led to clashes between different cultural groups. Safe places, make-shift mosques, churches and children's centres had been destroyed or relocated and yet the number of camp inhabitants had continued to increase, including numbers of unaccompanied children. News reports in early 2017 suggested that following closure of 'The Jungle' in October 2016, the numbers of refugees arriving in the area continues to increase and more informal camps have since appeared. A prediction of one of the participants seems accurate, that the camp's closure would leave refugees more vulnerable, as they would lose their community–volunteer links and neighbourhood watch system of 'The Jungle' and the media would lose interest.

My learning

It is tempting to focus on refugees' countries of origin and imagine what political and social difficulties they may have faced there. Meeting the refugees in Calais I understood how key refugees' journeys are in shaping their lives and experience of trauma. Now, when considering a patient's story, I need to ask not only why they left home, but also how.

Although it is possible to be critical of some aspects of MHPSS in Calais, there was a caring and supportive community of volunteers. When refugees find some stability or a new home in Europe, they may lose this support and feel isolated. Service providers need to help to empower communities and build trusting relationships with refugees, such as those between volunteers and refugees in 'The Jungle'.

Moving forward

Volunteers in the UK may be willing and ready to help refugees arriving from Europe; it would be useful for them to be trained to support refugees effectively, for example in PFA.

Refugees are unused to stable long-term therapeutic relationships; this is something that the NHS and NGOs in the UK can offer.

Refugees remain vulnerable even after reaching the UK, especially women and children. Tracing their families and loved ones needs to be a priority. Putting them in touch with other refugees may be empowering and protective for their mental health.

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PANDORA'S BOX

Pandora searches the world literature for evidence, news and other sources on matters of interest (doesn't shy away from controversy) to bring to the reader. She welcomes comments and suggestions (via ip@rcpsych.ac.uk)

The puzzle of adolescent brain development solved

The hitherto accepted view that both brain volume and cortical thickness decline from childhood to young adulthood is re-examined in a recent study. The researchers evaluated over 1000 young people (8–23 years old) who had taken part in the Philadelphia Neurodevelopmental Cohort, a community-based study of brain development, using neuroimaging and cognitive data. They examined age-related effects and gender differences in four measures of grey matter from 1625 brain regions: grey matter density (GMD), grey matter volume (GMV), grey matter mass (GMM) and cortical thickness (CT).

They found that while GMV and CT generally decrease with age and GMM shows a slight decline overall, in contrast GMD increases. Females have lower GMV but higher GMD than males throughout the brain. These results suggest that GMD is 'a prime phenotype for assessment of brain development and likely cognition'. Very importantly, the finding that GMD increases with age explains why cognitive performance improves from childhood to young adulthood despite the decline in brain volume and cortical thickness.

Gennatas, E. D., Avants, B. B., Wolf, D. H., *et al* (2017) MRI-derived gray matter measures, density, volume, mass, and cortical thickness, show distinct age and sex effects, as well as age-dependent intermodal correlations around adolescence. *Journal of Neuroscience*. https://doi.org/10.1523/JNEUROSCI.3550-16.2017.

Can we stop ourselves ageing?

As we age in years the ability of our body cells to divide and grow deteriorates, causing our body to degrade and letting diseases of senility creep in. Getting old is a biological reality and an irreversible process, or at least so we believed until now.

Not so, say a Korean research team from DGIST (Daegu Gyeongbuk Institute of Science and Technology), who are working on reversing the ageing process. In the process of screening for compounds that can alleviate senescence, they identified the ataxia telengiectasia mutated (ATM) inhibitor KU-60019 as a possible agent. The researchers found that ATM interacted with the subunits of vacuolar adenosine triphosphatase (v-ATPase), which is involved in the regulation of lysosomal activity. As cell ageing progresses, the ATM protein phosphorylates v-ATPase, weakening the binding force between the v-ATPase subunits and causing the function of the lysosomes to deteriorate. They also demonstrated that by inhibiting ATM with KU-60019 they reduced the phosphorylation of v-ATPase, hence inducing recovery of cell mitochondrial function, functional recovery of the lysosome and autophagy system and metabolic reprogramming and promoting wound healing in animal ageing models.

Could ATM inhibitors be effective in preventing brain ageing or promote repair of brain damage?

https://doi.org/10.1192/S2056474000001987 Published online by Cambridge University Press