News from here and there

Nineteenth century medical history texts made available free online in UK

As part of the UK Medical Heritage Library symposium held in November 2016 in London, England, the UK Medical Heritage Library in collaboration with the Wellcome Library has provided free online access to 68 000 19th century texts relating to the history of medicine. The literature will contribute to the Historical Texts division of the library, which already has 350 000 texts from the 15th to the 19th centuries. This service is an offshoot of a 3-year collaboration funded by Jisc (an independent education charity, previously known as Joint Information Systems Commmittee) and the Wellcome Library, and aims to provide access to 20+ million pages of medical texts from the 19th century for teaching, learning and research in medical humanities. The texts are accessible free online via the Wellcome Digital Library and Internet Archive till April 2017.

The UK Medical Heritage Library is sourced by university and other research libraries across the UK. The Wellcome Library has nine partner institutions contributing their content to this platform. These include the Royal College of Physicians of London, Royal College of Physicians of Edinburgh, Royal College of Surgeons of England, University College London, University of Leeds, University of Glasgow, London School of Hygiene and Tropical Medicine, King's College London and the University of Bristol. This project, which is co-designed with Research Libraries UK, has an academic advisory group chaired by Stella Butler. She is currently the University Librarian and Keeper of the Brotherton Collection at the University of Leeds.

Dr Shirish Kavadi (Researcher in Medical History and Visiting Faculty at Symbiosis School of Liberal Arts, Pune) said, 'This initiative of the UK Medical Heritage Library is welcome. Researchers and scholars especially those based outside the UK, unable to travel and access these rich archives, will now be able to do so. Several of these institutions have collections useful to medical historians in India. I hope during the period that the free online access is available researchers and teachers in the medical humanities in our country make the most of this opportunity. I certainly will be doing so.'

His views were echoed by Dr Sarah Hodges (Associate Professor, History Department, University of Warwick, Coventry, England), who said to this *Journal*, 'This is very exciting news for anyone interested in medical history. That such rich resources are to be made freely available is testimony to the innovative work that librarians and archivists are able to do in our digital age. I look forward to using the collection, and urge others to do the same.'

MAHARRA HUSSAIN, *Dubai, United Arab Emirates*

The impact of training informal healthcare providers in India

Can training improve the quality of care provided by informal healthcare providers and self-declared 'doctors' (informal providers)? Jishnu Das *et al*. have found that indeed it can and published their surprising findings in *Science* (7 Oct 2016).

The study was conducted at the Liver Foundation, a voluntary non-governmental organization in West Bengal, and was designed to evaluate whether a 9-month training programme, implemented through 72 training sessions, would allow informal providers to correctly diagnose and manage different conditions and decrease the use of unnecessary medicines, injections and antibiotics.

The researchers also assessed whether the training affected the patient load and thus, the profits of these informal providers.

The study was completed in three phases. In the first phase, 152 informal providers, of a total of 304, were randomly selected to receive training. The remaining 152 providers (the control group) were given training after the completion of the study.

In the second phase, the researchers sent standardized patients to all the 304 providers. Each standardized patient, recruited from West Bengal itself, was comprehensively trained to present one of three different conditions. All three conditions were presented to each provider to appraise their ability for correct diagnosis and management.

The implementers of the training programme did not know what the three conditions were. Also, the standardized patients did not know whether the providers they visited had been given formal training.

The standardized patients were then sent to every primary healthcare centre (PHC) in the 203 villages where the informal providers were located. Reflecting the severe scarcity of trained medical professionals in this region, only 11 PHCs were located.

In the final phase, the researchers sat in the clinics of the informal providers for a full day each, recording important particulars of all clinical interactions.

The key findings were that trained medical professionals were 28.3% more likely to correctly manage a case as compared to untrained informal providers. With training, this gap reduced to half for providers with mean attendance and almost entirely for those who completed the full course.

In addition, there was no decline in the use of unnecessary medicines, antibiotics and injections. However, both trained and untrained informal providers prescribed 28.2% fewer unnecessary antibiotics compared to trained medical professionals.

Finally, training improved the patient load of the provider. The study computed that the increased revenue would compensate for cost of training within 66 to 210 days based on estimated patient load.

In conclusion, the study showed that training improved the ability of informal providers to correctly diagnose and manage multiple conditions. It did not reduce their probability of prescribing unnecessary medications, but it did not increase it either.

This coupled with the low cost of training (US$175 per trainee) suggests that multitopic medical training is an effective short-term strategy to improve healthcare in rural India. This is important because more than 70% of all primary care in rural India is provided by such people. The Indian Medical Association believes that any kind of training will legitimize an illegal activity, but there are others who consider that training can provide a stop-gap solution to the severe shortage of qualified doctors in rural India.

Dr Samiran Nundy (Dean of Academics, Sir Ganga Ram Hospital, New Delhi) said, 'I think this is one of the most

important papers to come out from India in recent times. The authors have addressed the vexed and continuing problem of the shortage and maldistribution of doctors in this country. Instead of trying the conventional approach by opening more and more medical colleges which have now become business ventures and produce substandard doctors, they have tried to "upgrade" the quality of medical practitioners who are already available locally (disparagingly known as quacks) by training them in a short course. In a scientific study comparing the trained and the untrained they found that trained practitioners performed better and were nearly as good as doctors. This original study needs to be replicated more widely as soon as possible.'

P.M. NISCHAL, *Bengaluru, Karnataka*

Nobel Prize in Physiology or Medicine awarded for discovery of cellular 'self-eating' or autophagy process

The Nobel Prize in Physiology or Medicine for 2016 was awarded to Dr Yoshinori Ohsumi, a cell biologist from the University of Tokyo, for the discovery of cellular recycling mechanisms, called 'autophagy'.

Autophagy, or autophagocytosis, refers to the cellular processes of 'self-eating', which were first discovered in the 1960s as a mechanism allowing cells to recycle their own content by enclosing certain structures in membranes. In specific organelles known as autophagosomes, targeted cytoplasmic materials are enclosed within the autophagosome. After enclosure, the material is taken to the lysosome or recycling compartment of the cell. Dr Ohsumi's experiments in yeast cell lines show us that autophagy dictates the renewal of cellular components, which implicates cellular responses to starvation, infection, ageing, embryo development and disease. For instance, disrupted autophagy has been implicated in Parkinson disease, diabetes and cancer. Disruptions in autophagy can lead to increased morbidity and cell death. His ground-breaking work was published in 1992, after he demonstrated yeast with protein enzyme deficiencies accumulated autophagic vacuoles (Takeshige K, *et al*. Autophagy in yeast demonstrated with proteinase-deficient mutants and conditions for its induction. *J Cell Biol* 1992;**119:**301–11).

Dr Ohsumi is credited for founding the field of autophagy, which is a critical mechanism to keep cells healthy. From his ingenious use of Baker's yeast to identify those autophagy genes, to elucidation of the underlying mechanisms of autophagy, he pioneered our understanding of cell recycling and metabolism. His advances have also proved these cellular mechanisms are present in higher order organisms such as humans. He received a PhD in molecular biology and began his discoveries as a junior professor at the University of Tokyo, which was the start of the work that would bring him the Nobel Prize.

Dr Narendra N. Joshi (Immunologist, Advanced Centre for Treatment and Research and Education in Cancer, Navi Mumbai) said, '[The] Nobel prize is always awarded for fundamental research that is revolutionary and has very strong [and] long-term impacts on human life. Role of autophagy-related processes in neurodegenerative and malignant disorders has added an important dimension to research in this area. The impact is underscored by the fact that over ten thousand research articles are now published annually in this field.'

SAMARPITA DAS, PRETTY VERMA, PAMELA LIAO, *Canada*

Contralateral scratching for itch relief awarded the 2016 Ig Nobel Prize in Medicine

The Ig Nobel prizes acknowledge innovative research(es) that 'make people first laugh, and then make them think'. The 2016 Ig Nobel prize in Medicine was awarded to a German team at the University of Leubeck (Drs Christoph Helmchen, Carina Palzer, Thomas F. Munte, Silke Anders and Andreas Sprenger), for their research in the alleviation of pruritus using a technique called 'mirror scratching'.

The research investigated relief of pruritus by tapping into non-peripherally activated nerves, for example, using interactions in the spinal cord rather than the skin to help relieve the sensation of itch. The team tested the central mechanism of itch relief by asking participants to scratch contralateral limbs after receiving histamine itch-inducing injections. By showing that some relief was gained from scratching the contralateral side to the itch, the group hopes to make strides in certain inflammatory disease processes where scratching and associated sequelae such as superimposed infection remain a problem (*PLoS One* 2013; **8:**e82756).

Dr J.S. Vaidya (Professor of Surgery and Oncology, University College, London) said, 'Itch-scratch appears to be a phenomenon that is transferable between the sides of the body, and with its autonomic interactions via histamine, it may well be working through the hypothalamus if it is the autonomic system, or indeed the spinal column if it is the peripheral nervous system.'

SAMARPITA DAS, PRETTY VERMA, PAMELA LIAO, *Canada*