

Introduction: Pediatric hearing loss impacts speech and language acquisition and ultimately education and future employment. In 2018-2019, our team deployed a hearing screening program for school-aged children in Kilifi, Kenya. The COVID-19 pandemic prevented follow up until October 2022, at which time we aimed to identify whether our initial screening initiative led families to seek further care.

Methods: Hearing screenings were conducted at Kilifi County schools and churches using HearScope, a validated mobile device with audiometry and otoscopic examination. In addition, children and families were surveyed about interim follow up and continued otologic symptoms. If abnormal findings were found, appropriate referrals were made to a local ENT or audiologist.

Results: Among 155 children initially screened in 2018 and 2019, 15 had unilateral or bilateral hearing loss, 45 had abnormal findings on otologic exam, and 8 had both hearing loss and an abnormal exam. At follow up screenings in 2022, four participating schools could not be reached, and four churches were no longer in operation. Of 12 individuals identified from the initial cohort of 68 children, 7 (58%) had persistent otologic abnormalities including otosclerosis, drainage, effusions, and retractions. Four (33%), 2 (17%), and 1 (8%) reported seeing an ENT, undergoing complex otologic surgery, and tympanostomy tube placement, respectively. One child who previously underwent bilateral tympanoplasty had bilateral otitis media and externa during our repeat screening. The following ear symptoms were noted by 8 (67%) children: drainage (n=8), otalgia (n=6), aural pressure/fullness (n=6), infections (n=4), worsening hearing (n=4), and dizziness (n=5). These children were referred to a local ENT and given topical antibiotics when indicated.

Conclusions: A hearing screening program in underserved areas can successfully identify children with hearing loss and ear abnormalities, but many children needing further care did not adequately follow up. Screening should be linked with providers and facilities that can offer accessible follow up and coordinate care.

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INTRODUCTION

- Pediatric hearing loss impacts speech and language acquisition
- **Education and future employment** are subsequently impacted
- **Hearing screening program** for school aged children developed in 2018-2019 in **Kilifi, Kenya**
- COVID19 pandemic prevent follow up until October 2022
- We aimed to identify whether our initial screening initiative led families to seek **future care**

METHODS AND MATERIALS

Screenings were conducted at Kilifi county schools and churches (Figure 1).

Video otoscopy with HearScope, a validated mobile device with audiometry and otoscopic examination, was used.

Children and families were surveyed about interim follow up and continued otologic symptoms.

If abnormal findings were found, referral was made to local ENT or audiologist.

RESULTS

2018-2019

- 155 children screened at 17 locations
- 15 had unilateral or bilateral hearing loss
- 45 had abnormal findings on otologic exam

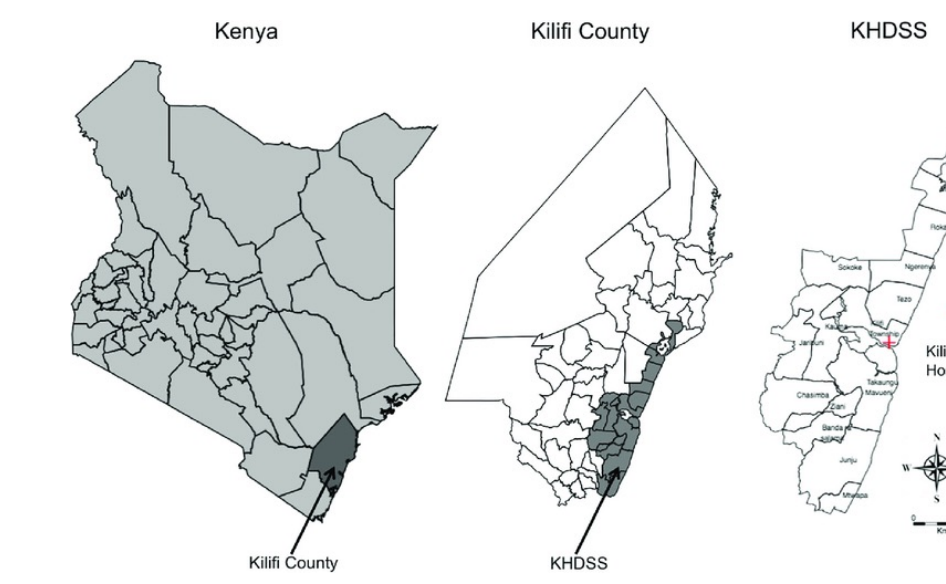


Figure 1. Kilifi county, Kenya. Location for hearing screenings.

2022

Patient Retention

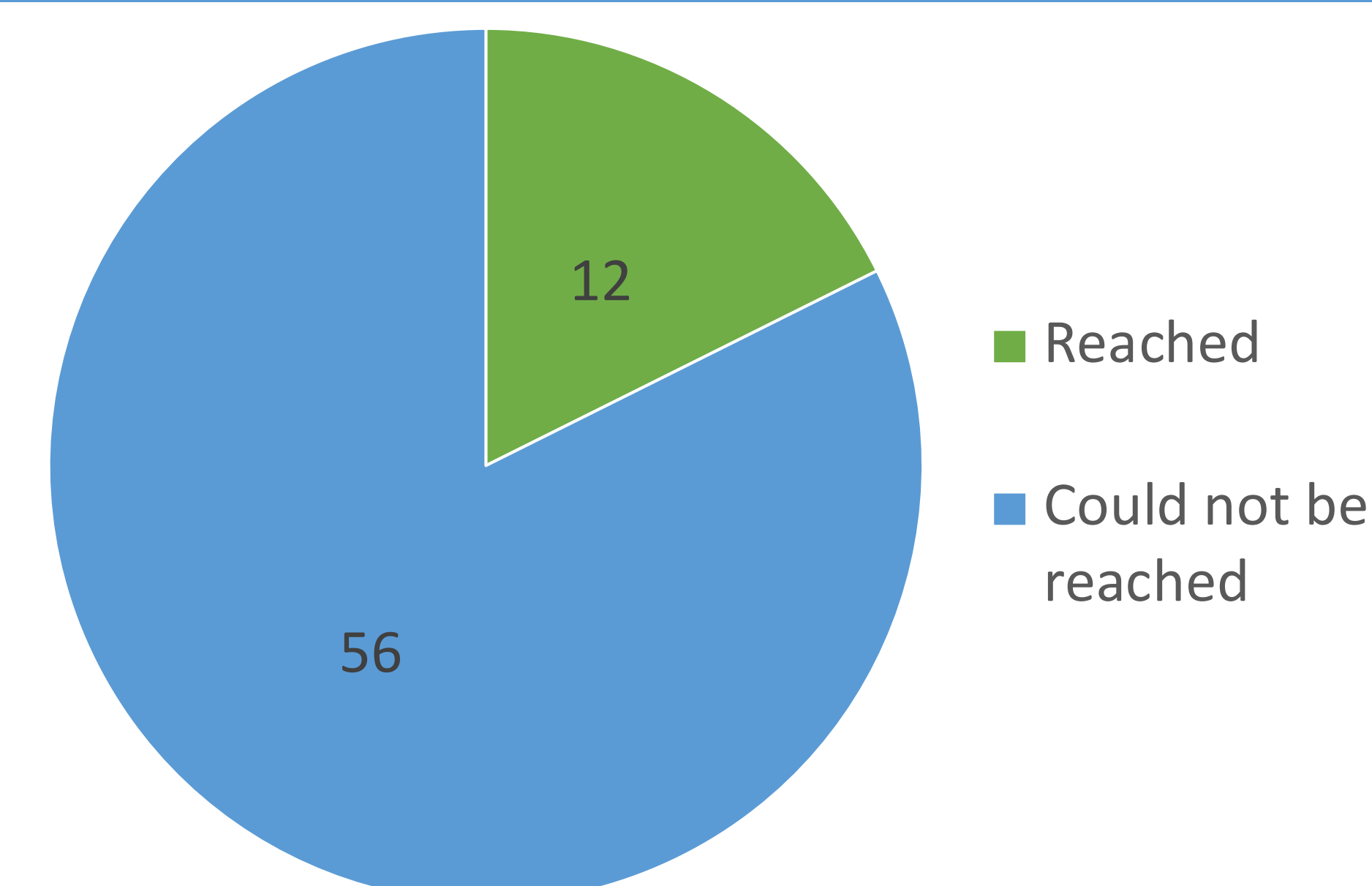


Figure 2. Only 12/68 children could be contacted for follow up

- Four schools could not be contacted
- Four churches no longer in operation

Intermittent Follow Up & Interventions

- Four (33%) saw an ENT
- Two (17%) underwent complex otologic surgery
- One (8%) had tympanostomy tube placement

Development



Two children were held back in school.



One child with a family history of hearing loss.



No children required positional seating to hear.

Current Status

- 7 (58%) had persistent otologic abnormalities on Hearscope (Figure 3)
- Otosclerosis
- Drainage
- Effusions
- Retraction
- Child who underwent bilateral tympanostomy tube placement had bilateral otitis media and externa during repeat screening.



Figure 3. HearScope

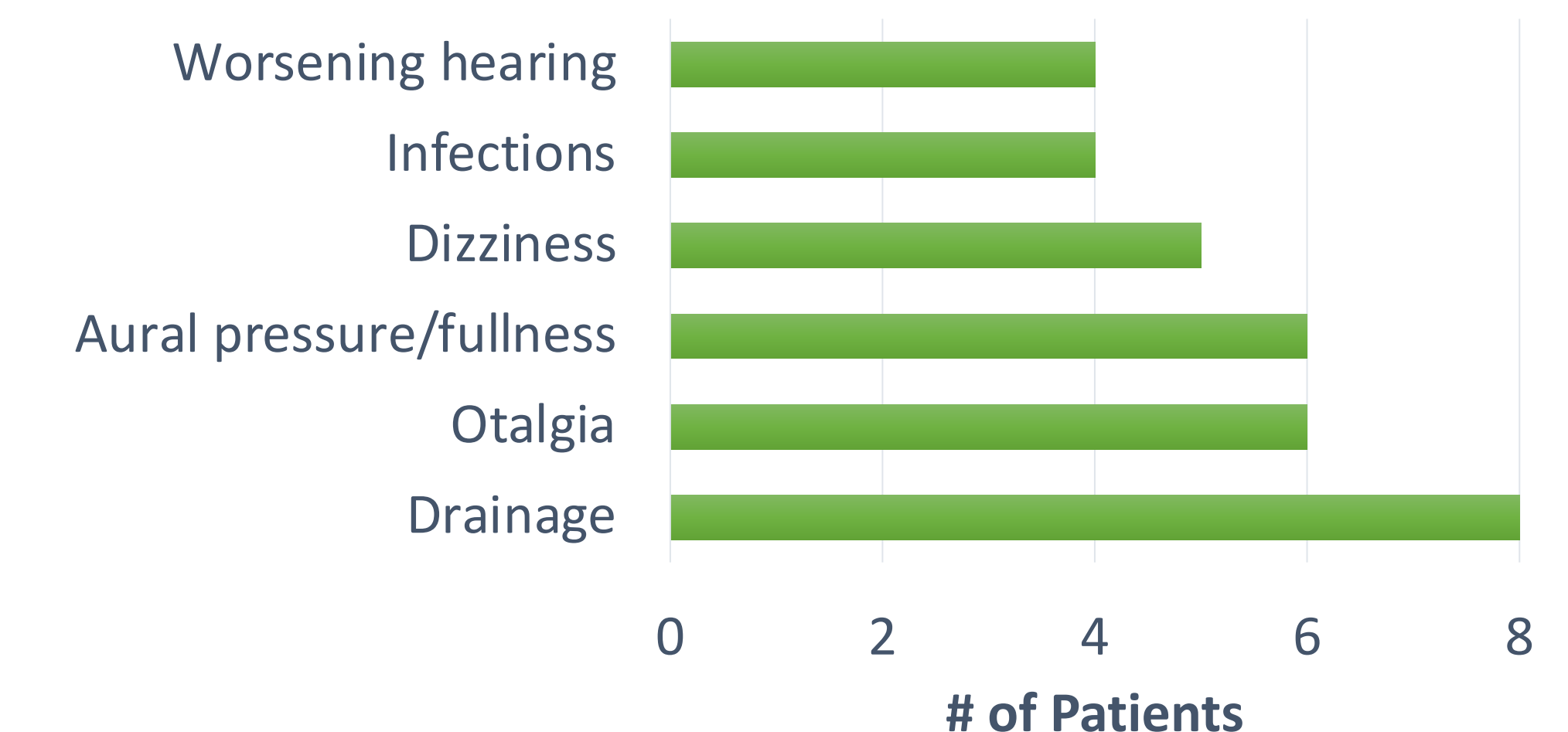


Figure 4. Symptoms among 12 patients at follow up.

Scheduled Follow Up

Six children were referred to a local ENT.

One child was referred to an audiologist.

One child was given topical antibiotics.



Figure 5. Patient receiving follow up otologic exam in 2022.

CONCLUSION

A hearing screening program in underserved areas can successfully identify children with hearing loss and ear abnormalities, but many children needing further care **did not adequately follow up**. Screening should be **linked with providers and facilities** that can offer accessible follow up and coordinate care.

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