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Adult asthma patients' views and experiences of self-management in Malaysia: a qualitative study

Wen Ming Koh¹, Ee Ming Khoo², Ahmad Ihsan Abu Bakar², Norita Hussein², Hilary Pinnock³, Su May Liew², Nik Sherina Hanafi², Yong Kek Pang⁴, Bee Kiau Ho⁵, Mohamed Isa Salbiah⁵

¹*Kelana Jaya Health Clinic, Ministry of Health, Malaysia*, ²*Department of Primary Care Medicine, Faculty of Medicine, University of Malaya*, ³*Usher Institute of Population Health Sciences and Informatics, University of Edinburgh*, ⁴*Department of Medicine, Faculty of Medicine, University of Malaya*, ⁵*Bandar Botanic Health Clinic, Ministry of Health Malaysia*

Background: Asthma self-management skills in Malaysia are reportedly poor despite evidence that self-management improved asthma outcomes. We aimed to explore adult asthma patients' views and experiences in self-management.

Methods: Adults with asthma were purposively selected from an urban primary healthcare clinic in Klang District, Malaysia. Individual in-depth interviews were conducted. Audio-recordings were transcribed verbatim and analysed thematically.

Results: A total of 24 participants with age ranged 22-69 years from diverse ethnicity, socioeconomic background and asthma duration were recruited. Participants practised the hot/cold concept of disease in asthma self-management which involved the use of food to 'neutralize' inherent hot/cold body constitution or the 'warm-up' practice to neutralize cold temperature that was believed to be the cause of attacks. Self-management skills were influenced by an interplay between personal experience, beliefs, family influence and advice from health care practitioners; asthma action plans were poorly understood and modified for use. Confidence in self-management improved when participants perceived positive outcomes, regardless of whether the strategy was appropriate or not. Participants expressed a strong desire for better support from health care practitioners on asthma self-management.

Conclusion: Asthma self-management practices were learnt experientially based on personal experiences and beliefs guided by sociocultural influences and advice from health care practitioners, family and friends. There is a need for better patient-health care practitioner partnerships to develop self-management skills.

Declaration of Interest:

The study was funded by NIHR RESPIRE Global Health Research Unit. The abstract is written on behalf of the RESPIRE collaboration.

Can the utilization of a practice formulary improve antibiotic prescribing habits in Primary Care?

Helena Hobbs, Rebecca Lee, Derek Forde
Slaney Medical Centre

Aim: Antibiotic resistance is one of the biggest threats to global health today. Appropriate antibiotics should be prescribed, where clinically indicated, at an appropriate dose for an appropriate duration.[1] Our study aims to determine if the introduction of an up-to-date practice formulary can positively influence antibiotic prescribing habits with reference to evidence-based antimicrobial guidelines.

Methods: The electronic health record of adults attending the practice, who were treated for an acute infectious cough in January 2018 were examined. Patients who were not treated with antibiotics or those with chronic lung diseases or significant medical comorbidities were not included in this study. Data was examined by clinical staff and entered anonymously into a spreadsheet which was analysed using Microsoft Excel.

A practice meeting was held and the practice formulary was updated to reflect current national HSE guidelines for the treatment of infectious cough i.e. amoxicillin 500 mg TDS for 5 days or doxycycline 200 mg stat/100 mg OD for 5 days.[2]

Following this intervention in November 2018, the electronic health records of adults presenting with an acute infectious cough in January 2019 were examined, following the methodology outlined above and the results were compared.

Results: In January 2018, only 2% of patients were treated in accordance with guidelines for acute infectious cough. In January 2019, 70% of patients were treated in accordance with guidelines i.e. 70% improvement.

Table 1

Antibiotic	Jan-18		Jan-19	
	N=60		Cases	%
Amoxicillin 500mg TDS x 5/7			1	2
Amoxicillin 500mg TDS x 6/7			37	62
Amoxicillin 500mg TDS x 7/7			4	6
Clarithromycin 500mg BD x 7/7			1	2
Clarithromycin LA 500mg OD x 7/7			10	17
Doxycycline 200mg stat then 100mg OD for 5 days			0	0
Erythromycin 250m TDS x 5/7			1	2
Cefaclor 375mg BD x 6/7			1	2
Augmentin 625mg TDS x 7/7			3	5
Levofloxacin 500mg BD x 5/7			1	2

Conclusion: It is encouraging that a simple intervention such as the implementation of an up-to-date practice formulary can improve prescribing habits so quickly and effectively. In the future, we wish to continue improving our standard of care. To do this, we intend to audit antibiotic prescribing in other respiratory conditions such as community acquired pneumonia and infective exacerbation of COPD.

References:

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- [2] HSE.ie. (2019). *Acute Cough, Bronchitis - HSE.ie*. [online] Available at: <https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/conditions-and-treatments/lower-respiratory/acute-cough-bronchitis/acute-cough-bronchitis.html> [Accessed 3 Mar. 2019].

Assessing treatment fidelity of lay health worker support to increase uptake and completion of pulmonary rehabilitation in COPD

Viktoria McMillan¹, Alison Wright², Gill Gilworth³, Stephanie Taylor⁴, Patrick White³

¹*School of Population Health and Environmental Sciences, King's College London*, ²*University College London*, ³*King's College London*, ⁴*Queen Mary University of London*

Background: The benefits of pulmonary rehabilitation (PR), the most effective treatment for the symptoms and disability of COPD, are restricted by poor rates of uptake and completion. Lay health workers (LHWs) have been effective in improving access to treatment and services in other settings. A feasibility study of using trained volunteer LHWs, COPD patients who have themselves completed PR, was conducted. This work aimed to assess the fidelity of delivery of the LHW intervention.

Methods: LHWs attended a 3-day training programme which included communication, confidentiality and behaviour change techniques (BCT). Interactions between LHWs (n=12) and 24 of 66 people with COPD referred for PR receiving LHW support were recorded, transcribed, coded and analysed. Interactions were rated for treatment fidelity based on a set of predetermined criteria, including delivery of the BCTs taught, and competence metrics.

Results: The pace of learning differed between LHWs. The recorded interactions showed that some LHWs might have benefitted from more time to embed their learning. BCTs providing information about 'consequences' and 'credible source' were delivered frequently ($\geq 79\%$ of interactions), whilst 'goals and planning' interactions were used infrequently ($\leq 8\%$ of interactions). Inter-rater agreement for coding of both BCTs and competence criteria was high ($\geq 84\%$).

Conclusions: The consistency of intervention delivery by different LHWs in their interactions with patient-participants could be improved. It cannot be concluded whether this inconsistency is due to the LHWs' personalised approach to patients, or reflects a true loss of fidelity requiring more intensive training.

Clinical effectiveness and models of pulmonary rehabilitation in low-resource-settings: a systematic review

GM Monsur Habib¹, Roberto Rabinovich², Kalyani Divgi³, Salahuddin Ahmed⁴, Samir Saha⁵, Sally Singh⁶, Aftab Uddin⁷, Nazim Uzzaman⁸, Hilary Pinnock⁹

¹Primary Care Respiratory Group; Bangladesh, ²ELEGI/Colt laboratory, Centre for Inflammation Research, QMRI, The University of Edinburgh and Respiratory Department, Royal Infirmary Edinburgh, ³Chest Research Foundation, Pune, ⁴NIHR Global Health Research Unit on Respiratory Health (RESPIRE), Usher Institute of Population Health Science and Informatics, University of Edinburgh, ⁵Dhaka Shishu Hospital, ⁶Pulmonary and Cardiac Rehabilitation, Department of Respiratory Medicine (Acute Division), University Hospitals of Leicester NHS Trust., ⁷International Centre for Diarrhoeal Disease Research, Dhaka, Bangladesh, ⁸Bangladesh Primary Care Respiratory Society, ⁹NIHR Global Health Research Unit on Respiratory Health (RESPIRE), Usher Institute of Population Health Sciences and Informatics, The University of Edinburgh

Background: The increasing disability, reduced productivity, associated anxiety and depression from chronic respiratory diseases (CRDs) result in social isolation and economic hardship for patients and their families. Pulmonary rehabilitation (PR) is a guideline-recommended multidisciplinary and multifaceted intervention that improves the physical and psychological condition of people with CRD. However, PR services are under-provided and uptake is poor in the low-resource settings of low- and middle-income countries.

Aim: We aimed to review the effectiveness, components and mode of delivery of PR in low-resource settings.

Method: We systematically searched MEDLINE, EMBASE, CABI, AMED, PUBMED and CENTRAL from 1990 for clinical trials of adults with CRD (including but not restricted to COPD) comparing PR with usual care in low-resource settings. After a duplicate selection process, we extracted data on exercise tolerance and quality of life (QoL); component and mode of delivery and analysed using a narrative synthesis.

Results: From 7355 hits we included 16 studies. PR improved exercise tolerance significantly in all the studies and quality of life in 15. In addition to exercise training, most PR services included education and breath retaining technique; some included airway clearance, energy conservation, controlled coughing technique, psychosocial rehabilitation and a few also included coping symptoms, self-management, lifestyle modification, and inhalation technique. Low-cost services were typically home-based or delivered in outpatient departments usually over 8-12 weeks. Common barriers in effective PR were lack of multi-professional teams and lack of demand from patients.

Conclusion: PR can be delivered effectively in low resource settings by incorporating multifaceted components and employing a range of modes of delivery. However, there is a major need to raise awareness amongst professionals and patients to improve availability and access to PR.

Neither the funder nor the sponsor (University of Edinburgh) contributed to protocol development. MH owns a Pulmonary Rehabilitation clinic in Bangladesh. All other authors declare no competing interests

References & Clinical Trial Registry Information

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Development and implementation of an awareness programme addressing household air pollution and tobacco smoke: a FRESH AIR project

Frederik van Gemert¹, Evelyn Brakema², Rianne van der Kleij², Sian Williams³, Rupert Jones⁴, Bruce Kirenga⁵, Shamim Buteme⁵, Talant Sooronbaiev⁶, Aizhamal Tabyshova⁶, Maamed Mademilov⁶, An Pham Le⁷, Quynh Nguyen Nhat⁷, Corina de Jong⁸

¹University Medical Center Groningen, the Netherlands, ²Leiden University Medical Center, ³International Primary Care Respiratory Group, ⁴Peninsula School for Medicine and Dentistry, Plymouth University, ⁵Makerere University Lung Institute, ⁶National Center of Cardiology and Internal Medicine, ⁷University of Medicine and Pharmacy, ⁸University Medical center Groningen

Aim: To develop and implement a feasible, acceptable, and effective lung health awareness programme on the risks of biomass- and tobacco smoke in three low and middle-income countries (LMICs): Uganda, Kyrgyzstan and Vietnam

Context: In many LMICs, many people are unaware of the damaging effects of tobacco and biomass fuel smoke.

Description of change: Group stakeholder meetings were held, to co-create intervention materials and develop an implementation strategy. Mixed methods were used to 1) evaluate the implementation process (guided by the *modified Conceptual Framework for Implementation Fidelity*), 2) determine the costs of the programme, and 3) evaluate the effect of the programme on local knowledge on lung health.

Strategy of change: All education materials were adapted and an implementation strategy for a cascading train-the-trainer programme was developed in close collaboration with local stakeholders; the programme was then integrated into the existing health infrastructure.

Effects of changes: A group of selected healthcare workers (HCWs) was initially trained. These HCWs then trained other groups of HCWs, who subsequently trained a group of community health workers (CHWs). CHWs educated their communities, reaching >15,000 people in both Uganda and Kyrgyzstan, and >10,000 in Vietnam. All education materials were approved by the Ministry of Health's education department. Costs varied from 13,000 to 15,400 euros across the countries. Knowledge on lung health among the trained HCWs, CHWs and community members increased significantly to an excellent level in each country.

Lessons learnt: The implementation strategy, using a cascading train-the-trainer approach commencing with physicians and ending at community level, is feasible, acceptable and effective in diverse low-resource settings.

Message to others: The increased understanding of lung health will enable communities to consider different possibilities to reduce exposure from HAP and start smoking cessation programmes.

Effects of implementing improved cookstoves and heaters to reduce household air pollution: a FRESH AIR study

Frederik van Gemert¹, Corina de Jong², Bruce Kirenga³, Patrick Musinguzi³, Shamim Buteme³, Talant Sooronbaev⁴, Aizhamal Tabyshova⁴, Maamed Mademilov⁴, Berik Emilov⁴, An Pham Le⁵, Quynh Nguyen Nhat⁵, Dang Tran Ngoc⁵, Hong Le Huynh Thi Cam⁵, Ryan Chartier⁶, Job van Boven²
¹University Medical Center Groningen, the Netherlands, ²University Medical Center Groningen, ³Makerere University Lung Institute, ⁴National Center of Cardiology and Internal Medicine, ⁵University of Medicine and Pharmacy, ⁶RTI International

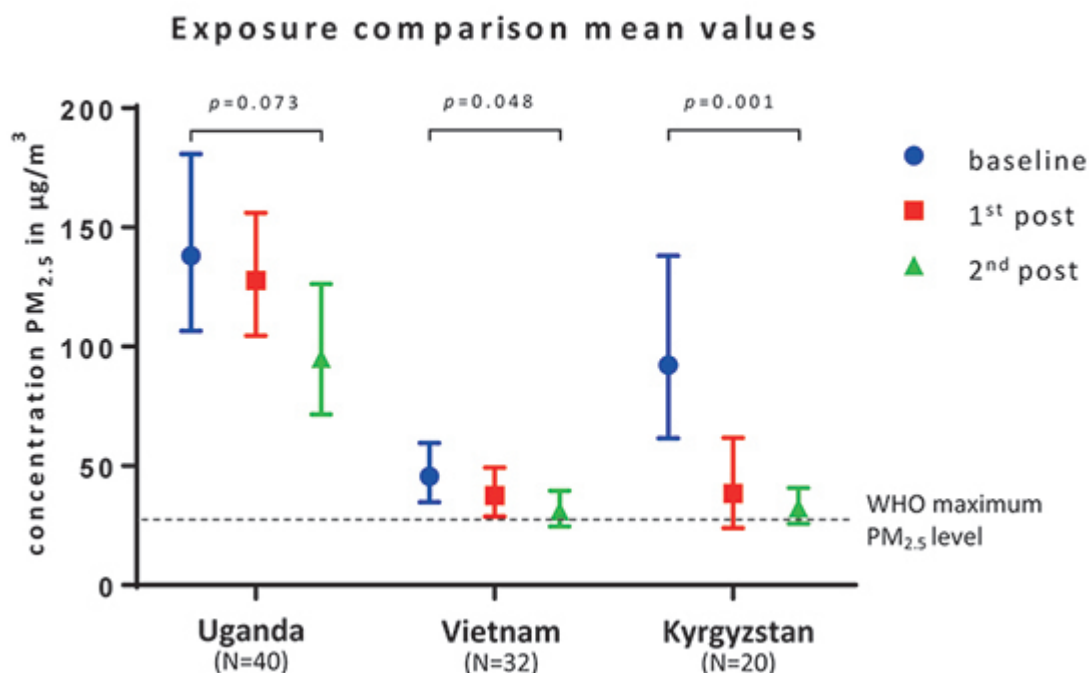
Aim: To evaluate the effectiveness and acceptability of locally tailored implementation of improved cookstoves/heaters in low- and middle-income countries (LMICs).

Context: Exposure to household air pollution (HAP) caused by biomass fuel use is associated with a wide range of health-damaging outcomes. The poorest people, living in the rural areas of Uganda, Vietnam and Kyrgyzstan have limited opportunities to switch to cleaner fuels in the immediate future.

Description of change: Situational analyses and awareness programme followed by implementation of locally-made improved cookstoves/heaters.

Strategy of change: Implementation of improved cookstoves/heaters among 649 adults and children living in rural communities in these three LMICs, provided by local energy providers. Health and HAP outcomes were compared between baseline (still using traditional cookstoves/heaters), and at 2 months and 6-12 months follow-up. Outcomes included respiratory symptoms, chest infections, school absence, objectively measured HAP (PM_{2.5} and CO), and intervention acceptability. The process was evaluated using the RE-AIM framework.

Effects of change: After implementation, many symptoms and infections diminished (and even disappeared) significantly in Uganda and Kyrgyzstan, and to a smaller extent in Vietnam. PM_{2.5} exposures decreased with 31% to 65% but remained above the WHO guidelines. Figure 1 shows mean PM_{2.5} exposures of randomly selected households with 95% confidence interval; *p*-value refers to baseline and 6-12 months difference. CO exposures remained below the WHO guidelines.



Lessons learnt: Locally tailored implementation of improved cookstoves/heaters had considerable effects on respiratory symptoms and HAP, yet PM_{2.5} levels remained too high, especially in Uganda. Participants indicated high acceptance of the improved cookstoves/heaters and almost everybody recommended the cookstoves/heaters to others.

Message to others: It is important to understand the local socioeconomic and cultural circumstances when implementing improved cookstoves/heaters. The short-term effects of reducing HAP exposure may encourage communities to change their cooking methods, including the use of clean fuels.