PSYCHOLOGY MISCELLANY

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Six More Months On (Covid-19: 1st October 2023 - 30th April 2024)

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2. Details of the author are included so that the level of expertise of the writer can be assessed. This compares to documents which are not named and it is not possible to tell if the writer has any knowledge about their subject.

This document is presented for human readers.

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1. RETAILING

1.1. OVERVIEW

Among the impacts of the pandemic on shopping behaviour, particularly for groceries, studies have highlighted the loss of or reduction in income, and having more time to plan, select, and prepare to shop online [1]. "The failure of supermarkets to adapt quickly enough to these changes and to understand and meet customer needs has resulted in customer inconveniences, such as food scarcity, empty supermarket shelves, and the potential loss of customers due to a poor customer experience" (Li et al 2023 p1).

In response to the government policy of lockdown in the UK, for example, the supermarkets introduced changes including limits to shopping hours (eg: early closure; temporary closures to restock), and to items that could be purchased (eg: three of the same items).

Li et al (2023) analysed over 160 000 tweets to the five leading UK supermarkets between 23rd March and 14th April 2020 (during lockdown) [2]. Four categories related to service quality were distinguished:

i) Physical aspects of the shopping experience.

ii) Reliability in providing products and/or as

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[1] Online shopping, and social media activity create data for retailers providing information about customers' behaviours and attitudes. Analysing these data is an issue (ie: "big data analysis"), particularly for smaller companies, because of the need for technical and financial support, and IT infrastructure, as well as a skilled workforce (Lutfi et al 2023).

[2] Social media means that product information is both seller-/marketer-generated and buyer-/user-created today. So, in the case of a new video game, there will be the publicity produced by the manufacturer, and comments by players. Cai et al (2023) confirmed the importance of both types of information in different ways in an analysis of five video game platforms on "Amazon.com" on 2nd July 2021.

A key player emerging on the consumer side is the influencer, "that is, prominent social network users who other users consider to be role models. These other users follow influencers' advice and trust their opinions on topics such as fashion, lifestyle, photography and travel... Influencers are increasingly seen as tools through which to communicate with consumers... It has been shown that influencers develop closer bonds with followers than do celebrities, and create more trusting and credible relationships" (Barta et al 2023 p1). But companies can make use of such individuals through "influencer marketing". In a study of a popular Spanish TikTok influencer, Barta et al (2023) found that "originality and opinion leadership play important roles, and that, because TikTok is distinctive, humour increased the effectiveness of messages..." (p1).

promised.

iii) Personal interaction - ie: how staff responded to customers including responding to tweets.

iv) Impact of supermarket policies - eg: special shopping hours for vulnerable consumers, and the ability to police such rules.

1.2. PRODUCT RETURNS

During the covid-19 pandemic, with shops closed as part of lockdowns, online shopping increased [3], as did returning items. "Product returns have become a significant challenge for retailers and society, causing economic, social and ecological harm, although some scholars and practitioners emphasise the opportunity of creating customer value leading to customer retention... Evidence shows that returns result in complicated reverse logistics, increased expenses, financial loss, and unnecessary waste because many returns cannot be resold... Retailers have already faced challenges in reducing and managing returns and associated fraud, even before covid-19" (Zhang et al 2023a p2).

Fraud related to product returns (fraudulent returns), include wearing a piece of clothing, say, and then returning it as unworn (known as "wardrobing" or "borrowing" or "renting"), and "lost in transit" claims for a refund (ie: when the good did arrive, or was never returned as claimed). There is also "price arbitrage" where "a broken, lesser quality or counterfeit item is returned instead of the original item for a full refund" (Zhang et al 2023b p2), and "receipt fraud" using a receipt to get a refund for a shoplifted item.

Harris (2008) outlined ten consumer-related factors linked to success in returns fraud (table 1.1), while the profile of a returns fraud perpetrator was described by Harris (2010) as a young female, with lower education level, and a thrill-seeking motivation.

Factors linked to returns fraud include retailers' liberal return policies (ie: no consequences for unscrupulous behaviour), financial benefits from the behaviour, ethical/moral beliefs of the perpetrators, and their economic and social needs (Zhang et al 2023b).

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[3] For example, net sales at "Amazon.com" increased 1.4 times in 2020 compared to 2019 compared to an increase of 3.2 times overall for 2014 to 2021 (Cai et al 2023).

- 1. Customer knowledge of return policies
- 2. Exploiting relational ties (collusion with employees)
- 3. Judicious timing
- 4. Selection of suitable products
- 5. Interaction style
- 6. Lack of customer self-consciousness
- 7. Feigning personal connections
- 8. Generation of enjoyable interaction
- 9. experience of successful fraudulent returns
- 10. Targeting employee types

Table 1.1 - Ten consumer-related factors in returns fraud success (Zhang et al 2023b).

Zhang et al (2023a) undertook eighteen interviews in 2021-2 with individuals involved in retail, and a consumer survey (n = 497) in February 2022 in the UK. The former group highlighted three issues around product returns and the pandemic:

i) More fraudulent returns - eg: contactless deliveries (ie: no signature on receipt) increased the opportunity for "lost in transit" fraud; "bricking" (removing valuable components from an electrical good before returning it for a refund) (table 1.2).

ii) Problems for retailers - eg: quarantining of returned products for 48-72 hours; build-up of returns at physical shops during closure.
Zhang et al (2023b) outlined reported changes during the pandemic that encouraged fraudulent returns, including lack of data-driven information systems by retailers (particularly those moving online for the first time), "no quibble" returns policy (which particularly motivated wardrobing), and "professional refunder services" (eg: sharing of tips online; books with detailed instructions; the "dark web").

iii) New returns management strategies - eg: working with delivery companies.
The interviewees made a number of suggestions for actions against fraudulent returns including (Zhang et al 2023b):

a) Tightening returns policies - "for instance, offering only product exchange instead of product return, or offering returns with a shipping cost... However, most retailers expressed that introducing stricter policies often increases the complexities of returns for honest

consumers, thus resulting in reduced sales" (Zhang et al 2023b p10).

b) Unique product identifiers linked to the purchase and shown on the receipt.

c) Effective returns portal "that systematically records detailed returns data or using the services of a third-party returns system provider..." (Zhang et al 2023b p11).

d) Establishing an anti-fraud team.

A loss prevention manager summed up the feelings of the retailers: "I don't think we're ever going back to the way it was, from the fraud trends that are emergent; as I said before, do you want to go into a store and be seen [on] CCTV cameras or by store staff? Or do you want to just be returning online, claiming you never received a package, and you can hide behind those aliases? I think that's e-commerce, and what's really happened. And I don't see it going away. And I think, it's gonna get worse if retailers are don't buckle up and put in programs to address the [returns fraud] situation" (p12).

SHOPPING ENVIRONMENT	FRAUD CATEGORIES
Online	* Price arbitrage (switching product returned) * Shipping-related (eg: claim parcel never arrived) * Multi-channel refund fraud (eg: claim refund online and also at physical shop)
Physical shop	* Return shoplifted item for refund * Employee return fraud (eg: collision with staff) * Discount fraud (eg: claiming full refund on discounted item) * Points fraud (purchase item to gain "loyalty points" before returning it)
Both	* Wardrobing (returning used or worn items as new) * Payment refund fraud (eg: using stolen credit card to purchase item and get cash as refund) * Damage fraud (eg: claiming damaged when not)

Table 1.2 - Categories of fraud based on type of shopping (Zhang et al 2023b).

The consumer survey by Zhang et al (2023a) found

that returning items during the pandemic was perceived as more acceptable and easier. "The inconvenience of the store" (ie: physically going back to a shop) was removed.

1.3. SERVICE ROBOTS

The "1.5 m-society" (Henkel et al 2020) during the pandemic opened the possibility for the use of service robots (SRs). A SR is "information technology in a physical embodiment, providing customised services by performing physical as well as non-physical tasks with a high degree of autonomy" (Josling et al 2019 quoted in Merdin-Uygur and Ozturkcan 2023 p2).

Did covid-19 change the attitudes of consumers towards SRs? Merdin-Uygur and Ozturkcan (2023) found some changes in their studies that covered the pre-covid-19 period as well as during it. The participants were students studying business courses at an European university ("Gen-Z" and "digital natives" born between 1994 and 2010).

The first study took place in February 2020 (pre-covid-19 in the country of the study), and compared the perceptions of SRs based on the power relationship to humans. The high power SR was robotic airport check-in, and low power was robotic surgery. This choice was based on a pre-test about the feeling of the consumer in relation to the SR's control over them. The attitudes towards robotic surgery were significantly more negative than the airport check-in SR.

Study 2 was performed in June 2020, and the same attitudes were found as the first study. "Overall, the participants found robotic airport check-in more appealing, likeable, positive, favourable, better and less irritating than robotic surgery. Based on our theoretical assumptions and pre-test, this difference is attributed to robotic airport check-in as a service encounter where the engaged person feels more powerful (vis-`a-vis the SR). In contrast, in robotic surgery, the person feels weaker in power (vis-`a-vis the SR)" (Merdin-Uygur and Ozturkcan 2023 p5).

A change in attitude due to the pandemic was only seen with the check-in SR, with a decline in the positive feelings. The researchers commented that "the decline in attitudes towards robotic check-in could be due to refraining from airports" (Merdin-Uygur and Ozturkcan 2023 p7).

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2. COVID-19 AND CORRECTIONAL FACILITIES IN THE USA

Covid-19 in the prison or carceral systems had an amplified impact because of dormitory-style living and overcrowded conditions, the prioritising of security over healthcare, and the under-resourcing of healthcare facilities within (Puglisi et al 2023).

Furthermore, "carceral settings were not and have not been fully integrated into public health responses to the pandemic despite their national importance for covid-19 prevention and mitigation. Few local governments have meaningfully incorporated prisons and jails into their strategies for covid-19 response and preparedness" (Puglisi et al 2023 p400). Testing and vaccination were also limited, and so disparities (particularly ethnic/racial) were exacerbated because of the disproportionate incarceration of minorities. Puglisi et al (2023) was thinking of the USA in their comments, but the points are relevant globally. "On average, the covid-19 case rates and mortality rates in state and federal prisons are higher as compared with the general population..., and communities that have carceral facilities have higher rates of covid-19 infection" (Puglisi et al 2023 p400).

Prior to covid-19, Beaudry et al (2020) found twenty-eight studies published in the 21st century for their review on outbreaks of infectious diseases in prisons (eg: tuberculosis; influenza; measles). Puglisi et al (2023) found 77 studies published between March 2020 and February 2022 on covid-19 in the US carceral systems.

The findings can be summarised in the following way:

i) The rate of covid-19 infection within correctional facilities was higher than outside (eg: 3-15 times higher), and the transmission rate was also greater (based on the basic reproduction ratio - ie: the number of uninfected people infected by one person with the disease) (eg: greater than eight).

ii) The transmission of covid-19 infection in and out of the prisons via correctional staff and their family members. The "data come from only a limited number of communities but suggest that covid-19 was more an 'outside-to-inside' problem" (Puglisi et al 2023 p414).

iii) Racial/ethnic disparities in infection in the

correctional facilities - ie: higher for Black and
Hispanic than White inmates (eg: 3-6 times higher).

iv) Higher covid-19 mortality than the US general
population, despite the average age of the incarcerated
population being younger than the general population (eg:
2.5 - 4.5 times higher).

v) Factors that increased the risk for covid-19 and
related mortality for prisoners included medical co-
morbidities, congregate living and limited physical
distancing, and overcrowding.

vi) Effective measures to mitigate and combat covid-
19 transmission included single celling, reduced movement
within and between correctional facilities, contact
tracing, mass testing, decarceration, health
communications, and vaccinations.

vii) Impact on the correctional staff - Greater risk
of infection than the local population (up to seventeen
times higher), but also an increased risk for a community
with the presence of a state or federal prison (eg:
approximately 10% higher than communities without such
facilities).

There were a number of methodological issues and
limitations with the studies in the review:

a) General limitations

- Availability of data - Many facilities did provide
  the Centre for Disease Control and Prevention (CDC)
  with official data, but others did not.

- Only peer-reviewed articles published in English
  included in the review.

- Exclusion of people detained in immigration
  detention centres.

- 68 of the studies were epidemiological (ie:
  observational).

- Data from 21 US states specifically, while nineteen
  studies used national data.

b) Methodological differences between studies

- Studies on staff members tended to be self-reports only.

- Population of focus - eg: incarcerated people only; correctional staff only; both groups; recently released.

- Definition and measurement of infection - eg: polymerase chain reaction (PCR) testing; SARS-CoV-2-anti-bodies testing; self-reports; hospitalisation rate.

- Sampling method, and size of sample; frequency of testing; mass or selective testing.

- Comparison group - eg: local community.

- Measurement of ethnicity - eg: self-reported; researcher-assigned.

- Real-time or retrospective reporting of data.

- Cross-sectional or longitudinal design.

- Response rates to surveys - eg: 17% - 82%.

c) Research gaps

- Certain research areas not covered - "there is not a single published report on the experience of covid-19 among incarcerated people: their self-reported health or long covid, their experience of prolonged quarantines and lockdowns, or their experience of healthcare during covid-19, including access to evidence-based covid-19 therapeutics. Their voices are absent in our accounting of the pandemic and reinforce the black box of what is known about correctional healthcare systems and the quality of care" (Puglisi et al 2023 p416).

- "No studies were conducted on healthcare delivery for covid-19 patients in correctional healthcare systems, and none were conducted on the quality of

care, perception of care, or receipt of new therapeutics" (Puglisi et al 2023 p408).

- Little data on incarcerated women, youth, and older adults, as well as family members of prisoners.

- No experimental studies on successful health strategies, or effectiveness of treatments.

d) Institutional issues

- The ability of institutions to apply mitigation strategies - for example: "Despite the public health benefits of decarceration, the general public largely has not supported broad decarceration efforts. In a nationally representative survey, researchers found that just over half of respondents said they agreed with releasing those already eligible for release, and only a quarter of respondents agreed with releasing as many people as possible (Denney and Valdez 2021)" (Puglisi et al 2023 p414).

e) Evidence levels

- Supported - testing on day 1 and again days 3-5 of infection; systemwide mass testing; vaccination.

- Not supported - "contact tracing by video monitoring was not shown to be particularly helpful for reducing transmission especially when definitions of close community contact were applied and because video monitoring cannot track contacts outside of correctional facilities, especially when employees return home" (Puglisi et al 2023 p415).

- Unsure - eg: wastewater monitoring.

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3. VACCINES

3.1. VACCINATION DURING PREGNANCY

Vaccination during pregnancy protects infants in the case of influenza, and Tdap (tetanus, diphtheria, and pertussis), and data confirmed this for covid-19 (Zerbo et al 2023).

Maternal covid-19 vaccination during pregnancy has been found in three recent epidemiological studies to be associated with reduced risk of SARS-CoV-2 infection and hospitalisation in the first six months of life (Zerbo et al 2023) (table 3.1). Zerbo et al (2023) confirmed this pattern with the Delta and Omicron variants, though the protection was lower with the latter variant, and protection declined as the infant aged.

STUDY	DETAILS
Carlsen et al (2022)	A cohort study of all live births in Norway between 1st September 2021 and 28th February 2022 (n = 21 643). Of these, 45% were born to mothers who had received a second or third dose of the covid-19 vaccine during pregnancy. Infants born to vaccinated mothers had a lower risk of a positive test for covid-19 by four months old than infants of unvaccinated mothers
Danino et al (2023)	A case-control study that compared 116 SARS-CoV-2-positive infants (aged 0-6 months) at three hospitals in Israel between 1st March 2021 and 30th November 2021 with 348 negative matched controls. The former group were more likely to have been born to unvaccinated mothers.
Halasa et al (2022)	A case-control study comparing 537 infants (aged 0-6 months) hospitalised for covid-19 and 512 matched controls hospitalised without covid-19 at thirty hospitals in 22 US states between 1st July 2021 and 8th March 2022. Nearly twice as many controls had been born to fully vaccinated pregnant mothers than cases.

Table 3.1 - Three epidemiological studies on maternal vaccination and infant risk of SARS-CoV-2.

Two methods were used by Zerbo et al (2023):

i) A cohort study of infants of vaccinated pregnant

persons vs infants of unvaccinated pregnant persons.
After adjusting for variables, the risk of the infant
testing positive for SARS-CoV-2 during the first six
months of life was less for vaccinated during pregnancy
(approximately 50% less risk with two doses of vaccine).

ii) A case-control study of mothers of infants who
tested positive vs mothers of infants who tested negative
for SARS-CoV-2. The latter group included more vaccinated
individuals.

The dataset covered over 30 000 infants born between
15th December 2020 and 31st May 2022, who were registered
with "Kaiser Permanente Northern California" (integrated
healthcare delivery organisation).
Zerbo et al (2023) outlined limitations with their
study, including that "[V]accinations were limited only
to those received during pregnancy. We did not assess
whether vaccines received before pregnancy or immediately
after pregnancy were associated with a reduced risk of
testing positive for SARS-CoV-2 in infants. The study did
not adjust for maternal SARS-CoV-2 infections during
pregnancy due to the inability of capturing home testing
results. We, therefore, were unable to assess whether
maternal infection provided some protection to their
infants" (p4).

3.2. MISCELLANEOUS

The original covid-19 vaccines were based on
stimulating an immune response to the spike protein on
the original Wuhan (ancestral) SARS-CoV-2 virus. Covid-19
mRNA vaccines had traditionally been monovalent (ie:
focused on the ancestral spike protein), but subsequently
they can be bivalent (ancestral and Omicron BA.5).
Wang et al (2023) analysed blood from 72 patients
receiving different vaccine boosters (ie: monovalent or
bivalent). The bivalent vaccine produced an immune
response to the ancestral spike protein, which "prevents
the broadening of anti-bodies to the BA.5 component of
the bivalent vaccine, thereby defeating its intended
goal" (Wang et al 2023).
The original vaccine is "essentially a vaccine for
an extinct virus not seen on the planet since 2021"
(Danny Altmann in Le Page 2023).

3.3. REFERENCES

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4. MENTAL HEALTH

4.1. Suicidality among university/college students
4.2. Patients with schizophrenia
4.3. Appendix 4A - Preter-intentional suicide
4.4. References

4.1. SUICIDALITY AMONG UNIVERSITY/COLLEGE STUDENTS

The covid-19 pandemic was a "complex stressor" impacting mental health via physical health concerns and illness, social isolation, and financial uncertainty, for instance (Cichon et al 2024). One consequence was increased suicidality (thoughts/ideation and behaviours) (appendix 4A). For example, one meta-analysis of twelve studies (Farooq et al 2021) found a 12% increase in suicidal ideation in the general population during the pandemic compared to before (Cichon et al 2024).

Around the world, studies have reported suicide risk in one in seven US adults, for example, and one in four young adults in China (Cichon et al 2024). But there is limited research comparing before and during the pandemic for young adults, and more specifically students (Cichon et al 2024).

Cichon et al's (2024) focus was university students in Poland. They surveyed over 10 700 such individuals in early 2021. The main outcome was suicidal thoughts and behaviour (STB), measured by the "Columbia Suicide Severity Rating Scale" (C-SSRS) (Posner et al 2011). Applied to the last thirty days, items included: "wish you were dead or would go to sleep and never wake up" (passive suicidal ideation); "have thoughts of killing yourself" (active suicidal ideation); and "make a suicide attempt" (ie: "purposefully hurt yourself with at least some intent to die"; Cichon et al 2024 p45). Participants were categorised into groupings for analysis - no STB vs any STB; then STB was sub-divided into passive vs active STB; and suicide plan but with no attempt, and suicide attempt.

Other measures were completed of mental disorders, substance use, and covid-19-related characteristics (eg: hospitalisation).

The prevalence of any STB in the last 30 days was 39.3%. This was sub-divided into 18% "passive ideation only", "active ideation only" 7.1%, "suicide plans without attempt" 15%, and "suicide attempt" 1.4% of total sample. This compares to 0.4% for suicide attempt, and

2.2% for "seriously considering committing suicide" in previous studies of Polish students (Cichon et al 2024).

STB was more likely in certain cases, including having been hospitalised for covid-19, having a current physical illness, and history of and/or a current mental disorder. The strongest risk factors for increased suicide attempts were severe anxiety, panic attacks, and covid-19 hospitalisation. "Surprisingly, major depression was not associated with the risk of suicide attempts" (Cichon et al 2024 p52).

The sample was recruited by educational institutions, and involved those who responded. The researchers admitted: "Therefore, we had no direct control on the number of invitations sent to potential participants. Thus, we cannot calculate participation rate. People with poor internet accessibility were likely to not be included in the study, which created a selection bias in the population studied" (Cichon et al 2024 p54). The study did not have individual pre-pandemic measures for comparison.

Table 4.1 outlines three studies of students in other countries.

STUDY	COUNTRY	DETAILS
DeVylder et al (2021)	USA	Data from "2020-2021 Healthy Minds Study" (n = 16 315 undergraduates and postgraduates): 13.4% suicidal ideation in past year; 5.4% suicide plan; 1.3% attempt
Kaparounaki et al (2020)	Greece	1000 students: a self-reported 20% increase in overall suicidality during the pandemic compared to before
Liang et al (2022)	China	Prevalence of suicidal ideation in three phases of pandemic: Outbreak period (February 2020) - 8.5% Remission period (March 2020) - 11% Normalised preventive and control period (June 2020) - 12.6%

Table 4.1 - Three studies of STB in students during the pandemic.

Focusing on Liang et al (2022). This was a repeated cross-sectional survey of students in Guangdong Province, China, at three points of time: 3rd-10th February (T1 - first outbreak; n = 164 101), 24th March-3rd April (T2 - remission period; n = 148 384), and 1st-15th June 2020 (T3 - normalised preventive and control period; n = 159

187). Volunteers were recruited via "WeChat", and the
survey was completed online. A number of measures were
included, but, specifically, suicidal ideation was
assessed by one item: "How often have you been bothered
by thoughts that you would be better off dead or of
hurting yourself in some way?". The response options
were: "not at all" (0), "a few days" (1), "more than half
of the days" (2), and "almost every day" (3). Scores
above zero were classed as suicidal ideation prevalence:
8.5% (T1), 11.0% (T2), and 14.3% (T3).

Suicidal ideation was more likely for males,
individuals with poor self-perceived mental health and/or
a history of mental illness, and those with negative
beliefs about covid-19 (eg: untreatable).

The researchers accepted the following limitations
with the study. Firstly, they stated: "Due to the
voluntariness of participation in the research, the
impact of the covid-19 epidemic on college students'
suicidal ideation may have been over or underestimated.
We cannot know the prevalence of suicidal ideation of
college students who did not participate in the survey"
(Liang et al 2022 p10). Secondly, the cross-sectional
design meant that causality could not be established.
Also the use of a single item to measure suicidal
ideation.

4.2. PATIENTS WITH SCHIZOPHRENIA

"Patients with schizophrenia spectrum disorders may
be at particular risk of poor covid-19 outcomes because
of multiple physical co-morbidities that have been
identified as risk factors for severe covid-19.
Schizophrenia-spectrum disorders are also associated with
socio-economic deprivation and reduced access to care,
two important factors of poor covid-19 outcomes" (Fond
and Boyer 2023 p179).

A meta-analysis of ten studies (Pardamean et al
2022) confirmed that schizophrenia was a risk factor for
covid-19 infection generally, and for negative outcomes
when infected (eg: over twice as likely to die as the
general population). "The mechanisms of this increased
mortality are still unclear and are not fully explained
by addictions, physical co-morbidities, or psychotropic
drugs. A concern was the risk of triage during the first
wave, to the detriment of patients with schizophrenia"
(Fond and Boyer 2023 p180).

Data from France (Boyer et al 2022) showed that
individuals with schizophrenia also had increased non-

covid-19 mortality during the pandemic. "This increased mortality was found for poisoning and injury, respiratory diseases, and for both surgery and medical care settings. These results suggested a greater deterioration in access to, effectiveness, and safety of non-covid-19 acute care in patients with schizophrenia compared with patients without severe mental disorders" Fond and Boyer 2023 p180). Compared to the year before the pandemic, half as many in-person psychiatric consultations occurred in the first year of the pandemic, according to one study (Payberah et al 2022). There was some disruption of prescription of long-acting injectable anti-psychotics, but this varied between countries (eg: no disruption in the USA but so in Romania) (Fond and Boyer 2023).

Individuals with schizophrenia had to deal with psychological impacts of the pandemic and lockdowns as with the general population. There was variety in the responses (eg: coping strategy used) (Fond and Boyer 2023).

"Unwillingness to vaccine has been associated with greater psychiatric symptoms in patients with schizophrenia: symptomatic patients with schizophrenia frequently are suspicious of the Government for wanting to vaccinate people and develop paranoid delusions around the vaccination itself and the process. However, this suspicion was not limited to patients with psychotic disorders and younger age, lower education and economic status, right-wing and conservative ideology have been associated with increased belief in misinformation" (Fond and Boyer 2023 p181).

4.3. APPENDIX 4A - PRETER-INTENTIONAL SUICIDE

Considering suicide attempt versus non-suicidal injury, Panarella and Mandarano (2023) argued that "it is essential to move beyond the current dichotomous view of suicide (intentional/unintentional) or assured survival, and recognise the grey area in between. This necessitates identifying certain behaviours that can be considered as 'suicidal equivalents'" (p560). Their answer was the term "preter-intentional suicide", to "encompass situations where distorted perceptions of risk lead to behaviours that significantly increase the likelihood of mortality. For example, should we consider bungee jumping from a bridge, driven by the pursuit of adrenaline, as a manifestation of self-destructive tendencies? It could be, thus, crucial to recognise a risk in the invincibility exhibited by individuals engaging in such

activities" (Panarella and Mandarano 2023 p560).

They continued: "Intentional suicide involves a conscious and deliberate desire to end one's life, while unintentional suicide refers to self-inflicted harm resulting in death without an explicit intent to die. The concept of preter-intentional suicide bridges the gap, acknowledging behaviours where individuals may lack a conscious intent to die but engage in actions that significantly heighten the risk of mortality due to distorted perceptions of risk or misguided confidence" (Panarella and Mandarano 2023 p561).

The concept of preter-intentional suicide shows "the multi-dimensional nature of human actions. It acknowledges the existence of a complex network woven with hidden motives, unconscious desires, and subjective experiences that contribute to the complexity of behaviour. By embracing this term, we can advance our understanding of the intricate interplay beyond the dyad consciousness/unconscious, providing a more holistic framework for investigating and interpreting human actions" (Panarella and Mandarano 2023 p561).

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5. EXPERIENCES OF HEALTHCARE WORKERS IN THE DOMINICAN REPUBLIC

Baez Caraballo et al (2023) interviewed 28 healthcare workers (HCWs) in the Dominican Republic in mid-2021 about how the covid-19 pandemic had affected their lives. Four main themes (with accompanying sub-themes) emerged from the analysis of the transcripts of the semi-structured interviews:

1. Stressors

i) Lack of knowledge and uncertainty caused anxiety for the HCWs - This was particularly the case at the beginning of the pandemic. For example, one of the interviewees (a doctor) said: "At the beginning, we did know [sic] how it spread, what could cause it, how to manage it, if people would die... obviously, we were scared" (p5).

ii) Fear of the disease was constantly there - eg: fear of infecting relatives, as described by a nurse: "My mother has high blood pressure and diabetes. I work in the covid unit. I feel this terrible fear of bringing covid home" (p6).

iii) Changes in personal life due to safety measures - "Most HCW expressed struggling with social distancing and isolation during the pandemic, feeling duress by either having their social lives reduced, or being away from their family. These feelings were particularly present among inpatient HCWs, where working in the covid-19 specialised unit often included being physically away from their families, further increasing their sense of isolation" (Baez Caraballo et al 2023 p7). For example, one doctor said: "I stopped spending time with my daughter and my parents. You could have covid even without symptoms, so I need to act like I always have it" (p7).

iv) Changes in work environment - These included increased workload, use of personal protective equipment (PPE), and dealing with patients and relatives, specifically giving covid-19 information. In relation to the latter, one doctor said: "Relatives don't believe you and you have to be careful how you explain things to them; they don't understand their relative has covid and they need to protect themselves" (p9).

v) Impact of covid-19 on the economy - "HCWs were concerned about their finances due to the consequences of covid-19. Concerns expressed included fear of unemployment and reduced salaries, for both HCWs and their family members, with many HCWs becoming the only source of income in their household" (Baez Caraballo et al 2023 p9).

2. Protective factors for HCWs' mental health

i) Motivation to continue working - eg: "My biggest motivator is seeing a patient who had coughing and breathing difficulties, visibly sick, get back on their feet and go back to their home and families" (doctor; p10).

ii) Social support - eg: "I can count on my mum, my dad even if he's away, my husband, aunts and uncles... my family has remained together" (doctor; p10).

iii) Positive work environment - eg: support from colleagues.

3. Adaptation and reaching "covidianidad" - This is a slang term in Spanish for "everyday covid", and "reflects a change in the situation whereby taking safety measures to prevent covid infection originally seen as stressors became perceived as manageable and routine as time went by" (Baez Caraballo et al 2023 p11).

i) Learning - Education and good quality information about covid-19.

ii) Greater use of digital tools - Both in their personal and work lives.

iii) Implementing safety measures - Positive experiences emerged, like families becoming closer during lockdowns, while one doctor noted the benefits of curfews: "There was no one on the streets drinking alcohol, looking for trouble; we saw less of that" (p12).

iv) Vaccine availability - "Almost half of the participants shared feeling better and safer after getting the vaccine, suggesting that getting the vaccine was perceived as protective by some of our participants" (Baez Caraballo et al 2023 p13).

4. Future perspectives about covid

i) Challenges for society - "For all HCWs, the most prevalent challenge was population behaviour regarding safety measures. Population behaviour was described as frustrating by all HCWs. There was a strong perception that people not adhering to safety measures were endangering everyone around them. By many HCWs, this reluctance to maintain safety measures was described as a 'cultural problem' rather than lack of education or knowledge among the general population" (Baez Caraballo et al 2023 p13).

ii) HCWs' mental health - eg: stigma associated with seeking help: "It's a bit difficult, the moment you go [to mental health services], people label you as crazy" (p14), said one doctor.

The findings from this study agreed with other research. Baez Caraballo et al (2023) outlined one issue in particular: "Similar to HCWs from Iran and Nepal, Dominican HCWs either witnessed or experienced a sense of stigma by the general population, who perceived HCWs as "carriers of covid". Specifically, HCWs from ambulatory settings expressed bewilderment that they were met with stigma despite not even working directly in a covid-19 unit. These findings reflect results from studies proposing that covid-19 effects were not limited to frontline responders [eg: Taylor et al 2020; appendix 5A]. A notable finding, however, is that although HCWs felt stigmatised, unlike other reports where stigma weighed heavily on the perceived mental health of HCWs, our participants were able to rationalise the likely source of this stigmatisation, understanding that physically distancing themselves from HCWs was a way for the general population to feel that they were protecting themselves. A possible explanation for the difference between our participants and other findings in the literature may be related to other countries experiencing much more aggressive forms of stigma than the ones expressed by our participants" (p14).
The idea of reaching "covidianidad" was important, and it "seemed to hinge on four cornerstones of the adaptation process: identifying reliable sources of information, leveraging technologic supports, vaccine development, and positive aspects of safety measures" (Baez Caraballo et al 2023 p15).

APPENDIX 5A - TAYLOR ET AL (2020)

Stigmatisation of HCWs is not new. "During widespread outbreaks of infectious disease, healthcare workers (HCWs) are often stigmatised by people in their communities; that is, HCWs have been feared, avoided, shunned, or ostracised due to public fear that HCWs are sources of infection" (Taylor et al 2020 p1). For example, up to half of HCWs surveyed in Taiwan and in Hong Kong during the 2003 Severe Acute Respiratory Syndrome (SARS) outbreak reported being shunned or avoided (Taylor et al 2020).

Taylor et al (2020) surveyed 3551 non-HCW adults in North America in May 2020 about their attitudes towards HCWs. The key statements included:

i) "For the safety of the community, healthcare workers should not go out in public".

ii) "Healthcare workers should have some restrictions on their freedom".

iii) "I do not want to be around someone who works in a healthcare setting".

Overall, on average, around one quarter of respondents agreed or strongly agreed with the statements. This peaked at nearly half for "I do not want to be around HCWs who treat covid-19 patients".
Appreciating HCWs (eg: applauding) did not change such attitudes, while stigmatisation was greater for more covid-19-stressed individuals (eg: those who avoided leaving the house at all).
Taylor et al (2020) commented that research had established that "just like non-HCWs, HCWs were most likely to be infected in the community rather than in hospital settings. Therefore, there is no sound basis for the attitudes of many of our participants, who believed that HCWs should be separated from their communities or families" (p4).

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6. MISCELLANEOUS

6.1. METFORMIN

Bramante et al (2023) randomised 1126 overweight and obese US adults (aged 30-85 years old) recently diagnosed with verified SARS-CoV-2 in January 2022 to receive combinations of metformin (used to control blood sugar levels in type 2 diabetes), ivermectin (anti-parasitic drug), fluvoxamine (anti-depressant), and placebo (in the "COVID-OUT" trial) for fourteen days. At follow-up, ten months later (Day 300), less individuals (of the total 8.3%) were diagnosed with long covid who had received metformin than the other substances.

It is not clear if the findings generalise to non-overweight and obese individuals, and that metformin can help those people already with long covid (Novak 2023).

Evaluation of methodology of Bramante et al (2023):

a) Six study sites and slightly different periods of time (covering three different variants of SARS-CoV-2 - Alpha, Delta, Omicron) (+/-).

b) Three hundred day follow-up (+).

c) Decentralised study with no in-person contact (+/-) and participants sent medication. Also covid-19 and long covid based on medical information provided by participants (eg: primary care physicians diagnosed long covid mostly, only four diagnoses by specialists for that condition) (-). "Several factors could influence whether individuals receive a diagnosis of long covid from a medical provider within 10 months of infection, such as access to medical care, competing demands, willingness to seek medical care for post-covid-19 symptoms, and provider awareness of long covid as a diagnosis" (Bramante et al 2023 p1126).

d) Self-selected sample based on response to online advertisements and patient messages (-).

e) Studied a high risk group (ie: overweight and obesity) for severe covid symptoms (+).

f) Drop-out of 305 participants between randomisation and follow-up (-). Reasons included delivery failure of drugs, hospitalisation, or withdrawal of consent during treatment or follow-up phases (Bramante et al 2023).

g) Quadrupled blinding - investigators, outcome assessors, treating clinicians, and participants did not know which condition they had been allocated to (+).

h) Sample - over 80% White (-), but gender balanced (+).

i) No agreed definition and criteria of long covid at this time (-).

j) Trial began by comparing metformin and placebo for short-term impact with SARS-CoV-2, but later added other drugs and follow-up for long covid, so it was was not the prefect clinical trial from scratch (-).

6.2. TRADITIONAL CHINESE MEDICINE

Chen and Wang (2023) described the practice of Traditional Chinese Medicine (TCM) in relation to covid-19. "According to the principles and theory, disease occurs as a result of disruption to the body's yin-yang balance, and covid-19 infection is regarded as an invasion of external pathogenic factors leading to a conflict between vital energy (zheng qi) and pathogenic energy (xie qi)" (Chen and Wang 2023 p357).

The early stages of infection with cough, fever, or sore throat are "perceived in TCM as an invasion of wind-heat or heat-toxin in the lungs. Thus, the therapeutic aim at this stage is typically to disperse the exterior and expel pathogens; that is, to eliminate the virus via perspiration. In more severe stages, the virus may lead to an obstruction caused by damp-toxin or blood stasis with symptoms that may include difficulty breathing or shortness of breath and associated symptoms. At this stage, the therapeutic aim is to dissipate dampness and promote blood circulation, or to improve the condition through diuresis, expectoration, and enhancement of blood circulation" (Chen and Wang 2023 p357).

TCM in response to covid-19 proposed different treatments, which became known as "three medicines and three formulas" (TMTFs) (Xiao et al 2023):

i) Jinhua Qinggan granules (JHQG) and Lianhua Qingwan capsule (LHQW) for fever, fatigue, and other symptoms.

ii) Xuanfei Baidu formula (XFBD) and Huashi Baidu formula (HSBD) for mild and moderate symptoms.

iii) Xuebijing injection (XBJ) with severe disease.

There have been some randomised controlled trials (RCTs) with elements of TMTFs. For example, JHQG treatment relieved mild-to-moderate symptoms of fever, for example (An et al 2021). While a meta-analysis of over two hundred experimental studies (Hu et al 2022) found that "treatment with LHQW substantially reduced the incidence of respiratory system injury, skin and accessory injury, nervous system injury, gastro-intestinal system injury, and other adverse reactions in patients with covid-19" (Xiao et al 2023 p311).

For example, in the treatment of severe-to-critical patients, a RCT of over 700 individuals (Song et al 2019) found that "XBJ substantially improved the primary endpoint of the pneumonia severity index, as well as secondary clinical outcomes such as mortality, duration of mechanical ventilation, and total length of stay in intensive care unit (ICU)" (Xiao et al 2023 p312).

Explanations of the biological mechanisms of TMTFs have also been provided. For example, JHQG down-regulates the expression of ACE2 cells, which is a point of attack of the SARS-CoV-2 virus (Xiao et al 2023).

TMTFs can also decrease the level of immune response, say, particularly where the "cytokine storm" has been harmful to the patient (ie: an extreme immune response to the virus) (Xiao et al 2023).

6.3. MISCELLANEOUS

(1) Up to one-fifth of covid-19 sufferers have gastro-intestinal problems (eg: diarrhoea; abdominal pain; nausea). These symptoms may be long lasting (eg: 100 days after hospitalisation) (Marshall 2023).

Analysis of the gut microbiome through stool samples suggests that "many helpful 'commensal' bacteria can become depleted when people are infected with the

coronavirus, while harmful ones become more populous. The fungi in the gut - the mycobiome - have shown similar disruptions" (Marshall 2023 p14). One hypothesis is that the SARS-CoV-2 virus binds to the angiotensin-converting enzyme 2 (ACE 2) receptor in gut cells and inhibits the nutrient uptake (Marshall 2023).

(2) In the UK in the winter 2022-23, the number of reported norovirus cases was the highest for at least a decade (Murugesu 2023).

As with many viruses, the number of norovirus cases was low during the covid-19 pandemic, probably due to lockdowns and social distancing measures. Though the UK Health Security Agency suggested that the figures may have been due to less norovirus testing (Murugesu 2023).

So, is the post-covid rise of norovirus cases "heightened disease activity or better surveillance and reporting" (Murugesu 2023 p14)?

Reduced immunity to the norovirus after fewer-than-usual cases during covid-19 could explain a real rise.

(3) "Brain fog" (poor memory, difficulty thinking or concentrating) has been reported after covid-19, and may be a lasting consequence. Hampshire et al (2024) investigated this with data from the "Real-Time Assessment of Community Transmission" (REACT) cohort in England.

Around 2.5 million randomly selected adults were recruited between 1st May 2020 and 31st March 2022. A sub-sample of 80 000, including those who reported positive results on a SARS-CoV-2 test or suspected infection that lasted at least twelve weeks in 2022, were studied here. A computerised online cognitive assessment was undertaken, which covered eight areas (eg: immediate memory; spatial planning; delayed memory).

Around 52 000 individuals were in the covid-19 group, and the remainder of the sub-sample were the controls. The former had "similar small deficits in global cognition" (Hampshire et al 2024 p806), but the deficits were larger for individuals with unresolved persistent symptoms (ie: "long covid"). There was "a downward shift, as compared with the no-covid-19 group, in the distribution of global cognitive scores among participants who had been infected early in the pandemic (during periods in which the original virus or alpha variant was predominant), among those with longer illness duration, and among those who had been

hospitalised" (Hampshire et al 2024 p809).

The key strength of this study was the cognitive assessment used. Hampshire et al (2024) explained: "Our assessment comprised tasks that were designed to measure distinct aspects of cognitive performance that are associated with different brain systems. The memory, reasoning, and executive function (ie: planning) tasks were among the most sensitive to covid-19-related cognitive differences" (p816). The key weakness was no cognitive measures for before the illness as an individual comparison, along with "reliance on subjective reporting to identify persons with persistent symptoms" (Hampshire et al 2024 p816).

Overall, the study confirmed that persistent symptoms were associated with cognitive decline, but also a small decline, within the subsequent year, even for individuals who recovered from covid-19 (compared to the no-covid-19 group). Hampshire et al (2024) ended: "The implications of longer-term persistence of cognitive deficits and their clinical relevance remain unclear and warrant ongoing surveillance" (p817).

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