A new approach to reducing disorder and improving well-being

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Abstract

Psychological science has usually approached the treatment of disorder through research on individual combinations of risk and protective factors (including life experiences, thinking styles, behaviours, social relationships and genes), and the application of interventions that focus on improvements in the individual. But we can do better than this. Not only should we be aiming to enhance well-being rather than merely reducing disorder, but we should be doing so for the many rather than the few. This article focuses on the mental health spectrum from flourishing to disorder, and makes the case for a population approach. It argues that a very small shift in the population mean of the underlying symptoms or risk factors can do more to enhance well-being and reduce disorder than a multitude of interventions with individuals. Examples from research on alcohol abuse and psychological distress are presented to illustrate the value of a population-based approach.

Individual-level approaches

Western psychology has traditionally focused on the individual rather than the collective. It emphasises individual needs and wants, individual differences (e.g. in personality, capability and genes) and individual responsibility for behaviour and health. Consequently, explanations of disorder and dysfunction are generally sought in the individual’s combination of risk and protective factors, and the treatment and prevention of disorder is usually provided at the individual level. This is entirely appropriate if the goal is to reduce misery in those who are experiencing it. But what if the goal is to reduce the total number of people who are miserable or to increase the total number who are flourishing? A different approach is needed. In this paper I develop ideas from epidemiology, which demonstrate that individuals reflect the characteristics of the
population in which they live, and that unless we understand and utilise this fact, our efforts to reduce the overall level of misery, and to increase well-being, will fail.

This can be illustrated by considering the usual psychological approach to the treatment of common mental and behavioural disorders such as depression, anxiety, addiction or antisocial behaviour. A range of psychological treatments has been developed, many of which have proven effectiveness in the reduction of symptoms or the frequency and severity of relapse (e.g. reviews by Huibers et al., 2003; Merry et al., 2004). For the individuals who have been successfully treated (whether in single or group settings), psychologists can justly claim that they have reduced misery for them and their families.

That prevention is better than cure is widely recognised, and millions of individuals who do not have diagnosed disorders seek and frequently benefit from psychological therapies. This is arguably a form of prevention for those who can afford it, reducing the likelihood that they will go on to develop a diagnosable condition. There have also been many successful prevention programmes offered to groups which are at high risk of developing a disorder, such as children whose parents are depressed, or low-income minority groups, and many have had good outcomes (e.g. Cardamil et al., 2007; Clarke et al., 2001).

**Population-level approaches**

Evidence from epidemiology suggests that in the case of common disorders, if we use only individual or targeted approaches, i.e. treating those with disorder or preventing disorder in those at high risk, we will have little effect on reducing the overall number with disorder. There will always be plenty of new cases of disorder to replace those who have been helped. This is because the majority who develop disorder come not from the high risk group, but from the general population, simply because the members of the general population are so numerous (Rose, 1992; 2008).
Figure 1 depicts the distribution of the symptoms or risk factors underlying any common mental or behavioural disorder such as depression or alcohol abuse. The clinical diagnosis of a common disorder can be regarded as an arbitrary cutpoint along a continuous distribution of symptoms; that is, the point at which the symptoms have become so numerous or so severe that the individual can no longer manage their normal activities, and meets criteria for a diagnosis. Individuals who do not quite meet diagnostic criteria may nevertheless be suffering in their daily lives ('languishing' according to Keyes, 2002). The diagram also suggests that relatively few people are in a state of positive mental health or flourishing, and that for the majority, who are moderately mentally healthy, there is scope for enhancement of their well-being.

This figure represents the distribution of symptoms or risk factors for just one population. The key to understanding the benefits of a population approach is the evidence that the number of people who have a diagnosable disorder is directly related to the mean of the underlying symptoms or risk factors in that population. If the mean number of symptoms in a particular population is low, it turns out that the percentage of people who meet criteria for a common disorder is low; if the mean number of symptoms in a population is high, the percentage of people who meet criteria is high. Moreover, this relationship holds even when the population mean is calculated only for those without disorder, ensuring that the mean is not inflated by the high symptom scores of those who have disorder. Evidence that the prevalence of disorder is directly linked to the population mean has been found for many common physical and mental conditions, including hypertension and heart disease (Puska et al., 1998), gambling addiction (Grun & McKeigue, 2000), and common mental disorders (Anderson et al, 1993; Melzer et al., 2002).
This model and its supporting evidence challenges the often held assumption that some people are just vulnerable to disorder and will develop a disorder regardless of the context in which they find themselves. While this may be true of rare disorders such as some forms of learning disability, it is not true for common disorders. This is because the risk factors for rare disorders are not normally distributed in the general population, whereas the risk factors for common disorders are multi-factorial and distributed across the whole population.

**Illustrative example: alcohol abuse**

Some of the strongest evidence for a relationship between the population mean and the prevalence of disorder comes from research on alcohol abuse. Using data from over 32,000 adults who participated in the Health Survey for England, Colhoun et al. (1997) showed that across all the regions in England, the mean alcohol consumption (excluding heavy or problem drinkers) was strongly correlated with the prevalence of problem drinking in that region. Similar data have been reported across 52 population samples from 32 countries (Rose, 1992). This is shown in Figure 2.

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Fig. 2 about here

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It has been concluded from data such as these, that a small reduction in the mean consumption of alcohol in light or moderate drinkers will result in a substantial decrease in the prevalence of problem drinking. Moreover, this appears to be a more effective strategy than the commonly used approach of targeting the binge drinkers and the problem drinkers (see Academy of Medical Sciences, 2004). Put simply, a small change in drinking culture such that most people have one or two drinks fewer each week, will do more to
reduce problem drinking than trying to persuade just the problem drinkers to change their habits.

**Illustrative example: common mental disorder**

Evidence that a small shift in the population mean is associated with a substantial reduction in the prevalence of disorder has been found in a study of common mental disorders. Using data from a representative sample of over 6,000 adults who participated in the British Health and Lifestyle Survey, Anderson et al. (1993) divided the sample into a number of different population groups defined by their socio-demographic characteristics (e.g. age, gender, geographical region). They found that across all the different population groups, the percentage of people with clinically significant disorder was directly related to the mean score on the scale which measured symptoms of psychological distress (the General Health Questionnaire of Goldberg, 1978). Using a linear regression model, they predicted that for every one point drop in the mean symptom score, there would be a 7% drop in the prevalence of disorder. This predictor was broadly confirmed in a 7-year follow-up study by Whittington and Huppert (1996). They found a linear relationship between the decrease in the mean symptom score and the decrease in the percentage of people who had clinically significant disorder. For every one point decrease on the symptom scale, the prevalence of disorder dropped by 6%. Moreover, as the mean number of symptoms decreased, a higher percentage of the sample moved into a no-symptom category, which could be described as flourishing.

The general principles underlying this claim are depicted in Figure 3.

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**Benefits of the population approach and future directions**
Finding that a small shift in the average score has a large effect at both the top and the bottom ends of the spectrum has far-reaching implications. If we want to increase the number of people who are functioning very well (e.g. gifted children, elite athletes), it may be more effective to make a small improvement in the average level of functioning in the population group, than to pour resources into those who are already performing at a high level. Targeting the high performers will improve their individual capability but will do nothing to increase the numbers of high performers.

To date, research which demonstrates that a small shift in the population mean can have a powerful effect on the extremes has been mainly observational. What is needed now is to test whether interventions which produce small improvements in the population mean will lead to substantial improvements at both ends of the spectrum.

How can a small, beneficial shift in the population mean be achieved? There is abundant evidence that the early years are crucial for the development of positive attitudes and behaviours, and of later resilience in the face of adversity (e.g. Dawson et al., 2000). Many parenting programmes, early years, and school-based programmes offered to all members of a population group (i.e. not targeted to those with particular needs) have been found to be very effective in the prevention of problems (e.g. Gilham et al., 2007; Olds et al., 2007; Weissberg et al., 2003). There are also many effective programs which reduce stress in the workplace (e.g. Lamontagne et al., 2007; Marine et al., 2006). The prediction that such universal programs will also enhance well-being needs to be tested by encouraging future studies to measure change across the full spectrum.

Working with the media would be a very powerful way to enhance well-being in the general population. For instance, the media could provide more positive role models who display valued character strengths and pro-social behaviours. This might counteract the current
media obsession with wealth, celebrity and consumption, which are known to be
detrimental to well-being (Kassen, 2002).

Summary
Table 1 summarizes the differences between the individual approach and the population
approach.

Table 1 about here

Conclusion
The reduction of individual misery or poor functioning is an important and humane
objective, but only the population approach can ensure that there are fewer miserable or
poorly functioning people in the longer term. Likewise, an increase in individual thriving is
a highly desirable goal, but only the population approach can ensure that more people are
thriving in the longer term.
References


Figure 1

The mental health spectrum

From: Huppert Ch.12 in Huppert et al. (Eds) The Science of Well-being, 2005.

Figure 2

Mean alcohol consumption and prevalence of heavy drinking*

* Across 52 population samples from 32 countries (men and women aged 20-59 years). Heavy drinking was defined as >3000ml pure alcohol per week.

Source: Adapted from Rose, 1992

Figure 3

Effect of a small shift in the population mean on the mental health spectrum

From: Huppert Ch.12 in Huppert et al. (Eds) The Science of Well-being, 2005.
<table>
<thead>
<tr>
<th>Research question</th>
<th>Individual approach</th>
<th>Population approach</th>
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<tr>
<td></td>
<td>What causes differences between individuals?</td>
<td>What causes differences between groups or nations?</td>
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<tr>
<td>Intervention strategy</td>
<td>Target individuals with disorder or at high risk, or</td>
<td>Promote universal intervention for the whole population or specific population groups (e.g. school children, employees)</td>
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<tr>
<td></td>
<td>leave it to individuals to seek out services. Target</td>
<td></td>
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<td></td>
<td>elite groups or high performers.</td>
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<tr>
<td>Aim of intervention</td>
<td>Reduce symptoms or enhance thriving in individuals</td>
<td>Reduce the number of people who have symptoms and increase the number thriving</td>
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