The psychological perspective on the role of personalised medicine

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When George Orwell, writing in the 40s, looked ahead to 1984 in his dystopian novel, many of his predictions focused on the 'behaviour modification' of his hero Winston Smith by a terrifying authoritative state.

Orwell's vision of a totalitarian state didn't mention a Ministry of Health (Minihealth, perhaps?), but I think it's safe to say that modifying people's behaviour will occupy an increasingly important place in healthcare innovation and delivery as we head towards 2030.

Thankfully, this won't be in the hands of a manipulative, unfeeling 'Big Brother'; the current zeitgeist of modern medicine is focused firmly on the democratisation of medicine, increased individual autonomy, informed choice, and decision-making. Put simply, it's about putting the patient first. While we should applaud this shift, the success of these strategies in practice will be determined by the behaviour of a multitude of stakeholders, none more so than patient and clinician.

A report published by the World Health Organisation in 2003 concluded that between a third and a half of medicines prescribed for long-term conditions are not taken as directed[1].

Assuming these prescriptions were appropriate, this represents a significant loss to healthcare and a growing negative perception of the 'real world' efficacy of innovative treatments.

It has become increasingly clear why this gap between prescription and real-world efficacy exists. There is a well-established body of evidence indicating that behaviour is the rate-limiting step between healthcare innovation and optimal health gains.

And this is perfectly exemplified when we look at patient adherence to prescribed treatments. This behavioural gap is driven at a very fundamental level by erroneous beliefs related to health, illness and treatment. Together, these beliefs represent the root cause of the most significant fault line in modern medicine — adherence to self-management and treatment recommendations[2].

Healthcare in 2030 will need to have solved these underlying challenges, so we can effectively transition innovative medicines from lab to bedside by taking full account of the patient's perspective.

So how will we achieve this and what will it look like? Firstly, drug manufacturers will apply the same scientific rigour and systematic development that has historically been reserved for treatments to the business of understanding how and why people behave in relation to their treatment. And I posit that this should be addressed through a further evolution of the novel adaptive licensing strategies currently being trialled in Alzheimer's disease and breast cancer. One thing's for certain, however; these efforts will require cooperation between a wide range of stakeholders. These include the organisations that influence patient access and acceptance to medicines (such as the EMA and other medicines regulators), the pharmaceutical industry, health technology assessment bodies, and organisations issuing clinical treatment guidelines.

Crucially, it will also include patient and consumer organisations, healthcare professionals, researchers and academics[3]. Achieving this virtuous network of stakeholders will be the first critical step in achieving personalised medicine from both a clinical and psychological perspective. Which brings me to my next gaze into the crystal ball. In contrast to Orwell's grim foretelling, healthcare in 2030 will recognise that people do not arrive at a medical encounter as programmable machines, ready to receive instructions which they will execute to perfection. Each individual will arrive with their own set of ideas about their illness and its treatment. Many will have doubts and most will have concerns. These barriers — combined with a multitude of practical barriers — will influence their ability, capacity, resources and motivation to start and continue with treatment[2].

By 2030, utilisation of simple yet well-established principles of behavioural medicine and health psychology will provide the key to delivering individualised treatment[2]. Once fully operationalised, these strategies will unlock the barriers to achieving the very best outcomes for patients.

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Each individual being treated for a long-term condition will receive a fully-tailored care package, both clinical and psychological. Healthcare providers, regulators and the pharmaceutical industry will be fully engaged and committed to delivering a 'product plus' solution that is tailored to each individual's needs.

I make no apology for my optimism here. Two millennia ago, we were looking at each person's balance of four different humours to individualise their treatment, and today's technology has brought us ever closer to exquisite precision in disease diagnosis and treatment[4].

So in 2030, patients will be screened to receive customised healthcare using molecular analysis — with medical decisions, practices, and/or products being tailored to the individual patient. In this model, diagnostic testing will be employed to select appropriate and optimal therapies based on the context of a patient's genetic content[4].

Critically though, patients will also be screened to understand their illness perceptions, beliefs about medicines, and their psychosocial support, information, and educational needs. Patients will also be assessed to understand their preferred communication channels.

A prospective package of tailored support will instantly be reflected back to the patient and (with full informed consent) shared with their multi-disciplinary healthcare team and the healthcare provider.

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And what will become of this data? It will serve a number of purposes. The patient will receive a fully-individualised care package designed to support optimal engagement to the treatment. This will be delivered through a range of channels including HCPs, personal wearable devices, smartphones, tablets, computers and smart televisions.

These care packages may even extend to gymnasium memberships and employers (without straying too far into Big Brother territory!). At a macro-level, aggregated data will be sent to health departments and will contribute both to our broader understanding and to a constantly evolving healthcare policy at a population health level.

Research into digital health behaviour will be ubiquitous by 2030 and there will be a more precise understanding of the human-technology interface. Predictive computer modelling will allow early warning signals to detect imminent health risks and monitor patients throughout their treatment pathways. In real-time, care packages will be adapted to continue to meet the needs of the patient.

Motivational and behavioural change techniques will be integrated within interventions that incentivise the patient to adopt more positive health behaviours. Adherence to lifestyle and treatment recommendations will reap rewards, such as reduced health insurance premiums, gym memberships and dietary discounts.

While the autonomous patient self-manages away from the clinic, clinicians can prepare themselves for more efficient and concordant consultations and medical interventions with the array of data at their fingertips.

And the role of the clinician should not be underestimated in 2030. We will never replace the therapeutic effect of a good clinician, and even the most independent patients want and need contact with doctors, nurses and pharmacists. While the reasons for this may seem obvious, healthcare in 2030 will, in full knowledge of the research, be harnessing the power of the non-specific, placebo effects of treatment[5].

In democratised healthcare systems of 2030, healthcare budgets will be vastly more efficient than those of today. Of course, such personalisation of medicine comes at a price, but the status quo is greatly more expensive, with poorer outcomes for patients.

It's said that: 'if you do what you've always done, you'll get what you always deserved'. We cannot continue along our current path. In 2013, the global cost of non-adherence was estimated to be $564 billion[6]. If this money could be reclaimed, along with the budgets allocated to our current 'one size fits all' care packages, then the funding of personalised healthcare in 2030 begins to look eminently achievable.

But all the money in the world will not make a difference unless regulators, industry, governments, healthcare providers and entrepreneurs begin to place the patient's perspective at the core of their thinking.

This is the big 'if' that hangs over all of my predictions for 2030. Only when the patient's perspective is understood will we begin to positively modify medicines-related behaviour and make the most of medical innovations.

References

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