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Prevention Medicine

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An independent academic psychologist, based in England, who has written extensively on different areas of psychology with an emphasis on the critical stance towards traditional ideas.

A complete listing of his writings at http://psychologywritings.synthasite.com/. See also material at https://archive.org/details/orsett-psych.

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1. PREVENTION SCIENCE

1.1. INTRODUCTION AND CRITIQUE

In the 1990s the concept of "prevention science" (Cole et al 1993) emerged in relation to health and social problems. The promise is that data on the causes of problems can be used in interventions before the problems occur (eg: with high-risk groups of individuals). The application of "research findings to the improvement of practice" (Bukoski 2003 quoted in Roumeliotis 2015).

"Textbook accounts of prevention science tend to explain its emergence as the result of a continuous, rational process of discovery leading to better knowledge about the problems of prevention. The legitimacy of prevention is likewise understood as a result of increasingly better scientific results, leading to more effective interventions and knowledge about 'what works' in prevention" (Roumeliotis 2015 p752).

But, Roumeliotis (2015) argued, "what is left out is an understanding of prevention as a social and above all as a political practice highly emblematic of modernity. As such, it is founded upon calculations on causes and effects and the predictability of the social world which are seen as the basis for governmental interventions. Furthermore, this understanding of prevention relies upon a universal value base and the authority of professional expertise and science" (pp746-747).

There is an assumption around the objectivity of science rather than the social and historical context of knowledge (or what Fleck (1935/1979) called "thought style", and Hacking (1992) "styles of reasoning"). To quote Rose (2007): "A style of thought is not just about a certain form of explanation, about what it is to explain, it is also about what there is to explain. That is to say, it shapes and establishes the very object of explanation, the set of problems, issues, phenomena that an explanation is attempting to account for" (quoted in Roumeliotis 2015).

The current way is neo-liberalism, which, among other things, places the emphasis on the individual and upon personal responsibility. For example: "As Campbell

(2011...) has argued, notions of addiction as a 'brain disease' fit with 'neoliberal notions of behavioural health, in which engaged citizens bear personal responsibility for modulating risks, vulnerabilities, patterns of exposure, use, and abuse, and accompanying behaviours'. Such responsibility risks stigmatising those who do not want to or do not have the possibility to conform to these requirements. The designation of addiction as a matter of 'health', as a single, stable object situated outside of scientific, cultural and political processes, also closes off considerations of features not included in this narrow definition of health such as issues of inequality and discrimination" (Roumeliotis 2015 p753).

1.1.1. Risk Politics

Rose (2001) outlined the concept of "risk politics". The idea of the regularity and predictability of illness became established in the 20th century, and the role of governments and authorities is to minimise risks in relation to this, including the identification of high-risk groups. The management of risk by authorities takes place, however, "within a set of power relations that we could term 'pastoral... – a form of collectivising and individualising power concerned with the welfare of the 'flock' as a whole" (Rose 2001 p9). The upshot is not compulsion, but informed consent, autonomy, voluntary action, and choice, though these principles may be illusory in some cases. There is a directive non-directive pastoral approach.

Rose (2001) called this "ethopolitics" - "ways in which the ethos of human existence – the sentiments, moral nature or guiding beliefs of persons, groups, or institutions – have come to provide the 'medium' within which the self-government of the autonomous individual can be connected up with the imperatives of good government. In ethopolitics, life itself, as it is lived in its everyday manifestations, is the object of adjudication. If discipline individualises and normalises, and biopower collectivises and socialises, ethopolitics concerns itself with the self-techniques by which human beings should judge themselves and act upon themselves to make themselves better than they are" (Rose 2001 p18). This leads to an internalising of norms such that individuals self-discipline rather governments imposing external punishments, in the main.

1.2. EXAMPLE: ADOLESCENT HEALTH

Catalano et al (2012) began: "Despite some regional differences and a concentration of deaths in low-income and middle-income countries, there is commonality in the causes of adolescent deaths worldwide" (p1653). For example, deaths from non-communicable diseases related to problem behaviours are common (eg: motor vehicle fatalities; violence; alcohol and drugs; risky sex).

Programmes designed to prevent these behaviours appeared in the late 1960s in high-income countries, with limited success (Catalano et al 2012). Prevention science has subsequently been applied in the 21st century.

Catalano et al (2012) explained: "Prevention science is based on a framework that identifies empirically verifiable precursors that affect the likelihood of undesired health outcomes. Precursors include structural, intermediate (family, school, peer), and individual risk factors that predict an increased likelihood of problems, and protective factors that mediate or moderate exposure to risk or directly decrease the likelihood of problems. Risk and protective factors emerge at particular periods of development. Some factors are problem specific and some are more general, predicting multiple outcomes, including alcohol, tobacco, and other drug misuse, adolescent pregnancy, violence, delinquency, school dropout, and mental health disorders. The commonality in risk factors across problem behaviours means that interventions that address a risk factor will probably affect many problems" (p1654).

Preventive interventions can be divided into three categories (Catalano et al 2012):

i) Universal - Programmes across the whole population, irrespective of individual risk (eg: "Strengthening Families Programme for Parents and Youth 10-14": training programmes for parents and 10-14 year-olds in rural USA produced one quarter reduction in alcohol use; Spoth et al 2001).

ii) Selective - Programmes aimed at groups with higher risk of the problems (eg: "New Beginnings Programme": training for divorced mothers with 9-12 year-olds in USA found less behavioural problems and better mental health; Wolchik et al 2002).

iii) Indicated - Focused on individuals showing early symptoms of the problems (eg: "Functional Family Therapy": intensive family therapy with high-risk

families in the USA led to less juvenile offending and detention; Klein et al 1977).

Risks can be categorised as "early accumulated risk cluster" (ie: factors throughout the early life and childhood), and "adolescent-onset risk cluster" (ie: arising in adolescence) (Catalano et al 2012).

The focus of the preventive programme will also vary. For example, structural risk factors are those affecting the whole population, and can be addressed by universal programmes (eg: increasing the minimum legal drinking age; free and increased access to contraceptives; age-related driving restrictions). Other programmes address family, and individual risk factors.

Programmes and interventions face implementation barriers, including lack of funding, and training, and limited public support. "Many government officials lack training in public health
and often focus policies and funding on remedial rather than preventive efforts. Further, there is unbalanced attention focused on physical health problems and medical treatment at the expense of mental health problems and psycho-social intervention" (Catalano et al 2012 pp1659-1660).

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2. MENTAL HEALTH AND PREVENTION

2.1. OVERVIEW

Many countries have increased treatment for common mental disorders (CMDs) in the last half century, yet the prevalence of these conditions has remained stable or even increased (Ormel and VonKorff 2024). This has been called the "treatment-prevalence paradox" (Ormel et al 2022). "Together, the stable lifetime incidence rates and the treatment-prevalence paradox suggest that increased treatment alone has not, and likely will not, achieve meaningful reductions in CMD prevalence (barring unforeseen breakthroughs in treatment)" (Ormel and VonKorff 2024 p2).

This places the burden upon prevention [1] [2], which Ormel and VonKorff (2024) argued will only succeed in reducing CMD prevalence if seven conditions are met:

1. Target prevention policies on early life of the child and the family (appendix 2A).

2. Focus on major risks that can be modified (eg:

[1] Papola et al (2024) defined prevention strategies as "the conscientious, explicit and judicious use of current best evidence to inform decisions about interventions for individuals, communities and populations, to facilitate the best possible outcomes in reducing the incidence of disorders and in enabling people to increase control over and to improve their health" (p2).

[2] Mental illness is a cost to society both in terms of its treatment, but also the welfare benefits and loss of income from individuals unable to work (Holte 2024).

maternal depression; parental substance abuse; poor life skills) (appendix 2B).

3. Embed prevention in social institutions and culture via three levels (political, legal, and normative) - "Political embedment involves regional and/or national governments implementing prevention programmes, activities, and strategies in key community organisations such as schools and primary health care clinics. Political embedment also includes ensuring adequate governmental benefits for family income maintenance, secure housing and food, and universal access to health care... Legal embedment anchors CMD prevention in laws and regulations thereby enhancing durability. Normative embedment normalises prevention activities socially and culturally, integrating them into the social norms of day-to-day life (as has happened for tobacco use norms in public settings)" (Ormel and VonKorff 2024 p3).

4. Apply policies via multiple community settings (eg: school; workplace).

5. Fund programmes for the long-term.

6. Address socio-economic disadvantage and the associated risk factors for CMD – Patel et al (2023) observed: "Attempting to reduce the number of people with mental ill health without combating adverse social and economic conditions would be the equivalent of tackling cancer with no regulations on cigarette smoking, or trying to reduce infectious disease without investments in public sanitation" (quoted in Papola et al 2024).

7. Make prevention the government policy, which includes attention to the effect of all individual government policies on mental health (appendix 2C).

Mire and Dunsmore (2024) proposed a multi-tiered support system public health model, with particular reference to the USA, based around three key initiatives – universal access to good quality pre-kindergarten, universal evidence-based social and emotional learning (SEL) throughout school, and universal mental and behavioural health (MBH) screening for children and adolescents. Universal programmes are tier 1 of the multi-tiered model, which is prevention, while tier 2 is targeted interventions for individuals with elevated risk of MBH problems. "Tier 3 strategies provide intensive and

individualised support for youth with significant MBH needs.... Interventions often are more specialised and may involve co-ordinated care with professionals outside the school" (Mire and Dunsmore 2024 p2).

Holte (2024) suggested the idea of "Seven Mental Health Rights", including to a sense of identity and self-respect, meaning in life, belonging, and security, for instance.

2.2. WHOLE OF POPULATION APPROACH

Gordon's (1983) oft quoted framework of prevention strategies is universal ("measures that are desirable for everyone", selective (aimed at high risk groups) [3], and indicated prevention (for individuals on the threshold of symptoms) (Papola et al 2024).

"Whole of population" approaches to promoting mental health and well-being has been advocated by the World Health Organisation for over twenty years, but they are underdeveloped in most countries of the world (Barry et al 2024). Barry et al (2024) argued for investing in mental health promotion, in particular the cost-effective benefits that accrue with a mentally healthy population (eg: reducing welfare benefit and treatment costs). However, both "upstream" (eg: reducing poverty) and "downstream" (eg: psychological interventions) strategies are required (Barry et al 2024).

What is effective mental health promotion, however? Barry et al (2024) synthesised 111 meta-analyses and 57 systematic reviews in seeking international evidence to answer that question.

The policies can be grouped under the following headings (Barry et al 2024):

i) Early years and parenting interventions – eg: psychological and social support to pregnant mothers.

ii) School-based interventions – eg: universal SEL programmes.

[3] Selective prevention has a role in reducing inequity, argued Papola et al (2024): "A nation should also allocate resources, create opportunities, and provide support in ways that recognise the inherent disparities that exist among people to improve equity, so that everyone has a fair and just chance to succeed in their life... This can only be achieved by recognising that different people need different levels of support, based on their specific needs and challenges" (p4). Specifically, to combat poverty, gender disparity, and social discrimination (Papola et al 2024).

iii) Community-based interventions – eg: social skills training; neighbourhood projects.

iv) Promoting mentally healthy workplaces – eg: stress management programmes.

v) Digital interventions – eg: online mindfulness-based interventions.

vi) Primary care interventions – eg: cognitive-behaviour therapy (CBT) programmes for depression to non-depressed individuals.

vii) Awareness raising interventions – eg: promoting help-seeking.

Then there is implementation: "While mental health promotion interventions have been shown to be effective, implementation gaps exist in policy and practice. This combined with a lack of funding and political commitment results in a failure to deliver concrete actions that will address population level mental health needs" (Barry et al 2024 p5). This includes enabling policies within the government (eg: ministerial posts), and providing the infrastructures and delivery mechanisms.

Concentrating on Norway as an example of rich country, Holte (2024) proposed four priorities for that country:

a) Universal screening of mental health for all pregnant women and mothers of young children, particularly as pregnancy and childbirth can be a risk factor for depression and anxiety.

b) Training and guidance for all day care centre teachers, such that high-quality care is the upshot.

c) Make mental health a subject in school.

d) "Meaningful work for all" as unemployment and low-quality work are risk factors for mental disorders.

2.3. COMMUNITY COALITIONS

Prevention intervention opportunities for children and adolescents require community coalitions, argued Toumbourou et al (2024). They explained that these

"typically take a 'whole-of-community' approach and often involve strategies across a range of diverse settings such as early childhood education services, schools, workplaces, and neighbourhoods. As such, they allow for co-ordinated implementation of multiple interventions to address the complex combination of factors that contribute to health and mental health conditions in a community" (Toumbourou et al 2024 p3). Different models or frameworks have been tried.

In terms of research, Langford et al (2014) reviewed sixty-seven randomised controlled trials on the "WHO Health Promoting School" framework, finding it "to be an effective means of significantly modifying risk and protective factors, including increasing physical activity, fruit, and vegetable consumption, decreasing cigarette use, and decreasing bullying behaviours. However, mental health problems were not significantly reduced, based on two included randomised trials" (Toumbourou et al 2024 p3).

While the "Communities That Care" model has been found to reduce alcohol and drug use in two large randomised controlled trials (Toumbourou et al 2024).

Evaluating community coalitions, Toumbourou et al (2024) stated that their benefits depend upon "community engagement and involvement, their ability to respond to local community issues and context, and their focus on tackling multiple risk and protective factors using a collective impact multi-layered approach" (p5). Funding, of course, is an issue, and it can be subject to lobbying and political influence, as well as the need to show the monetary benefits of the programmes (Toumbourou et al 2024). Also there are equality issues - "Communities with high levels of mental health problems sometimes have low resources for organising and sustaining coalitions" (Toumbourou et al 2024 p5).

2.4. BARRIERS TO HELPING CHILDREN

Potentially half of all adult mental health disorders have emerged by the teenage years (Connolly et al 2024). So, support and prevention programmes for children's mental health has great importance, as in school-based initiatives.

Connolly et al (2024) investigated the primary school staff perspective in online focus groups in 2020 in Victoria, Australia (n = 56 staff, including teachers, well-being officers, and psychologists). Three themes around the barriers to supporting pupils emerged:

i) Teachers' capacity - "Teachers consistently reported competing classroom demands as one of the most significant obstacles to identifying students with potential mental health difficulties and supporting students with known difficulties" (Connolly et al 2024 p3).

For example, one teacher said: "... if you miss a trigger which with 25 kids or however many... if you don't catch them, then one poor little bloke, he's holding his head and banging it on the table because I'd missed the lead up to it and then you feel terrible in yourself..." (p3). While another teacher explained: "... if they've got mental health conditions, they're frustrated and so they show it in different ways. So it might be acting out violently or it might be running away or it might just be hiding under a table. But you're trying to teach and that's your core role" (p3).

Even if a troubled child is spotted, one teacher expressed their concern thus: "... a huge barrier is the time and the ability – your own personal knowledge, professional knowledge... I don't want to say the wrong thing..." (p3).

ii) Systematic constraints – Most schools could not afford dedicated well-being staff, and general support is limited. One school principal commented that "... your school [departmental] psychologist used to actually work with your students. Now they come and they meet with you... but they can't stay because they're dealing with another 8000 students in the district... your access to school psychologists is atrocious" (p4).

iii) Family circumstances – "Disengaged parents" was mentioned as one problem, or even worse, an adverse family environment, as one teacher described: "Because you do all the work at school and then... you're putting them right back in that same place where it's high anxiety or violence or... neglect, and then you get them back the next day [and] you're back at square one... So that's really difficult, heartbreaking" (p4).

2.5. SUICIDE PREVENTION PROGRAMMES

Youth suicide is an increasing risk (eg: rate doubled between 2007 and 2015 among 15-19 year-old females in the USA; Borah et al 2024). Suicide prevention programmes based at schools, colleges and universities are important.

"Gatekeeper training (which teaches people to identify the individuals that are at risk of suicide and assist them in getting professional help) may positively impact students' help-seeking for suicidal thoughts and behaviours. Gatekeeper training program on suicide prevention is effective for school staff" (Borah et al 2024 p2). For example, such training has been found to increase teacher confidence for dealing with suicidal students (eg: in Japan; Hashimoto et al 2021).

Stigma around suicide and mental illness makes it difficult to help individuals. Azasu (2024) studied suicide stigma in a sample of 742 students in Ghana (average age 15 years old). Suicide stigma was measured by the "Opinions and Reactions to Suicide Questionnaire" (Eskin 1992) (eg: "In your opinion, should the phenomenon stigma be discussed among friends?"; "In your opinion, are the persons who kill themselves by committing suicide mentally ill?"). Measures of general stigma around mental illness, and traditional paranormal and spiritual beliefs were also completed.

Suicide stigma was positively correlated with general stigma around mental illness, not surprisingly, and both of these scores positively correlated with adherence to traditional beliefs.

2.5.1. India

Arya (2024) began with this clear statement of the problem: "India accounts for almost 25 % of the total male suicides and 37 % of the total female suicides worldwide, despite having approximately 18 % of the total male and 17 % of the total female global population" (p1). Thus, the need for suicide prevention interventions. Arya (2024) outlined some of the measures that would help:

i) Primary strategies (aimed at the whole population) - eg: restricting access to lethal means as suicide can be an impulsive act. These include restrictions on access to agricultural pesticides as done in Sri Lanka, carbon monoxide removal from domestic gas as in the UK in the 1960s and 1970s, and firearms controls.

Other strategies here include government surveillance of suicide through data collection, discouraging media reporting of celebrity (or any) suicides to reduce "copycats", and training for relevant

professionals (eg: healthcare workers).

ii) Secondary and tertiary strategies (aimed at high and at-risk groups and individuals) - eg: crisis intervention services (like telephone helplines and online support groups); postvention measures after attempted suicide.

2.6. SPORT-BASED STRATEGIES

Mental health promotion programmes delivered within community sport settings have grown, particularly those targeted at men and boys. Specifically, mental health literacy (defined as "knowledge and beliefs about mental disorders which aid their recognition, management, or prevention"; Jorm et al 1997 quoted in O'Connor et al 2024), and increasing confidence and knowledge to support others (O'Connor et al 2024).

One such programme is "Tackle Your Feelings" (TYF) in Australia. O'Connor et al (2024) investigated TYF in Australian Rules Football (AFL) community sporting clubs. TYF includes online materials based on "understand" (increasing knowledge about mental health), "recognise" (signs and symptoms), and "respond" (supporting help-seeking), and a face-to-face workshop run by a local psychologist.

Four community AFL clubs who undertook the programme were matched with four control clubs (based on size, competition level, and location). Measures were taken at baseline (Time 1), two weeks after the workshop (Time 2) and four months after (Time 3). The key outcome measures were the "Mental Health Efficacy Scale" (MHRES) (confidence to support others), and "Resource-Oriented Mental Health Literacy Scale" (ROMHL) (eg: "I know where to go to receive mental health services").

The intervention group showed positive effects on all outcome measures between Time 1 and Time 2, whereas the control group did not change. The improvements were also evident at Time 3 for the intervention group.

Nine participants in TYF were interviewed in detail about their experiences. The benefits of the programme are captured in this quote: "There’s been many times after sessions [since the programme] that I’ve... had that chat and say checked in... and touch base and see how they are and that’s something I wouldn’t have necessarily done prior to the training" ("Player 2"; p6). While "Player 1" said: "I think this programme, made it [mental health] become more normalised... because

everyone's listened to it... everyone's heard it, everyone is on the same page" (p7).

Overall, TYF was successful in improving knowledge of mental health, confidence to support others, and help seeking. O'Connor et al (2024) commented: "Findings from this study and others suggest the sport and team context can provide an environment conducive to quality mental health literacy and promotion leveraging notions of a supportive culture where members look out for one another on and off the field" (p8).

2.6.1. Soccer-Based Strategy

The "Eyethu" intervention was developed using soccer training to reduce HIV and substance use risks among young South African men. "Sessions, embedded within soccer league practices, were led by intervention coaches who served as mentors and delivered behaviour change programming focused on problem-solving, interpersonal skills development, communication, and conflict management, as well as psycho-education. Sessions were held three times weekly and included routine HIV testing and drug testing as a requirement to play" (Mamutse et al 2024 p2).

The programme between 2016 and 2020 with over 400 18-29 year-old men in Cape Town was evaluated in a randomised controlled trial (Rabie et al 2023) (appendix 2D). Neighbourhoods received soccer training, soccer and vocational training, or educational materials (control group). "The intervention was assessed on a range of outcomes including HIV-related risks, substance abuse, employment, mental health, and violence perpetration and victimisation. Overall, the intervention was found to be unsuccessful; of all targeted outcomes, there was only one significant difference, on rapid diagnostic tests for mandrax (methaqualone) at 6 months... A key conclusion was that this group-based behavioural intervention was ineffective in addressing multiple risk behaviours among at-risk young men and hypothesised that early adulthood may be too late to alter embedded risk behaviours" (Mamutse et al 2024 p2).

One problem was low engagement and uptake. Mamutse et al (2024) interviewed thirty participants in the programme to understand the null findings of the controlled trial. Three overarching themes emerged:

i) Positive perceptions of the intervention -

"Despite the null effects identified in the trial, participants across intervention conditions, and with varying experience of engagement, regarded Eyethu as a generally positive experience. Many participants recounted how taking part in Eyethu helped to change the way they perceived themselves and others, and how they thought about their behaviour. Participants reported developing confidence and self-esteem, reducing engagement in risk behaviours, and developing social skills and problem-solving abilities..." (Mamutse et al 2024 p3).

For example, "Bongani" said: "Once Eyethu came to us, everything changed. I stopped smoking, and at the time Eyethu came, it was when I also changed friends that were bad, and I was moving with right friends that I met there in Eyethu that were right. I changed there. We looked for jobs. We did all the right things" (p3).

ii) Reflections on the intervention's mechanisms of change – eg: facilitated positive thinking as "Langa" expressed: "Hey, there is a difference... not only for the guys that we were with, but around the whole area and other areas because the way I saw it... [Eyethu] were able to take the guys that are always in the corner, feeling they have nothing to do, they would take them, gather them, and change their way of thinking to a positive one, so I would say there is a difference" (p4).

iii) Contextual influences shaping intervention engagement and success - "Participants described their broader environments as characterised by risks and threats to positive change; they further detailed how their life circumstances and responsibilities influenced their ability to engage in the intervention" (Mamutse et al 2024 p4).

The reality of everyday life above attending the intervention sessions was seen in "Mbulelo's" comment: "It was money... you must eat, [your] stomach is in front and is important, you see? That's what made me to rush to that job, I was like 'hey- [with] that money at least I will be able to buy myself toiletries, I will be able to buy jeans, I will be able to buy food' there, you see" (p4). A similar comment from "Khwezi": "I dropped out because, okay, I got a piece job [once-off job] that I got, so I thought 'okay, no, I do not have another way of going back' because the times were not corresponding so I thought I should go to work, but I told them that, 'no, I found a job so I cannot attend'" (p5).

"Sibabalwe" described another distraction: "I was

forced to go to the [Eastern Cape] with my mother and go live there with my grandmother, and I had to help my grandmother because my mother was bad, she could not do anything for herself, she was bedridden, so I had to be there until her older sisters... arrived" (p5).

Mamutse et al (2024) observed: "The short-term, positive environment of the intervention, which was perceived as beneficial at the individual level, should be positioned against a backdrop of continuous exposure to counteracting forces. The participants highlighted the role of existing social structures and dynamics related to gang relationships and substance use, as well as interruptions in routine over major holiday periods during which time socialising was common. Their accounts suggest that programming that aims to change behaviour among young men may struggle to sustain effects against these forces" (p5).

2.7. TRANSGENERATIONAL TRAUMA

Transgenerational trauma is "a novel scientific concept, which implicates transmission of psychological and physiological symptoms in the subsequent generations of trauma-exposed individuals. Emerging evidence supports the involvement of germline epigenetic mechanisms, in addition to the psycho-social routes, in transgenerational transmission of behavioural and metabolic perturbations after exposure to traumatic experiences" (Jawaid et al 2024 p1).

The transgenerational transmission of physical changes has been studied experimentally in mice exposed to unpredictable maternal separation and unpredictable maternal stress (eg: Gapp et al 2014).

Germline molecular changes (eg: epigenetic changes that can be transmitted to subsequent generations) have been detected in trauma-exposed human populations (eg: Jawaid et al 2016). "Epigenetic modifications in stress signalling, as well as increased stress reactivity and risk for post-traumatic stress disorder (PTSD) have been extensively characterised in the Holocaust offspring and grandoffspring [eg: Yehuda et al 2016]" (Jawaid et al 2024 p1).

Concentrating on the situation now, Jawaid et al (2024) warned that "it is feared that the recent escalation of the war in Gaza can trigger and/or accentuate cycles of transgenerational trauma in both Israelis and Palestinians" (p1). These authors

recommended preparation for the consequences - ie: "targeted investigations and preparatory measures should be implemented by relief organisations to anticipate the drastic mental health impact of the war in Gaza, potentially lasting for decades. Psychological interventions should focus on strengthening peer relationships, emotional regulation during and immediately after the war, and promoting satisfaction of the basic psychological needs, factors that were previously associated with resilience in Palestinians" (Jawaid et al 2024 p1).

Meanwhile, "Israeli apprehensions about further attacks should be considered with a nuanced trauma-informed approach with full acknowledgement of their historical trauma in discussions and appraisals of the ongoing Gaza war" (Jawaid et al 2024 p1).

2.8. APPENDIX 2A - WAZZUP MAMA?!

Perinatal emotional distress (PED), which can occur between pregnancy and the first year after birth, is experienced by up to 60% of childbearing women (depending on the study), and it includes symptoms from "a reduced sense of welfare, health and happiness, feelings of insecurity, stress, fears, and worries, to depression and anxiety and a disturbed psychological functioning..." (Kuipers et al 2024 p1). There is also a potential impact on the child.

"WazzUp Mama?!" is a web-based intervention to prevent and reduce PED, originally developed in the Netherlands. "The intervention is self-directed, requiring input from the user. Most of the intervention's content is written text. A specific programme-built algorithmic recommendation system generates personalised feedback, including tip & tricks for daily life, relaxation exercises, information why, when, and how to be aware of the (warning) signs of emotional distress, advice how to adopt positive coping mechanisms and how to avoid or eliminate maladaptive adaptive coping" (Kuipers et al 2024 p2).

Fontein-Kuipers et al (2016) found a significant reduction in anxiety in a non-randomised pre-post intervention study of "WazzUp Mama?!" in the Netherlands. Kuipers et al (2024) reported benefits in a study of its use in the Dutch-speaking part of Belgium (Flanders).

This study was a case-control comparison of an intervention group (n = 94 pregnant women) and a control (care-as-usual) group (n = 282). Measures were taken of

depression, anxiety, and coping responses. The mean depression and anxiety scores were significantly lower in the intervention group, even after adjusting for co-variates (eg: level of education; history of PED). The intervention group also had significantly higher levels of adaptive coping.

The study was volunteer-based, while the use of "WazzUp Mama?!" was a choice. The website of the intervention shared with pregnant and post-partum women vis medical practitioners, social media platforms, and a multi-media campaign. Internet access was required for use. The controls were recruited in the same way.

On the positive side, the researchers "created identical pairs of cases and controls (1:3) based on core characteristics known to be associated with perinatal emotional distress" (Kuipers et al 2024 p3). However, the researchers accepted that "participants in the intervention group may be different from those in the control group in other important ways that were not included in our study" (Kuipers et al 2024 p6).

2.9. APPENDIX 2B – FAMILY RESILIENCE BUILDING

Somers et al (2024) argued for a universal prevention approach to prevent mental health problems by building family resilience via parent-child interactions. The idea is that good relationships between parents and children "buffer" against stress.

The approach is based around three elements (Somers et al 2024):

i) Screening of parents for risk and resilience factors – eg: parents' own adverse childhood experiences (ACEs) (risk) or benevolent ones (BCEs) (resilience).

ii) Strengthening social ties – eg: social support by family and friends during the child's first year is associated with more sensitive maternal caregiving.

iii) Supporting children's socio-emotional skill acquisition – eg: use of emotion talk to label feelings.

Practically, governments and authorities need to provide services, like paid maternity leave, school SEL programmes, pre- and post-natal care programmes, and increased access to healthcare.

"Among certain children and families facing heightened risk due to individual or structural factors,

such as systemic racism and discrimination and additional barriers to accessing child care and healthcare due to geographic location, socio-economic status, universal prevention may not be enough, warranting a blend of universal prevention with additional targeted prevention and intervention efforts" (Somers et al 2024 p7). Parent-infant separation through hospitalisation of the child is an example where targeted support is needed (Somers et al 2024).

2.9.1. Psychological Resilience

Psychological resilience is "the capacity for individuals to effectively cope with and adapt to challenging life circumstances and events" (Zhang et al 2024 p1). It is associated with improved health and well-being, particularly among older adults (Zhang et al 2024).

This can be seen in data from the "Health and Retirement Study" (HRS), began in 1992 in the USA. Resilience was measured by the "Leave Behind Questionnaire", which covered perseverance, calmness, self-reliance, and a sense of purpose. This was administered in 2006-08. The outcome measure was mortality (up to May 2021). The sample was over 10 000 over fifty year-olds.

"Higher levels of psychological resilience were associated with a reduced risk of all-cause mortality in models adjusting for attained age, sex, race and body mass index... This association remained statistically significant after further adjustment for self-reported diabetes, heart disease, stroke, cancer and hypertension... The relationship persisted even after accounting for smoking and other health-related behaviours" (Zhang et al 2024 p1).

Zhang et al (2024) discussed the findings thus: "Resilience is often discussed in terms of protective factors, allowing adults in normal environments to maintain relative stability even in the face of highly disruptive events. While they may experience changes such as insomnia and inattention, their overall physiological and psychological functions remain normal or close to normal. Additionally, they can even experience positive emotions following trauma. Various factors, including but not limited to meaning in life, positive emotions, self-rated health and satisfaction with social support, have been identified as potential influences on psychological resilience" (p5).

The resilience score was based on answers at one point in time, and so missed any changes in resilience. The measure of resilience has been previously used in the HRS, and in other studies (Zhang et al 2024).

The researchers also commented that "as an observational study, it is important to note that causality cannot be inferred. Despite controlling for numerous co-variates, the influence of unmeasured variables on the results cannot be excluded. For example, genetic factors, epigenetic regulation, organisational effects of hormones and childhood adversity were not considered in our analysis" (Zhang et al 2024 p6).

The key strengths of the study, however, were the prospective longitudinal data for a large sample.

2.10. APPENDIX 2C - POLITICAL COMMITMENT

Carbone (2024) began: "Good mental health is a critical life asset. High levels of mental well-being are linked to multiple benefits including higher levels of creativity, better learning, greater productivity, high quality relationships, greater civic contribution, positive health behaviours, better physical health, and longevity... They are also associated with a reduced risk of mental health conditions and better recovery from these conditions" (p1). Thus, the benefits to a nation of promoting mental well-being.

Carbone (2024) outlined the general requirements to improve mental health for a nation:

i) Mental health literacy for all - Kutcher et al (2016) gave the definition of mental health literacy as "understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders; and, enhancing help-seeking efficacy" (quoted in Carbone 2024). This includes having the words to talk about the subject, appreciating individual differences and changes over time in mental health, and knowing how to enhance mental well-being.

"Ultimately, building the community's mental well-being literacy will increase the likelihood that people are motivated to look after their mental well-being and know what to do. It also increases the chances that they will expect and demand that their leaders prioritise initiatives to promote and protect the community's mental well-being – something that is vital to success" (Carbone 2024 p2).

ii) A framework for action - ie: prevention strategies and programmes.

iii) "Building the infrastructure" - including planning, leadership and governance, and a "skilled workforce" to implement strategies.

iv) "Gaining and maintaining political commitment" - Political inertia (ie: a lack of political commitment) occurs for reasons including "a concern that promotion and prevention are too complex; that it takes too much time for benefits to be realised while many politicians are eager for 'quick wins'; in the battle over scarce resources concerns are raised by government officials that expenditure is required from their department while the cost-saving benefits flow to another; the belief that you can't measure something that hasn't happened so prevention can't be proven; and scepticism that it is possible to enhance a person's mental well-being or prevent mental health conditions. But perhaps the two biggest barriers that get in the way, is the pressure governments feel to respond to calls from consumers, carers and service providers to support people who are already experiencing difficulties rather than people who are currently well, and the politics involved in addressing the social determinants of mental health, where differences in different political parties' policy responses can be quite extreme" (Carbone 2024 p4).

2.11. APPENDIX 2D - RANDOMISED CONTROLLED TRIALS

The randomised controlled trial (RCT) is the "gold standard" of medical and healthcare research as seen in the "Cochrane Collaboration" which systematically reviews RCTs on a topic. But this approach has been widened to include psycho-social, educational, and health policy interventions. Jorm (2024) argued that "it is not appropriate for psych-social interventions which have a complex programme logic and downstream health effects" (p1). Downstream effects are a product of the intervention but not directly viewed as an outcome measure of an evaluation of the intervention.

For example, Richardson et al's (2023) Cochrane review of "Mental Health First Aid" (MHFA) training, based on 18 RCTs, could not draw any conclusions because of "the lack of good quality evidence" (quoted in Jorm 2024). "However, any health benefits of MHFA are downstream and not easily measurable in randomised

controlled trials. In a trial, the participants are those who are trained in MHFA, while the potential beneficiaries are the people with mental health problems who they subsequently assist, and these people have not consented to be in the trial. As with the Cochrane Collaboration, any evaluation of downstream health effects needs to consider the underlying program logic and the evidence for each step in that logic. Such evaluation may require evidence beyond randomised controlled trials. In the case of MHFA, trials make up only a small proportion of the evidence. A search of the Scopus database (19 October 2023) showed 369 documents on MHFA, using a wide range of research methodologies" (Jorm 2024 p1).

Other mental health promotion interventions will also be difficult to evaluate in RCTs. These include (Jorm 2024):

- "R U OK? Day" - encouraging the public to reach out to friends and families having personal difficulties (eg: Australia; Ross and Bassilios 2019).

- "Beyond Blue" - community response to depression and anxiety (eg: Australia; Dunt et al 2011).

- "Time to Change" - reducing mental health stigma (eg: Europe; Sampogna et al 2017).

- "NowMattersNow.org" - suicide prevention website (eg: Whiteside et al 2019) .

2.11.1. R U OK? Day

"R U OK? Day" was launched in 2009 and then annually in September in Australia. "Specifically, R U OK? empowers the community to connect with, and support each other in dealing with life events and difficulties by initiating helping conversations. The R U OK? Campaign encourages the use of a four-step model to have these conversations: (1) ask the person how they're going, (2) listen without judgement, (3) encourage the person to take action, such as seeking support from a mental health professional and (4) check in with the person by following up with them at a later time" (Ross and Bassilios 2019 p2).

An evaluation survey of two thousand adults in 2014 (Mok et al 2016) found high awareness of the campaign (66% of respondents) and a positive perception, but less

participation (19%), while Ross and Bassilios's (2019) analysis of 2017 data showed increasing awareness and participation (78% and 32% respectively).

Ross and Bassilios (2019) surveyed over 2000 adults recruited online. Campaign awareness was measured by the yes/no question, "Have you heard of R U OK? Day", while campaign participation was categorised with eleven activities (eg: "asked someone face-to-face if they were OK"; "posted a general comment about R U OK? Day on social media"; "spent extra time with family, friends and/or others"). Combining these two questions produced three response categories - not aware (22% of sample); aware but did not participate (46%); aware and participated (32%). Future intentions were also question about offering and seeking help.

Campaign exposure (ie: awareness and participation) was significantly associated with positive behaviours, including intention to help someone who might be experiencing personal difficulties, and to seek help from a mental health professional.

The survey included intention to help in the future rather than actual behaviour. Also, Ross and Bassilios (2019) accepted that "knowledge of how to start a conversation with someone who might be experiencing personal difficulties using the four steps developed by R U OK?, as well as knowledge of suicide and mental health issues, were not measured in the current study" (p10).

R U OK? Day is a suicide prevention strategy, and this was not measured in this study (Ross and Bassilios 2019).

2.11.2. Sampogna et al (2017)

Over 10 500 people recruited online, who had seen the social marketing campaign of "Time to Change" in England between 2009 and 2014, completed questionnaires about attitudes and intended behaviour towards people with mental disorders, and knowledge about mental illness. Usage of social media was associated with awareness of "Time to Change", and awareness was in turn associated with positive attitudes towards people with mental disorders.

The key measures used were:

a) Mental Health Knowledge Schedule (MAKS) (Evans-Lacko et al 2010) - items eg: "Most people with mental health problems want to have paid employment"; "People with severe mental health problems can recover". Each

scored "strongly disagree" (1) to "strongly agree" (5).

b) Community Attitudes toward the Mentally Ill Scale (CAMI) (Taylor and Dear 1981) - items eg: "One of the main causes of mental illness is a lack of self-discipline and will power"; "The mentally ill should not be given any responsibility".

c) Reported and Intended Behaviour Scale (RIBS) (Evans-Lacko et al 2011) - item egs: "Are you currently living with, or have you ever lived with, someone with a mental health problem?"; "In the future, I would be willing to work with someone with a mental health problem".

2.11.3. NowMattersNow.org

"NowMattersNow.org" was developed to help suicidal patients and health providers who care for them using dialectical behaviour therapy (DBT) principles. "DBT is a robust evidence-based treatment that includes skills and self-management strategies (DBT skills) to change and tolerate emotions that drive suicidal thoughts" (Whiteside et al 2019 pp203).

Whiteside et al (2019) analysed the user experience survey completed by 3670 website visitors between 2015 and 2017. Overall, a significant reduction in intensity of suicidal ideation and negative emotions were self-reported after visiting the website.

The survey was completed by volunteers, and Whiteside et al (2019) explained, "that user-experience data were collected at one point in time from individual users, without a control-group comparison. Distraction alone may have had an effect, or the passage of time may be associated with similar reductions. In addition, we do not know if experienced improvements lasted beyond the brief period that the survey covered. In addition, non-response bias may account for the findings — these findings may not generalise to people who saw the survey but did not complete it or people who never saw the survey who may not have had positive responses. It is possible that the nature of the survey topic (suicide) may have made some individuals less likely (eg: among those with greater self-stigma or experienced discrimination) or more likely (eg: experiencing the survey as highly relevant) to participate, including those potentially at higher risk of suicide. Another limitation is that participants were asked to rate their

pre and post website suicidal thoughts and negative emotions on a single survey. Although this format was designed to maximise survey response, reported reductions in distress may be at least partially attributable to recall bias" (p9).

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3. LIFESTYLE MEDICINE

3.1. OVERVIEW

The term "lifestyle medicine" (LM) has been attributed first to Ernst Wynder in 1988, but more generally to Rippe (1999) with his book called "Lifestyle Medicine" (Guthrie 2019).

"The meaning of the words changes through time. The meaning and understanding of the phrase 'Lifestyle Medicine' are still evolving within the medical, lay, and health-business communities" (Guthrie 2019 p961). Medical definitions tend to emphasise the role of evidence-based non-drug therapy for non-communicable diseases, while non-medical approaches focus on personal behaviours impacting health and well-being. "Other users [of the phrase] reference social, societal, and political effects, thus broadening the perspective to embrace public health and, among other things, community planning, laws, and national health messaging. These added factors are often outside the direct responsibility of an individual and thus remove at least a modicum of the personal 'guilt' someone may have for 'causing' their chronic non-communicable disease" (Guthrie 2019 p961). Table 3.1 gives three specific definitions of LM included by Guthrie (2019).

The key aspects of LM are prevention (rather than treatment after the illness appears), a focus on lifestyle determinants of diseases, the use of methods beyond medications, evidence-based, and well-being (ie: more than just the absence of disease). Important elements include nutrition, exercise, and healthy behaviours (eg: not smoking; low alcohol consumption). However, the wide range of LM has to be recognised (Guthrie 2019).

There is overlap (ie: similarities and differences) with complementary and alternative medicine (CAM), "Mind Body Medicine" ("the interactions among the brain, mind, body, and behaviour, and on the powerful ways in which emotional, mental, social, spiritual, and behavioural factors can directly affect health"; Guthrie 2019 p965), and preventive medicine. The latter is very similar to

- "The integration of lifestyle practices into conventional medicine to lower the risk for chronic disease and, if disease is already present, to serve as an adjunct to therapy" (Rippe 1999).

- "The therapeutic use of lifestyle interventions in the management of disease at all levels to help manage the growing number of cases presenting to doctors now with a lifestyle-based cause of disease such as obesity and type 2 diabetes" (Egger et al 2007).

- "Lifestyle Medicine is the evidence based practice of helping individuals and communities with comprehensive lifestyle changes (including nutrition, physical activity, stress management, social support, and environmental exposures) to help prevent, treat, and even reverse the progression of chronic diseases by addressing the underlying cause" (Sanger et al 2014).

(All quoted in Guthrie 2019)

Table 3.1 – Three definitions of LM.

LM, but addresses the population level to the individual focus, in practice, of LM (Guthrie 2019).

3.2. CARDIOVASCULAR DISEASE

Rippe and Angelopoulos (2019) observed that cardiovascular disease (CVD) "represents one of the quintessential lifestyle related diseases, since many of the risk factors for it, including cigarette smoking, elevated cholesterol, high blood pressure, obesity and an inactive lifestyle, have significant lifestyle-related components" (p19). This means that "lifestyle interventions" have great potential for prevention (and treatment) of CVD.

The research gives a clear message: "Epidemiologic studies have shown that positive lifestyle measures, such as not smoking; engaging in at least 30 minutes of physical activity per day; consuming a diet of more fruits, whole grains, fish and vegetables; and maintaining a healthy weight can reduce the incidence of CVD,by over 80% and diabetes by over 90%. Of note is the fact that incorporating just one of these health-promoting practices reduces the risk of developing CVD and diabetes by over 50%" (Rippe and Angelopoulos 2019 p21).

Central to preventative medicine is the assessment of risk factors, which can be divided into modifiable and

non-modifiable factors. The "American College of Cardiology" and the "American Heart Association", for example, have a four-class model (Rippe and Angelopoulos 2019):

1 – Lifestyle interventions to reduce risk supported by evidence – eg: cigarette smoking cessation.

2 – Likely to lower the risk, but less strong evidence in support – eg: weight loss; physical activity.

3 – Clearly associated risk factors that can be modified – eg: nutrition and diet.

4 – Not likely to reduce risk or non-modifiable factors – eg: age; family history of CVD.

3.3. DIET AND CANCER PREVENTION

"Cancer" is a general term covering over 100 diseases (Davis and Ross 2019). "While each type of cancer has unique features, they all share one common characteristic, namely that they begin when a single cell acquires genetic changes and loses control of its normal growth and replication processes" (Davis and Ross 2019 p409). The risk of cancer has a genetic component and an environmental aspect, including dietary factors (Davis and Ross 2019).

In terms of prevention, consumption of fruits and vegetables are important, though the impact varies with the type of cancer (eg: non-starchy vegetables and protection against cancers of the mouth, pharynx and larynx, oesophagus, and stomach) (Davis and Ross 2019) [4].

The "World Cancer Research Fund", based on the evidence from studies, recommends at least five portions or servings (400 g or 14 oz) of a variety of non-starchy vegetables and/or fruits of different colours every day (Davis and Ross 2019).

Concentrating on specific fruits and vegetables, allium vegetables (eg: garlic; onion), for example, have evidence from a variety of studies (eg: cohort studies;

[4] "Fruits and vegetables contain as many as 100,000 unique bioactive food components including both essential micronutrients (eg: vitamins C, D, E, and folic acid and the minerals selenium, zinc, iodine, and calcium) and phytochemicals. The term phytochemicals is a general name for an assortment of plant constituents that often perform important functions in the plant, such as providing colour, flavour, or protection... Examples of phytochemicals include allyl sulfur compounds (from allium foods including garlic and onions), terpenes (from citrus fruits), plant phenols (from grapes, strawberries, apples), polyphenols (from green tea and chocolate), indoles and isothiocyanates (from cruciferous vegetables), and phytoestrogens (from soy and soy products)" (Davis and Ross 2019 p410).

case-control studies) to show a reduced risk of cancer (eg: 50 g per day) (Davis and Ross 2019).

But the relationship between micro-nutrients and cancer risk is not always straightforward. For example, high dietary folate (a B vitamin) has been found to reduce upper gastro-intestinal cancers risk, while high folic acid supplementation in some rodent studies accelerated cancer development (Davis and Ross 2019). Dietary carotenoids also appear to have a different effect than supplementation on cancer risk (Davis and Ross 2019).

Dietary fibre (eg: 25 g per day) appears beneficial, particularly for risk of colorectal cancer. "The assessment of a cancer-protective effect for dietary fibre can be complicated by correlations among dietary fibre, dietary fat, and caloric intakes (ie: high fibre diets may be relatively low in fat and calories). A further confounding factor in examining the association between cancer risk and high-fibre diets is the possible effect on risk caused by micro-nutrients, particularly folate, and phytochemicals in high-fibre foods" (Davis and Ross 2019 p413).

High processed meat consumption has been defined as a definite cause of cancer and high red meat intake as a probable cause by the "International Agency for Research on Cancer". "There is evidence that an increased cancer risk may not be a function of meat per se, but may reflect high fat intake, and/or carcinogens generated through various meat cooking or processing methods. The high energy density of meat increases the likelihood of obesity, itself a major risk factor for cancer" (Davis and Ross 2019 p413).

High alcohol consumption increases the risk of various cancers because alcohol/ethanol has multiple biological mechanisms of its causation (eg: acetaldehyde is a toxic metabolite of alcohol metabolism; decreased absorption of micro-nutrients) (Davis and Ross 2019).

3.4. ADDICTIVE SUBSTANCES

In terms of health consequences, the major addictive substances are nicotine and alcohol. In fact, Mokdad et al (2004) described smoking as the number one "actual cause of death" in the United States in the year 2000, for example, while the WHO estimated that alcohol, tobacco, and illicit drugs contributed to one in eight deaths globally at that time (Suzuki et al 2019).

But nicotine and alcohol are not necessarily viewed

as addictive drugs in the same way as serious illicit drugs by the general public. "People might be eating a healthy diet and exercising, but they may also be drinking too much" (Suzuki et al 2019 p1047).

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