

Qualitative findings on the implementation of pulmonary rehabilitation in Kampala

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Post-tuberculosis (post-TB) lung damage is irreversible and varies from mild to devastating in Uganda; it represents 20% of adult respiratory outpatient attenders. There is no useful treatment, but sufferers have poor health status and often are stigmatised.

The aim of this study was to adapt a UK model of pulmonary rehabilitation (PR) for implementation in Kampala, Uganda, for patients with post-TB lung disease.

Working with Ugandan respiratory specialists, nurses and physiotherapists, we developed a PR team to design an exercise regime meeting international standards and an education programme which consisted of normal lung development, tuberculosis and post-TB damage, as well as conventional messages about breathlessness exercise, nutrition, smoking and drug treatments.

Between March 2015 – February 2016, we recruited a total of 45 patients to four x 6 week PR programmes. Each programme comprised 10–13 participants with only 10% drop-out. Interviews were conducted with 45 participants at baseline and six weeks post completion, and five stakeholder interviews. The purpose was to investigate the feasibility and acceptability of PR; impact of respiratory disease and PR; whether PR could be improved and the extent to which the exercises or gains were maintained.

Patients were debilitated by their condition before PR with fear of exercise. They reported whilst exercises were hard to complete at first, they noticed improvement in their ability to walk further and undertake work and domestic activity. As self-confidence improved, they felt less stigmatised and less depressed. Improved social and intimate relationships were reported and after completion, many continued exercises at home. Recommendations for future programmes included patient information to take home about the exercises, and to show their families; and the support of a community health worker to help maintenance of exercises at home.

PR is feasible and acceptable in post-TB patients in Uganda, but the programme must be culturally appropriate and education tailored to the patients' conditions. International collaboration worked very well, and as internet and skype was unreliable face-to-face meetings are essential. This study will inform the design of an implementation study planned for Zambia, Kenya, and Tanzania.

Use of Global initiative for asthma guidelines in asthma management among paediatric residents in tertiary hospitals in Nigeria

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Although the Global initiative for asthma (GINA) guidelines provides a comprehensive integrated approach to asthma management that can be adapted for local use, non-adherence to such guidelines is one of the major reasons for poor asthma control.

A cross-sectional descriptive study of consenting paediatric residents in Nigeria using structured questionnaire. Questionnaire was adapted from GINA guidelines recommendations. Data analyses were with Statistical Package for Social Sciences (SPSS) version 19 (Chicago IL). Chi square was used to assess for any significant associations between categorical variables. A $p < 0.05$ was regarded to be statistically significant. All reported p -values were two sided.

Sixty-six paediatric residents aged 27–40 years were enrolled into the study (37 females and 29 males). An approximate one-third had spent more than three years in residency training. Fifty-eight residents (87.9%) were aware of the GINA guidelines while 46 (69.7%) were familiar with its contents. Only 39 (59.1%) residents adhered to the GINA guidelines. Twenty of the 35 junior residents (57.1%) compared to 26 of 31 (83.9%) senior residents were familiar with the GINA guidelines ($p=0.031$) while 15 of 35 junior residents (42.9%) compared to 24 of 31 senior residents (77.4%) consistently follow the GINA guidelines ($p=0.006$). Adherence to GINA guidelines was not influenced significantly by years of graduation or training ($p>0.05$).

The application of the GINA guidelines was poor among the interviewed paediatric residents. There is need for further exposure to asthma education and to incorporate the management guidelines into the paediatric residency training curriculum.

Asthma prevalence and risk factors in thirteen-fourteen year old school children in Lusaka, Zambia

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Zambia did not take part in the International Study of Asthma and Allergies in Childhood (ISAAC study) and, to date, country-specific data describing childhood asthma, allergic rhinoconjunctivitis and eczema do not exist. As such, the prevalence and risk factors of childhood asthma in Zambia are currently an uncharted territory. The present study sought to begin filling this knowledge gap.

School children aged 13–14 years were recruited as per ISAAC methodology. Inclusion criteria were all children in the Lusaka Urban District within the target age group. Children were asked to respond to (1) a standardised written questionnaire focused on wheezing, rhinitis, and eczema; and (2) a video questionnaire on wheezing.

A total of 1885 school children from 25 schools were included in the final study analysis. Nearly two-thirds (63.7%) of the pupils were aged 14 years and just over one-third (36.3%) were aged 13 years. There were slightly more girls than boys (56.2% vs 43.8%). The prevalence of current wheeze was 6.0%, and 8.2% of the children reported having been diagnosed with asthma by a health professional. Overall, 155 (4.3%) were found to suffer from severe asthma. Exercise-induced wheeze was present in 503 study participants (26.7%), and 35 (1.7%) children reported sleep disturbance due to wheezing. Night-time cough was reported by 661 children (35.1%).

The video questionnaire revealed prevalence rates of asthma symptoms in the last year to be as follows: wheeze 9.4%, exercise-induced wheeze 19.2%, sleep disturbance due to wheeze 5.3%, nocturnal cough 23.9%, and severe wheeze 8.4%.

A history of eczema or rhinoconjunctivitis was significantly associated with the risk of current asthma (adjusted odds ratios 3.48 [95% CI 2.17–5.58] and 2.38 [95% CI 1.57–3.63], respectively), self-reported asthma (adjusted odds ratios 1.92 [95% CI 1.18–3.12] and 2.10 [95% CI 1.45–3.12], respectively), and severe asthma (adjusted odds ratios 4.21 [95% CI 2.41–7.36], and 2.26 [95% CI 1.36–3.82], respectively).

Asthma prevalence in 13–14 year old school children in Lusaka, Zambia, is moderately high and comparable to rates found in other African major cities. Eczema and rhinoconjunctivitis are strongly associated with a diagnosis of asthma in Zambian children.

Prevalence of asthma and its symptoms among undergraduates in tertiary institutions in Ilorin, Nigeria

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Asthma is one of the world's most common long-term conditions, the prevalence and incidence for asthma throughout Africa has increased remarkably in recent years. There is paucity of data on the prevalence of asthma in Nigeria. The aim of this study was to determine the prevalence of asthma and its symptoms, self-reported asthma attacks, and use of asthma medication among tertiary institutions undergraduates in Ilorin, Nigeria.

The European Community Respiratory Health Survey (ECRHS) asthma-screening questionnaire was self-administered by participating students. Asthma was defined as 'possible', current and physician diagnosed and compared with previous local studies to determine changing trend of asthma.

A total of 1485 students were enrolled into the study, with mean age (SD) of 20.9±3.1 years and 793 (52.7%) were males. Nocturnal cough was reported by 21.4% (95% CI: 19.3–23.7%), shortness of breath by 13.5% (95% CI: 11.6–15.4%), and wheezing by 12.1% (95% CI: 10.5–13.9%). Asthmatic attack in past 12-months was reported by 5.0% (95% CI: 3.9–6.1%), and current use of asthma medication by 7.5% (95% CI: 6.1–8.8%) of the respondents. The prevalence of possible asthma was 18.7% (95% CI: 16.7–20.7%), current asthma was 9.5% (95% CI: 7.9–11.1%) and physician-diagnosed asthma was 6.6% (95% CI: 5.5–8.0%). Possible, current and physician-diagnosed asthma and symptoms of asthma were higher in the females than the males. When compared to previous study in young adults ten years ago, the temporal trend shows an increase in the prevalence of asthma attack, use of asthma medication and physician diagnosed asthma.

The prevalence of asthma and its symptoms among tertiary institutions undergraduates in Ilorin, Nigeria is high and further buttressed the fact that asthma prevalence is on the rise.

The development and implementation of a Lung health programme for rural Uganda addressing biomass and tobacco smoke

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Chronic lung disease is common but under-reported in sub-Saharan Africa. Following a survey in rural Uganda which found 16% of the adult population had COPD, we developed a lung health awareness programme to detect and prevent chronic lung disease. This is a two year train-the-trainer programme conducted by health care workers (HCWs) led by the district health officer in Masindi district.

In this abstract we present the design and development of education programme and associated materials.

Working with HCWs who had conducted the Fresh Air Uganda survey, we implemented a train-the-trainer programme for HCWs who taught village health teams (VHTs) to teach their communities. We held a series of meetings to develop the project strategy and contents of the education materials. Preliminary education materials were shown to senior clinicians, administrators (including the Minister for Health and the District Health Officer in Masindi) through all grades of clinicians to VHTs and villagers. Incorporating all feedback in an updated programme, the first group then taught other HCWs and again adapted the materials. Final educational

materials covered: 'What is lung health?', 'How the lung gets damaged?', 'Lung growth and development', and 'Preventing harm by reducing exposure to tobacco smoke and biomass smoke'.

We designed radio messages for broadcast on talkshows and radiospot adverts locally.

Evaluation methods included designing knowledge questionnaires for use before and after training for HCWs and the population.

Educational materials for use in training HCWs and VHTs using desk-aid flip-over charts, and posters have been designed and approved by the Ministry of Health.

The target was to train 10 HCWs in the first group and 12 completed this. These 12 then trained 47 HCWs, and VHT training is ongoing with over 100 so far completing. We have developed and administered knowledge questionnaires.

Using a ground upward approach we involved the local health care systems and HCWs to develop and deploy a train-the-trainer programme which is continuing. The educational materials were designed by the team are now approved for national use. The materials are available for wider use including in our international projects, in pulmonary rehabilitation and in midwifery training.

Asthma and pneumonia among children less than five years with acute respiratory symptoms in Mulago hospital, Uganda: evidence of under-diagnosis of asthma

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Pneumonia is considered the major cause of mortality among children with acute respiratory disease in low-income countries but may be over-diagnosed at the cost of under-diagnosing asthma. We report the magnitude of asthma and pneumonia among 'under-fives' with cough and difficulty breathing, based on stringent clinical criteria. We also describe the treatment for children with acute respiratory symptoms in Mulago hospital.

We enrolled 614 children aged 2–59 months with cough and difficulty breathing. Interviews, physical examination, blood and radiological investigations were done. We defined asthma according to Global Initiative for Asthma guidelines. Pneumonia was defined according to World Health Organization guidelines which were modified by including fever and, white cell count, C-reactive protein, blood culture and chest x-ray. Children with asthma or bronchiolitis were collectively referred to as 'asthma syndrome' due to challenges of differentiating the two conditions in young children. Three pediatricians reviewed each participant's case report post hoc and made a diagnosis according to the study criteria.

Of the 614 children, 41.2% (95% CI: 37.3–45.2) had asthma syndrome, 27.2% (95% CI: 23.7–30.9) had bacterial pneumonia, 26.5% (95% CI: 23.1–30.2) had viral pneumonia, while 5.1% (95% CI: 3.5–7.1) had other diagnoses including tuberculosis. Only 9.5% of the children with asthma syndrome had been previously diagnosed as asthma. Of the 253 children with asthma syndrome, 95.3% (95% CI: 91.9–97.5) had a prescription for antibiotics, 87.7% (95% CI: 83.1–91.5) for bronchodilators and 43.1% (95% CI: 36.9–49.4) for steroids.

Although reports indicate that acute respiratory symptoms in children are predominantly due to pneumonia, asthma syndrome contributes a significant proportion. Antibiotics are used irrationally due to mis-diagnosis of asthma as pneumonia. There is need for better diagnostic tools for childhood asthma and pneumonia in Uganda.