.6%	51 22.2%	13 5.7%	230 100.0%

As well as being the leading advocate for vision testing, the Mexican Government is also the leading provider of vision testing services. Among the 51 responses given under “another location,” 22 cited “DIF Zacatecas” and 18 “government.” Accordingly, adding these numbers to those other sites in the public sector used for vision testing — hospital, health care center, school, government-run mobile unit — brings the total to 166 out of the 230 (72%). Interestingly, though, private eyeglass shops had attracted about one in seven respondents to have their eyes tested, and four reported (under “another location”) having it done at their workplace (See **TABLE 16**). Additionally, 28% reported that vision testing is not regularly offered at the location where they had their vision tested (See **TABLE 18**).

	Yes	No	Don't Remember
Those Previously with Vision Tested N ³ = 230	142	87	1
	61.7%	37.8%	0.4%

YES, regularly done there	NO, only infrequently done there	NO, only done one time there	I do not remember / I do not know	TOTAL RESPONSES
146	48	16	20	230
63.5%	20.9%	7.0%	8.7%	100.0%

Summary of Knowledge of Reading Glasses Held by Surveyed Populations in Mexico

Respondents of the surveys were people who attended the health fairs and received the optical services provided that day. The majority of this group, 88%, had heard about reading glasses prior to the day at the health fair, whereas 12% had never heard of reading glasses. The primary source of information about reading glasses was the government and family and friends. Of those who knew about reading glasses, just under half had never had their vision tested. The remaining 54% had their vision tested and 62% had their vision tested locally. Sixty-four percent (64%) reported that there was regular vision testing at the locations where they had their vision tested, while 28% said that vision testing was not commonly done there.

Data Findings on Use of Reading Glasses within Surveyed Populations in Mexico

	YES, I am still using the reading glasses that I have had before today	YES, I was using reading glasses in the past, but I no longer have them	YES, I was using reading glasses in the past, but they no longer help my vision	NO, I have never used reading glasses before today	Blank Response	TOTAL RESPONSES
Those Previously Aware of Reading Glasses N ² = 424	71	61	52	240	0	424
	16.7%	14.4%	12.3%	56.6%	0.0%	100.0%

More than one-half of the respondents (57%) are new wearers, having reported that they had not previously worn reading glasses. The others reported being either current users (17%) or past users (27%); this lattermost group comprise individuals almost evenly split among those who no longer have their reading glasses — for unspecified reasons, such as loss, breakage, or possession by others, such as giving the glasses to one’s spouse — and those whose reading glasses no longer serve them well in correcting their vision impairment. As such, it appears that the outreach work of DIF Zacatecas at these health fairs is addressing the need for reading glasses among community residents as much for those who have never had their vision corrected as for those who had formerly done so.

TABLE 20: If You have Already Used Reading Glasses Before Today, from Where did You Get Them?

	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/ Church Run Mobile Unit	Another Location	Don't Know/ Remember	Blank Response	TOTAL RESPONSES
Those Previously Aware of Reading Glasses N ² = 424	2	9	0	27	66	4	66	9	1	184
	1.1%	4.9%	0.0%	14.7%	35.9%	2.2%	35.9%	4.9%	0.5%	100.0%

TABLE 21: Subset of Above TABLE

	DIF Zacatecas	Some Government Agency	Street Sale or Shop Purchase	Pharmacy	Family	Workplace	Unspecified Other	Unknown Source	Another Location
"Another Location" as Source of Reading Glasses N ⁴ = 66	13	10	20	2	10	4	3	4	66
	19.7%	15.2%	30.3%	3.0%	15.2%	6.1%	4.5%	6.1%	100.0%

The query on the source of one's reading glasses was directed to the 184 individuals — 71+61+52 from the first three columns of **TABLE 19** — who are using or have used reading glasses. The considerable share of their answers (66 in number) that are categorized under "another location," is displayed in **TABLE 21**.

TABLE 22: If You have Already Used Reading Glasses Before Today, from Where did You Get Them? (recompiled)

	Government Health Facility	Govt-Run Mobile Unit	Government Agency	NGO-/Church Run Mobile Unit	Eyeglass Shop, Pharmacy, Marketplace	Workplace	Family	Don't Know/ Remember	Blank or Unclear Response	TOTAL RESPONSES
Those Reporting Sources of Reading Glasses N ⁵ = 184	11	79	10	4	49	4	10	16	1	184
	6.0%	42.9%	5.4%	2.2%	26.6%	2.2%	5.4%	8.7%	0.5%	100.0%

In re-calculating the frequency of responses from **TABLES 20** and **21** under broader categories within this recompiled table, **TABLE 22**, one finds that the Mexican Government represents the most likely source for obtaining reading glasses (54%), although respondents relied much more heavily on government-run, mobile campaigns (DIF Zacatecas) rather than on the municipal government's fixed service sites.

The private sector (inclusive of informal markets) was indicated as the second mostly likely (27%) source. Mobile campaigns run by charitable organizations or churches, the workplace, and family members each represent other means for getting reading glasses, although this had not been done very often by the respondents (5% or less of their responses).

Summary of Use of Reading Glasses by Surveyed Populations in Mexico

Fifty-seven percent (57%) of beneficiaries are new wearers, having never used reading glasses previously; meanwhile 27% had done so, but either no longer had the glasses or the lens diopter was no longer sufficient for correcting their near vision impairment. This means about 84% of individuals served at these health events were leading lives with inadequate use of reading glasses. This data also suggests the importance of the DIF Zacatecas health fairs in providing for the vision care needs of the communities they serve. For those who have had reading glasses previously, 54% relied on the Mexican government for acquiring the reading glasses, with preference for the mobile campaigns, like the DIF Zacatecas health fairs, over fixed government facilities. A smaller portion, 27%, acquired their glasses from the private sector.

Data Findings on Access to Reading Glasses within Surveyed Populations in Mexico

TABLE 23:
Was the Location Where You Got Your Reading Glasses in this Community?

	Yes	No	Don't Remember Blank Response
Those Reporting Sources of Reading Glasses N ⁵ = 184	97 52.7%	77 41.8%	10 5.4%

TABLE 24:
Did You Pay for These Reading Glasses?

YES	NO	I do not remember / I do not know	Blank Response	TOTAL RESPONSES
126 68.5%	53 28.8%	4 2.2%	1 0.5%	184 100.0%

While vision testing had been done locally for about 62% of the respondents who had their vision tested (**TABLE 17**), a bare majority of them purchased their reading glasses locally (**TABLE 23**). This may indicate some instance of supply not having met demand, since it is assumed that there is a general preference for the convenience of getting glasses at the time of vision testing. The study of a population's access to reading glasses is concerned with their affordability as well as their availability in local proximity. From **TABLE 24**, two of three respondents reporting having paid for their reading glasses.

TABLE 25:
How Much did You Pay for These Reading Glasses?

	# Respondents Providing Amount Paid	Average Price Paid in Mexican Pesos	1-250 PESOS (up to USD\$13.00)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL RESPONSES
Those Who Paid for Their Reading Glasses N ⁶ = 126	126	505 \$27 ¹³	49 38.9%	33 26.2%	12 9.5%	18 14.3%	3 2.4%	5 4.0%	6 4.8%	126 100.0%

With reference to **TABLE 25**, all 126 respondents who had purchased reading glasses on their own reported having paid an average of 505 Mexican pesos, or \$27; this is a price that is above the average cost of reading glasses in the US. Recall that in **TABLE 11**, the reported, average weekly earnings of respondents who were fully interviewed was about 850 pesos; as such, the price paid for reading glasses represented 60% of a week's worth of earnings, (or, roughly, 15% of monthly income). Also, as noted earlier, fewer than 25% of the respondents claimed weekly incomes of more than 1000 pesos.

With the reported price paid for reading glasses disaggregated into categories as defined by 250 Mexican peso amounts, there seems to be some variance in what the respondents had spent. While nearly two in three paid no more than 500 pesos, about one in four paid between 500 and 1000 pesos, and one in nine more than 1000 pesos.

TABLE 26:
Were There any Barriers for You to Get These Reading Glasses?

	Yes	No	No, as I never tried to get reading glasses	Blank Response	TOTAL RESPONSES
Those Previously Aware of Reading Glasses N ² = 424	115 27.1%	127 30.0%	181 42.7%	1 0.2%	424 100.0%

The question of possible difficulties in attaining reading glasses was posed to not just those respondents who had gone to purchase them, but to all those who were fully interviewed for this survey and had known about reading glasses before the day of the health fair (424 in number). As noted earlier in **TABLE 19**, though, only 184 among these 424 were current or past users of reading glasses, with the remaining 240 never having used them. Yet, only 181 claimed to *not* have tried to get reading glasses, as shown in **TABLE 26**, while 242 did have an opinion on the past or potential concerns in being able to get them. As such, those 115 respondents articulating barriers to their ability to access reading glasses, as well as the 127 not perceiving any constraints, each comprise to some degree both those who have had (or still have) reading glasses and those who have not. In short, their responses reflect actual and perceived conditions.

¹³ 18.8189 Mexican pesos to US \$1.00 (January 13, 2020) <https://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=MXN>

TABLE 27: What were the Barriers for You to Get These Reading Glasses?

		Difficulties in ...								TOTAL RESPONSES
Those Claiming "YES" there were Barriers	# Respondents	knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	115	6	0	1	4	103	0	1	4	119
		5.0%	0.0%	0.8%	3.4%	86.6%	0.0%	0.8%	3.4%	100.0%
		Difficulties in:								TOTAL RESPONSES
Had NOT Earlier Tried to Get Reading Glasses But Claimed Barriers	# Respondents	knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	50	4	0	1	0	46	0	0	3	54
		7.4%	0.0%	1.9%	0.0%	85.2%	0.0%	0.0%	5.6%	100.0%
		Difficulties in:								TOTAL RESPONSES
Had Earlier Tried to Get Reading Glasses and Claimed Barriers	# Respondents	knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	65	2	0	0	4	57	0	1	1	65
		3.1%	0.0%	0.0%	6.2%	87.7%	0.0%	1.5%	1.5%	100.0%

TABLE 27 was prepared to determine if the frequency in the identification of barriers faced when getting reading glasses would vary depending on the respondents' own experience or not in this endeavor. For both those who had not tried to get reading glasses and those who had, having the money for purchasing them was consistently and hugely the issue. Those with past attempts, unlike their counterparts, did also cite some past problems with funds and means of transport related to their travel to where reading glasses could be bought.

TABLE 28: How did You Overcome These Barriers in Getting Reading Glasses?

Those Claiming "YES" there were Barriers	# Respondents	need of government support	need to have self-initiative	need of support from family	barriers quite hard to surmount	blank or unclear response	TOTAL RESPONSES
	115	23	57	13	20	2	115
		20.0%	49.6%	11.3%	17.4%	1.7%	100.0%
Had NOT Earlier Tried to Get Reading Glasses But Claimed Barriers	# Respondents	need of government support	need to have self-initiative	need of support from family	barriers quite hard to surmount	unclear response	TOTAL RESPONSES
	50	16	13	6	14	1	50
		32.0%	26.0%	12.0%	28.0%	2.0%	100.0%
Had Earlier Tried to Get Reading Glasses and Claimed Barriers	# Respondents	need of government support	need to have self-initiative	need of support from family	barriers quite hard to surmount	unclear response	TOTAL RESPONSES
	65	7	44	7	6	1	65
		10.8%	67.7%	10.8%	9.2%	1.5%	100.0%

As a follow-up, an open-ended question was posed to respondents on how they had or would overcome such barriers. Their replies were grouped into a few categories for **TABLE 28**, with individuals again split among those who had tried or not in getting reading glasses. Interestingly, those who had attempted to do so were likelier (68% versus 26%) to note the need for self-initiative, compared to their counterparts. Conversely, the need for government support was raised more often (32% versus 11%) among those who have not had

the experience of obtaining reading glasses on their own, and seemed more daunted by the task, according to their comments on the expected difficulties (28% versus 9%). Need for support from family members were cited as often (around 11%) by both groups.

Summary of Access to Reading Glasses for Surveyed Populations in Mexico

Access to reading glasses refers to both the availability and affordability. Of the 481 study participants, 88% or 424 beneficiaries had heard of reading glasses prior to the health fair they attended. Of those, 57%, or 184 beneficiaries, had used reading glasses previously. Of those 184 beneficiaries who have used reading glasses previously, 53% had obtained them locally and 69% had purchased them. Among those who had paid, 39% spent 250 pesos, 26% spent between 251-500 pesos, and a smaller group, 24%, spent between 751-1250 pesos, the equivalent to earnings from more than one week of work. Additionally questions about barriers to getting glasses was asked to all 424 beneficiaries who had heard of reading glasses prior to the health fair. Forty-three percent (43%) reported that they never tried to get glasses, although their reasons for not doing so were not explored, while 27% said there have been barriers, and 30% said there were no barriers. For those who reported barriers (115), the vast majority, 87%, said the primary barrier was the money to buy reading glasses. This suggests that, while there is a willingness to pay, there is also a challenge for this population in paying for them. When asked how they would overcome these barriers, those who had never tried to get reading glasses offered various responses — they needed support from the government (32%), the barriers were too hard to surmount (28%) or they needed self-initiative (26%). For those who had tried to get reading glasses previously, they cited primarily the need to have self-initiative (68%), followed by government support and family support, each at 11%. A smaller percent, 9%, stated that the barriers were too hard to surmount.

Data Findings on Self-Directed Efforts for Getting Reading Glasses, as Reported by Surveyed Populations in Mexico

TABLE 29:

If You had Not Received Reading Glasses Today, Would You Have Tried to Get Them from Elsewhere?

Those Previously Aware of Reading Glasses N ² = 424	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
		424	264	159	1
		62.3%	37.5%	0.2%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
	240	152	88	0	240
		63.3%	36.7%	0.0%	100.0%
Had Earlier Tried to Get Reading Glasses	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
	184	112	71	1	184
		60.9%	38.6%	0.5%	100.0%

The questioning is now re-directed to the 424 surveyed individuals who had known about reading glasses before the day of the health fair. They are asked where they would have gone if they had *not* received reading glasses at this health fair. As had been earlier mentioned in the “Design Logic of the Survey Questions” section, a suite of queries was developed to have respondents imagine a hypothetical situation — if DIF Zacatecas had *not* come that day with reading glasses to be dispensed at the health fair.

For both groups, those who had previously tried to get reading glasses and those who had not tried, 40% said they would *not* have tried to get reading glasses on their own, whereas just over 60% of the respondents claimed that they would indeed seek reading glasses on their own.

TABLE 30:
If You had Not Received Reading Glasses Today, Where Would You Have Gone to Get Them?

	# Respondents	Government	DIF Zacatecas	Charity	Optical Shop	Pharmacy	Shop or Market	Workplace	Do Not Know	TOTAL RESPONSES
Those Previously Aware of Reading Glasses N ² = 424	264	47	102	19	53	7	27	1	8	264
		17.8%	38.6%	7.2%	20.1%	2.7%	10.2%	0.4%	3.4%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	152	34	58	14	26	1	14	1	4	152
		22.4%	38.2%	9.2%	17.1%	0.7%	9.2%	0.7%	2.6%	100.0%
Had Earlier Tried to Get Reading Glasses	112	13	44	5	27	6	13	0	4	112
		11.6%	39.3%	4.5%	24.1%	5.4%	11.6%	0.0%	3.6%	100.0%

As a follow-up question, respondents, still categorized into those two groups, were asked where they would go to get reading glasses on their own. Fifty-six percent (56%) indicated they would go to DIF Zacatecas or another government support facility. Seven percent (7%) of the replies were understood to mean charity (“Truthfully, I would look for where it was given for free or cheaply.”). Altogether, the public sector and charitable organizations were cited by 63% of the respondents, while the private sector — as represented by optical shops (20%), a pharmacy (3%), and the marketplace (10%) — was chosen by about 33% of them collectively.

TABLE 31:
If You had Not Received Reading Glasses Today, Would You be Willing to Pay for Them?

	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
Those Previously Aware of Reading Glasses N ² = 424	424	252	169	3	424
		59.4%	39.9%	0.7%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	240	144	95	1	240
		60.0%	39.6%	0.4%	100.0%
Had Earlier Tried to Get Reading Glasses	184	108	74	2	184
		58.7%	40.2%	1.1%	100.0%

Again with the hypothetical scenario of not receiving reading glasses at the health fair, individuals were asked if they would be willing to pay for reading glasses on their own. Their affirmative answers elicited roughly the same 60% response rate as had been found for the previous, related questions that were posed on actual and imagined experience — “Did You [Actually] Pay for These Reading Glasses?” (See **TABLE 24**) and “If You had Not Received Reading Glasses Today, Would You Have Tried to Get Them from Elsewhere?” (See **TABLE 29**).

TABLE 32: What Would be the Most that You Would be Willing to Pay for Reading Glasses?										
	# Respondents Providing Anticipated Money Amount	Average Price Willing to Pay in Mexican Pesos	1-250 PESOS (up to USD\$13.00)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL
ALL	248	458	77	113	16	32	2	4	4	248
	+ 2 blank responses	\$24	31.0%	45.6%	6.5%	12.9%	0.8%	1.6%	1.6%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	141	441	43	70	9	14	1	3	1	141
	+ 1 blank responses	\$23	30.5%	49.6%	6.4%	9.9%	0.7%	2.1%	0.7%	100.0%
Had Earlier Tried to Get Reading Glasses	107	480	34	43	7	18	1	1	3	107
	+ 1 blank responses	\$26	31.8%	40.2%	6.5%	16.8%	0.9%	0.9%	2.8%	100.0%

For those respondents who were asked to imagine what they would have done if reading glasses had *not* been provided at the health fair and who had earlier indicated a willingness to buy them on their own (252 in number, see **TABLE 31** above), the last question posed to them concerned the maximum sum of money that they would pay. Once again, respondents were disaggregated according to their status of having had past experience or not in seeking out reading glasses, and again, there seemed only marginal differences in their response patterns.

As indicated in **TABLE 32**, all 248 respondents reported that they would pay an average of 458 Mexican pesos, or \$24, with those without prior experience (141 in number) said that they would be willing to pay a slightly less amount 441 (\$23), while their 107 counterparts, a marginally higher amount of 480 pesos or \$26.

With prices for reading glasses disaggregated into categories as defined by 250 Mexican peso amounts, there seems to be only a little variance in how much those in each of the two groups would spend. Overall, 77% of all respondents would pay no more than 500 pesos, while 80% of those with no prior experience reporting that they would do so, and 72% of those with past experience. Likewise, on the more expensive scale end of purchasing reading glasses, only 4% of all respondents would consider costs of more than 1000 pesos, with a slightly lower percentage among those with no prior experience, and slightly higher one among those with past experience.

Summary of Self-Directed Efforts for Getting Reading Glasses, as Reported by Surveyed Populations in Mexico

To the question “if you had not received reading glasses today, would you have tried to get them elsewhere, 60% (254) of the 424 beneficiaries who had heard of reading glasses prior to the health fair responded “yes,” whereas 40% responded “no.” Of those who said “yes,” the majority, 63% (160), would have looked to the government, DIF Zacatecas, or a charity to get their glasses. On the other hand, 33% reported that they would have gone to an optical shop, a pharmacy, or the local market.

When asked if they would have paid for reading glasses if the health fair had not come that day, 60% (254) responded in the affirmative; this same percentage rate was the same for beneficiaries whether they had previously tried to get reading glasses or not. Similarity in responses was also found for the highest price one reportedly would be willing to pay, \$26 versus \$23, respectively; the average top price was \$24.

Data Findings on Self-Directed Efforts for Getting Reading Glasses, as Reported by Surveyed Populations in Mexico Who Had Not Been Earlier Aware of Reading Glasses

As was stated in the earlier section of this report, “Design Logic of the Survey Questions,” a separate course of inquiry had been prepared for those respondents who stated that they had *not* known about reading glasses before the day of the survey. Their negative response, by which 57 individuals were differentiated from the total number of 481 who were surveyed in Mexico, generated a “skip” to a different set of questions. These separate questions nearly mirror those that had been posed to their counterparts when asked to consider what they would do about getting reading glasses if they had *not* been dispensed to them at the health fair.

TABLE 33:
If You had Not Used Reading Glasses Today, Would You Have Try to Get Them by Some Other Way if You did Not Receive Them at this Event Today?

ALL	# Subset of Respondents	YES	NO	Blank Response	TOTAL RESPONSES
Those Previously NOT Aware of Reading Glasses N ⁷ = 57	57	13	44	0	57
		22.8%	77.2%	0.0%	100.0%

The screening question near the start of the survey that had been posed to all respondents was phrased: “When did you first learn that your vision could be helped with reading glasses?” The responses are presented in **TABLE 12**. The phrasing of this section’s first question, noted in **TABLE 33** above, had been deliberately phrased to ensure that past users of reading glasses would not be included in this subset of the survey population. From their answers, those with limited exposure to reading glasses showed limited interest (23%) in seeking them out on their own.

TABLE 34:
If You Were to Get Reading Glasses in Some Other Way, from Where Would You Get Them?

Those Previously NOT Aware of Reading Glasses Willing to Get Them N ⁸ = 13	# Subset within Subset of Respondents	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/Church Run Mobile Unit	“Government”	TOTAL RESPONSES
	13	2	1	0	2	6	1	1	13
		15.4%	7.7%	0.0%	15.4%	46.2%	7.7%	7.7%	100.0%

For those 13 who replied affirmatively to the last question, the query about where they would go to seek out reading glasses was next posed, and DIF Zacatecas, the government-run mobile health unit, was noted almost one-half the time by six respondents (46%). Government-run institutions, including those named specifically as “the hospital” or “health clinic,” would bring this subtotal to ten. Private eyeglass shop was cited twice, and a non-government-run mobile health unit once.

TABLE 35:
Would There be any Barriers for You to Get Reading Glasses?

	Yes	No	Blank Response	TOTAL RESPONSES
Those Previously NOT Aware of Reading Glasses N ⁷ = 57	21	36	0	57
	36.8%	63.2%	0.0%	100.0%

This next question is directed to all 57 individuals within this subset of survey respondents, and they were asked if there would be any barriers for them in seeking out reading glasses on their own. While 36 (63%) claimed that they would have little problem, the remaining 21 said that there would be some hindrances, specifics of which are requested from them in the next question.

TABLE 36:
What would be Barriers for You to Get These Reading Glasses?

Those Previously NOT Aware of Reading Glasses Claiming "YES" There Would be Barriers N ⁹ = 21	Difficulties in ...								TOTAL RESPONSES
	knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	1	0	0	2	18	0	0	0	21
	4.8%	0.0%	0.0%	9.5%	85.7%	0.0%	0.0%	0.0%	100.0%

Remarkably similar response patterns are found in answers provided by this subset of the respondents, in **TABLE 36**, to those provided by their larger-numbered counterparts in **TABLE 27**. By far, the greatest problem lies in having the money to buy reading glasses, cited in frequency by 86% and 87%, respectively, of these two groups — subset and larger-numbered counterparts. Likewise, for both groups, lack of financial means for traveling to venues to get reading glasses (10%, 3%) as well as lack of knowledge about source locations for reading glasses (5%, 5%) were the second- and third-most noted hindrances.

TABLE 37:
How Could You Overcome These Barriers in Getting Reading Glasses?

Those within Subset of Respondents claiming "YES" there would be barriers	need of government support	need to have self-initiative	need of "charity"	barriers quite hard to surmount	blank or unclear response	TOTAL RESPONSES
21	3	9	2	5	2	21
	14.3%	42.9%	9.5%	23.8%	9.5%	100.0%

In continuing this admittedly broad cross match of responses to comparable questions that had been given by this subset of respondents and their larger-numbered counterparts, there was broad consensus (43%, 50%) for the need of self-reliance and self-initiative in overcoming the aforementioned barriers when seeking reading glasses on one's own. Also suggestive of positive outcomes, the requirement of government assistance when getting reading glasses garnered mention second most oftentimes 14%, 20%; the charity of others, including family members followed next in frequency of responses (10%, 11%). However, there was also a shared, negative view that barriers were rather insurmountable, 24% and 17%.

TABLE 38:
What Would be the Most that You Would be Willing to Pay for Reading Glasses?

Those Previously NOT Aware of Reading Glasses N ⁷ = 57 ALL	# Subset of Respondents	Average Price Willing to Pay in Mexican Pesos	1-250 PESOS (up to USD\$13.00)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL
			51	273	31	16	0	3	0	0
+ 6 blank responses	\$15	60.8%	31.4%	0.0%	05.9%	0.0%	0.0%	2.0%	100.0%	

Serving as the last question on this section, and continuing with the cross match of given responses, respondents from the two groups were asked how much they would be willing to pay at most for reading glasses. Their documented responses in **TABLE 38** and **TABLE 32** suggest that those in the subset, with claimed little prior knowledge about reading glasses, have expectations of cost that are perhaps somewhat unrealistic. The average of their projected, purchase price was 273 Mexican pesos (\$15), about 40% less than the average price calculated for those referred herein as their counterparts, 458 (\$24). Even within this latter group, there was a subset who claimed to not have had past experience in getting reading glasses (although they knew about them); the average price they said that they would be willing to pay was 441 pesos (\$23).

Even the distribution of responses across categories that are defined by 250 pesos ranges between this subset of 57¹⁴ respondents with no previous knowledge of reading glasses to their 252 counterparts¹⁵ reflects a difference of understanding in the market prices for reading glasses. About 60% proposed that they would pay no more than 250 pesos, compared with 32% with their counterparts; more

¹⁴ 51 in number for analysis of this question, due to 6 non-answers

¹⁵ 250 in number, down from 252 due to 2 non-answers

than 90% proposed a ceiling price at 500 pesos, compared with 77%. Interestingly, the weekly earnings averaged from one-third of the 57 respondents willing to confide in this personal information was at a higher level (1005 pesos) versus their counterparts (841 pesos), of whom more than one-half of the 424 provided this information.

Summary of Self-Directed Efforts for Getting Reading Glasses, as Reported by Surveyed Populations in Mexico Who Had Not Been Earlier Aware About Reading Glasses

Seventy-seven percent (77%) of the 57 respondents who were not aware of reading glasses prior to the health fair said they would not have tried to acquire them, if the health fair had not been organized. Among the remaining 23%, who said they would have tried, slightly about one-half of them (46%) stated that they would have waited for a government-run mobile unit to come, while 15% would have gone either to a hospital or an optical shop. Among all 57 respondents who were asked if there were barriers for them in obtaining reading glasses, 37% reported that there were, while 63% reported the contrary. For those who did claim difficulties with barriers, the vast majority identified them as money-related, either to buy the glasses (86%) and having the funds to travel to make this purchase (10%). Five percent (5%) reported they would not know from where to get the glasses. Sixty-two percent (61%) of the 57 stated that they would pay up 250 pesos(\$13) and another 31% said they would pay between 251-500 pesos \$27) for reading glasses; recall that weekly earnings are about 850 pesos.

Data Findings on Self-Directed Efforts for Replacing Reading Glasses by Those in Surveyed Populations in Mexico

The next section of the survey comprises six questions and was designed to learn from all 481 respondents their likelihood in replacing reading glasses that may have become lost, broken, or no longer effective in correcting their near vision impairment. It is believed that levels of perceived benefits and value of reading glasses can be appraised when respondents are asked to imagine their future course of action within the hypothetical situation that they need to replace their reading glasses. Additionally, as will be soon evident, the line of questioning corresponds to that used in the two previous sections; this allows for data corroboration through the review of consistency in the responses that have been given.

TABLE 39:
If You Lose or Break Your Reading Glasses or If They were No Longer Strong Enough to Help with Your Vision, Would You Try to Get Them Replaced?

ONLY Those Fully Interviewed N ¹ = 481	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
		481	356	118	7
		74.0%	24.5%	1.5%	100.0%
Had NOT Earlier Known About Reading Glasses	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
	57	18	38	1	57
		31.6%	66.7%	1.8%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
	240	195	42	3	240
		81.3%	17.5%	1.3%	100.0%
Had Earlier Tried to Get and Had Worn Reading Glasses	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
	184	143	38	3	184
		77.7%	20.7%	1.6%	100.0%

This set of questions is posed to all 481 who were randomly selected for this survey, and all these respondents were disaggregated according to parameters of knowledge and use related to reading glasses:

- those who had not earlier known about reading glasses (57 in number)
- those who had known about reading glasses but had not tried to get them for themselves (240)

- those who had indeed tried to get reading glasses and are either still wearing them or have discontinued doing so for a number of reasons (lost, broken, no longer in possession, or no longer effective for correction of near vision (184)

In the aggregate, three of four would try to replace their reading glasses, and this was roughly true for each of the groups where the respondents had earlier known about reading glasses — those who had tried and those had not tried in getting reading glasses. On the other hand, among those without prior knowledge of reading glasses, one in three answered in this way. Over two-thirds of this group indicated that they would not have tried to replace their glasses.

TABLE 40: From Where Would You Get Replacement Reading Glasses?

	# Respon-dents	Municipal Govt.	DIF Zacatecas	Hospital	Clinic	Optical Shop	Pharmacy/Optical Shop	Shop, Flea Market	Workplace	Govt. Mobile Unit	NGO Mobile Unit	Family	Blank/Unclear Response	TOTAL RESPONSES
ONLY Those Fully Interviewed N¹ = 481	481	21	38	3	11	56	8	14	1	192	9	1	131	485
		4.3%	7.8%	0.6%	2.3%	11.5%	1.6%	2.9%	0.2%	39.6%	1.9%	0.2%	27.0%	100.0%
Had NOT Earlier Known About Reading Glasses	57	0	2	2	0	4	0	0	0	9	1	0	39	57
		0.0%	3.5%	3.5%	0.0%	7.0%	0.0%	0.0%	0.0%	15.8%	1.8%	0.0%	68.4%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	240	11	26	1	6	30	3	7	1	104	5	1	47	242
		4.5%	10.7%	0.4%	2.5%	12.4%	1.2%	2.9%	0.4%	43.0%	2.1%	0.4%	19.4%	100.0%
Had Earlier Tried to Get and Had Worn Reading Glasses	184	10	10	0	5	22	5	7	0	79	3	0	45	186
		5.4%	5.4%	0.0%	2.7%	11.8%	2.7%	3.8%	0.0%	42.5%	1.6%	0.0%	24.2%	100.0%

As found in **TABLE 40**, among respondents representing the smallest cohort — who had not earlier known about reading glasses — two of three claimed that they were not familiar with where to go to get reading glasses replaced, while the remaining one in three identified a government-run mobile health unit as the most likely source (16%), followed by an optical shop (7%), DIF Zacatecas and hospital, (4% each). On the other hand, for those with prior knowledge of reading glasses and differentiated only by whether they had previously tried to obtain reading glasses or not, there was a similarity in the pattern of their selection of locales to get reading glasses. For both, a government-run mobile health unit was the prominent choice (at just above 40%), followed by optical shop (12%) and municipal government (5%). DIF Zacatecas was mentioned twice as often (11%) by those who had not earlier tried to get reading glasses than their counterparts who had (5%). Between 20%-25% from each group provided blank or unclear answers to this question.

When reclassified as public versus private sector sources of reading glasses, government-based sites, noted in the table's shaded columns, were cited more than 50% of the time — its health care facilities (hospital, clinic) and community outreach work (mobile health unit, DIF Zacatecas), along with the services of the municipal government. Interestingly, those without prior knowledge of reading glasses named government sources for reading glasses at only 23% of the time. Meanwhile, the private sector, represented by the response choices in the four, unshaded columns in the middle of the table received less than 20% of the selections by each of the three groups of respondents, faring more poorly in comparison of frequency to blank or unclear answers. In short, there appears to be need for greater awareness in these communities of where to go to get reading glasses.

ONLY Those Fully Interviewed N ¹ = 481	# Respondents	YES	NO	I do not know / I am not sure	Blank Response	TOTAL RESPONSES
		481	245	99	12	125
		50.9%	20.6%	2.5%	26.0%	100.0%
Had NOT Earlier Known About Reading Glasses	# Respondents	YES	NO	I do not know / I am not sure	Blank Response	TOTAL RESPONSES
	57	11	5	2	39	57
		19.3%	8.8%	3.5%	68.4%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	# Respondents	YES	NO	I do not know / I am not sure	Blank Response	TOTAL RESPONSES
	240	137	54	4	45	240
		57.1%	22.5%	1.7%	18.8%	100.0%
Had Earlier Tried to Get and Had Worn Reading Glasses	# Respondents	YES	NO	I do not know / I am not sure	Blank Response	TOTAL RESPONSES
	184	97	40	6	41	184
		52.7%	21.7%	3.3%	22.3%	100.0%

With regard to the question presented in **TABLE 41** — would the location for seeking reading glasses replacement be in the local community — affirmative replies outpaced negative ones by more than a two-to-one margin, about 50% versus 20% for all respondents except those without prior knowledge of reading glasses, who answered in this way less frequently, 20% and 9%. Blank responses, as found in **TABLE 40**, were offered by about one-fourth of the respondents, again suggesting the need for more public education on locations where reading glasses can be found.

ONLY Those Fully Interviewed N ¹ = 481	# Respondents	Difficulties in ...								TOTAL RESPONSES
		knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	blank responses or no barriers	
	481	20	5	0	30	284	5	7	138	489
		4.1%	1.0%	0.0%	6.1%	58.1%	1.0%	1.4%	28.2%	100.0%
Had NOT Earlier Known About Reading Glasses	57	3	0	0	2	13	0	0	40	58
		5.2%	0.0%	0.0%	3.4%	22.4%	0.0%	0.0%	69.0%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	240	13	2	0	11	164	3	3	50	246
		5.3%	0.8%	0.0%	4.5%	66.7%	1.2%	1.2%	20.3%	100.0%
Had Earlier Tried to Get and Had Worn Reading Glasses	184	4	3	0	17	107	2	4	48	185
		2.2%	1.6%	0.0%	9.2%	57.8%	1.1%	2.2%	25.9%	100.0%

With regard to barriers one would face in replacing reading glasses — for whatever reason, such as breakage, loss, or loss of effectiveness in correcting near vision impairment — insufficient money to purchase reading glasses (whether new, as documented in **TABLE 27** and **36**, or replacement ones, as in **TABLE 42** above) most commonly poses the greatest challenge, as reported by the respondents; this was the case among those in each of the three disaggregated groups presented above.

As has been noted earlier and exhibited in **TABLE 42**, those who had not earlier known about reading glasses have a different response pattern to the survey questions, and are more likely to leave questions unanswered. Also, interestingly, financial constraints were less often cited by them (22% versus the 58% of those who had obtained reading glasses and 67% of those who had not tried to do so.) In a related way, money for transportation to where one could get replacement reading glasses was the second-most, although not commonly, cited barrier by all three groups, ranging from 3% (of those who had not earlier known about reading glasses) to 9% (of those who had

obtained reading glasses). Lack of knowledge of locations for purchasing replacement reading glasses was also a barrier selected by all three groups, in rate of frequency, although relatively low, of about 2% to 5%.

	# Respondents	Average Price Willing to Pay in Pesos	1-250 PESOS	251-500 PESOS	501-750 PESOS	751-1000 PESOS	1001-1250 PESOS	1251-1500 PESOS	1551 or MORE PESOS	TOTAL
			(up to USD\$13.00)	(up to USD\$27)	(up to USD\$40)	(up to USD\$53)	(up to USD\$66)	(up to USD\$80)	(more than USD\$80)	
ONLY Those Fully Interviewed N ¹ = 481	356	417	126	155	20	44	2	5	4	356
	+ 125 blank responses	\$22	35.4%	43.5%	5.6%	12.4%	0.6%	1.4%	1.1%	100.0%
Had NOT Earlier Known About Reading Glasses	18	450	7	7	0	3	0	0	1	18
	+ 39 blank responses	\$24	38.9%	38.9%	0.0%	16.7%	0.0%	0.0%	5.6%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	195	406	70	88	11	21	1	3	1	195
	+ 45 blank responses	\$22	35.9%	45.1%	5.6%	10.8%	0.5%	1.5%	0.5%	100.0%
Had Earlier Tried to Get, Had Worn Reading Glasses	143	429	49	60	9	20	1	2	2	143
	+ 41 blank responses	\$23	34.3%	42.0%	6.3%	14.0%	0.7%	1.4%	1.4%	100.0%

In **TABLE 42**, there seems to a greater concurrence among the different groups on the average maximum price one would be willing to pay (roughly within range of 420 pesos, or \$22) for reading glasses — in this case, for a replacement of one’s reading glasses — than had been earlier indicated by respondents, as documented in **TABLES 32** and **38**. Upon reviewing all three tables, the average maximum price seems to be around the 425-475 peso. Indeed, across all the tables, at least 76% of respondents in each of their respective groups specified that they would pay no more than 500 pesos (\$27). Additionally, between 16% and 20% of them would be willing to pay for reading glasses in the 500-1000 pesos range (\$40-\$53).

ALL	# Respondents	Difficulties with			No Need or No Desire	Can Get Reading Glasses through Charity	Would Try to Get Replacement Reading Glasses	Blank or Unclear Responses	TOTAL RESPONSES
		Knowing Where to Go to Get Reading Glasses	Finding the Money to Buy Reading Glasses	My Physical Limitations that Makes Travel Difficult for Going to Get Reading Glasses					
ONLY Those Fully Interviewed N ¹ = 481	481	8	362	6	18	13	58	23	488
		1.6%	74.2%	1.2%	3.7%	2.7%	11.9%	4.7%	100.0%
Had NOT Earlier Known About Reading Glasses	57	0	53	0	0	0	3	1	57
		0.0%	93.0%	0.0%	0.0%	0.0%	5.3%	1.8%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	240	6	180	1	14	5	28	9	243
		2.5%	74.1%	0.4%	5.8%	2.1%	11.5%	3.7%	100.0%
Had Earlier Tried to Get and Had Worn Reading Glasses	184	2	129	5	4	8	27	13	188
		1.1%	68.6%	2.7%	2.1%	4.3%	14.4%	6.9%	100.0%

For the last question in this section, respondents were asked why they would *not* try to get replacement glasses. As to be expected, for all groups, as indicated in **TABLE 44**, financial constraints posed the prominent reason for about three of four respondents. Somewhat in contradiction, those who had not earlier known about reading glasses almost unanimously cited this reason, even though they had not noted money as a significant barrier for them in **TABLE 42**, concerning their appraisal of cost barriers in the purchase of replacement reading glasses and travel expenses related to this.

More than 10% of each of those who had earlier tried to get reading glasses and those who had not tried stated that they would commit themselves to seeking out replacement glasses, at more than double the frequency of those who had not earlier known about reading glasses. On the other hand, those who not earlier tried to get reading glasses expressed more often (6%) than either of the other two groups their lack of interest or desire in getting them. Meanwhile, those who had earlier tried to get reading glasses admitted most often as a group (4%) of their reliance on charitable organizations for replacement reading glasses.

Summary of *Self-Directed Efforts* for Replacing Reading Glasses by Those in Surveyed Populations in Mexico

This section inquired about what a beneficiary would do if they needed to replace their reading glasses, e.g., due to loss, breakage or ineffective diopter strength. Only thirty-two percent (32%) of beneficiaries who had not known about reading glasses prior to the health fair responded they would try to get their glasses replaced. In contrast, about 80% of beneficiaries who had previously known about reading glasses said they would try to get them replaced. This suggests that beneficiaries who have used reading glasses previously know of the benefits of reading glasses and will be more likely to seek ways to replace them if they were to become broken, lost, or ineffective. Additionally, 54% of all the beneficiaries stated that they would go to government sources to get a replacement pair of reading glasses, with a greater preference for mobile clinics, including the health fairs. The data highlights the need for greater awareness of where to get reading glasses. Next, beneficiaries reported that the biggest barrier to getting a replacement pair of reading glasses was money — money to buy the glasses (58%) and to travel to make the purchase (6%). When asked how much they would be willing to pay for a pair of replacement glasses, 35% said less than 250 pesos (\$13), and 44% said between 250-500 pesos (\$13-\$27). Lastly, financial constraints are the biggest reason why beneficiaries would not try to get a replacement pair of glasses; 69-93% of the subgroups listed “finding the money to buy the glasses” as the primary constraint.

Data Findings on Impact of Reading Glasses within Surveyed Populations in Mexico

This last, and shortest, section of the survey invited all 481 respondents to offer their observations on two matters, after permission was asked of them to continue with questioning, of which 97% agreed:

- How your life could be changed by now having reading glasses?
- How would you talk to other people in your community about the benefits of reading glasses?

Since this was an open-ended question, multiple responses were possible, allowing for 788 to be collected, as displayed in three categories in **TABLE 45**. The first category, titled, “Improved Sight for: ..” compiled answers related to better eyesight in general as well as to everyday activities conducted in the home and outside the home. About 75% of the responses are grouped in this category, with improved seeing and improved abilities to read printed text were the two most commonly cited, at about 20% each. Given that women comprise 80% of the respondents, the relative importance of sewing, knitting, and doing embroidery was not unexpected, and it figured relatively highly, at 12%. Meanwhile, greater capacity at place of employment due to near vision improvement was noted 7% of the time.

Under the category of “Other Benefits,” an improved sense of overall wellbeing was among more than 10% of all responses and greater sense of independence garnered 5% of them. Lastly, 7% of the responses referenced the foreseen reduction in eyestrain and in headaches due to poor vision when reading glasses are required but not available or worn.

TABLE 45: How Could Your Life Be Changed by Now Having Reading Glasses?

Activity	Number of Responses	Percentage of Responses	Percentage of Responses by Category
	788	100.0%	100.0%
Improved Sight for:	579	73.5%	
general vision	172	21.8%	73.5%
general reading	149	18.9%	
writing and signing	17	2.2%	
reading Bible and church song lyrics	11	1.4%	
reading prices while shopping	2	0.3%	
reading labels on medicines	5	0.6%	
sewing, knitting, doing embroidery	91	11.5%	
helping their children with homework	29	3.7%	
cooking	25	3.2%	
doing housework	23	2.9%	
driving	4	0.5%	
conducting work or business	51	6.5%	
Other Benefits:	182	23.1%	
reduced eyestrain and fewer headaches provoked by poor vision	57	7.2%	23.1%
overall improved sense of wellbeing	83	10.5%	
greater sense of independence	39	4.9%	
free reading glasses received	3	0.4%	
Other:	27	3.4%	
no response	18	2.3%	3.4%
unclear response	9	1.1%	

470 remarks were given in response to the last question, "How would you talk to other people in your community about the benefits of reading glasses?" They range broadly in topic and quality of comprehensibility, perhaps due to the fatigue of respondents at this end of this survey or the quality of transcriptions by the survey enumerators themselves, likewise wearied. Nonetheless, a selection is provided in the Annex.

It will be noted here that a considerable proportion of these 'public outreach' messages do advocate others to seek out vision testing for the free glasses that will be dispensed. Others give hearty support for the work of DIF Zacatecas, which was repeatedly cited as a notable provider for vision testing and reading glasses by the respondents throughout the survey.

TABLE 46: Public Education Messages on Reading Glasses Offered by Recipients of Reading Glasses in Mexico

1	[Reading glasses] would be [a] great help to be able to embroidery, read
2	According to my experience that I can no longer do some things, I would tell you how I will do what I like again thanks to the lenses
3	Because [if vision] ... is [not] checked, if they do not see well, other health problems can cause them
4	Buy [reading glasses], if it is needed, so as not to damage your eyesight anymore
5	Do not battle[.] [It is] ... a good help to see everything
6	Don't let your view be forced
7	For the benefit that would [come, as] ... it would help to improve the quality of life, see, read, sew.
8	For they are great help
9	Health and performance
10	I would say that they are very useful for everything and for work.
11	I would talk to you how I could not see well and now how I feel better using reading glasses
12	I would tell them to seek some government support or try to get for their glasses because if they change their lives for the better
13	I would tell you my experience that I can now read and help my children with their homework
14	It is a great support to see
15	It is very practical to be able to bring reading glasses because they help you for everything
16	It would be an opportunity to improve my life
17	It would be the best thing that I would advise you because there are many benefits
18	It would be the best thing to do -- get your glasses
19	It's worth trying to get your glasses
20	Make the effort to acquire reading glasses and be able to work better both in your home and in the countryside
21	Make the effort to get them because they provide them a lot
22	See well people
23	Take advantage of the opportunity there is today because it is very nice to be able to see well and do what you like more
24	There is enough benefit in seeing better
25	They [reading glasses] serve a lot, help you live better and be healthier
26	They are a lot of help to be able to perform our daily activities
27	They are good because they see better and their head does not hurt and their eyes no longer strain
28	They are really great help to be able to perform my activities again
29	They are very good because there are things that can no longer be done without reading glasses
30	They are very necessary and that even they do not have money try to buy them because they take up a lot.
31	They are very necessary to be able to perform our daily activities
32	They did me the favor of giving me the glasses so that I could look at the little letters better, thread a needle, I would tell them that they gave them to me and I am very grateful that I will be able to see.
33	We should have to go more often to test [our eyes] because it is important to take care of the eyesight
34	What a very big benefit since [they] would improve everyday life
35	What are a lot of help [it is] to see better
36	What is a great benefit to be able to continue doing independent things
37	What is benefit [it is] to be able to do [y]our daily activities
38	You [will] feel more like [yourself] because you would see well again
39	You can read without making an effort
40	You must be careful with your eyes because they are a very important organ

Summary on the Impact of Reading Glasses in Mexico

An open-ended question was asked of beneficiaries about the impact of reading glasses on their lives. There was a diverse range of responses, with the most common being better vision (ability to see well) and being able to read, followed by being able to sew and do embroidery (likely to be important for this population of women), improved sense of wellbeing, and reduction of headaches related to eye strain. The beneficiaries also provided a number of suggestions for public service education, including the promotion of reading glasses as a means for improving your life, enabling you to perform your daily activities, and enabling you to be independent.

Survey in Mexico: Community Leaders within Surveyed Populations in Mexico

Introduction

Between mid-September and mid-October 2019, the survey on knowledge and use of reading glasses conducted in collaboration with DIF Zacatecas in Mexico recruited as respondents both recipients of reading glasses who attended these four, weekly health fairs as well as local leaders from those visited communities. In organizing and carrying out these activities, DIF Zacatecas ensured that residents were informed to come the event, held on a Friday, in order to have their vision tested and to receive at no charge reading glasses for correction of near vision impairment. In addition, DIF Zacatecas played a critical role for the survey in advising local community leaders that the survey would be conducted not just with recipients of reading glasses but also with a number (12-15) of them.

A separate survey instrument of 22 questions, shorter in length than would be used with the recipients, had been prepared to serve as a parallel survey aimed at these local leaders. It was designed to serve as a means for corroborating responses from the recipients of reading glasses in order to gain a more robust understanding of general levels of knowledge and use of reading glasses in these communities.

While both surveys began with a demographic section of the survey, the one designed for community leaders comprised seven questions, rather than 13. The remaining 15 questions of the community leaders survey, constituting the second, and concluding section, delves into levels of availability (geographic accessibility and affordability) of reading glasses within their communities — as understood by these individuals. They are also asked about their perception of the general knowledge levels and behavioral tendencies of their fellow residents specific to reading glasses. As with the other survey, the last question is directed to soliciting how to best phrase a public statement for promoting the benefits of reading glasses.

The objective was to administer a total of 50 surveys in Mexico with local leaders; as such, 15 were administered at each of the four health fair sites. It should be noted, however, that responses from one local dignitary at the second health fair site were found to be incomplete after the fifth question; accordingly, analysis of this partial data record was not undertaken for this report. See summary table below.

Dates of Survey Work	Survey Sites in Zacatecas State, MEXICO	Population ¹⁶	Reading Glasses		
			Dispensed	Recipients	Surveys Completed Community Leaders
Sept. 20, 2019@	Valparaiso	32,606	218	117	15
Sept. 27, 2019	Trancoso	19,413	178	117	14
Oct. 04, 2019	Calera	45,204	136	118	15
Oct. 11, 2019	Morelos	12,354	208	129	15
@ Consultant present in the field			740	481	59

To be clear, DIF Zacatecas played the lone and, obviously, critical role in identifying community leaders, although it was asked to invite a roster of dignitaries who would be broadly representative of their constituents and who serve in a variety of functional capacities, that is, those in and out of governmental and administrative roles.

¹⁶ Population figures for municipalities within Zacatecas State are for 2015. Zacatecas State's overall 2015 population was listed at 1,579,209. https://en.wikipedia.org/wiki/Municipalities_of_Zacatecas

Demographic Information of Community Leaders from Surveyed Populations in Mexico

TABLE 2: How Old are You?								
	< 21 Years of Age	21 - 30 Years of Age	31 - 40 Years of Age	41 - 50 Years of Age	51 - 60 Years of Age	61 - 70 Years of Age	> 70 Years of Age	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	0	13	13	18	8	4	3	59
	0.0%	22.0%	22.0%	30.5%	13.6%	6.8%	5.1%	100.0%

The range of ages among the community leaders spans across six age cohort groups, all but one defined by ten-year periods. Those 40 years of age or younger represent 44% of all the community leaders, with the largest cohort (31%) having ages between 41-50 years.

TABLE 3: What is your Gender?				
	Female	Male	Other	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	41	18	0	59
	69.5%	30.5%	0.0%	100.0%

TABLE 4: Age Cross-Tabulated with Gender								
	< 21 Years of Age	21 - 30 Years of Age	31 - 40 Years of Age	41 - 50 Years of Age	51 - 60 Years of Age	61 - 70 Years of Age	> 70 Years of Age	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	0	13	13	18	8	4	3	59
	0.0%	22.0%	22.0%	30.5%	13.6%	6.8%	5.1%	100.0%
FEMALE COMMUNITY LEADERS	0	8	11	11	7	2	2	41
	0.0%	19.5%	26.8%	26.8%	17.1%	4.9%	4.9%	100.0%
MALE COMMUNITY LEADERS	0	5	2	7	1	2	1	18
	0.0%	27.8%	11.1%	38.9%	5.6%	11.1%	5.6%	100.0%

The community leaders surveyed were 70% female and 30% male. Among those serving as survey respondents under the title of community leader, women tended to be younger in age. Almost one-half (46%) are under the age of 40 years, compared to 40% of men. Likewise, 10% of women are over the age of 60, whereas 17% of the men are.

TABLE 5: What is the Highest Level of Education that You have Completed?

	No school	Some Primary School	Completed Primary School	Some Junior High School	Completed Junior High School	Some High School	Completed High School	Some Under-graduate Studies	Completed Under-graduate Studies	Some Graduate Studies	Completed Graduate Studies	TOTALS
ALL 59 COMMUNITY LEADERS INTERVIEWED	6	2	2	0	13	4	11	2	14	0	5	59
	10.2%	3.4%	3.4%	0.0%	22.0%	6.8%	18.6%	3.4%	23.7%	0.0%	8.5%	100.0%
FEMALE COMMUNITY LEADERS	3	1	1	0	11	4	7	1	10	0	3	41
	7.3%	2.4%	2.4%	0.0%	26.8%	9.8%	17.1%	2.4%	24.4%	0.0%	7.3%	100.0%
MALE COMMUNITY LEADERS	3	1	1	0	2	0	4	1	4	0	2	18
	16.7%	5.6%	5.6%	0.0%	11.1%	0.0%	22.2%	5.6%	22.2%	0.0%	11.1%	100.0%

While women who serve as community leaders may have likelier have had some schooling (93% versus 83%), men in this role are likelier to have attained a higher level of education, with 61% of the men having at least graduated from high school, compared to 51% of the women.

TABLE 6: Which of the Following Activities Best Describes How You Usually Spend your Days?

	Working for a living outside the home and outside the family fields	Working for a living at home or in the family fields	Remaining at home, while taking care of the home and family	Remaining at home, as a retiree or as someone with disabilities or long-term illness	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	47	6	6	0	59
	79.7%	10.2%	10.2%	0.0%	100.0%
FEMALE COMMUNITY LEADERS	32	3	6	0	41
	78.0%	7.3%	14.6%	0.0%	100.0%
MALE COMMUNITY LEADERS	15	3	0	0	18
	83.3%	16.7%	0.0%	0.0%	100.0%

TABLE 7: What Type of Work Do You Usually Do?

	Farming or raising farm animals in order to feed oneself and family only	Farming or raising farm animals in order to feed oneself and family & to sell in the market	Work-as a house-wife	Working as a cook in a restaurant, school, or community center	Teaching at a school	Serving at a health center	Working for a local organization or house of worship	Working in a business office or a government office	Working as a merchant	Blank	TOTALS
ALL 59 COMMUNITY LEADERS INTERVIEWED	1	5	6	1	1	2	2	34	6	1	59
	1.7%	8.5%	10.2%	1.7%	1.7%	3.4%	3.4%	57.6%	10.2%	1.7%	100.0%
FEMALE COMMUNITY LEADERS	1	0	6	1	1	0	1	26	5	0	41
	2.4%	0.0%	14.6%	2.4%	2.4%	0.0%	2.4%	63.4%	12.2%	0.0%	100.0%
MALE COMMUNITY LEADERS	0	5	0	0	0	2	1	8	1	1	18
	0.0%	27.8%	0.0%	0.0%	0.0%	11.1%	5.6%	44.4%	5.6%	5.6%	100.0%

With reference to **TABLE 6**, about 80% of both female and male community leaders are engaged in a livelihood outside their home and family fields, with a greater percentage of the remaining members of the male cohort working from home (17%) or on their farms, compared to those within the female cohort (7%). Given the traditional notions of gender roles concerning care of family and household, 15% of the women fulfill this work responsibility, with no males doing so.

Responses to the follow-up question provided more specifics as to line of employment, as documented in **TABLE 7**. There were some apparent inconsistencies found between the two sets of answers — with the men’s occupation in family farming, for example — although a clear majority of both female and male community leaders (81% and 67%, respectively) hold professional positions, identified in the shaded columns. For the purposes of this survey, community leaders who had been recruited to respond to the questions that follow in the upcoming section were expected to be familiar with local conditions concerning availability and affordability of reading glasses. Accordingly, those who work away from their homes, such as these community leaders at white-collar jobs and, one could add, those working as merchants, who represent another 10% of their numbers, are well likely to have this knowledge base.

TABLE 8: How Would You Describe your Community?				
	Rural	Small Town	Urban	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	15	44	0	59
	25.4%	74.6%	0.0%	100.0%

The community leaders uniformly reported the description of their respective communities as small towns, except for the 15 representing Calera, the third survey site, all of whom said that they lived in a rural setting. Unlike a few recipients of reading glasses, no community leader described their home setting as urban.

TABLE 9: How Many Years Have You Lived or Worked in this Community?				
	Less than One Year	Between One and Five Years	More than Five Years	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	3	6	50	59
	5.1%	10.2%	84.7%	100.0%
FEMALE COMMUNITY LEADERS	2	4	35	41
	4.9%	9.8%	85.4%	100.0%
MALE COMMUNITY LEADERS	1	2	15	18
	5.6%	11.1%	83.3%	100.0%

As presented in **TABLE 9**, about 85% of the community leaders, female and male, claimed to have lived or worked in their respective communities for at least five years, while only 5% said less than one year. This further helps to substantiate them to be credible sources of information for this survey.

TABLE 10: Do You Know Where in This Community One Can Purchase Reading Glasses?				
	YES	NO	There are NO Places in This Community	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	22	29	8	59
	37.3%	49.2%	13.6%	100.0%

37% of the community leaders stated that they were knowledgeable of local sites where reading glasses could be purchased, and another 14% said there were no such local sites. The remaining one-half of them claimed no knowledge of where in this community one could purchase reading glasses.

Availability and Access of Reading Glasses in the Community, as Perceived by the Community Leaders from Surveyed Populations in Mexico

<i>Multiple Responses Allowed for this Question</i>	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/Church Run Mobile Unit	Mobile Vendor	Another Location	Don't Know/Remember	TOTAL RESPONSES
22 COMMUNITY LEADERS WHO REPORTED KNOWING WHERE READING GLASSES COULD BE PURCHASED LOCALLY	0	2	0	17	3	2	0	0	0	24
	0.0%	8.3%	0.0%	70.8%	12.5%	8.3%	0.0%	0.0%	0.0%	100.0%

Allowed to provide multiple responses to the follow-up question, the 22 community leaders who had stated that they knew where reading glasses could be purchased locally specified four venues, with private eyeglass shop accounting for 71% of the answers, while the health clinic had 8%. Mobile units run by the government or by a charitable or faith-based organization were cited as the remaining 21% of the replies, even though reading glasses are dispensed free of charge through these channels.

	YES	NO	Blank Response	TOTAL RESPONSES
ALL COMMUNITY LEADERS	19	32	8	59
	32.2%	54.2%	13.6%	100.0%

	# Respondents Providing Amount Paid	Average Price Paid in Mexican Pesos	1-250 PESOS (up to USD\$13.00)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL RESPONSES
19 COMMUNITY LEADERS WHO REPORTED KNOWING LOCAL PRICE OF READING GLASSES	19	789	4	3	5	4	1	0	2	19
		\$42 ¹⁷	21.1%	15.8%	26.3%	21.1%	5.3%	0.0%	10.5%	100.0%

	# Respondents Providing Amount Paid	Average Price Paid in Mexican Pesos	1-250 PESOS (up to USD\$13.00)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	52	580	14	15	7	12	2	0	2	52
		\$31	26.9%	28.8%	13.5%	23.1%	3.8%	0.0%	3.8%	100.0%

The average local selling price of reading glasses was asked of all 59 community leaders, although only 19 reported (32%) that they were knowledgeable of this, as indicated in **TABLE 12**, and the average of their responses was 789 Mexican pesos (\$42), presented in **TABLE 13**. Seven among their responses (37%) were under 500 pesos, and nine (47%) between 501-1000 pesos; accordingly, the remaining three (16%) quoted prices were pegged at a higher level, skewing an overall average cost of purchasing reading glasses.

¹⁷ 18.8189 Mexican pesos to US \$1.00 (January 13, 2020) <https://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=MXN>

When all the community leaders were queried on what they thought would be the highest amount that local residents would be willing to pay for reading glasses, 52 provided a response, which was averaged at 580 pesos (\$31), as found in **TABLE 14**. Among their responses, 29 (56%) were under 500 pesos, and 19 (37%) between 501-1000 pesos, while the remaining four responses (8%) were at a higher level.

In recalling the sets of responses to related questions provided by different subsets among the recipients of reading glasses, sales prices — whether actual amounts they reported having been paid or the maximum amounts they would be willing to pay — were closer to the 400-500 peso range (**TABLES 24, 31, 37, 42**).

There is a possibility that some of the community leaders (as well as recipients) may have conflated reading glasses with prescription glasses when answering questions related to pricing. The Spanish translation for reading glasses, “*lentes para vista cansada*” (lenses for eyestrain) was used consistently throughout the survey proceedings, and a fuller explanation of this term was repeated at the start of each section of questions within the survey:

“Como aclaración, los lentes para vista cansada son el tipo de anteojos que le pueden ayudar cuando no puede ver de cerca para trabajar con cosas en sus manos, ver cosas pequeñas, o leer.”

“As a clarification, reading glasses are the type of glasses that can help you when you cannot see clearly when working with things in your hands, or looking at small things, or when reading.”

TABLE 15: Do You Know if Reading Glasses are Sold in Other Areas Outside This Community Where Most Members of this Community can Travel to Without Great Difficulty?				
	YES	NO	Blank Response	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	49	10	0	59
	83.1%	16.9%	0.0%	100.0%

TABLE 16: How Many Places are There in These Other Areas Outside This Community Where Reading Glasses are Sold?						
	One or Two Places	Between Three and Five Places	Six or More Places	I do not know / I am not sure	Blank Response	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	9	7	13	20	0	49
	18.4%	14.3%	26.5%	40.8%	0.0%	100.0%

From the responses to the next question, as shown in **TABLE 15**, 49 (83%) community leaders reported that there are other areas beyond their respective communities that are accessible and that offer locations where reading glasses are sold. When asked to quantify the number of such sites in these other, outside areas, 20 (41%) were unable to do so, but 9 (18%) claimed that there one or two such places, 7 (14%) noted that there three to five places, and 13 (27%) spoke of six or more.

TABLE 17: Do You Know the Average Selling Price of Reading Glasses in These Other Areas Outside This Community?				
	YES	NO	Blank Response	TOTAL RESPONSES
ALL 59 COMMUNITY LEADERS INTERVIEWED	28	21	10	59
	47.5%	35.6%	16.9%	100.0%

	# Respondents Providing Amount Paid	Average Price Paid in Mexican Pesos	1-250 PESOS (up to USD\$13.00)	251-500 PESOS (up to USD\$27)	501-750 PESOS (up to USD\$40)	751-1000 PESOS (up to USD\$53)	1001-1250 PESOS (up to USD\$66)	1251-1500 PESOS (up to USD\$80)	1551 or MORE PESOS (more than USD\$80)	TOTAL RESPONSES
28 COMMUNITY LEADERS WHO REPORTED KNOWING NON-LOCAL PRICE OF READING GLASSES	26	1059	4	3	2	6	4	3	4	26
		\$57	15.4%	11.5%	7.7%	23.1%	15.4%	11.5%	15.4%	100.0%

When next asked if they knew of the average sales price for reading glasses in these other areas beyond their respective communities, 28 (48%) claimed that they did, as shown in **TABLE 17**. However, only 26 community leaders provided an amount in response to the next question on estimated sales price, which averaged to 1,059 pesos (\$57), as found in **TABLE 18**. Among their responses, 7 (27%) were under 500 pesos (\$27), and 8 (31%) between 501-1000 pesos (27\$-\$53), while the remaining 11 responses (42%) were at a higher level.

With reference to what the community leaders had earlier reported on what they thought was the local price for reading glasses (789 pesos averaged from 19 responses, **TABLE 13**) and the maximum price that their fellow residents would be willing to pay for them (580 pesos averaged from 52 responses, **TABLE 14**), the disparity in the responses concerning the purchase price of reading glasses at local and outlying areas within Zacatecas State is rather puzzling — unless there truly is a cost differential. Then again, as alluded to earlier, there may have been some confusion among the respondents between reading glasses and prescription glasses.

ALL 59 COMMUNITY LEADERS INTERVIEWED	# Respondents	Difficulties in ...								Multiple Responses Allowed for this Question 80 Responses
		knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	59	16	1	0	7	45	3	4	4	80
		20.0%	1.3%	0.0%	8.8%	56.3%	3.8%	5.0%	5.0%	100.0%

TABLE 19 presents the listing of one of more barriers that community leaders suggested were significant hindrances for their fellow residents in trying to get reading glasses. As likewise reported by the recipients of reading glasses themselves (**TABLE 26, 35, 41**), insufficient money for purchasing them was consistently noted as the greatest drawback.

Additionally, community leaders believed that there is some lack of knowledge within the general public of locations for buying reading glasses; however, they noted this (20% of their responses) more often than the recipients had themselves (around 5%). Other considerations offered by the community leaders that were believed to be impediments — such as lack of funds, time, and means of transport related to traveling to purchase reading glasses — roughly coincide with those raised by the recipients, with respect to response frequency rates, all of which were below 10% levels.

ALL 59 COMMUNITY LEADERS INTERVIEWED	# Respondents	need of better government health services outreach	need of better geographical and financial access to reading glasses	need of better paying jobs so reading glasses are more affordable	need to have self-initiative	do not know	TOTAL RESPONSES
	59	30	14	5	9	2	60
		50.0%	23.3%	8.3%	15.0%	3.3%	100.0%

As a follow-up, open-ended question, respondents were posed how they thought that their fellow residents could overcome such barriers. Their replies were grouped into a few categories for **TABLE 20**; the need for government support through health outreach services was raised more often (50%) than other approaches, followed by the need for better access to reading glasses (23%, related to both physical access and affordability).

It is noteworthy that community leaders (15% of the responses) concurred with recipients (**TABLE 27** and **36**) of the need for individuals to take the self-initiative in seeking out reading glasses. Recipients had articulated that they could be better at saving up for reading glasses or purchasing them at locations, like flea markets, that offer reduced prices or payment by installments. Interestingly, community leaders introduced the topic (8% of the responses) that reading glasses would be more affordable if there were better paying jobs.

TABLE 21: Thinking about Those Living in This Community, How Many of Them Do You Think are Knowledgeable about Reading Glasses?								
		Proportion of Community Members Who are Knowledgeable about Reading Glasses						
ALL 59 COMMUNITY LEADERS INTERVIEWED	# Respondents	Very Few	Some	About One-Half	Many	Nearly All	I Do Not Know / I Cannot Say	TOTAL RESPONSES
	59	17	13	5	4	17	3	59
		28.8%	22.0%	8.5%	6.8%	28.8%	5.1%	100.0%

Community leaders had a split difference of opinion concerning their perception of the level of knowledge held by their fellow residents of reading glasses. One-half believed that “very few” or “some” were knowledgeable, and over one-third believed that “many” or “nearly all” were knowledgeable.

TABLE 22: Again Thinking about Those Living in This Community, How Many of Them Do You Think Would Rather Wait for the Possibility that Reading Glasses May be Given Away for Free — Rather than Pay for Them?								
		Proportion of Community Members Who Would Rather Wait for Free Reading Glasses						
ALL 59 COMMUNITY LEADERS INTERVIEWED	# Respondents	Very Few	Some	About One-Half	Many	Nearly All	I Do Not Know / I Cannot Say	TOTAL RESPONSES
	59	2	4	6	9	38	0	59
		3.4%	6.8%	10.2%	15.3%	64.4%	0.0%	100.0%

Concerning the likelihood that community members would rather wait for reading glasses to be given to them for free rather than seeking them out on their own, community leaders were mostly in agreement (80%) that “many” or “nearly all” would do so, with abstainers (“very few” or “some”) representing about 10% of the responses given in appraising their fellow residents’ intentions. See **TABLE 22**. The survey did not ask community leaders to explain their selection, although it can be surmised from the data that both limited access to affordable reading glasses and financial constraints in purchasing them are factors that could influence such a “wait-it-out” behavior.

TABLE 23: How Much Time do You Think Others in This Community Would be Willing to Wait for Reading Glasses to be Given Away for Free — Rather Than that They Pay for Them on Their Own?									
		Time Period that Community Members Would Rather Wait for Free Reading Glasses							
ALL 59 COMMUNITY LEADERS INTERVIEWED	# Respondents	Less than One Month	Between One and Three Months	Between Four and Six Months	More than Six Months but Less than One Year	Between One and Two Years	More than Two Years	I Do Not Know / I Cannot Say	TOTAL RESPONSES
	59	21	18	5	5	1	3	6	59
		35.6%	30.5%	8.5%	8.5%	1.7%	5.1%	10.2%	100.0%

Community leaders also shared similar opinions on the length of time that they believed their fellow residents would spend waiting for the chance to obtain reading glasses at no cost to them — as at the health fairs organized by DIF Zacatecas. Seventy-five percent (75%) projected that individuals in their communities would wait as long as six months with the prospect that they could receive free reading glasses, and 15% would be patient enough to wait for them even after that time frame — beyond two years (5%), for example. This could suggest a number of interpretations:

- the levels of poverty among some in these communities are so pronounced that they could make no earnest attempt in getting reading glasses on their own

- limited geographic access to reading glasses is tremendously difficult to contend with
- there are limited choices of reading glasses (regarding diopter strength or eyeglass frame aesthetics)
- there is limited knowledge among those in the communities that reduced near vision, to which one becomes susceptible with advancing age, can be simply remedied by reading glasses after a quick vision test that can be easily administered anywhere
- individual behaviors or overall cultural practices manifest themselves whereby some are willing to forgo resolution of a health-related problem while awaiting the potential benefits of charity, despite the compromised state of health and unsure, interim wait

As the last question of the survey to be directed to the 59 community leaders, they were asked the following:

“What would be an effective message to inform those in your community that reading glasses can help with one’s vision when working with things in one’s hands or when looking at things that are close up or when reading?”

All of them provided a response and their remarks ranged broadly in topic and quality of relevancy to the specific question raised. Nonetheless, a compilation of their responses under broad categories can be summarized hereinbelow, with excerpted selections.

It will be noted here that a considerable proportion of the responses (52%, with reference to the unshaded columns in **TABLE 24** below) do refer to the need and value of ‘public outreach,’ whether through eye health promotional campaigns or by advocacy through exchanges with individuals about the benefits of reading glasses. Within this set of responses are a few that suggested that public outreach could be better supported by the existing network of health agents and government officials (5%).

As for ideas about the type of messages for promoting reading glasses to the public — the first four shaded columns — the most commonly cited one (18%) related to urging local community members to attend these, not-so-often-run health campaigns, such as the one by DIF Zacatecas, and take advantage of getting free glasses. Others framed their message on the benefits of reading glasses, whether for maintaining one’s eye health (11%) or for improving one’s ability with near vision demands and daily tasks (19%).

TABLE 24: What Would be an Effective Message to Inform Those in Your Community that Reading Glasses Can Help with One’s Vision When Working with Things in One’s Hands or When Looking at Things that are Close Up or When Reading?

ALL 59 COMMUNITY LEADERS INTERVIEWED	# Respondents	Reading Glasses Improve Abilities to Do Daily Tasks, Improves Quality of Life	Reading Glasses Serves to Maintain Health of Your Eyes	Reading Glasses are a “Big Help”	People Should Take Advantage of Free Services to Test Vision and be Given Reading Glasses	Promote Eye Health through Public Campaigns	Promote Eye Health and Reading Glasses through One-on-One Dialogue and Demonstrations	Use Local Resources to Promote Eye Health and Reading Glasses	Multiple Responses Allowed for this Question 62 Responses
	59	4	7	8	11	14	15	3	62
		6.5%	11.3%	12.9%	17.7%	22.6%	24.2%	4.8%	100.0%

Public Education Messages Offered by Community Leaders in Mexico

TABLE 25: What Would be an Effective Message to Inform Those in Your Community that Reading Glasses Can Help with One's Vision When Working with Things in One's Hands or When Looking at Things that are Close Up or When Reading?	
1	... the benefits of using the lenses to read and perform manual activities that would improve your daily life.
2	Conduct awareness talks about eye care and [how to] avoid[ing] complications if they are not attended to in time.
3	I would tell them that it would help them improve their quality of life.
4	That lenses can change your life
5	That are a great help.
6	They are a benefit [for] see[ing] and do not be disappointed because they do work.
7	There are many benefits because [reading glasses] change ... lives and looks good, [whether] they are given away or bought.
8	They are very useful and that they [have] served me.
9	I would tell you that they are very useful for your tired eyesight and are good for reading.
10	They are something necessary, so they don't hurt your eyesight.
11	Have your exams done and try [reading glasses] out to help you and ... don't force your eyesight.
12	Let them go for their glasses because it is a great opportunity and it is not a shame to wear them.
13	I would highly recommend them.
14	Tell them and explain to them that they are good ... [in helping to] see better and are a great benefit ...
15	[Conduct] talks in workplaces and schools, as there are times when children also require glasses.

Survey in Nigeria: Recipients of Reading Glasses in Nigeria

Introduction

Implementation of the survey in Nigeria was conducted with a different project partner than in Mexico and under different circumstances. The project partner for this endeavor was the David Omenukor Foundation (DOF), a US-based, non-profit organization from Dallas, Texas, which had scheduled a multiple-week visit to Imo State, Nigeria in December 2019, during which it would conduct its annual health screening and delivery of health services on site at several rural communities. The health interventions that it has been offering range from diabetes and rectal-colon cancer screening to eye health; doctors, nurses, lab technicians as well as optometrists and opticians are all recruited; unlike the health outreach work done by DIF Zacatecas in Zacatecas State, Mexico, vision testing provided by the DOF was done by eye health professionals with trial lens travel kits, and both prescription glasses and reading glasses dispensed.

As such, the timing and itinerary of the work travel schedule that had been established by DOF for 2019 dictated when and where the survey could be done as a parallel activity in Nigeria. Accordingly, the survey was undertaken at four survey sites during the second half of December, and DOF coordinated logistics and maintained communications concerning its mobile health campaign with the leaders of the visited communities, who alerted their fellow residents in advance of the various health services that would be coming to them.

To all those who had registered to be vision tested on the day of the mobile health campaign and who were about to receive reading glasses, the demographic section of the survey, comprising 13 questions, was first administered. Unlike sampling protocols followed in Mexico, random selection of individuals to complete the entire survey — another 36 questions — was abandoned after the first site in Nigeria, since internet accessibility, essential for administering the survey, proved to be quite unreliable at the other, rural locations. Consequently, nearly every person who had been vision tested in Nigeria was asked to submit to the full set of questions, since recurring problems with securing a stable hotspot was found to result in partial or complete loss of some of the survey data.

As such, the survey was successfully administered to 472 individuals across the four survey sites in Nigeria, but demographic information was collected in full on only 452 of them; as for information collected from the other sections of the survey, there was numerous instances of significant data loss as well, resulting in the discarding of what had been obtained from 77 respondents (16% reduction in usable data records from the overall 472). Some incomplete data was also among the remaining 395 respondents, but this was found to be minor.

Surveys, as in Mexico, were likewise conducted with community leaders in Nigeria. Again, there was some information that was lost through breaks with internet access; among the 79 local dignitaries from whom information was collected in Nigeria, demographic information was found to be complete for 70 of them, and the full survey was complete for only 64 (19% loss), although on target with the goal of surveying 50 community leaders overall.

As a clarifying note, the number of reading glasses dispensed at any site for this research, whether in Mexico or in Nigeria, would necessarily be greater than the number of full interviews completed, given the minimum need of only 100 per site; recipients of reading glasses were randomly selected for the survey in Mexico, while those in Nigeria whose interview data records were subsequently found to be complete were chosen. Given the larger attendance at the community events held in Nigeria, the ratio in the number of reading glasses dispensed to recipient surveys completed at any site was more than four to one; in Mexico, it was less than two to one.

TABLE 1 below provides subtotals of the surveys conducted at each of the four sites during the mobile health campaigns led by DOF:

TABLE 1: Summary of Results from Surveys Conducted in Nigeria					
Dates of Survey Work	Survey Sites in Imo State, NIGERIA	Population ¹⁸	Reading Glasses Dispensed	Surveys Completed	
				Recipients	Community Leaders
Dec. 18, 2019@	Lude, Ahiazu Mbaise LGA#	235,200 (LGA)	402	109	12
Dec. 19, 2019@	Okwu, Aboh Mbaise LGA	268,200 (LGA)	395	84	3
Dec. 21, 2019@	Ugirike, Ikedura LGA	206,200 (LGA)	415	96	24
Dec. 27, 2019	Awo-Amama, Oru East LGA	153,900 (LGA)	501	106	25
@ Consultant present in the field	# LGA = Local Government Area (Imo State District)		1,713	395	64

¹⁸ March 21, 2016 projections based on March 2006 census figures. Source: National Population Commission of Nigeria (web), National Bureau of Statistics (web). <https://www.citypopulation.de/php/nigeria-admin.php?adm1id=NGA017>

Demographic Information of Recipients of Reading Glasses in Nigeria

	Rural	Small Town	Urban	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 452	445	5	2	452
	98.5%	1.1%	0.4%	100.0%
	Rural	Small Town	Urban	TOTAL RESPONSES
ONLY Those Fully Interviewed N¹ = 395	389	5	1	395
	98.5%	1.3%	0.3%	100.0%

YES	NO	TOTAL RESPONSES
412	40	452
91.2%	8.8%	100.0%
YES	NO	TOTAL RESPONSES
360	35	395
91.1%	8.9%	100.0%

More than 90% of the respondents claimed to customarily reside in the community where the mobile health campaign was being held, and nearly all of them described the site as being in a rural setting. These answers were given in the same proportionate way, whether by all those from whom demographic information was collected after vision testing or by those with whom the full survey was completed.

	< 21 Years of Age	21 - 30 Years of Age	31 - 40 Years of Age	41 - 50 Years of Age	51 - 60 Years of Age	61 - 70 Years of Age	> 70 Years of Age	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 452	2	7	40	123	120	102	58	452
	0.7%	1.5%	8.8%	27.2%	26.5%	22.6%	12.8%	100.0%
	< 21 Years of Age	21 - 30 Years of Age	31 - 40 Years of Age	41 - 50 Years of Age	51 - 60 Years of Age	61 - 70 Years of Age	> 70 Years of Age	TOTAL RESPONSES
ONLY Those Fully Interviewed N¹ = 395	0	6	36	104	106	93	50	395
	0.0%	1.5%	9.1%	26.3%	26.8%	23.5%	12.7%	100.0%

With reference to **TABLE 4**, the use of reading glasses to correct near vision impairment is more commonly needed as one gets older, especially for those beyond 40 years. As such, the age distribution of those who were vision tested by DOF reflects this, with nearly 90% minimally at this age, and nearly all being over the age of 30 years, as expected. Also, there was little difference in the proportionalities of age cohorts among all those whose demographic information had been collected and among those who had completed the full survey.

	Female	Male	Other	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 452	311	141	0	452
	68.8%	31.2%	0.0%	100.0%
	Female	Male	Other	TOTAL RESPONSES
ONLY Those Fully Interviewed N¹ = 395	267	128	0	395
	67.6%	32.4%	0.0%	100.0%

	Ave. Number
ALL Recipients of Reading Glasses	6.52
	Ave. Number
ONLY Those Fully Interviewed	6.51

Women comprised two-thirds of all respondents and of those with completed surveys. Some of this gender imbalance may be due to the absence of actively employed men, since 65% of all respondents are younger than sixty years of age and some male community residents could have been working away from their home village. Note that the three of the four mobile health campaigns were held on weekdays. Additionally, as discussed previously, generally higher rates of presbyopia are reported for women.

The average number of individuals “usually” residing in the household of the respondents was reported to be between six and seven individuals, and this same average was calculated for all those with demographic information collected and those with complete survey data collected.

	No school	Some Primary School	Completed Primary School	Some Junior High School	Completed Junior High School	Some High School	Completed High School	Some Under-graduate Studies	Completed Under-graduate Studies	Some Graduate Studies	Completed Graduate Studies	TOTALS
ALL Recipients of Reading Glasses N = 452	14	50	106	23	31	37	100	24	47	8	12	452
	3.1%	11.1%	23.5%	5.1%	6.9%	8.2%	22.1%	5.3%	10.4%	1.8%	2.7%	100.0%
	No school	Some Primary School	Completed Primary School	Some Junior High School	Completed Junior High School	Some High School	Completed High School	Some Under-graduate Studies	Completed Under-graduate Studies	Some Graduate Studies	Completed Graduate Studies	TOTALS
ONLY Those Fully Interviewed N¹ = 395	12	45	87	23	28	33	82	22	44	7	12	395
	3.0%	11.4%	22.0%	5.8%	7.1%	8.4%	20.8%	5.6%	11.1%	1.8%	3.0%	100.0%

The respondents were asked to report on their highest level of education attained, and the response pattern for both groups indicated, as per **TABLE 7**, that nearly all had attended some classes, with only 3% having no schooling. About 36% had some or completed schooling at the primary level, 13% at the junior high level, 29% at the high school level, and 22% at the college level. Compared to the Mexico survey population, this is a more educated, although mixed, population.

	Working for a living outside the home and outside the family fields	Working for a living at home or in the family fields	Remaining at home, while taking care of the home and family	Unemployed, not working	Remaining at home, as a retiree or as someone with disabilities or long-term illness	Studying at school or at the university	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 452	270	93	19	20	46	4	452
	59.7%	20.6%	4.2%	4.4%	10.2%	0.9%	100.0%
	Working for a living outside the home and outside the family fields	Working for a living at home or in the family fields	Remaining at home, while taking care of the home and family	Unemployed, not working	Remaining at home, as a retiree or as someone with disabilities or long-term illness	Studying at school or at the university	TOTAL RESPONSES
ONLY Those Fully Interviewed N¹ = 395	239	80	14	16	43	3	395
	60.5%	20.3%	3.5%	4.1%	10.9%	0.8%	100.0%

Again, with reference to **TABLE 8**, not much difference is revealed between the two groups of respondents in how they had described their usual daily activities. Eighty percent (80%) described themselves as working, 11% remaining at home as a retiree or someone with an illness or disability, 4% as unemployed, 4% as taking care of the home and family, and 1% as students. About three in five are employed outside their residence, about one in five works while at home or on their farms.

TABLE 9: What Type of Work Do You Usually Do?	ALL Recipients of Reading Glasses N = 452	ONLY Those Fully Interviewed N¹ = 395
TOTAL RESPONSES	452	395
	<i>100.0%</i>	<i>100.0%</i>
Farming or raising farm animals in order to feed oneself and family & to sell in the market	69	59
	<i>15.3%</i>	<i>14.9%</i>
Farming or raising farm animals in order to feed oneself and family only	42	40
	<i>9.3%</i>	<i>10.1%</i>
Working as a housewife	22	18
	<i>4.9%</i>	<i>4.6%</i>
Doing piece work (embroidery, artisanry) while at home	26	22
	<i>5.8%</i>	<i>5.6%</i>
Working in the household of another family	1	1
	<i>0.2%</i>	<i>0.3%</i>
Working as a cook in a restaurant, school, or community center	15	14
	<i>3.3%</i>	<i>3.5%</i>
Doing manual labor or construction	35	28
	<i>7.7%</i>	<i>7.1%</i>
Doing factory work	4	3
	<i>0.9%</i>	<i>0.8%</i>
Driving a taxi or truck	3	3
	<i>0.7%</i>	<i>0.8%</i>
Teaching at a school	31	28
	<i>6.9%</i>	<i>7.1%</i>
Serving at a health center	10	10
	<i>2.2%</i>	<i>2.5%</i>
Working for a local organization or house of worship	2	2
	<i>0.4%</i>	<i>0.5%</i>
Working in a business office or a government office	27	25
	<i>6.0%</i>	<i>6.3%</i>
Working as a merchant	71	60
	<i>15.7%</i>	<i>15.2%</i>
Working in any other capacity not mentioned here	24	20
	<i>5.3%</i>	<i>5.1%</i>
Remaining at home, as a retiree or as someone with disabilities or long-term illness	70	62
	<i>15.5%</i>	<i>15.7%</i>

The next question probed further into the type of work that the survey respondents do, and their answers were found to not always corroborate what they had reported earlier (15-30% appeared to be contradictory). Nonetheless, agriculture and farm animal raising were said to be a livelihood for about one in four (25%) and selling (“working as a merchant”) about one in six (15%). Manual labor, construction, teaching at school was each mentioned by one in fourteen (7%). Less frequently cited occupations were selling handicrafts (6%), working in an office (6%), housekeeping (5%), and “other” (5%). As a response to this question, 16% said that they had been out of the work

force, remaining at home due to retirement, disabilities, or chronic illness. This is a higher percentage than that reported in the prior question, perhaps explaining the slight discrepancy of information provided by beneficiaries for these two questions

	Yes	No	No, I receive financial support from members of my family	I do not know / I am not sure	Blank	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 452	237	143	71	1	0	452
	52.4%	31.6%	15.7%	0.2%	0.0%	100.0%
ONLY Those Fully Interviewed N ¹ = 395	213	123	59	0	0	395
	53.9%	31.1%	14.9%	0.0%	0.0%	100.0%

As for their individual contributions to the family household income, as presented in **TABLE 10**, a little more than 50% reported themselves as the primary earner, while slightly more than 30% said they were not; an additional 15% acknowledged receiving financial support from other members of the family.

When asked about their weekly earnings, more than 80% of the respondents were willing to divulge this personal information; the average was calculated to be between 6,200-6,300 Nigerian naira,¹⁹ about \$17 weekly, or \$862 annual income. See **TABLE 11**. These income-related figures may not seem credible, although at least one study conducted in Imo State suggest some plausibility.²⁰ Levels of household income, presented as quartiles — “poor,” “moderate,” “fairly rich,” and “rich”— that were calculated from data collected by the Government of Nigeria also suggest a rather high (46%) poverty rate in Imo State.²¹ The CIA World Factbook reports that the gross domestic product for Nigeria in 2017 was \$5,900,²² which translates to \$113 a week. Finally, as an anecdote, members of the survey team, all comprised of local Nigerians, claimed that 10,000 naira a week is a commonly-used standard for differentiating those above and below the poverty line.

	# Responses Given	# Non-Responses, Erroneous or “No Naira” Response	Blank	TOTALS	Average Weekly Earnings in Naira
ALL Recipients of Reading Glasses N = 452	367	85	0	452	6,162
	81.2%	18.8%	0.0%	100.0%	
ONLY Those Fully Interviewed N ¹ = 395	322	73	0	395	6,314
	81.5%	18.5%	0.0%	100.0%	

Still on the topic of weekly income, disaggregation of response into categories defined by 2,000 Nigerian naira amounts, found in **TABLE 12**, gives a slightly more nuanced analysis, with about 35% of the respondents reporting earning less than 2,000 naira a week (\$6), while slightly more than 50% earning up to 4,000 naira (\$11), 71% earning up to 6,100 naira (\$17), and, with reference to the ‘informal’ poverty standard of 10,000 naira (\$28), about 87% of the respondents claimed to have an income less than that amount.

¹⁹ 361.739 Nigerian naira to US \$1.00 (January 18, 2020); 1000 Nigerian naira = \$2.76 <https://www.xe.com/currencyconverter/convert/?Amount=1%2C000&From=NGN&To=USD>

²⁰ J.O. Amao, K. Ayantoye, and G.E. Fanifosi, “Analysis of Poverty Status and Income Distribution Among Farming Households in Imo State, Nigeria,” *Journal of Economic and Sustainable Development* 8, No. 20 (2017): 190-200. <https://pdfs.semanticscholar.org/acc3/12f2b4beae72108151b906e632fe0fed431.pdf>

²¹ Government of Nigeria, “Nigeria Data Portal” (December 8, 2014) <https://nigeria.opendataforafrica.org/iyngqrf/socioeconomic-statistics?states=1000170-imo>

²² The Central Intelligence Agency, “The World Factbook” (December 26, 2019) <https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html>

	1-2000 Naira (up to USD\$6)	2001-4000 Naira (up to USD\$11)	4001-6000 Naira (up to USD\$17)	6001-8000 Naira (up to USD\$22)	8001-10,000 Naira (up to USD\$28)	10,001-12,000 Naira (up to USD\$33)	12,001 or More Naira (more than USD\$33)	TOTAL RESPONSES
ALL Recipients of Reading Glasses N = 452	133 36.0%	59 16.0%	72 19.5%	15 4.1%	44 11.9%	4 1.1%	42 11.4%	369 100.0%
ONLY Those Fully Interviewed N¹ = 395	114 35.4%	53 16.5%	62 19.3%	15 4.7%	37 11.5%	4 1.2%	37 11.5%	322 100.0%

Summary of Demographic Data Collected from Surveyed Populations in Nigeria

Over 68% of those receiving reading glasses as well as those who completed the survey were women. There is an average of six to seven family members reported living in the household, higher than the average of four persons in Mexico. Nearly all beneficiaries had some education, with only 3% having no schooling. The highest level of education attained was rather mixed among the respondents; 36% had schooling only through the primary grades, while 13% continued as far as junior high school, and 29% as far as high school. Yet, another 22% proceeded to college studies or higher. The vast majority, 80%, work for a living as farmers, merchants, manual laborers, teachers and other such occupations. Eleven percent (11%) remain at home due to retirement, disability or illness, 4% are unemployed, 4% primarily take care of the house and family, and 1% are students. Over 80% responded to the question on income (higher than expected), with the average weekly earnings being about 6,200 naira (\$17). It is not known how many among the six or seven members of the household are income providers. Additionally, an informal poverty line was stated by the enumerators as a weekly income at 10,000 naira (\$28), by which measure 87% of the respondents would be categorized as poor.

Design Logic of the Survey Questions (as provided in the Mexico section of the report)

The first set of survey questions after the demographics section (Questions 15-33) explores whether or not the respondents had known about reading glasses before the day of the mobile health campaign and, if so, the length of time that they have since known about them, and the respondents' sources of information. Next, their past experiences with vision testing for reading glasses is explored, followed by prior use of reading glasses, including inquiries on their purchase venue, purchase price, and barriers related to acquiring them. Then another set of questions is posed, within the situational context that reading glasses had *not* been provided to them at this event — would they still seek out reading glasses, in which way, and for how much money they would be willing to pay.

In reference to those individuals who answer the demographics questions and who are then randomly selected to proceed with the full survey, they are first asked if they had known about reading glasses before the day of the survey. A negative response obviates the need to continue with this section; instead, respondents are directed to a separate line of questioning embodied in the next section (Questions 34-40), which are exclusive to them and which nearly mirrors those survey questions that had been posed to the others while considering the consequences of what they would do about getting reading glasses if they had *not* been dispensed to them.

The third set of questions after the demographics section, Questions 41-46, is posed to all respondents on their likelihood of replacing reading glasses that may have become lost, broken, or no longer effective in correcting vision for reading and looking at things close at hand. Lastly, Questions 47-49, again asked of all those interviewed, solicits their open-ended responses to:

- the anticipated effect that reading glasses would have on their lives (or experienced effect for those who had been wearing them)
- the public service-like message that they would suggest for promoting the benefits of reading glasses

Data Findings on Knowledge of Reading Glasses within Surveyed Populations in Nigeria

TABLE 13:
When did You First Learn that Your Vision Could be Helped with Reading Glasses?

	Did not learn about reading glasses before today	Less than one month ago	Between one month and one year ago	Between one year and two years ago	More than two years ago	I do not remember / I do not know	TOTAL RESPONSES
Respondents Fully Interviewed N ¹ = 395	32	4	24	45	271	19	395
	8.1%	1.0%	6.1%	11.4%	68.6%	4.8%	100.0%

While 452 individuals had answered the demographics questions at all four mobile health campaigns run by DOF in Imo State, Nigeria, losses of survey data caused by irregular internet access reduced the number of completed surveys to 395. Of these 395 respondents, about 92% (363) reported that they had known about reading glasses before the day of the mobile health campaign, with about two-thirds of them being cognizant of them for more than two years. About 19% had gained such knowledge only within the last year, while 8% reported that they had not at all known about reading glasses prior to the health event.

TABLE 14: Who Told You about Reading Glasses?

	Hospital Health Care Worker	Health Care Center Health Worker	Community-based Health Care Worker	School-teacher	Ophthalmologist / Optician at Private Eyeglass Shop	Worker from Government Agency	Worker from NGO, Faith-based Organization	Family Member or Neighbor	Someone Else	Don't Know/Remember	TOTAL RESPONSES
Those Fully Interviewed Who were Previously Aware of Reading Glasses N ² = 363	157	13	3	14	27	3	58	37	23	28	363
	43.3%	3.6%	0.8%	3.9%	7.4%	0.8%	16.0%	10.2%	6.3%	7.7%	100.0%

Despite the lack of specificity of some “worker from a government agency,” other responses that fall under this same category — health care workers at either a hospital/health center/community level, schoolteacher — all suggest (52% of responses) that the Nigerian Government is the major source of information concerning reading glasses. That is, the private sector, represented by the private eyeglass shop (7%), is not a significant information source for respondents in these communities, while charitable and faith-based organizations play a larger role (16%), as do family and neighbors (10%). Among the 23 “someone else” answers, two were affiliated with the church and the others were the respondents themselves who diagnosed their own need for reading glasses.

TABLE 15: Before Today, Have You Ever Had Your Vision Tested?

	Yes	No
Those Fully Interviewed Who were Previously Aware of Reading Glasses N ² = 363	242	121
	66.7%	33.3%

TABLE 16: How Long Ago Did You have Your Vision Tested?

	Less than one month ago	Between one month and one year ago	Between one year and two years ago	More than two years ago	I do not remember / I do not know	TOTAL RESPONSES
	5	26	31	171	9	242
	2.1%	10.7%	12.8%	70.7%	3.7%	100.0%

One-third (33%) of respondents who knew about reading glasses had never had their vision tested, whereas two-thirds reported having their vision tested previously. Of those who had their vision tested, the majority, 71%, had it done at least two years earlier, while the nearly all the rest were split at 12% between less than one year ago and between one and two years ago. Among those 242 who had earlier undergone vision testing, 145 (60%) had it done locally. See **TABLE 18**.

TABLE 17: Where did You Go to have Your Vision Tested?

	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/Church Run Mobile Unit	Another Location	Mobile Vendor	Don't Know/Remember	TOTAL RESPONSES
Those Fully Interviewed Who were Previously Aware of Reading Glasses and Who had Vision Tested N ³ = 242	127	30	0	4	2	54	6	18	1	242
	52.5%	12.4%	0.0%	1.7%	0.8%	22.3%	2.5%	7.4%	0.4%	100.0%

As well as being the leading advocate for vision testing, the Nigerian Government is also the leading provider of vision testing services (66% of responses), as shown in **TABLE 17**. Charitable and faith-based organizations were reported to play the next largest role (22%), while mobile vendors (7%) were mentioned more frequently than private eyeglass shops (2%). These percentages roughly match those for answers given to the question as to whether or not vision testing is regularly done where the respondents had had their vision tested, presented in **TABLE 19**. “Yes” responses (71%) nearly corresponds to the government health facilities visited for vision testing (66%), and “No” responses (26%) is close in frequency rate to mobile vendors and mobile health units (run by either the government or by charitable/faith-based organizations (31%).

TABLE 18: Did You have Your Vision Tested in this Community?				TABLE 19: Is Vision Testing Regularly Done Where You had Your Vision Tested?				
Those Fully Interviewed Who were Previously Aware of Reading Glasses and Who had Vision Tested N ³ = 242	Yes	No	Don't Remember	YES, regularly done there	NO, only infrequently done there	NO, only done one time there	I do not remember / I do not know	TOTAL RESPONSES
	145	94	3	171	31	31	9	242
	59.9%	38.8%	1.2%	70.7%	12.8%	12.8%	3.7%	100.0%

Summary of Knowledge of Reading Glasses Held by Surveyed Populations in Nigeria

Respondents of the surveys were individuals who attended the mobile health campaign organized by DOF, at which they had their vision tested and were given reading glasses. The majority of them, 92%, had heard about reading glasses prior to the day of the event, while 8% had never heard of them. The primary source of information about reading glasses was the Nigerian government, followed by charitable and faith-based organizations, and a family member or neighbor. The private sector (eyeglass shops and mobile vendors) is a minimal source of knowledge, at 7%. Of those who knew about reading glasses, one-third (33%) had never had their vision tested. Among the remaining two-thirds (66%) with previous vision testing, 60% had it done locally, with two-thirds stating it had performed by Nigerian Government staff. Seventy-one percent (71%) reported that there was regular vision testing at the location where they had their vision tested.

Data Findings on Use of Reading Glasses within Surveyed Populations in Nigeria

TABLE 20: Have You Ever Used Reading Glasses Before Today?						
Those Fully Interviewed Who were Previously Aware of Reading Glasses N ² = 363	YES, I am still using the reading glasses that I have had before today	YES, I was using reading glasses in the past, but I no longer have them	YES, I was using reading glasses in the past, but they no longer help my vision	NO, I have never used reading glasses before today	Blank Response	TOTAL RESPONSES
71	60	120	112	0	363	
19.6%	16.5%	33.1%	30.9%	0.0%	100.0%	

112 of the respondents (31%) reported that they had *not* previously worn reading glasses, while others report either current use (20%) or past use (50%); this lattermost group comprises in a one-to-two ratio those 60 individuals who no longer have their reading glasses — for reasons such as loss and breakage — and the 120 others whose reading glasses no longer correct their near vision impairment. Restated more directly, one-third of the respondents who have been aware of reading glasses, had their vision tested, and got reading glasses are no longer served by them. Likely, they had their vision tested more than two years ago. As such, it appears that the outreach work of DOF at these mobile health campaigns is helping to address the need for reading glasses among community residents — as much for those who have never had their vision corrected as for those who had formerly done so.

TABLE 21: If You have Already Used Reading Glasses Before Today, from Where did You Get Them?										
Those Fully Interviewed, Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180) N ⁴ = 251	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/Church Run Mobile Unit	Mobile Vendor	Another Location	Don't Know/Remember	TOTAL RESPONSES
	116	29	1	10	3	55	32	3	2	251
	46.2%	11.6%	0.4%	4.0%	1.2%	21.9%	12.7%	1.2%	0.8%	100.0%

The query on the location where reading glasses had been obtained, presented in **TABLE 21**, was directed to the 251 individuals — 71+60+120 from the first three columns of **TABLE 20** — who are using or have used reading glasses. From the responses, the Nigerian Government represents the most likely source for getting reading glasses (59%) through mostly its hospitals and health clinics, although respondents also relied upon charitable or faith-based organizations-run, mobile campaigns, like that of DOF (22%). Meanwhile, mobile vendors were cited as another provider of reading glasses (13%), three times as often as private eyeglass shops (only 4%).

Summary of Use of Reading Glasses in Nigeria

Thirty-one percent (31%) of beneficiaries had never used reading glasses previously, while 50% of them had worn reading glasses previously but no longer do so, either because they had become lost or broken, or the lens diopter strength was no longer sufficient for correcting their near vision impairment. That means that about 80% of individuals served at these health events were leading lives with inadequate use of reading glasses. Of the 251 who had prior or current use of reading glasses, the Nigerian Government was the major source for obtaining reading glasses (59%), followed by charitable and faith-based organizations (22%). A smaller portion, 19%, acquired their glasses from the private sector, more specifically 14% from mobile vendors and only 4% from optical shops. While there are 71 respondents who have continued using reading glasses, there are 292 others (80% of those with prior knowledge of reading glasses) who had been without them.

Data Findings on Access to Reading Glasses within Surveyed Populations in Nigeria

TABLE 22: Was the Location Where You Got Your Reading Glasses in this Community?				TABLE 23: Did You Pay for These Reading Glasses?				
Those Fully Interviewed, Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180) N ⁴ = 251	Yes	No	Don't Remember Blank Response	YES	NO	I do not remember / I do not know	Blank Response	TOTAL RESPONSES
	69	179	3	164	81	6	0	251
	27.5%	71.3%	1.2%	65.3%	32.3%	2.4%	0.0%	100.0%

While vision testing had been done locally for about 60% of the respondents who had had their vision tested previously (**TABLE 18**), a majority of them obtained their reading glasses outside their home communities (71%), as shown in **TABLE 22**. This may indicate some instance of supply not having met demand, since it is assumed that there is a general preference for the convenience of getting glasses at the time of vision testing. The study of a population's access to reading glasses is concerned with their affordability as well as their availability in local proximity. About two of three respondents stated that they had paid for their reading glasses, as shown in **TABLE 23**.

TABLE 24: How Much did You Pay for These Reading Glasses?										
Those Fully Interviewed, Previously Aware of Reading Glasses, Wear or Had Worn Reading Glasses, and Had Purchased Them N ⁵ = 164	# Respondents Providing Amount Paid	Average Price Paid in Nigerian Naira	1-1000 Naira	1001-2000 Naira	2001-3000 Naira	3001-4000 Naira	4001-5000 Naira	5001-6000 Naira	6001-7000 Naira	7001-8000 Naira
			(Up to \$3)	(\$6)	(\$8)	(\$11)	(\$14)	(\$17)	(\$19)	(\$22)
			153 + 11 "0"	4,715	43	20	19	15	16	4
	\$13 ²³	28.1%	13.1%	12.4%	9.8%	10.5%	2.6%	5.9%	3.3%	

TABLE 24 (continued): How Much did You Pay for These Reading Glasses?											
8001-9000 Naira	9001-10,000 Naira	10,001-12,000 Naira	12,001-14,000 Naira	14,001-16,000 Naira	16,001-18,000 Naira	18,001-20,000 Naira	20,001-22,000 Naira	22,001-24,000 Naira	More than 24,000 Naira	"0" or Likely Erroneous Response	TOTAL RESPONSES
(\$25)	(\$28)	(\$33)	(\$39)	(\$44)	(\$50)	(\$55)	(\$61)	(\$66)	(> \$66)		
1	5	1	3	7	0	0	0	1	4	11	164
0.7%	3.3%	0.7%	2.0%	4.6%	0.0%	0.0%	0.0%	0.7%	2.6%	--	100.0%

²³ 361.739 Nigerian naira to US \$1.00 (January 18, 2020); 1000 Nigerian naira = \$2.76 <https://www.xe.com/currencyconverter/convert/?Amount=1%2C000&From=NGN&To=USD>

With reference to **TABLE 24**, 153 of the 164 respondents who had purchased reading glasses reported a price that averages \$13, while the remaining 11 provided an answer that was “0” or obviously incorrect, perhaps due to transcription error or misunderstanding of the question. This price falls within a low range of what reading glasses can cost in the US, and derives from the large percentage of respondents (41%) claiming that they had paid under 2000 naira (\$5.53). With reported, paid prices disaggregated into categories as defined by 1000 Nigerian naira (up to 10,000 naira) and 2000 naira thereafter (up to 24,000 naira), there seems to be some variance in what the respondents had spent. While 100 of the respondents (65%) paid less the overall average of \$13, twenty-one of them (14%) paid at least that twice that amount.

Recall that in **TABLE 11**, weekly earnings were presented as an average of 6,314 naira (\$17), derived from those respondents who were fully interviewed; accordingly, the average price reported to have been paid for the reading glasses represented about 75% of their weekly income.

	Yes	No	No, as I never tried to get reading glasses	Blank Response	TOTAL RESPONSES
Those Fully Interviewed Who were Previously Aware of Reading Glasses N ² = 363	78 21.5%	218 60.1%	67 18.5%	0 0.0%	363 100.0%

The question of possible difficulties in attaining reading glasses was posed to not just those respondents who had gone to purchase them, but to all those who were fully interviewed for this survey and had known about reading glasses before the day of the mobile health campaign (363 in number). As noted earlier in **TABLE 20**, though, only 251 among these 363 were current or past users of reading glasses, with the remaining 112 never having used them. Yet, only 67 claimed to *not* have tried to get reading glasses, as shown in **TABLE 25**, while 78 others did indeed have an opinion on the past or potential concerns in being able to get them. As such, those 78 (22%) respondents articulated 115 barriers (multiple responses encouraged) to their ability to access reading glasses, as well as the 218 (61%) not perceiving any constraints, each comprise to some degree both those who have had (or still have) reading glasses and those who have not. In short, their responses reflect actual and perceived conditions.

		Difficulties in								TOTAL RESPONSES (Multiple Responses Allowed)
Those Fully Interviewed, Previously Aware of Reading Glasses, and Claiming Barriers in Getting Them N ⁶ = 78	# Respondents	knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	78	4 3.5%	5 4.3%	1 1.0%	36 31.3%	52 45.2%	4 3.5%	5 4.3%	8 7.0%	115 100.0%
		Difficulties in:								RESPONSES
Had NOT Earlier Tried to Get Reading Glasses But Claimed Barriers N ⁷ = 14	# Respondents	knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	14	0 0.0%	0 0.0%	1 5.6%	6 33.3%	8 44.4%	0 0.0%	0 0.0%	3 16.7%	18 100.0%
		Difficulties in:								RESPONSES
Had Earlier Tried to Get Reading Glasses But Claimed Barriers N ⁸ = 64	# Respondents	knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	64	4 4.1%	5 5.1%	0 0.0%	30 30.9%	44 45.4%	4 4.1%	5 5.1%	5 5.1%	97 100.0%

TABLE 26 was prepared to determine if the frequency in the identification of barriers faced when getting reading glasses would vary depending on the respondents' own experience or not in this endeavor. For both the 14 respondents who had not tried to get reading glasses, and the 64 who had tried in the past, limited funds for purchasing them was cited among 45% of their respective responses. Almost as often raised as a constraint (about 32% of each of their collective sets of responses) was the lack of money for traveling to where reading glasses could be bought. Much less often mentioned — and only by those with past experience in trying to obtain reading glasses — were finding the time and means of transport for undertaking such travel. Among “other” barriers, long wait times was cited altogether four times (4%).

TABLE 27: How did You Overcome These Barriers in Getting Reading Glasses?							
Those Fully Interviewed, Previously Aware of Reading Glasses, and Claiming Barriers in Getting Them N ^o = 78	# Respondents	need of government/charity support	need to have self-initiative	need of support from family/friends	barriers quite hard to surmount	blank, unclear, or contradictory responses	TOTAL RESPONSES
		78	4	19	37	7	11
		5.1%	24.4%	47.4%	9.0%	14.1%	100.0%
Had NOT Earlier Tried to Get Reading Glasses But Claimed Barriers N ^o = 14	# Respondents	need of government/charity support	need to have self-initiative	need of support from family/friends	barriers quite hard to surmount	blank, unclear, or contradictory responses	TOTAL RESPONSES
	14	0	2	2	4	6	14
		0.0%	14.3%	14.3%	28.6%	42.9%	100.0%
Had Earlier Tried to Get Reading Glasses But Claimed Barriers N ^o = 64	# Respondents	need of government/charity support	need to have self-initiative	need of support from family/friends	barriers quite hard to surmount	blank, unclear, or contradictory responses	TOTAL RESPONSES
	64	4	17	35	3	5	64
		6.3%	26.6%	54.7%	4.7%	7.8%	100.0%

As a follow-up, open-ended question, respondents were posed how they had or would overcome such barriers, and their replies were grouped into a few categories for **TABLE 27**, with individuals again split among those who had tried or not in getting reading glasses. From the 14 with no past experience in obtaining them on their own, almost one-half of their responses were not particularly informative, and need for self-reliance and, conversely, need of support from family members or friends was each mentioned twice as means for countering barriers.

As for the 64 who had made earlier attempts in obtaining reading glasses, they more often noted (61% of their responses) the need of external assistance, whether from the government or from family and friends. Then again, they also cited the importance of self-initiative more frequently in their responses (27%) than their counterpart respondents (14%), and alluded less often to the steepness of the challenges in getting reading glasses (5% versus 29%).

Summary of Access to Reading Glasses in Nigeria

Access to reading glasses refers to both the availability and affordability. Of the 395 study participants, 92% or 363 beneficiaries had heard of reading glasses prior to the mobile health campaign that they attended. Of those, 69%, or 251 beneficiaries, had used reading glasses previously. Of those 251 beneficiaries who have used reading glasses previously, only 28% obtained their glasses locally. Sixty-five percent (65%) had paid for their glasses, whereas 32% had not. Among those who had paid, the largest group, representing 28%, had paid less than 1,000 naira (\$3), or one-sixth of the average of a week's pay, about 6,200 naira (\$17). On the other hand, 74% had paid 5,000 naira or less (\$14), while the overall average was 4,715 naira or \$13. Among the Nigerian respondents, there was a broad range of what they said that they would pay for a similar product. It may be that there is no formal market system for sales of reading glasses, as disparity in prices may be based on limited supplies, poor-quality wares, or unscrupulous vendors.

Questions about barriers to getting reading glasses was asked to all 363 beneficiaries who had heard of reading glasses prior to the mobile health campaign. 67 (19%) reported that they had never tried to get glasses, although we do not know the reasons for this. 78 respondents (22%) reported they had faced barriers when trying to obtain reading glasses on their own, whereas 218 (60%) reported that they had not. However, for those who did report barriers, the vast majority (76%) said that the major impediments were money to buy reading glasses (45%) and to cover transport costs to make the purchase (31%). This suggests that, while there may be a

willingness to pay, there are also challenges that are inhibitive for these respondents. It could be that those on the lower end of the economic scale had received poor-quality glasses with limited durability and short utility.

Lastly, of the 64 who had made earlier attempts to obtain reading glasses and had confronted barriers, 61% felt that they could have benefited from external assistance, whether from the government or their own personal connections, to overcome these barriers. On the other hand, among the 14 who had not tried to get reading glasses, the barriers were believed to be more daunting as well as less resolvable with outside help (14%).

Data Findings on Self-Directed Efforts for Getting Reading Glasses, as Reported by Surveyed Populations in Nigeria

Those Fully Interviewed Who were Previously Aware of Reading Glasses N ² = 363	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
		363	143	215	5
		39.4%	59.2%	1.4%	100.0%
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N ⁷ = 112	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
	112	26	85	1	112
		23.2%	75.9%	0.9%	100.0%
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N ⁴ = 251	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
	251	117	130	4	251
		46.6%	51.8%	1.6%	100.0%

The questioning is now re-directed to the 363 surveyed individuals who had known about reading glasses before the day of the survey. They were asked whether or not they would have gone elsewhere if they had *not* received reading glasses at the mobile health campaign — and where they would have gone instead. As had been earlier mentioned in the “Design Logic of the Survey Questions” section, a suite of queries was developed to have respondents imagine a hypothetical situation — if DOF had *not* come that day with reading glasses to be dispensed at the mobile health campaign.

As shown in **TABLE 28**, the 363 respondents who had previously known about reading glasses were then subdivided according to whether or not they had previously tried to obtain reading glasses on their own. For those respondents with earlier experience in this endeavor, slightly more than 50% would decline from obtaining them on their own if they were not to receive them on that day of the event. For those respondents *without* this experience, 76% would not have tried to obtain them on their own. With their responses combined, close to 60% indicated a willingness to forgo reading glasses if they were to leave empty-handed from the mobile health campaign.

Those Fully Interviewed, Previously Aware of Reading Glasses and Who Would Get Them on their Own — if Not Received Today N ⁸ = 143	# Respondents	Hospital /Clinic	Eye Hospital/ Clinic	Charitable/ Faith-Based Org	Optical Shop	Pharmacy	Shop/ Market/ Mobile Vendor	Unclear Response	TOTAL RESPONSES
		143	82	22	8	0	0	20	11
		57.3%	15.4%	5.6%	0.0%	0.0%	14.0%	7.7%	100.0%
Had NOT Earlier Tried to Get Reading Glasses	# Respondents	Hospital /Clinic	Eye Hospital/ Clinic	Charitable/ Faith-Based Org	Optical Shop	Pharmacy	Shop/ Market/ Mobile Vendor	Unclear Response	TOTAL RESPONSES
	26	10	6	1	0	0	5	4	26
		38.5%	23.1%	3.8%	0.0%	0.0%	19.2%	15.4%	100.0%
Had Earlier Tried to Get Reading Glasses	# Respondents	Hospital /Clinic	Eye Hospital/ Clinic	Charitable/ Faith-Based Org	Optical Shop	Pharmacy	Shop/ Market/ Mobile Vendor	Unclear Response	TOTAL RESPONSES
	117	72	16	7	0	0	15	7	117
		61.5%	13.7%	6.0%	0.0%	0.0%	12.8%	6.0%	100.0%

As a follow-up question, respondents who had answered “yes” to the previous question were asked where they would go to get reading glasses on their own — if the mobile health campaign were *not* able to provide free reading glasses. As before, their responses are categorized into those two aforementioned groupings. As documented in **TABLE 29**, for each group, a hospital or clinic was the most frequently designated response, with 39% of those who had not earlier tried to get reading glasses making this their top option, versus 62% of those who had earlier tried. In descending order, an eye hospital was next mentioned, and it received proportionately more mentions from the former than the latter group (23% versus 14%). Close behind were shops, the marketplace and mobile vendors, all combined to garner 19% and 13% of the responses, respectively. Charitable or faith-based organizations round out the list, getting 4% and 6% of the choices, while pharmacies and optical shops were not mentioned at all. Altogether, about three out of four of all the mentioned sites are in the public sector, even though this was the case for only three of five sites picked by those who had no previous experience in seeking out reading glasses. As such, on the whole, the government is uniformly recognized as the source of reading glasses by those who are aware of the use and value of them.

TABLE 30:

If You had Not Received Reading Glasses Today, Would You be Willing to Pay for Them?

Those Fully Interviewed Who were Previously Aware of Reading Glasses N ² = 363	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
		363	161	194	8
		44.4%	53.4%	2.2%	100.0%
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N ⁷ =112	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
		112	33	78	1
		29.5%	69.6%	0.9%	100.0%
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N ⁴ = 251	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
		251	128	116	7
		51.0%	46.2%	2.8%	100.0%

The questioning is once again re-directed to the 363 surveyed individuals who had known about reading glasses before the day of the survey. Still asked to consider their course of action within the hypothetical scenario of not receiving reading glasses at the mobile health campaign, individuals were asked if they would be willing to pay for reading glasses on their own. From **TABLE 30**, affirmative answers were provided by those in each of the two groups (51% ‘have earlier tried’ / 30% had ‘not tried’) at slightly higher frequency rates than for answers that they had provided when earlier asked about their willingness to go elsewhere for reading glasses (47% / 23%) (see **TABLE 28**). Still, as shown in **TABLE 30**, those with no past experience in seeking out reading glasses were not especially motivated in taking the initiative to do so if they were to leave left-empty-handed from the mobile health campaign; only 30% said that they would, and in the aggregate, only 44% said so.

TABLE 31:										
What Would Be the Most Money that You Would Be Willing to Pay for Reading Glasses?										
Those Fully Interviewed Who were Previously Aware of Reading Glasses, Worn or NOT Worn Reading Glasses, and Would Get Them on their Own — if Today Not Received N ⁹ = 161	# Respondents Providing Amount Paid	Average Price Paid in Nigerian Naira	1-1000 Naira (Up to \$3)	1001-2000 Naira (\$6)	2001-3000 Naira (\$8)	3001-4000 Naira (\$11)	4001-5000 Naira (\$14)	5001-6000 Naira (\$17)	6001-7000 Naira (\$19)	7001-8000 Naira (\$22)
	150 + 11 "0"	2,203	74	33	17	5	13	2	0	1
		\$6	49.3%	22.0%	11.3%	3.3%	8.7%	1.3%	0.0%	0.7%
Those Fully Interviewed, Previously Aware of Reading Glasses, Had NOT Earlier Tried to Get Them, BUT Would Get Them on their Own — if Today Not Received N ¹⁰ = 33	# Respondents Providing Amount Paid	Average Price Paid in Nigerian Naira	1-1000 Naira (Up to \$3)	1001-2000 Naira (\$6)	2001-3000 Naira (\$8)	3001-4000 Naira (\$11)	4001-5000 Naira (\$14)	5001-6000 Naira (\$17)	6001-7000 Naira (\$19)	7001-8000 Naira (\$22)
	30 + 3 "0"	2,342	16	8	1	0	3	0	0	0
		\$6	53.3%	26.7%	3.3%	0.0%	10.0%	0.0%	0.0%	0.0%
Those Fully Interviewed, Previously Aware of Reading Glasses, Wear or Had Worn Reading Glasses, and Would Get Them on their Own — if Today Not Received N ¹¹ = 128	# Respondents Providing Amount Paid	Average Price Paid in Nigerian Naira	1-1000 Naira (Up to \$3)	1001-2000 Naira (\$6)	2001-3000 Naira (\$8)	3001-4000 Naira (\$11)	4001-5000 Naira (\$14)	5001-6000 Naira (\$17)	6001-7000 Naira (\$19)	7001-8000 Naira (\$22)
	120 + 8 "0"	2,168	58	25	16	5	10	2	0	1
		\$6	48.3%	20.8%	13.3%	4.2%	8.3%	1.7%	0.0%	0.8%

TABLE 31 (continued):											
What Would Be the Most Money that You Would Be Willing to Pay for Reading Glasses?											
8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	18,001-20,000 Naira (\$55)	20,001-22,000 Naira (\$61)	22,001-24,000 Naira (\$66)	More than 24,000 Naira (> \$66)	"0" or Likely Erroneous Response	TOTAL RESPONSES
0	1	2	0	2	0	0	0	0	0	11	150
0.0%	0.7%	1.3%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	--	100.0%
8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	18,001-20,000 Naira (\$55)	20,001-22,000 Naira (\$61)	22,001-24,000 Naira (\$66)	More than 24,000 Naira (> \$66)	"0" or Likely Erroneous Response	TOTAL RESPONSES
0	1	0	0	1	0	0	0	0	0	3	30
0.0%	3.3%	0.0%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	--	100.0%
8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	18,001-20,000 Naira (\$55)	20,001-22,000 Naira (\$61)	22,001-24,000 Naira (\$66)	More than 24,000 Naira (> \$66)	"0" or Likely Erroneous Response	TOTAL RESPONSES
0	0	2	0	1	0	0	0	0	0	8	120
0.0%	0.0%	1.7%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	--	100.0%

As indicated in **TABLE 31**, all 150 respondents (eleven others of whom did not provide figures) would pay an average of 2,203 Nigerian naira, or \$6; those without prior experience (30 in number) said that they would be willing to pay a slightly higher amount 2,342 (still within \$6), while their 120 counterparts would spend a marginally lower amount of 2,168 naira, (likewise around \$6). Recall that in **TABLE 24**, the 153 respondents who had tried to get reading glasses in the past and actually purchased them reported paying an average price of 4,715 naira (\$13), more than twice any of these amounts. This rather wide variance in the two sets of answers suggests that the respondents may have felt that they had paid twice the reasonable price for their reading glasses.

With a second look at **TABLE 31**, with prices for reading glasses disaggregated into categories as defined by 1,000 and 2,000 naira, as was done in **TABLE 24**, there seems to be only a little variance in how much those in each of the two groups would spend for reading

glasses in the event that they were not given at the mobile health campaign. Overall, 71% of all respondents would pay no more than 2,000 naira (\$6), while this price limit was quoted by 80% of those with no prior experience in getting reading glasses and by 69% of those with past experience. On the more expensive scale end of purchasing reading glasses, about 5% of all respondents would consider costs of more than 5,000 naira (\$14), and this was rather much the same for both subgroups.

Summary of Self-Directed Efforts for Getting Reading Glasses in Nigeria

To the question — “If you had not received reading glasses today, would you have tried to get them elsewhere?” — 59% (215) of the 363 beneficiaries who had heard of reading glasses prior to the health fair responded “No,” whereas 39% responded “Yes.” Of those who replied affirmatively, 73% (104) reported that they would have gone to a hospital or clinic, and 14% (20) to a shop or mobile vendor. When 363 beneficiaries previously aware of reading glasses before the day of the survey were asked if they would have paid for the glasses, 54% (194) said they would not have done so. Among the others, the average price they quoted as being the most that they would be willing to pay was 2,200 naira, or \$6. To break this down even further, almost half (49%) were only willing to pay up to \$3, while an additional 22% were only willing to pay up to \$6.

Going back to an earlier question in which people who had previously purchased glasses were asked how much they had actually paid for them, the average price was \$13. Had they not received reading glasses from DOF, nearly 95% of those who said that they would be willing to pay for glasses would do so only if cost was far less, with 71% willing to pay less than half of the average price spent by those who had previously purchased them on their own. Although 161 individuals stated they would be willing to pay for reading glasses, it can be assumed that they would have a difficult time in finding them within this stated price range.

Data Findings on Self-Directed Efforts for Getting Reading Glasses, as Reported by Surveyed Populations in Nigeria Who Had Not Been Earlier Aware of Reading Glasses

As was stated in the earlier section of this report, “Design Logic of the Survey Questions,” a separate course of inquiry had been prepared for those respondents who stated that they had known *not* about reading glasses before the day of the survey. Their negative response, by which 32 individuals were differentiated from the total number of 395 who were surveyed in Nigeria, generated a “skip” to a different set of questions. These separate questions nearly mirror those that had been posed to their counterparts when asked to consider what they would do about getting reading glasses if they had *not* been dispensed to them at the mobile health campaign.

TABLE 32:
If You had Not Used Reading Glasses Today, Would You Have Try to Get Them by Some Other Way if You did Not Receive Them at this Event Today?

	# Subset of Respondents	YES	NO	Blank Response	TOTAL RESPONSES
Those Previously NOT Aware of Reading Glasses N ¹² = 32	32	21	11	0	32
		65.6%	34.4%	0.0%	100.0%

The screening question near the start of the survey that had been posed to all respondents was phrased: “When did you first learn that your vision could be helped with reading glasses?” The responses are presented in **TABLE 13**. The phrasing of this section’s first question, noted in **TABLE 32** above, had been deliberately phrased to ensure that past users of reading glasses would not be included in this subset of the survey population. From their answers, those with limited exposure to reading glasses showed some interest (66%) in seeking them out on their own.

TABLE 33:
If You Were to Get Reading Glasses in Some Other Way, from Where Would You Get Them?

Those Previously NOT Aware of Reading Glasses BUT Claiming They Would Get Them on their Own — if Today Not Received N ¹³ = 21	# Subset of Respondents	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/Church Run Mobile Unit	Mobile Vendor	Blank Response	TOTAL RESPONSES
	21	14	2	0	0	0	3	2	0	21
		66.7%	9.5%	0.0%	0.0%	0.0%	14.3%	9.5%	0.0%	100.0%

From the 32 individuals who had not been aware of reading glasses before the mobile health campaign, 21 replied affirmatively to the last question about their interest in seeking out reading glasses, if not provided to them at the event. When next queried about where they would go to seek out reading glasses, a hospital was among 67% of the responses (14), followed by a non-government-run mobile health unit (3), health clinic (2) and mobile vendor (2). In short, government institutions were cited 75% of the time, and except for mobile vendors (10%), other sources in the private sector were not mentioned.

TABLE 34: Would the Location Where You Would Get Your Reading Glasses Be in This Community?							TABLE 35: Would There be any Barriers for You to Get Reading Glasses?		
Those Previously NOT Aware of Reading Glasses BUT Claiming They Would Get Them on their Own — if Today Not Received N ¹³ = 21	# Subset of Respondents	Yes	No	I am Not Sure / I Do Not Know	Blank Response	TOTAL RESPONSES	Yes	No	TOTAL RESPONSES
		21	13	6	2	0	21	15	6
		61.9%	28.6%	9.5%	0.0%	100.0%	71.4%	28.6%	100.0%

For these same 21 individuals, almost two in three said that their source for getting reading glasses would be locally based, while slightly more than one in four said that they would need to go beyond their home community; see **TABLE 34**. When asked if they foresaw difficulties in seeking out reading glasses, 15 of them (71%) replied that they did, as presented in **TABLE 35**.

TABLE 36: Would There be any Barriers for You to Get Reading Glasses?			
Those Previously NOT Aware of Reading Glasses N ¹² = 32	Yes	No	TOTAL RESPONSES
		26	6
	81.3%	18.8%	100.0%

When this last question is directed to all 32 individuals who had not been aware of reading glasses before the mobile health campaign, all 11 who had earlier expressed no interest in seeking reading glasses on their own (**TABLE 32**) joined the 15 in **TABLE 35** in stating that they would also encounter barriers in undertaking this activity (**TABLE 36**), collectively a sizable majority (81%) with this view.

TABLE 37: What would be Barriers for You to Get These Reading Glasses?										
Those Previously NOT Aware of Reading Glasses N ¹² = 32	# Respondents	Difficulties in ...								TOTAL RESPONSES (Multiple Responses Allowed)
		knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	32	5	5	1	10	19	4	2	1	47
		10.6%	10.6%	2.1%	21.3%	40.4%	8.5%	4.3%	2.1%	100.0%

The follow-up question is posed to all 32 respondents to solicit one or more of the specific causes of these foreseen barriers. From this, rather similar patterns in the ranking of identified hindrances were found from the answers provided by these respondents, displayed in **TABLE 3**, to those answers provided by their counterparts (78 in number, who had known about reading glasses before the day of the survey), as presented in **TABLE 26**. By far, the greatest problem stated commonly is the lack of sufficient money to buy reading glasses, cited in frequency by 40% and 45%, respectively, of these two groups — those who had been unaware *and those who had been previously aware of reading glasses*. Likewise, for both groups, lack of financial means for traveling to venues to get reading glasses (21%, 31%) was the second-most named constraint.

Among those other barriers less often identified, lack of knowledge about source locations for reading glasses, in general, and for those that are attractive to wear, was a concern for those who had not been earlier knowledgeable about reading glasses (11% frequency of their responses); this was not as significant a problem, though, for those who had been knowledgeable in the past about reading glasses (4%). Lack of sufficient time was another mentioned problem that was raised more often by the former than the latter (9% versus 4%).

Those Previously NOT Aware of Reading Glasses N ¹² = 32	# Respondents	need of government/charity support	need to have self-initiative	need of support from family/friends	barriers quite hard to surmount	blank, unclear, or contradictory responses	TOTAL RESPONSES
	32	6	11	2	7	6	32
		18.8%	34.3%	6.3%	21.9%	18.8%	100.0%

This admittedly broad, cross match of responses to comparable questions continues with the topic of methods for overcoming these enumerated barriers. There were some surprisingly wide variances among the replies offered by those respondents who had been previously unaware of reading glasses, as presented in **TABLE 38**, and by their *larger-numbered*, “aware” counterpart (presented in **TABLE 27**). The benefit of support provided by family and friends was claimed by 6% of the former group but by a much larger proportion of 47% by the latter. Conversely, support from governmental or charitable/faith-based organizations was admitted as a need by 19% by the former and only 5% by the latter. This pattern of apparent dissimilarity continues, whereby 22% of the 32 individuals who had not been knowledgeable about reading glasses stated that they found the barriers to getting them to be rather steep; only 9% of the 78 who have been knowledgeable thought so. Yet, the importance of self-initiative in overcoming barriers was cited by 34% and 24% of those within each group, respectively.

To make a conjectured explanation of all this:

- those who have known about reading glasses before the survey, and may have had personal experience in getting them, recognize that obtaining reading glasses poses challenges that are not greatly formidable but, then again, they are not being fully addressed by the government (on the supply side); despite all this, purchasing reading glasses does require some self-initiative along with, perhaps, financial help (loan or gift) from family members and friends
- those who have *not* known about reading glasses imagine that there are some significant challenges when trying to obtain reading glasses, which they think can be resolved with both self-purpose and greater government intervention; at the same time, this would not require much involvement of others, like those within one’s personal circles

Those Previously NOT Aware of Reading Glasses N ¹² = 32	# Respondents Providing Amount Paid	Average Price Paid in Nigerian Naira	1-1000 Naira	1001-2000 Naira	2001-3000 Naira	3001-4000 Naira	4001-5000 Naira	5001-6000 Naira	6001-7000 Naira	TOTAL RESPONSES
			(Up to \$3)	(\$6)	(\$8)	(\$11)	(\$14)	(\$17)	(\$19)	
	25 + 7 “0”	1,934	12	8	1	0	3	1	0	25
		\$5	48.0%	32.0%	4.0%	0.0%	12.0%	4.0%	0.0%	100.0%

Serving as the last question on this section, and continuing with the cross match of given responses, individuals from the two groups were asked how much they would be willing to spend at most for reading glasses. Their replies are found in **TABLE 39** and **TABLE 31**. As displayed in **TABLE 39**, only 25 of the 32 with no prior knowledge of reading glasses stated an amount of money that they would be willing to maximally pay for reading glasses; this averaged to be 1,934 Nigerian naira (\$5), a little less than the average of 2,203 naira (\$6) claimed as the top price to pay by those with prior knowledge of reading glasses.

With the distribution of responses across categories that are defined by 1,000-naira ranges, those without prior knowledge stated top prices mostly at levels of 2,000 naira or less (80% of the responses), close to what proportionately those with prior knowledge had stated as their maximum price range (71%). The highest amount stated by a respondent in the former group was 6,000 naira, while that of the latter group, 15,000.

Summary of Self-Directed Efforts of Those in Nigeria Who Had Not Been Earlier Aware About Reading Glasses

Thirty-four percent (34%) of the 32 respondents who were not aware of reading glasses prior to the mobile health campaign said they would not have tried to acquire reading glasses if DOF had not come to do vision testing and dispensing. Among the 66% who said that they would have tried to acquire glasses on their own, the vast majority, 91%, would have looked to the public or non-profit sector for their reading glasses, of which 76% stated hospitals or clinics, while 14% stated charitable or faith-based mobile unit. The private sector,

in the form of a mobile vendor, was stated by 10%. Of those who would have tried to get reading glasses, 62% reported they would be able to find them within their home communities.

All 32 respondents were asked about the existence of barriers in getting reading glasses on their own, for which 81% reported that there were barriers and the remaining 19% stating otherwise. For those who did claim that there were barriers, the majority (62%) identified them as being money needed to buy reading glasses (40%) and funds to cover transport costs in order to make the purchase (21%). Another 21% reported that they would not know from where to get the glasses.

Forty-eight percent (48%) of the 32 stated that they would pay up 1,000 naira (\$3) and another 32% said they would pay between 1001-2000 naira (\$3-\$6), representing one-sixth and one-third of a week's earnings, respectively. Similar to responses given by those with prior knowledge of reading glasses, 96% were willing to pay only less than the average price of reading glasses that were stated to have been spent on previous purchases (\$13); moreover, 80% were willing to pay only 50% of that average price. So again, from their responses, those surveyed in Nigeria might be willing to pay for reading glasses, but they would most likely have a difficult time finding one at prices they are willing to pay.

Data Findings on Self-Directed Efforts for Replacing Reading Glasses by Those in Surveyed Populations in Nigeria

The next section of the survey comprises six questions and was designed to learn from all 395 respondents their likelihood in replacing reading glasses that may have become lost, broken, or no longer effective in correcting their near vision impairment. It is believed that levels of perceived benefits and value of reading glasses can be appraised when respondents are asked to imagine their future course of action within the hypothetical situation that they need to replace their reading glasses. Additionally, as will be soon evident, the line of questioning corresponds to that used in the two previous sections; this allows for data corroboration through the review of consistency in the responses that have been given.

ALL RESPONDENTS	# Respondents	YES	NO	Blank Response	TOTAL RESPONSES
Respondents Fully Interviewed N ¹ = 395	395	330	54	11	395
		83.5%	13.7%	2.8%	100.0%
Those Previously NOT Aware of Reading Glasses N ¹² = 32	# Respondents 32	YES 28	NO 4	Blank Response 0	TOTAL RESPONSES 32
		87.5%	12.5%	0.0%	100.0%
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N ⁷ =112	# Respondents 112	YES 88	NO 21	Blank Response 3	TOTAL RESPONSES 112
		78.6%	18.8%	2.7%	100.0%
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N⁴ = 251	# Respondents 251	YES 214	NO 29	Blank Response 8	TOTAL RESPONSES 251
		85.3%	11.6%	3.2%	100.0%

This set of questions is posed to all 395 who were randomly selected for this survey, and all these respondents were disaggregated according to parameters of knowledge and use related to reading glasses:

- those who had not earlier known about reading glasses (32 in number)
- those who had known about reading glasses but had not tried to get them for themselves (112)

- those who had indeed tried to get reading glasses and are either still wearing them or have discontinued doing so for a number of reasons (lost, broken, no longer in possession, or no longer effective for correction of near vision (251)

In the aggregate, more than 84% would try to replace their reading glasses, and this significantly proportionate share was true for each of the groups, although those who had known about reading glasses but had not tried to get them for themselves have a slightly smaller response rate of 79%.

TABLE 41: From Where Would You Get Replacement Reading Glasses?										
Respondents Fully Interviewed N ¹ = 395	# Respondents	Hospital	Health Clinic	Eye Clinic	Eye-glass Shop	Mobile Vendor	Govt. Mobile Unit	NGO Mobile Unit	Blank/ Unclear Response	TOTAL RESPONSES
	395	162	52	2	13	31	5	108	22	395
		41.0%	13.2%	0.5%	3.3%	7.8%	1.3%	27.3%	5.6%	100.0%
Those Previously NOT Aware of Reading Glasses N ² = 32	32	12	5	0	1	4	0	8	2	32
		37.5%	15.6%	0.0%	3.1%	12.5%	0.0%	25.0%	6.3%	100.0%
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N ⁷ = 112	112	33	12	2	3	11	3	40	8	112
		29.5%	10.7%	1.8%	2.7%	9.8%	2.7%	35.7%	7.1%	100.0%
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N ⁴ = 251	251	117	35	0	9	16	2	60	12	251
		46.6%	13.9%	0.0%	3.6%	6.4%	0.8%	23.9%	4.8%	100.0%

As found in **TABLE 41**, the frequency rates of locations that were cited by respondents as to where they would go to replace their reading glasses appear to be rather comparable across the three groups. A hospital was a commonly-named site, ranging from 30% to 47% of their respective choices, although those who had known about reading glasses but had not tried to get them for themselves considered their top selection to be a mobile unit run by a charitable/faith-based organization (38%); this alternative way of getting reading glasses found considerable favor with the other groups as well, garnering about 25% of their respective choices. On the other hand, mobile units run by the government received only a few mentions, as was true for private eyeglass shops. To round out the listing, shops and mobile vendors were picked as a source for reading glasses fewer than 10% of the time, but still outpaced the private eyeglass shops.

When reclassified as public versus private sector sources of reading glasses, government-based sites, noted in the table's shaded columns — its health care facilities (hospital, clinic) and community outreach work (mobile health unit) — were cited by more than 50% of the respondents, except by those who had known about reading glasses but had not tried to get them for themselves; they collectively mentioned one of these state-run sites at a frequency rate of 43%.

The private sector is represented by the three unshaded columns in the middle of the table, and it includes eye clinics, which are believed to be non-governmental health centers. Altogether, these options received the vote between 10%-16% of the time by a group, while the non-government-run, mobile health units, such as the one organized by DOF, outpaced by a factor of two the private sector with regard to mentions by respondents, registering 24%-36% of selections made. In short, the perceptions of where to seek out reading glasses generally seem to be held consistently by those with or without prior experience in having done so.

TABLE 42: Would the Location Where You Would Get Replacement Reading Glasses Be in This Community?

	# Respondents	YES	NO	I do not know / I am not sure	Blank Response	TOTAL RESPONSES
Respondents Fully Interviewed N ¹ = 395	395	132	201	50	12	395
		33.4%	50.9%	12.7%	3.0%	100.0%
Those Previously NOT Aware of Reading Glasses N ¹² = 32	32	21	9	1	1	32
		65.6%	28.1%	3.1%	3.1%	100.0%
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N ⁷ = 112	112	37	53	19	3	112
		33.0%	47.3%	17.0%	2.7%	100.0%
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N ⁴ = 251	251	74	139	30	8	251
		29.5%	55.4%	12.0%	3.2%	100.0%

With regard to the question presented in **TABLE 42** — would the location for seeking reading glasses replacement be in the local community — “No” responses were given by nearly 50% of the respondents, except in the case of those who had not previously known about reading glasses. An affirmative response was given by 66% of those in this specific group, who also seemed more confident in answering this survey question, give their infrequent use of the reply, “I do not know / I am not sure,” which was stated about 12%-17% of the time by respondents in the other groups.

TABLE 43: What would be Barriers for You to Replace Reading Glasses?

	# Respondents	Difficulties in ...									TOTAL RESPONSES
		knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	spending too much time to get reading glasses	other responses or no barriers	
Respondents Fully Interviewed N ¹ = 395	395	34	19	9	147	228	29	16	12	11	505
		6.7%	3.8%	1.8%	29.1%	45.1%	5.7%	3.2%	2.4%	2.2%	100.0%
Those Previously NOT Aware of Reading Glasses N ¹² = 32	32	4	0	1	10	23	3	2	0	2	45
		8.9%	0.0%	2.2%	22.2%	51.1%	6.7%	4.4%	0.0%	4.4%	100.0%
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N ⁷ = 112	112	9	5	2	39	60	6	4	4	2	131
		6.9%	3.8%	1.5%	29.8%	45.8%	4.6%	3.1%	3.1%	1.5%	100.0%
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N ⁴ = 251	251	21	14	6	98	145	20	10	8	7	329
		6.4%	4.3%	1.8%	29.8%	44.1%	6.1%	3.0%	2.4%	2.1%	100.0%

With regard to barriers one would face in replacing reading glasses — for whatever reason, such as breakage, loss, or loss of effectiveness in correcting near vision impairment — insufficient money to purchase reading glasses (whether new, as documented in **TABLE 26** and **37**, or replacement ones, as in **TABLE 43** above) most commonly poses the greatest challenge, as reported by the respondents; this was the case among those in each of the three disaggregated groups presented above, with such an assessment accounting for 45% of their respective set of responses.

As has been noted earlier and likewise exhibited in **TABLE 43**, financial constraints for traveling in order to purchase reading glasses figure as the second-most daunting constraint imagined; preconceived difficulties with securing funds for transportation to buy replacement reading glasses was noted among 20%-30% of the responses, as was the case for those from other groupings of respondents earlier reported in **TABLE 26** and **37**. Interestingly, access to transportation for traveling to purchase reading glasses seems to theoretically pose less of a challenge, accounting for about 4% of any set of responses. While, on the other hand, the time commitment involved for traveling and receiving services in order to obtain reading glasses looms as a slightly more pressing, potential problem, accounting for 5%-8% of stated barriers in the aforementioned three tables.

Lack of knowledge of locations for getting replacement reading glasses, including ones with an appealing look, was another relatively low-degree, but consistent, possible barrier that was cited by respondents within each group at a frequency range between 4%-10%.

TABLE 44: What Would be the Most that You Would be Willing to Pay for Replacement Reading Glasses?										
	# Respon- dents	Average Price Willing to Pay in Naira	1-1000 Naira	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001-7000	TOTAL RESPONSES
			(Up to \$3)	Naira (\$6)	Naira (\$8)	Naira (\$11)	Naira (\$14)	Naira (\$17)	Naira (\$19)	
Respondents Fully Interviewed N¹ = 395 Respondents Fully Interviewed N¹ = 395	325	2,066	171	72	34	7	24	2	1	325
			52.6%	22.2%	10.5%	2.2%	7.4%	0.6%	0.3%	
	+ 70 blank responses	\$6	7001-8000 Naira (\$22)	8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	100.0%
			2	0	9	0	0	3	0	
Those Previously NOT Aware of Reading Glasses N¹² = 32	23	1,504	13	7	1	1	1	0	0	23
			56.5%	30.4%	4.3%	4.3%	4.3%	0.0%	0.0%	
	+ 9 blank responses	\$4	7001-8000 Naira (\$22)	8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	100.0%
			0	0	0	0	0	0	0	
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N⁷ =112	89	1,797	55	19	4	0	7	0	0	89
			61.8%	21.3%	4.5%	0.0%	7.9%	0.0%	0.0%	
	+ 23 blank responses	\$5	7001-8000 Naira (\$22)	8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	100.0%
			1	0	3	0	0	0	0	
			1.1%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	

	# Respondents	Average Price Willing to Pay in Naira	1-1000 Naira (Up to \$3)	1001-2000 Naira (\$6)	2001-3000 Naira (\$8)	3001-4000 Naira (\$11)	4001-5000 Naira (\$14)	5001-6000 Naira (\$17)	6001-7000 Naira (\$19)	TOTAL RESPONSES
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N ⁴ = 251	213	2,239	103	46	29	6	16	2	1	213
			48.4%	21.6%	13.6%	2.8%	7.5%	0.9%	0.5%	
+ 38 blank responses		\$6	7001-8000 Naira (\$22)	8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	100.0%
			1	0	6	0	0	3	0	
			0.5%	0.0%	2.8%	0.0%	0.0%	1.4%	0.0%	

In **TABLE 44**, there is a clear pattern in the responses stating the highest price willing to be paid by respondents, who are again disaggregated by those who had not earlier known about reading glasses and those who had known, with this latter group further split by their past experience in having gotten reading glasses for themselves or not. For all three groups, there is a clustering of responses in the “1-1,000 naira” and “1,001-2,000 naira” boxes, as to be expected with the calculated average of the top amount quoted by each group hovering around 2,000 naira. Then again, the smallest average (1,504 naira) is found for those who had not previously known about reading glasses and, likely, those who have the least knowledge of actual sales prices. Those with past knowledge of reading glasses but no experience in trying to obtain them posted a higher average of maximum price that they would pay at 1,797 naira, while their counterparts with past experience had the highest average, 2,239 naira.

Indeed, with other sets of quotes from respondents on maximum price one would be willing to pay for reading glasses, as presented earlier in this report (**TABLE 24, 31, 39**), it appears that those with more limited knowledge of market prices for reading glasses believe them to be lower in price than they actually are, or they perceive reading glasses, with their limited experience in using them, to be of less value, and therefore less costly. Recall that the 153 respondents who had actually paid for their reading glasses in the past (**TABLE 24**) reported purchase prices that averaged to 4,715 naira (\$13); about 40% of them having paid no more than 2,000 naira (\$6). On the other hand, those without previous knowledge of reading glasses (admittedly a small number of 25 respondents), when asked what they would pay at most for reading glasses — if the mobile health campaign of DOF had not provided them for free — reported an average of 1,934 naira, with 70% of them quoting a price of 2,000 naira or less (**TABLE 39**).

Yet, the perception of value held for reading glasses must have changed when those same 153 past purchasers were asked to name an acceptably maximum cost of reading glasses in the imagined scenario that they would *not* be dispensed for free at DOF’s mobile health campaign; as per **TABLE 31**, the average of their maximum purchase price fell to 2,203 naira (\$6), with 71% of them quoting a figure under 2,000 naira. With the topic of discussion in **TABLE 44** being replacement reading glasses, no longer a novelty item perhaps for respondents, even lower figures were generated on average maximum price that would be willingly paid by those with limited knowledge of reading glasses or limited experience in obtaining them on their own.

TABLE 45: If You Would Not Try to Get Replacement Reading Glasses, Please Explain Why Not

Respondents Fully Interviewed N ¹ = 395	# Respondents	Difficulties with				No Need or No Desire	Can Get Reading Glasses through Charity	Blank or Unclear Responses	TOTAL RESPONSES (Multiple Responses Allowed)
		Knowing Where to Go to Get Reading Glasses	Finding the Money to Buy Reading Glasses	Finding the Time to Buy Reading Glasses	My Physical Limitations that Make Travel Difficult for Going to Get Reading Glasses				
	54 13.7%	2 3.5%	42 73.7%	4 7.0%	5 8.8%	1 1.8%	3 5.3%	341 --	57 100.0%
Those Previously NOT Aware of Reading Glasses N ¹² = 32	4 12.5%	1 20.0%	3 60.0%	1 20.0%	0 0.0%	0 0.0%	0 0.0%	28 --	5 100.0%
Those Fully Interviewed and Who were Previously Aware of Reading Glasses BUT Had NOT Earlier Tried to Get Reading Glasses N ⁷ =112	21 18.8%	0 0.0%	18 78.3%	0 0.0%	3 13.1%	0 0.0%	2 8.7%	91 --	23 100.0%
Those Fully Interviewed, and Who were Previously Aware of Reading Glasses, and Wear (71) or Had Worn Them (180), N ⁴ = 251	29 11.6%	1 3.4%	21 72.4%	3 10.3%	2 6.9%	1 3.4%	1 3.4%	222 --	29 100.0%

For the last question in this section, respondents were asked why they would *not* try to get replacement glasses, and a great majority (86%) offered no response; the reason for this is unexamined. As indicated in **TABLE 45**, there were 57 responses from 54 individuals across the three groups, and unsurprisingly financial constraints were said to pose the prominent reason (74% of all responses), followed by physical difficulties with traveling (9%), heavy commitment of time required for traveling (7%), and lack of knowledge of where to purchase replacement reading glasses (4%). Three individuals (5%) did admit that they would rely upon others (the government or non-governmental organization) to provide them with a replacement.

Summary on Summary of Self-Directed Efforts for Replacing Reading Glasses by Those in Surveyed Populations in Nigeria

This section inquired about what a beneficiary would do if they needed to replace their reading glasses, due to either loss, breakage, or ineffective diopter strength. Eighty-four percent (84%) (330) of beneficiaries stated they would try to replace their reading glasses. Over half (56%) of those individuals stated they would seek replacements from the public sector, in the form of a hospital, health clinic, or mobile unit. Over a quarter (27%) stated they would seek replacements from a charitable or faith-based organization-run mobile unit. Only 12% (46) stated they would seek replacements from the private sector, in the form of an eye clinic (presumed to be non-governmental), eyeglass shop, or mobile vendor. Of those who would seek replacements, 51% reported that they would have to go outside of their home community.

When asked about barriers to getting reading glasses, almost three-fourths stated there would be financial difficulties, with 45% noting that it would be hard to find the money to buy reading glasses, and 29% identifying hardship in having the money to pay for travel in order to make the purchase. An additional 7% reported not knowing from where to buy reading glasses.

When asked how much one would be willing to pay at most for a pair of replacement glasses, the most frequent response, given over 50% of the time, was 1,000 naira (\$3) or less. The average prices among all subgroups was 2,066 naira (\$6). A total of 95% were willing to pay no more than what they had paid, on average, for previous purchases of reading glasses (\$13); moreover, 75% stated that they would only be willing to pay just 50% of that amount. Again, respondents seem to be willing to pay for reading glasses, but at prices that, from their accounts, would not be so easy to get on the open market.

Data Findings on Impact of Reading Glasses within Surveyed Populations in Nigeria

This last, and shortest, section of the survey invited all 395 respondents to offer their observations on two matters, after permission was asked of them to continue with questioning, of which 367 (94%) agreed:

- How your life could be changed by now having reading glasses?
- How would you talk to other people in your community about the benefits of reading glasses?

Since this was an open-ended question, multiple responses were possible, allowing for 440 to be collected, as displayed in three categories in **TABLE 46**. The first category, titled, “Improved Sight for: ..” compiled answers related to better eyesight in general as well as to everyday activities conducted in the home and outside the home. About 72% of the responses are grouped in this category, with improved seeing (17%) and improved abilities to read printed text (40%) being the two most commonly cited benefits. Specific reference to greater ease in reading church texts was made 6% of the time.

Under the category of “Other Benefits,” an improved sense of overall wellbeing was noted among 14% of all responses while a foreseen reduction in eyestrain and related headaches among 8% of them.

TABLE 46: How Could Your Life Be Changed by Now Having Reading Glasses?			
Activity	Number of Responses	Percentage of Responses	Percentage of Responses by Category
	507	100.0%	100.0%
Improved Sight for:	363	71.6%	71.6%
general vision	86	17.0%	
general reading	202	39.8%	
writing and signing	7	1.4%	
reading Bible and church song lyrics	32	6.3%	
reading prices while shopping	0	0.0%	
reading labels on medicines	1	0.2%	
sewing, knitting, doing embroidery	3	0.6%	
helping their children with homework	1	0.2%	
cooking	0	0.0%	
doing housework	1	0.2%	
daily tasks	7	1.4%	
conducting work or business	23	4.5%	
Other Benefits:	116	22.9%	22.9%
reduced eyestrain and fewer headaches provoked by poor vision	40	7.9%	
overall improved sense of wellbeing	73	14.4%	
greater sense of independence	0	0.0%	
free reading glasses received	3	0.6%	
Other:	28	5.5%	5.5%
no response	28	5.5%	
unclear response	0	0.0%	

370 remarks were given in response to the last question, “How would you talk to other people in your community about the benefits of reading glasses?” They range broadly in topic and quality of comprehensibility, perhaps due to the fatigue of respondents at this end of this survey or the quality of transcriptions by the survey enumerators themselves, likewise wearied. Nonetheless, a selection is provided on the next page.

It will be noted here that a considerable proportion of these 'public outreach' messages do advocate others to seek out vision testing for the free glasses that will be dispensed. Others give hearty support for the work of DOF as a valued provider for vision testing and reading glasses.

Public Education Messages Offered by Survey Respondents in Nigeria

1	As a community leader, I have helped greatly in mobilizing people and creating awareness for medial mission in the past. I don't intend to relent, especially on the area of sight as eye is the most important organ.
2	Everyone knows that having a good vision is necessary, I will reiterate on the importance of it.
3	For those who cannot see well while reading, [I] will advise them to get reading glasses to prevent them from stressing their eyes.
4	[Reading glasses are] for you to communicate effectively and understand what you're reading effectively too.
5	Honestly [I] am happy about this outreach as, for the first time since 1985 when I started using glasses, I will be getting [them for] free. I will encourage [others] to answer this call whenever such opportunity avails.
6	I encourage them to have their eyes checked so that they can get reading glasses to enable [them] to read and see things close up to their eyes.
7	I will advise as many as that have impaired sight to go and get [reading glasses] because [they] will make life more eas[y].
8	I will advise the elderly on the advantages of using reading glasses. I will also encourage them to get their eyes especially checked.
9	I will advise them to ensure they use reading glasses to prevent much stress to the eyes.
10	I will encourage a lot who can't afford them to participate in the next outreach. At the same time, I wish to say thank you to the donors and sponsors.
11	I will encourage people who I know [are] having problems reading effectively to endeavor to get a reading glasses as sight problem is something that can't be managed.
12	I will encourage [others] to get reading glasses, especially the elderly, because [they] will enable them to read well without stressing the eyes too much.
13	I will talk to them positively, and make them understand that reading glasses are beneficial to one's eye[s].
14	I will tell my fellow women in church and encourage those of them who find it difficult to read clearly to try anything within their capacity to get reading glasses
15	I will tell the entire Oba Community through our weekly meetings about the value of reading glasses, especially among the aged ones who are having difficulties reading. Thank you, David Omenukor Foundation
16	I will tell [others] that reading glasses help to ease the stressing [of] one's eyes [when] ... reading. They should have their sight examined and obtain reading glasses
17	I will tell them to always get their eyes checked by professional so they can get the right power lens for their eyes. It will also help them to read clearly.
18	I will tell them to stop stressing their eyes. [R]ather they should get reading glasses
19	I will testify to my fellow women [at the] village meeting about the usefulness of a reading glasses and also encourage them to ensure they are vision tested before getting reading glasses.
20	If anyone is having eye problem[s], I will advise them to go and for eye testing to get reading glasses
21	If you get reading glasses, [it will] be ... easier ... to operate [your] [cell]phone and read [the] Bible.
22	In our next women union gathering, I will encourage others who have similar eye [problems] ... to get tested, as I believe the [reading] glasses I will get today its stronger and better than the ones sold in the market.
23	It is important to get reading glasses to help the strength of your eyes.
24	It will help the to read very well without straining the eyes too much. They should always get their vision tested regularly.
25	It will help them to read well and not strain the eyes. The earl[er] they get [reading glasses], the better for them, especially the [elderly].
26	Please, if you notice your vision is bad, try to get reading glasses.
27	Reading glasses help the eyes; at times there will be tears in your eyes while reading without reading glasses.

28	It is important they go and take care of [your] eyes because the eye is an important organ of the body.
29	While preaching the word of God as a preacher, I will tell them the importance of reading glasses.
30	I will tell them that [the] David Omenukor Foundation ha[s] really helped me by giving me the opportunity to see and read clearly.
31	Yes, I will tell them that [reading glasses] help to improve your vision when reading and sewing.
32	I will tell them to hasten for solution because it is not good to joke with the eyes.

Summary on the Impact of Reading Glasses

An open-ended question was asked to beneficiaries about the impact of reading glasses on their lives. There was a diverse range of responses, with the most common being able to read (40%) and better vision (ability to see well; 17%). These were followed by improved sense of wellbeing (14%), reduction of headaches due to eye strain (8%), and being able to read the Bible (6%). The beneficiaries also provided a number of suggestions for public service education, which included topics such as: making life easier, the usefulness of reading glasses, the quality of the reading glasses provided, the importance of eyecare and gratitude. Additionally, many of their statements highlighted the importance of their directly sharing with others the benefits of reading glasses and seeing clearly.

Community Leaders in Nigeria

Introduction

During the last two weeks of 2019, the survey on knowledge and use of reading glasses was conducted in Nigeria in collaboration with DOF, which had organized mobile health campaigns for screening and treatment of certain medical conditions, including vision impairment. Beneficiaries of these services would be recruited to serve as respondents for the survey designed for recipients of reading glasses. Additionally, local leaders of these visited communities would be requested to take part in a second survey on their own.

In organizing and carrying out these activities, DOF ensured that residents were informed to come on the day of the event in order to have their vision tested and to receive at no charge reading glasses for correction of near vision impairment. In addition, DOF played a critical role for the survey in advising local community leaders that the survey would be conducted not just with recipients of reading glasses but also with a number (12-15) of them.

As explained earlier, the survey instrument for the community leaders comprises 22 questions and is shorter in length than that used with the recipients. It was designed to serve as a means for corroborating responses from the recipients of reading glasses in order to gain a more robust understanding of general levels of knowledge and use of reading glasses in these communities.

While both surveys began with a demographic section, the one designed for community leaders comprised seven questions, rather than 13. The remaining 15 questions of the community leaders survey, constituting the second, and concluding section, delves into levels of availability (geographic accessibility and affordability) of reading glasses within their communities — as understood by these individuals. They are also asked about their perception of the general knowledge levels and behavioral tendencies of their fellow residents specific to reading glasses. As with the other survey, the last question is directed to soliciting how to best phrase a public statement for promoting the benefits of reading glasses. To be clear, DOF played the lone and, obviously, critical role in identifying community leaders, although it was asked to invite a roster of dignitaries who would be broadly representative of their constituents and who serve in a variety of functional capacities, that is, those in and out of governmental and administrative roles.

The objective was to administer a total of 50 surveys in Nigeria with local leaders, but internet access problems, resulting in some survey data loss, resulted in a variable number of surveys to be administered at the four community sites where the mobile health campaigns were organized. See **TABLE 1** for details.

Dates of Survey Work	Survey Sites in Imo State, NIGERIA	Population ²⁴	Reading Glasses Dispensed	Surveys Completed	
				Recipients	Community Leaders
Dec. 18, 2019@	Lude, Ahiazu Mbaise LGA#	235,200 (LGA)	402	109	12
Dec. 19, 2019@	Okwu, Aboh Mbaise LGA	268,200 (LGA)	395	84	3
Dec. 21, 2019@	Ugirike, Ikedura LGA	206,200 (LGA)	415	96	24
Dec. 27, 2019	Awo-Amama, Oru East LGA	153,900 (LGA)	501	106	25
@ Consultant present in the field	# LGA = Local Government Area (Imo State District)		1,713	395	64

²⁴ March 21, 2016 projections based on March 2006 census figures. Source: National Population Commission of Nigeria (web), National Bureau of Statistics (web). <https://www.citypopulation.de/php/nigeria-admin.php?adm1id=NGA017>

Demographic Information of Leaders from Surveyed Communities in Nigeria

	< 21 Years of Age	21 - 30 Years of Age	31 - 40 Years of Age	41 - 50 Years of Age	51 - 60 Years of Age	61 - 70 Years of Age	> 70 Years of Age	TOTAL RESPONSES
ALL COMMUNITY LEADERS	2	0	2	10	18	16	16	64
	3.1%	0.0%	3.1%	15.6%	28.1%	25.0%	25.0%	100.0%

As shown in **TABLE 2**, the range of ages among the community leaders spans across all seven age cohort groups, all but one defined by ten-year periods. Surprisingly, there were two individuals who are younger than twenty-one years among those interviewed, undoubtedly serving as the heads of youth groups. Those 40 years of age or younger represent 44% of all the community leaders, with the largest cohort (31%) having ages between 41-50 years.

	Female	Male	Other	TOTAL RESPONSES
ALL COMMUNITY LEADERS	23	41	0	64
	35.9%	64.1%	0.0%	100.0%

Unlike the community leaders interviewed at the four survey sites in Mexico, those from the four sites in Nigeria represented more men than women, 64% versus 36%. However, the male / female split among those surveyed as recipients of reading glasses was nearly the inverse, at 32% versus 69%.

It was noted for the Mexican sites that the scheduling of the health fairs on Fridays may have precluded attendance by those working full-time jobs outside the home, especially the men. This would also hold true in Nigeria, where three of the four the mobile health campaigns were likewise conducted on weekdays. However, for both countries, community leaders were found to be proportionately older, as one could expect, and thus likelier to be retired or not working far from home; this can be construed from **TABLE 2**, showing 50% of the community leaders to be over the age of 60. This discussion will continue with data presented in **TABLE 6** below.

	< 21 Years of Age	21 - 30 Years of Age	31 - 40 Years of Age	41 - 50 Years of Age	51 - 60 Years of Age	61 - 70 Years of Age	> 70 Years of Age	TOTAL RESPONSES
ALL COMMUNITY LEADERS	2	0	2	10	18	16	16	64
	3.1%	0.0%	3.1%	15.6%	28.1%	25.0%	25.0%	100.0%
FEMALE COMMUNITY LEADERS	1	0	1	8	10	3	0	23
	4.3%	0.0%	4.3%	34.8%	43.5%	13.0%	0.0%	100.0%
MALE COMMUNITY LEADERS	1	0	1	2	8	13	16	41
	2.4%	0.0%	2.4%	4.9%	19.5%	31.7%	39.0%	100.0%

Among those serving as survey respondents under the title of community leader, women tend to be younger in age. About 43% are under the age of 50 years, compared to 10% of men. Likewise, 13% of women are over the age of 60, whereas 71% of the men are.

TABLE 5: What is the Highest Level of Education that You have Completed?

	No school	Some Primary School	Completed Primary School	Some Junior High School	Completed Junior High School	Some High School	Completed High School	Some Undergraduate Studies	Completed Undergraduate Studies	Some Graduate Studies	Completed Graduate Studies	TOTALS
ALL COMMUNITY LEADERS	4	3	5	6	4	5	11	5	10	3	8	64
	6.3%	4.7%	7.8%	9.4%	6.3%	7.8%	17.2%	7.8%	15.6%	4.7%	12.5%	100.0%
FEMALE COMMUNITY LEADERS	1	1	2	1	3	2	4	1	4	2	2	23
	4.3%	4.3%	8.7%	4.3%	13.0%	8.7%	17.4%	4.3%	17.4%	8.7%	8.7%	100.0%
MALE COMMUNITY LEADERS	3	2	3	5	1	3	7	4	6	1	6	41
	7.3%	4.9%	7.3%	12.2%	2.4%	7.3%	17.1%	9.8%	14.6%	2.4%	14.6%	100.0%

The proportionate share of women and men among the community leaders who have completed certain levels of education is similar: 57% and 59%, respectively, of those from each group have at least graduated from high school, and 35% and 32% have continued on with the education and have at least finished their undergraduate studies.

TABLE 6: Which of the Following Activities Best Describes How You Usually Spend your Days?

	Working for a living outside the home and outside the family fields	Working for a living at home or in the family fields	Remaining at home, while taking care of the home and family	Remaining at home, as a retiree or as someone with disabilities or long-term illness	TOTAL RESPONSES
ALL COMMUNITY LEADERS	35	8	5	16	64
	54.7%	12.5%	7.8%	25.0%	100.0%
FEMALE COMMUNITY LEADERS	14	3	2	4	23
	60.9%	13.0%	8.7%	17.4%	100.0%
MALE COMMUNITY LEADERS	21	5	3	12	41
	51.2%	12.2%	7.3%	29.3%	100.0%

TABLE 7: What Type of Work Do You Usually Do?

	Farming or raising farm animals in order to feed oneself and family only	Farming or raising farm animals in order to feed oneself and family & to sell in the market	Working from home	Working as a cook in a restaurant, school, or community center	Pursuing other work occupations ^s	Teaching at a school	Serving at a health center	Working for a local organization or house of worship	Working in a business office or a government office	Working as a merchant	Retired, Not working	TOTALS
ALL COMMUNITY LEADERS	7	4	4	2	10	4	1	4	3	9	16	64
	10.9%	6.3%	6.3%	3.1%	15.6%	6.3%	1.6%	6.3%	4.7%	14.1%	25.0%	100.0%
FEMALE COMMUNITY LEADERS	3	0	3	1	1	3	0	0	1	7	4	23
	13.0%	0.0%	13.0%	4.3%	4.3%	13.0%	0.0%	0.0%	4.3%	30.4%	17.4%	100.0%
MALE COMMUNITY LEADERS	4	4	1	1	9	1	1	4	2	2	12	41
	9.8%	9.8%	2.4%	2.4%	22.0%	2.4%	2.4%	9.8%	4.9%	4.9%	29.3%	100.0%

^sWorking from home[™] includes those who are home makers, domestic help, or those who do piece work to earn income while remaining at home

^sPursuing other work occupations^s includes those who do manual labor, work in a factory, drive a truck or cab, and work in some other capacity not referenced elsewhere in this table.

With reference to **TABLE 6**, at least 50% of both female and male community leaders are engaged in a livelihood outside their home and family fields, with the nearly same proportionate share of each group working from home or on their farms (12%) or remaining at home, caring for others (8%). The greatest difference between women and men was the proportionate share who are retired or not working (17% versus 29%).

Turning to **TABLE 7**, responses to the follow-up question provided more specifics as to line of employment. There were some apparent inconsistencies found between the two sets of answers — with the men’s occupation in family farming, for example — although a clear majority of both female and male community leaders hold positions outside their homes, with a little less than 20% serving in professional roles, identified in the shaded columns. For the purposes of this survey, community leaders who had been recruited to respond to the questions that follow in the upcoming section were expected to be familiar with local conditions concerning availability and affordability of reading glasses. Accordingly, those who work away from their homes, such as these community leaders at white-collar jobs and, one could add, those working as merchants, who represent another 14% of their numbers, are well likely to have this knowledge base.

TABLE 8: How Would You Describe your Community?				
	Rural	Small Town	Urban	TOTAL RESPONSES
ALL COMMUNITY LEADERS	62	1	1	64
	96.9%	1.6%	1.6%	100.0%

Nearly all community leaders reported the description of their respective communities as rural.

TABLE 9: How Many Years Have You Lived or Worked in this Community?				
	Less than One Year	Between One and Five Years	More than Five Years	TOTAL RESPONSES
ALL COMMUNITY LEADERS	3	1	60	64
	4.7%	1.6%	93.8%	100.0%
FEMALE COMMUNITY LEADERS	1	1	21	23
	4.3%	4.3%	91.3%	100.0%
MALE COMMUNITY LEADERS	2	0	39	41
	4.9%	0.0%	95.1%	100.0%

As presented in **TABLE 9**, more than 90% of the community leaders, female and male, claimed to have lived or worked in their respective communities for at least five years, while only 5% said less than one year. This further helps to substantiate them to be credible sources of information for this survey.

Availability and Access of Reading Glasses in the Community, as Perceived by the Community Leaders from Surveyed Populations in Nigeria

	YES	NO	There are NO Places in This Community	TOTAL RESPONSES
ALL COMMUNITY LEADERS	4	26	34	64
	6.3%	40.6%	53.1%	100.0%

In **TABLE 10**, More than one-half of the community leaders (34) reported that there are no sites in the community where one could purchase reading glasses, with only a small percentage (6%) refuting that. Forty-one percent (41%) reported not knowing about local venues where reading glasses are sold.

	Hospital	Health Care Center / Clinic	School	Private Eyeglass Shop	Govt-Run Mobile Unit	NGO-/Church Run Mobile Unit	Mobile Vendor	Another Location	Don't Know/Remember	TOTAL RESPONSES
ALL COMMUNITY LEADERS	3	0	0	1	0	0	0	0	0	4
	75.0%	8.3%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

For three of the four community leaders stating knowledge of locations within their village where reading glasses are sold, hospital was cited; the other remaining respondent indicated it was a private eyeglass shop. See **TABLE 11**.

	YES	NO	Blank Response	TOTAL RESPONSES
ALL COMMUNITY LEADERS	2	28	34	64
	3.1%	43.8%	53.1%	100.0%

	# Respondents Providing Amount Paid	Average Price Paid in Nigerian naira	1-1000 Naira (Up to \$3)	1001-2000 Naira (\$6)	2001-3000 Naira (\$8)	3001-4000 Naira (\$11)	4001-5000 Naira (\$14)	5001-6000 Naira (\$17)	6001-7000 Naira (\$19)	7001-8000 Naira (\$22)	TOTAL RESPONSES
ALL COMMUNITY LEADERS	12	1,358	10	0	0	0	2	0	0	0	12
		\$4	83.3%	0.0%	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%	100.0%

	# Respondents Providing Amount Paid	Average Price Paid in Nigerian Naira	1-1000 Naira (Up to \$3)	1001-2000 Naira (\$6)	2001-3000 Naira (\$8)	3001-4000 Naira (\$11)	4001-5000 Naira (\$14)	5001-6000 Naira (\$17)	6001-7000 Naira (\$19)	7001-8000 Naira (\$22)
	47 + 17 "0"	2,923	25	6	3	0	8	0	0	1
		\$8 ²⁵	53.2%	12.8%	6.4%	0.0%	17.0%	0.0%	0.0%	2.1%

²⁵ 361.739 Nigerian naira to US \$1.00 (January 18, 2020); 1000 Nigerian naira = \$2.76 <https://www.xe.com/currencyconverter/convert/?Amount=1%2C000&From=NGN&To=USD>

8001-9000 Naira (\$25)	9001-10,000 Naira (\$28)	10,001-12,000 Naira (\$33)	12,001-14,000 Naira (\$39)	14,001-16,000 Naira (\$44)	16,001-18,000 Naira (\$50)	18,001-20,000 Naira (\$55)	20,001-22,000 Naira (\$61)	22,001-24,000 Naira (\$66)	More than 24,000 Naira (> \$66)	"0" or Likely Erroneous Response	TOTAL RESPONSES
0	2	0	0	1	0	1	0	0	0	17	47
0.0%	4.3%	0.0%	0.0%	2.1%	0.0%	2.1%	0.0%	0.0%	0.0%	--	100.0%

The average local selling price of reading glasses was asked of all 64 community leaders, although only 2 reported (3.1%) that they were knowledgeable of this, as indicated in **TABLE 12**, and the average of their responses was 1,358 Nigerian naira (\$4), presented in **TABLE 13**. Ten among the twelve respondents (83%) who quoted a sales price said it was under 1,000 naira (\$3) — seven said 500 naira (\$1) or cheaper — while two others (17%) cited the much higher price of 5,000 naira (\$17), skewing the overall averaged cost of purchasing reading glasses.

When all the community leaders were queried on what they thought would be the highest amount that local residents would be willing to pay for reading glasses, 47 provided a response, which was averaged at 2,923 naira (\$8), as found in **TABLE 14**. Among their responses:

- 25 (53%) were under 1,000 naira (\$3)
- 6 (13%) were between 1,001-2,000 naira (up to \$6)
- 3 (6%) were between 2,001-3,000 naira (up to \$8)
- 8 (17%) were between 4,001-5,000 naira (up to \$14)
- 5 (11%) were higher than 5,000 naira, up to one response at 20,000 naira (\$55)

In recalling the sets of answers provided to the same question by different subsets among the recipients of reading glasses (**TABLES 31, 39, 44**), there was a consistent pattern in range of maximum amounts they said that they would be willing to pay for reading glasses — about 50% of the respondents cited figures between the 1-1,000 naira range (\$3), and 95% of them cited figures within the 1-5,000 naira range (\$14). This coincides exactly with what the community leaders proposed, as enumerated above. On the other hand, among those respondents receiving reading glasses on the day of the survey, when reporting on *actual* amounts they had previously paid for their reading glasses (**TABLE 24**), only 28% of them spent a maximum of 1,000 naira, not 50%; likewise, only 75% spent at most 5,000 naira, not 95%.

	YES	NO	There are NO Places in This Community	TOTAL RESPONSES
ALL COMMUNITY LEADERS	29	20	15	64
	45.3%	31.3%	23.4%	100.0%

	One or Two Places	Between Three and Five Places	Six or More Places	I do not know / I am not sure	Blank Response	TOTAL RESPONSES
ALL COMMUNITY LEADERS	14	6	2	7	35	29
	48.3%	20.7%	6.9%	24.1%	--	100.0%

From the responses to the next question, as shown in **TABLE 15**, 29 (45%) community leaders reported that there are other areas beyond their respective communities that are accessible and that offer locations where reading glasses are sold. When asked to quantify the number of such sites in these other, outside areas, 7 (24%) were unable to do so, but 14 (48%) claimed that there are one or two such places, 6 (21%) noted that there are three to five places, and 2 (7%) spoke of six or more. See **TABLE 16**.

	YES	NO	Blank Response	TOTAL RESPONSES
ALL COMMUNITY LEADERS	15	14	35	29
	51.7%	48.3%	--	100.0%

# Respondents Providing Amount Paid	Average Price Paid in Nigerian Naira	1-1000 Naira	1001-2000 Naira	2001-3000 Naira	3001-4000 Naira	4001-5000 Naira	5001-6000 Naira	6001-7000 Naira	7001-8000 Naira
		(Up to \$3)	(\$6)	(\$8)	(\$11)	(\$14)	(\$17)	(\$19)	(\$22)
14 + 50 "0"	5,414	7	0	0	1	2	0	0	1
	\$15 ²⁶	50.0%	0.0%	0.0%	7.1%	14.3%	0.0%	0.0%	7.1%

8001-9000 Naira	9001-10,000 Naira	10,001-12,000 Naira	12,001-14,000 Naira	14,001-16,000 Naira	16,001-18,000 Naira	18,001-20,000 Naira	20,001-22,000 Naira	22,001-24,000 Naira	More than 24,000 Naira	"0" or Likely Erroneous Response	TOTAL RESPONSES
(\$25)	(\$28)	(\$33)	(\$39)	(\$44)	(\$50)	(\$55)	(\$61)	(\$66)	(> \$66)		
0	1	0	0	1	0	0	0	0	1	50	14
0.0%	7.1%	0.0%	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	7.1%	--	100.0%

When next asked if they knew of the average sales price for reading glasses in these other areas beyond their respective communities, 15 (52%) claimed that they did, as shown in **TABLE 17**. However, only 14 community leaders provided an amount in response to the next question on estimated sales price, which averaged to 5,414 naira (\$15), as found in **TABLE 18**. Among their responses, 7 (50%) were under 1,000 naira, and 10 (71%) were under 5,000 naira, with the remaining 4 responses (29%) at much higher levels.

With reference to what the community leaders had earlier reported on what they thought was the local price for reading glasses (1,358 naira averaged from 12 responses, **TABLE 13**) and the maximum price that their fellow residents would be willing to pay for them (2,923 naira averaged from 47 responses, **TABLE 14**), the disparity in the responses concerning the purchase price of reading glasses at local and outlying areas within Imo State is rather puzzling — unless there truly is a cost differential.

ALL COMMUNITY LEADERS	# Respondents	Difficulties in ...								Multiple Responses Allowed for this Question 88 Responses
		knowing where to go to get reading glasses	knowing where to get reading glasses I'd like to wear	getting family acceptance to travel to get reading glasses	finding the money to travel to get reading glasses	finding the money to buy reading glasses	finding the time to travel to get reading glasses	finding means of transport to get reading glasses	other ways to get reading glasses	
	49	12	5	1	24	32	6	7	1	88
		13.6%	5.7%	1.1%	27.3%	36.4%	6.8%	8.0%	1.1%	100.0%

TABLE 19 presents the listing of one of more barriers that community leaders, of whom 49 offered one or more multiple choice responses, suggested were significant hindrances for their fellow residents in trying to get reading glasses. As likewise reported by the recipients of reading glasses themselves (**TABLE 26, 37, 43**), they identified insufficient money for buying reading glasses as the greatest impediment. Recipients cited this among 40%-45% of their responses, while community leaders did so at 36% frequency. Difficulties in paying for transport to where the purchase could be made — ranging 20%-30% of recipients' responses compared to the 27% of those of community

²⁶ 361.739 Nigerian naira to US \$1.00 (January 18, 2020); 1000 Nigerian naira = \$2.76 <https://www.xe.com/currencyconverter/convert/?Amount=1%2C000&From=NGN&To=USD>

leaders — posed the second greatest challenge. Constraints with finding both the time to travel and the means of transport garnered proportionately similar mentions by those in both groups — time (6% versus 7%), transport (4% versus 8%).

Additionally, community leaders believed that there is some lack of knowledge within the general public of locations for buying reading glasses as well as buying ones that are agreeable to wear (combined response frequency at 19%); this was less often admitted by the recipients themselves, with such observations noted in ranges of 4%-11%.

TABLE 20: How did You They Overcome These Barriers in Getting Reading Glasses?

ALL COMMUNITY LEADERS	# Respondents	need of better health services outreach	need of better geographical and financial access to reading glasses	need of better paying jobs so reading glasses are more affordable	need to have self-initiative	do not know	TOTAL RESPONSES Multiple responses allowed
		48	23 39.7%	12 20.7%	1 1.8%	20 34.4%	2 3.4%

As a follow-up, open-ended question, respondents were posed how they thought that their fellow residents could overcome such barriers. Their replies, from 48 of the community leaders, generated 58 answers that were grouped into a few categories for **TABLE 20**. Under the label of “need of better health services outreach,” noted among 40% of the responses, includes reference to interventions by the Nigerian Government as well as by charitable and faith-based organizations, and includes health education promotion. “Need of better geographical and financial access” comprises mentions of the need for financial support (in the purchase of reading glasses), “better roads,” and the availability of more optical shops; this grouping garnered 21% of the mentions. The unexplained reference to “empowerment” by six of the community leaders was added to the professed need for self-initiative, all of which figured in 58 of the responses.

It is noteworthy that community leaders (34% of the responses) concurred with recipients of reading glasses, as presented earlier in **TABLE 27** (24%) and **TABLE 38** (34%), of the need for individuals to take the self-initiative in seeking out reading glasses.

TABLE 21: Thinking about Those Living in This Community, How Many of Them Do You Think are Knowledgeable about Reading Glasses?

ALL COMMUNITY LEADERS	# Respondents	Proportion of Community Members Who are Knowledgeable about Reading Glasses						TOTAL RESPONSES
		Very Few	Some	About One-Half	Many	Nearly All	I Do Not Know / I Cannot Say	
64	6 9.4%	9 14.1%	13 20.3%	29 45.3%	2 3.1%	5 7.8%	64 100.0%	

Community leaders had a split difference of opinion concerning their perception of the level of knowledge held by their fellow residents of reading glasses. Almost one-half of community leaders (48%) believed that “many” or “nearly all” of their fellow residents were knowledgeable in this regard, while 44% felt that “about one-half” or fewer were so knowledgeable. See **TABLE 21**.

TABLE 22: Again Thinking about Those Living in This Community, How Many of Them Do You Think Would Rather Wait for the Possibility that Reading Glasses May be Given Away for Free — Rather than Pay for Them?

ALL COMMUNITY LEADERS	# Respondents	Proportion of Community Members Who Would Rather Wait for Free Reading Glasses						TOTAL RESPONSES
		Very Few	Some	About One-Half	Many	Nearly All	I Do Not Know / I Cannot Say	
64	4 6.3%	16 25.0%	4 6.3%	26 40.6%	12 18.8%	2 3.1%	64 100.0%	

Concerning the likelihood that community members would rather wait for reading glasses to be given to them for free rather than seeking them out on their own, community leaders were somewhat in agreement (59%) that “many” or “nearly all” would do so, with abstainers (“very few” or “some”) representing about 31% of the responses given in appraising their fellow residents’ intentions. See **TABLE 22**. The survey did not ask community leaders to explain their selection, although it can be surmised from the data that both limited access to affordable reading glasses and financial constraints in purchasing them are factors that could influence such a “wait-it-out” behavior.

TABLE 23: How Much Time do You Think Others in This Community Would be Willing to Wait for Reading Glasses to be Given Away for Free — Rather Than that They Pay for Them on Their Own?									
		Time Period that Community Members Would Rather Wait for Free Reading Glasses							
ALL COMMUNITY LEADERS	# Respondents	Less than One Month	Between One and Three Months	Between Four and Six Months	More than Six Months but Less than One Year	Between One and Two Years	More than Two Years	I Do Not Know / I Cannot Say	TOTAL RESPONSES
	64	14	19	15	7	3	4	2	64
		21.9%	29.7%	23.4%	10.9%	4.7%	6.3%	3.1%	100.0%

Community leaders shared rather dissimilar opinions on the length of time that they believed their fellow residents would spend waiting for the chance to obtain reading glasses at no cost to them — as at the mobile health campaign organized by DOF. About 22% projected that individuals in their communities would wait only as long as one month, 30% of others foresaw a wait time up to three months, 23% of others up to six months, and 11% from six months up to one year. The remaining 11% believed that individuals could bide their time for one or two or more years. See **TABLE 23**. This could suggest a number of interpretations:

- the levels of poverty among some in these communities are so pronounced that they could make no earnest attempt in getting reading glasses on their own
- limited geographic access to reading glasses is tremendously difficult to contend with
- there are limited choices of reading glasses (regarding diopter strength or eyeglass frame aesthetics)
- there is limited knowledge among those in the communities that reduced near vision, to which one becomes susceptible with advancing age, can be simply remedied by reading glasses after a quick vision test that can be easily administered anywhere
- individual behaviors or overall cultural practices manifest themselves whereby some are willing to forgo resolution of a health-related problem while awaiting the potential benefits of charity, despite the compromised state of health and unsure, interim wait

As the last question of the survey to be directed to the 64 community leaders, they were asked the following:

“What would be an effective message to inform those in your community that reading glasses can help with one’s vision when working with things in one’s hands or when looking at things that are close up or when reading?”

All but one community leader provided one or more of the 75 total responses; their remarks ranged broadly in topic and a compilation of their responses were broad categorized, with a summarized account and excerpted selections that follow.

It will be noted here that a 20% proportion of the responses in **TABLE 24** do refer to the need and value of ‘public outreach,’ whether through eye health promotional campaigns or by advocacy. Twelve percent (12) thought the free access to eye care services should be better disseminated to the general public to encourage better attendance at mobile health campaigns. All the others framed their message on the benefits of reading glasses, whether for maintaining one’s eye health (22%), the value of reading glasses to improve one’s near vision impairment (35%), or for improving one’s ability to deal with daily demands and daily tasks requiring near vision (12%).

TABLE 24: What Would be an Effective Message to Inform Those in Your Community that Reading Glasses Can Help with One's Vision When Working with Things in One's Hands or When Looking at Things that are Close Up or When Reading?

ALL COMMUNITY LEADERS	# Respon- dents	Reading Glasses Improve Abilities to Do Daily Tasks, Improves Quality of Life	Reading Glasses Serves to Maintain Health of Your Eyes	Take Care of Your Eyes	People Should Take Advantage of Free Services to Test Vision and be Given Reading Glasses	Promote Eye Health through Public Campaigns	Multiple Responses Allowed for this Question 62 Responses
	63	9	26	16	9	15	75
		12.0%	34.7%	21.3%	12.0%	20.0%	100.0%

TABLE 25: Public Education Messages Offered by Community Leaders in Nigeria

1	By educating them about the importance of using reading glasses.
2	By educating them on the importance of reading glasses for those with eye problems.
3	Everyone is always conscious of their sight and are aware of it.
4	I will them about the joy that will be felt once you start using a reading glass.
5	I always advise to them that it is very important, especially if there is a problem with reading; they don't need to overstress the eyes.
6	I have always encouraged people to go for reading glasses to make their life easier.
7	I will advise all that have sight challenges to approach hospital to examine their sight and obtain reading glasses.
8	I will advise them to go and have their sight examined, I will also share the good work of David Omenukor Foundation with them.
9	I will educate them on the importance, tell them that the more you stress the eye, the more you spoil your eye. I will advise them that once a form of abnormality is observed, they should report to who can be of assistance.
10	I will encourage them to always go for check up on getting to know that they have eye problems in order to correct it.
11	I will tell them it helps to read without stress.
12	I will tell them that it is [reading glasses are] necessary because if you are not using it [them], you can't read and do other things.
13	I will tell them to look out for opportunities like this and access free medical care.
14	I will them with reading glasses they won't be stressing their eye too much especially for those who are aged.
15	I will use the village meeting, church as a medium of talking to as many people as possible.
16	Reading glasses will help anyone with eye problems at early stage to go for [a] check-up and avoid buying at places that are not approved, like on the street, etc.
17	That reading glasses reduce poverty [and] death, and also improves reading.
18	To tap into the David Omenukor Foundation and received benefits, as I have just done.
19	Will always encourage people to use the reading glasses.
20	Yes, that reading [glasses] helps [you] to read and [it] is good to go and get your eyes tested.

Overview Summary of Findings from Mexico

Reading glasses were provided by RestoringVision and distributed to four communities in Zacatecas State, Mexico by DIF, a public agency providing social services and counseling. DIF conducts its health fairs on a weekly, rotating basis to each of the 58 municipalities that it serves, and through RestoringVision, it has been able to add correction of near vision to its outreach services. Without the donation of reading glasses to DIF, this intervention would not have been provided to community members, who are reluctant to seek out vision testing services in areas lying beyond their home surroundings, half of which can be described as rural, half as small town. Undoubtedly, the main reason is that a great majority who were seen in these communities are women over the age of forty years who are homemakers; the scheduling of the health fair on Fridays may have precluded the presence of more men. Left unstudied is the prevalence among these women who have husbands working for extended periods at a distance far from home.

Among those interviewed for the survey, 17% of these Mexican respondents are currently wearing reading glasses and 57% are new wearers, never having worn them previously. Meanwhile, 26% had been wearing them but had discontinued doing for reasons as often due to loss or breakage of the reading glasses as to their diminished effectiveness in correcting near vision. About two-thirds of them had purchased reading glasses previously, spending an average of \$27, about 60% of their reported weekly income, \$45. The desired price for reading glasses, though, is not far from this: \$24. The cost for purchasing reading glasses was reported consistently as the most serious barrier. When asked what they would have done if the health fairs had not been organized, about 58% of the Mexican respondents would have tried to purchase reading glasses on their own, while about 33% of the establishments that they cited for purchasing them (optical shops, pharmacy, marketplace) are in the private sector, located both locally and not.

Answers from the respondents reveal their preference to continue obtaining reading glasses from the mobile health campaign organized by DIF; there was scant reference to non-governmental or faith-based organizations running such health outreach activities. Fixed government facilities, like hospitals and clinics, did not seem as attractive, representing fewer than 10% of mentioned sources.

The Mexican respondents, though, never specified the reasons for limiting their travel if they were to access reading glasses at farther-lying locations, since barriers of related to availability and cost of transport, and expenditure of time on the road, were rarely ever cited. On the other hand, they did place high value in self-initiative, and it appears that they would make efforts to get reading glasses on their own, if money were available.

A great majority of the Mexican respondents know about reading glasses; 40% have had schooling that went up through only junior high school, while only 6% graduated from high school. Their description of the benefits from having reading glasses most often cited the improved ability to read printed text (20% of the responses), but benefits were also based on greater facility in undertaking domestic tasks. One example is sewing and embroidery, by means of which piece work items made at home to generate income.

As for the community leaders who were interviewed for the survey, about one-half claimed not knowing about locations for purchasing reading glasses but, for the majority of the remaining one-half who did know, optical shops were mentioned by most of them, contrarily to responses given by the recipients. The community leaders believed that the price of reading glasses was 789 pesos (\$42), although they felt that most of their fellow residents would prefer paying no more than 580 pesos (\$31). Most (83%) claimed that there are venues outside their community for purchasing reading glasses, although exact number of such places and the average price for reading glasses sold there were unclear to about 40% of them. There was a majority opinion that insufficient money is the greatest barrier.

Turning to their opinion of what their fellow residents know or would do about reading glasses, community leaders were split on their perception of the proportions of the population with knowledge of reading glasses, with 29% of responses claiming “very few,” 29% claiming “nearly all.” About two of three community leaders thought that nearly all of their fellow residents would rather wait for free reading glasses than purchase them, while the maximum time period for waiting by community members was reckoned to be “up to three months” (66% of the community leaders), “up to six months” (75%), and “up to one year” (83%).

Key Data Points:

- 88% of the 481 surveyed recipients of reading glasses had previously heard of them, with primary sources being the government, family and friends — yet only 54% of these individuals had had their vision tested previously; 46% never had their vision tested
- 57% of those surveyed and dispensed reading glasses at the health fairs were new wearers
- 84% of the people served at the health fair needed reading glasses, as calculated as the percentage sums of new wearers (57%) and former wearers (26%), who discontinued use of reading glasses due to loss, breakage, diminished effectiveness in correcting near vision impairment; the duration of their wait to acquire new reading glasses at the health fair was not studied, but is worthy topic to explore in the future

- Looking at the total study population in Mexico, of the 481 beneficiaries:
 - Only 10% had previously used reading glasses and obtained them from the private sector
 - 21% had previously used reading glasses and obtained them from government sources, with greater preference for mobile campaigns over fixed government facilities.
 - 26% had previously used reading glasses and had paid for them, citing paying 1-2 weeks of earnings for the glasses
 - For those who tried to get reading glasses before and found barriers, the majority cited money to buy the glasses as the primary barrier.
 - Using data from two questions, 80% of the beneficiaries stated that if the DIF health fair didn't exist, they would not have tried to get reading glasses from elsewhere OR they would have relied on free support to access the glasses
- The data also supports the notion that once a person received and experiences the benefits of reading glasses and seeing clearly, they are likely to try to replace their broken, lost or ineffective glasses. Beneficiaries suggested they would pay 1-2 weeks average pay for the glasses. However, financial constraints were listed as the biggest reason why beneficiaries would not try to get a replacement pair of glasses

Overview Summary of Findings from Nigeria

Reading glasses were provided by RestoringVision and distributed by DOF, one of its project partners, in December 2019 as part of a mobile health campaign that was held in four, rural communities within Imo State, Nigeria. The reading glasses from RestoringVision certainly helped to fill a need for correction of near vision.

Among those Nigerian respondents interviewed by the survey, 20% currently wear reading glasses and 31% are new wearers, never having worn them previously. Meanwhile, 50% had been wearing them but had discontinued doing so due to loss or breakage of the reading glasses, or due to their diminished effectiveness in correcting near vision. About two-thirds of them had purchased reading glasses previously, spending almost 75% of their reported weekly income (\$17 on average) on them. The range of desired price for reading glasses, though, is far less in cost, \$5-\$6. Financial barriers related to purchasing reading glasses or for transportation to locations where they are sold were repeatedly cited as concerns. Fewer than one-half (44%) of the Nigerian respondents would try to obtain reading glasses on their own, if they had not been provided at the mobile health campaign.

For those with interest in independently getting reading glasses, sources for them were said to be located both locally and not. It is believed that the mobile health campaign organized by DOF constitutes a significant percentage of those providers noted to be within the community; there was scant reference to health outreach activities organized by the government. Mobile vendors, having a small role, but being easily accessible to the community, can be likewise categorized as “local”; however, a few of those interviewed did comment on the low quality of their wares. Also, there are clinics, which are believed to be within reasonable access to community members; they were mentioned by a relatively small percentage (10%) as a source of reading glasses.

However, a consistent majority of the respondents cited hospitals (presumably government-run) as the primary choice for seeking out reading glasses. Yet, their farther-lying locations require travel, which presents financial and time implications. Indeed, many comments of “wasted time” were made when respondents had tried to get reading glasses on their own, perhaps in allusion to their efforts at the hospital. Optical shops and the local market, on the other hand, were infrequently mentioned as alternatives, while pharmacies were rarely noted.

A great majority of the Nigerian respondents know about reading glasses; more than 90% have had some schooling, with 50% having at least attended high school. Their description of the benefits from having reading glasses heavily dwelled on the improved ability to read printed materials, among which was often referenced the Bible and church hymn lyrics, since many are devout Christians. Others alluded to the improved capacity to do one's professional job; 60% work outside their home.

As with the responses of the local leaders from the Mexican communities surveyed, the 64 community leaders from Nigeria offered less insight than had been hoped. The availability of a local source for purchasing reading glasses did not exist (53%) or was unknown (41%). The price for such reading glasses was averaged — from only twelve of their responses — at an incredibly low 1,358 naira (\$4), while the highest price that 48 of them thought their fellow residents would pay was pegged at 2,923 naira (\$8). About 30% did not know of locations for purchasing reading glasses outside their communities, and about 25% said that there were none to be found; 48% of the remaining others knew of only one or two sites, 21% knew of three to five sites, and only 7% of six or more. The sales price of reading glasses at these more distant locations was averaged at 5,414 naira (\$15) from the responses of only 14 community leaders. As a barrier for someone trying to buy reading glasses, community leaders thought the money for travelling to the site was almost as important as the money for meeting the purchase price.

Turning to their opinion of what their fellow residents know or would do about reading glasses, two-thirds of the Nigerian community leaders believed that a majority of others do have knowledge of reading glasses. Only about 20% of the community leaders thought that nearly all of their fellow residents would rather wait for free reading glasses than purchase them; however, 66% felt that at least one-half. The maximum time period for waiting by community members was reckoned to be “up to three months” (52%), “up to six months” (75%), and “up to one year” (86%).

Key Data Points:

- 92% (363) of the 395 surveyed recipients of reading glasses had previously heard of them, with primary sources being the government, charitable or faith-based organizations, family and friends — yet only 66% of these individuals had had their vision tested previously
- 31% of those surveyed and dispensed reading glasses at the mobile health campaigns were new wearers
- 81% of the people served at the health fair needed reading glasses, as calculated as the percentage sums of new wearers (31%) and former wearers (50%), who discontinued use of reading glasses due to loss, breakage, diminished effectiveness in correcting near vision impairment; the duration of their wait to acquire new reading glasses at the health fair was not studied, but is worthy topic to explore in the future
- Of the total 395:
 - Only 11% had previously used reading glasses and obtained them from merchants with a preference for mobile vendors
 - 37% had previously used reading glasses and obtained them from government, nonprofit or faith-based sources.
 - 41% of the beneficiaries had previously used reading glasses and had paid for them citing paying one week’s pay or less. How many people that one week’s pay provided for is unclear as Nigerian’s reported 6-7 people per household. Additionally, beneficiaries responses varied greatly when asked what they paid for a similar product.
 - For those who tried to get reading glasses before and found barriers, the majority cited money to buy the glasses and travel to the location from where to obtain the glasses as the primary barriers.
 - Using data from two questions, 90% of the beneficiaries stated that if the DOF health event didn’t exist, they would not have tried to get reading glasses from elsewhere OR they would have relied on free support to access the glasses.
- The data also supports the notion that once a person received and experiences the benefits of reading glasses and seeing clearly, they are likely to try to replace their broken, lost or ineffective glasses. The vast majority indicated that they seek public and social support for replacement glasses and only 10% of beneficiaries reported that they would go to the private sector to replace their glasses. Financial constraints were listed as the biggest reason for why beneficiaries would not try to get a replacement pair of glasses; finding the money to buy the glasses and finding the money to travel to get the replacement pair of glasses were the two primary concerns. This suggests that there may be a difference between being willing to pay and actually being able to pay.
- A last point about Nigeria is that many of the vision services seem to be located outside of the local communities, requiring travel which can be costly – as evident by the fact that money to travel was listed as a barrier. Additionally, it may not be safe to travel outside of one’s local community as security is a primary concern in Nigeria. This makes the access to glasses even more challenging, especially for those who live in rural communities like the ones that were visited for this study.

Conclusions

Vision impairment due to the lack of access to available, affordable eyeglasses has been called one of the biggest — yet least visible — international health problems of our time. A globally widespread disability, it affects 2.5 billion people; the scale of having tens of millions of individuals left without correction of their vision impairment is one that could rightfully be called a crisis. However, the solution for solving near vision impairment is simple and inexpensive, and one that has been in existence for more than 700 years.

What is required is well-considered planning and coordination among key stakeholders and partners for collectively undertaking the screening of underserved populations for vision impairment and the dispensing of reading glasses with the proper diopter strength. Those who remain unserved or underserved are those who lack knowledge about reading glasses or have barriers to accessing them. And so, RestoringVision is committed to ensuring that reading glasses are given to people in need one person, one face, one pair of eyes at a time.

Despite the past efforts in addressing this global health problem, there is still extraordinary work to be done in:

- improving means of access to reading glasses in unserved or underserved communities
- fostering local resources for improving supply of reading glasses, as with social enterprises that help build emerging markets and that provide start-up support to domestic-based manufacturers of corrective lenses and eyeglass frames

These are complex activities that require a fact-based, understanding of conditions on the ground where populations are in need, as well as coordinated efforts in rolling out solutions-based interventions. There is also the complexity of coordinating efforts so that all people are served, from those who cannot afford glasses to those who can afford glasses but at a subsidy.

RestoringVision and Warby Parker have entered into a pilot engagement so that field research in Mexico and Nigeria would be conducted to provide an enhanced understanding of reading glasses through a survey focused on:

- knowledge of reading glasses by the studied populations
- frequency of their past and current use of reading glasses
- range and type of alternative providers of reading glasses in their local areas
- levels of geographic and financial accessibility to reading glasses
- value of reading glasses held by the studied populations

The data, collected from the particularized context of four communities each in Mexico and Nigeria, has been summarized above, from which some conclusions can be drawn here. These conclusions are framed to address the essential question that had been jointly raised by RestoringVision and Warby Parker at the design phase of the survey. As to whether or not individuals in these populations would have been able to get reading glasses elsewhere — in absence of the distribution of glasses at the local health fairs and mobile health campaigns conducted by RestoringVision's in-country partners — the now-better informed response is most often not.

For those surveyed in Zacatecas State, Mexico, predominantly composed of women who were more likely to be engaged with activities close to home, any travel to outside establishments to secure reading glasses would have been difficult. Moreover, reported prices paid by one-third of them amounted to a week's earnings or more. Health fairs have been routinely organized, though on an infrequent basis — generally, once a year. The fairs are conducted on site in these and other municipal communities by DIF, the public agency that RestoringVision partnered with to dispense reading glasses to people in need. Such health outreach provides financial and geographic accessibility for these low-income populations; indeed, 84% of the people served at the health fair needed reading glasses and did not yet have them, mostly due to financial constraints. For how long they waited to acquire the glasses is unknown, but a worthy question to ask in the future.

Among the respondents in Mexico, though, about 27% had previously obtained reading glasses on their own, but they no longer used them due to loss, breakage, or insufficient strength of the lens for correction of near vision impairment. As such, these donated reading glasses also help in the provision of continuity of care.

Optical shops and other venues in the private sector (including flea markets) were another source, although collectively mentioned by only 11% of the respondents; on the other hand, state-run hospital and clinics figured far less as viable options for getting reading glasses as compared to the health fair. In sum, 80% of the beneficiaries stated that if the DIF health fair had not been organized, they would not have tried to get reading glasses from elsewhere or they would have relied on government or charitable support to access reading glasses, due to financial constraints. Based on the survey results, there does seem to be some difference between what a person is willing pay from what a person is able to pay.

There is indeed great value held for reading glasses by those who were surveyed in Mexico, despite the abbreviated educational backgrounds — with 50% having had a primary school level of education and another 40% having had a junior high school education. Reading glasses allowed the beneficiaries to more fully engage in activities requiring near vision, including reading, sewing and embroidery to earn an income, and helping their schoolchildren with homework.

For those surveyed in Imo State, Nigeria, the age and gender distributions of the surveyed populations were more mixed; they were also generally better educated but earning reportedly less in US dollar equivalents than their counterparts in Mexico, and they had larger households, between six to seven persons, rather than four. RestoringVision's project partner, DOF, is a US charitable organization that makes infrequent overseas trips, mostly twice yearly, although they do not visit each community annually. By the time of its mobile health campaign in Imo State, 80% of the people served needed reading glasses and did not yet have them. For how long they waited to acquire them is again unknown, but a worthy question to ask in the future. Neither the Nigerian Government nor other charitable or faith-based organizations offer mobile health services.

Furthermore, alternative locations for locally sourcing reading glasses are generally reported to be limited to the fixed health care establishments run by the government: hospitals and clinics; these pose problems with regard to physical and financial access, as well as to limited, available stock of reading glasses and the long wait times for service. The private sector is limited to mobile vendors of reading glasses offering eye wear of questionable quality and to a small number of optical shops. As such, it was less than surprising to learn that 50% of those interviewed who had previously worn reading glasses were failing to replace them once they had gotten lost, broken, or become less effective in correcting near vision impairment. Indeed, continuity of care is not well assured in these Nigerian communities and concerns related to creating dependency are not supported by the data. In sum, 90% of the beneficiaries stated that if the DOF mobile health campaign had not been organized, they would not have tried to get reading glasses from elsewhere or they would have relied on charitable support to access them. Similar to survey findings from Mexico, there does seem to be some difference between what a person is willing pay from what a person is able to pay.

As in Mexico, value for reading glasses are held highly, especially with this more highly literate population in Nigeria, who rely on these glasses to be able to read for their education and skilled profession, to participate in faith-based services, and to improve their overall sense of well-being.

In conclusion, there does not seem to be a reliable, regular, and affordable supply of services and goods related to correction of near vision impairment for many of the inhabitants in the communities that were visited by this survey. This appraisal refers to both vision testing and the provisioning of corrective eyewear, and it applies to potential outlets in both the public and private sectors. Furthermore, it is surmised there has been no routine screening of vision impairment within the general population, as could be done, for example, through the public-school system, which received negligible mention. As such, knowledge of eye health is not widely promoted by public health initiatives, but often by word of mouth; there is doubtlessly little in the way of mass marketing of eyewear, since reference to this never arose from the survey responses. Indeed, demand for eye care services seems to be driven by the individual who makes the effort to seek out eye care, while such demand is seldom generated by the providers themselves, except in the case of mobile health campaigns.

It should be noted here that DIF, a Mexican government agency, is selective of those community members who are sent advance notice of an upcoming health fair at which DIF would test vision and dispense free reading glasses. It has access to a variety of data sources in order to ascertain level of need for outreach services among those in communities to be visited.

On the other hand, DOF is a US non-profit organization that, on behalf of its "family" communities in Nigeria, attempts to more sporadically fill a medical need for screening (and some treatment) of select, health conditions, such as cancer and diabetes; these services are scarcely provided, if at all, in Imo State, which speaks to the importance of DOF's work. Assessment of financial need for prioritizing beneficiaries does not fall into DOF's consideration for its provision of vital health services at the community level. Moreover, DOF may not have the capacity to access this type of data, even if it wished to have it as reference in order to more assuredly target its beneficiaries. In these communities, separating beneficiaries by need level may also be a challenge.

In summary, RestoringVision and its partners, DIF and DOF, are providing an important and needed service to the people of Zacatecas State, Mexico and Imo State, Nigeria. Progress seems to have been made in these communities around the promotion of knowledge about reading glasses for correction of near vision impairment. Based on the survey findings, the next step is to educate and inform the populations on where they can go to have their vision tested and acquire reading glasses, as well making these more readily available and accessible.

Based on analysis of survey responses and on prior research, emerging markets in the developing countries are more likely to be found in their urbanized areas, and less so outside of the cities. Travel to those locations where glasses may be available is not generally

possible for many and, for that reason, they rely on mobile health fairs and sporadic health campaigns to serve their needs. Both sets of studied populations reported on their reliance on government and social services for accessing reading glasses, and significantly less so on optical shops or mobile vendors.

The diversity of the socio-economic characteristics between those surveyed in Mexico and those in Nigeria does not suggest any variance in their respective need for reading glasses. In Mexico, most of the beneficiaries were women, primarily homemakers, who have a lower level of education versus those interviewed in Nigeria, who participate proportionately more in the formal labor market, but have larger households to support. The reported cost of glasses can be described as high when compared against weekly earnings for those in both countries, suggesting that reading glasses are not as affordable as they are in the US.

One of the challenges for RestoringVision and its other optical social service colleagues is to monitor the progress of emerging needs for reading glasses and level and type of local resources for meeting those needs in the various countries and communities where they have programming. Indeed, the undertaking of this survey reaffirms the value of a strong knowledge base for devising sound strategies and for designing effective and efficient program plans in the delivery of services for correcting near vision impairment.

Yet, it also raises questions about the practicalities of establishing a robust data collection system by RestoringVision, given the operational constraints it faces. Additionally, there are challenges with its dependence on project partners, who assume all logistical responsibilities involved with organizing sessions for vision testing and dispensing of reading glasses, inclusive of getting the reading glasses from custom offices in donor countries to those needy populations residing in those countries. This document also reported on software-related issues, illustrating the technological hurdles to clear for viable collection of data.

And yet, this report offers to RestoringVision and Warby Parker the opportunity to confer over its findings so that they can chart a course ahead that is better informed from what has been mapped for these communities in Mexico and Nigeria, illustrative islands of knowledge, use, access, and value related to reading glasses.