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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. INFECTION AND REINFECTION

- 1.1. Reinfection
- 1.2. Symptoms
 - 1.2.1. "Viral underclass"
 - 1.2.2. Indirect method of covid-19 surveillance
- 1.3. Variants

1.1. REINFECTION

The US Department of Veteran Affairs national healthcare database provides a large cohort for study, which Bowe et al (2022) used to investigate reinfection. Over 443 000 had a single SARS-CoV-2 infection, around 40 000 reinfection, and over five million no infection. Data were collected between March 2020 and April 2022. Risk of health problems post-covid-19 was the outcome measure.

Compared to single infection, reinfected individuals had an increased risk of all-cause mortality, and of health problems. "The risks were evident regardless of vaccination status" (Bowe et al 2022 p2398). Non-infected controls had the lowest risk.

In terms of methodological issues:

i) This study included a large sample, but disproportionately White males compared to the general population in the USA (Bowe et al 2022).

ii) Individuals were classified based on a positive test for SARS-CoV-2, and "did not include those who may have had an infection with SARS-CoV-2 but were not tested; this may have resulted in misclassification of exposure since these people would have been enrolled in the control groups" (Bowe et al 2022 p2404).

iii) The study compared people who had been infected more than once with individuals infected once rather than comparing first and second infections in the same individuals (Le Page 2022).

iv) The study "defined reinfections as a positive test 30 days or more after a previous positive test, which could be a persistent initial infection rather than a reinfection" (Le Page 2022 p21). A period of 90 days may have been better, for instance. A reanalysis using 90 days found that the "results are essentially the same" (Ziyad Al-Aly [of Bowe et al 2022] in Le Page 2022).

Eric Topol (at the Scripps Research Translational Institute in California) commented on the implications of the study: "There is simply no excuse why... vaccines are not being hyper-aggressively pursued... The lack of priority and resource allocation stems from the illusion that the pandemic is behind us" (quoted in Le Page 2022).

1.2. SYMPTOMS

The "Assessment of Transmission and Contagiousness of Covid-19 in Contacts" (ATACCC) study (Singanayagam et al 2022) recruited newly diagnosed PCR-confirmed SARS-CoV-2 cases in the UK between September 2020 and March 2021 (n = 393), and May and October 2021 (n = 345). All participants kept a daily symptom diary, and underwent daily PCR tests for twenty days.

The time from symptom onset to peak infection was three days (average), and infectiousness lasted 5-7 days (for the vast majority of cases). There was some heterogeneity in viral load. A quarter of cases were infectious prior to symptom onset, while vaccinated individuals were infectious for a shorter period.

1.2.1. "Viral Underclass"

Thrasher (2022) used the term "viral underclass", in reference to the USA, to describe individuals who continued to struggle with covid-19 and its impacts while the rest of society moved on, viewing covid-19 as a "regulatory respiratory virus". Thrasher (2022) lamented: "It's a shame that major news outlets are hyping up moving on and returning to normal and not running more pieces calling for an increase in government-funded mitigation efforts (more free high-quality masks and tests, upgraded ventilation in work sites and schools) to stem the tide of death. American norms (rampant incarceration, eviction, homelessness, lack of health care, poor ventilation, and economic inequality) are fairly deadly as is" (p7).

While, writing in July 2022, The leader (2022) pointed out that "there are now more confirmed cases of covid-19 globally than there were at any point during the first two years of the pandemic as the BA.4 and BA.5 Omicron sub-variants spread worldwide..." (p5). BA.4 and BA.5, though genetically similar, are more transmissible than sub-variants BA.1 and BA.2 (Wilson 2022).

1.2.2. Indirect Method of Covid-19 Surveillance

Different indirect ways for surveillance of covid-19 in the population have been sought. One is via the symptom of anosmia (loss of smell). Beauchamp (2022) measured this through reviews of perfumed or scented candles that were accused of having no smell.

The data were 9837 reviews of four "Yankee Candle" brand scented candles on Amazon posted between 1st September 2018 and 20th December 2021. This involved 172 weeks, and the number of reviews that mentioned "no smell" or "no scent" each week was scored (mean 1.7 out of 57 reviews per week). It was found that the number of "no smell" reviews "do indeed reflect changes in US covid cases even when controlling for the seasonality of those reviews" (Beauchamp 2022 p1363).

1.3. VARIANTS

"The rapid spread of the SARS-CoV-2 Omicron variant across communities worldwide has been attributed to several factors, including transmissibility features of the viral variant, limited coverage by available vaccines, and changes in face mask use and socialising behaviours" (Joung et al 2022 p2). Transmission is increased by asymptomatic or minimally symptomatic infections. In other words, individuals who are unaware of their infection status while actively transmitting SARS-CoV-2.

Joung et al (2022) analysed this group with data from Los Angeles. The Cedars-Sinai Medical Centre has longitudinal data on over 6300 adult employees and patients during the pandemic (including blood samples and self-reports of symptoms) (Ebinger et al 2022).

During the Omicron variant surge in the area (December 2021 - May 2022), 210 participants were infected with this variant based on blood sample evidence. Self-reports of symptoms of these individuals showed that 56% were aware of being infected. Medical centre employees were significantly more likely to be aware than patients. Joung et al (2022) explained: "This finding may be explained not only by the difference in general health awareness and literacy between employees and non-employees but also by the mandatory daily screening protocols for employees that are supported by covid-19 sick pay policies, which were broadened at the institution during the Omicron variant surge. We also observed that younger and male individuals were more

likely to be more aware of recent Omicron variant infection" (pp7-8).

Overall, infection awareness was linked to symptoms present or absent, attribution of symptoms as covid-19 or as other illnesses like the common cold, or a recent (or not) polymerase chain reaction (PCR) test (ie: diagnosed/undiagnosed).

This study and others (eg: Syangtan et al 2021) have shown that much of the transmission of covid-19 has been down to asymptomatic or undiagnosed transmission. Joung et al (2022) ended: "Given that unawareness of active infection precludes self-initiated interventions, such as testing and self-isolation, even modest levels of undiagnosed infection can contribute to substantial population-level transmission" (p8).

Three key methodological points are worth mentioning:

i) The detection of SARS-CoV-2 in blood is dependent on the accuracy of the test used. The quantity of relevant circulating anti-bodies was used, and a standard threshold was applied.

ii) Data on employees of the medical centre were collected more regularly than on patients.

iii) The sample was volunteers at one centre in California.

Omicron sub-variant XBB.1.5 was reported as increasing in late 2022 (eg: 28% of all covid-19 cases in the USA) (Callaway 2023). The drop-off in testing for covid-19 makes such data rough estimates. Biochemist, Jennifer Surtees, talking about the north-east USA where 70% of cases in late 2022 were estimated to be XBB.1.5, said: "I think that we are truly flying blind right now. We have no idea how many cases are really out there" (quoted in Callaway 2023).

XBB.1.5 is an offshoot of the XBB variant of SARS-CoV-2, and the latter is a recombinant of two descendants of the BA.2 lineage (which is itself an offshoot of Omicron) (Callaway 2023).

XBB.1.5. appears to have a rarely seen mutation in the spike protein that improves the ability to attach to the ACE2 receptor (the means by which the virus enters cells). The relationship between this mutation and transmissibility "isn't fully clear" (Jesse Bloom, evolutionary virologist, in Callaway 2023).

"One thing that researchers can agree on is that

XBB.1.5, like its predecessor XBB, is a master of immune evasion. It carries numerous spike mutations that blunt the potency of anti-bodies raised by vaccination and previous infections – including infection with earlier Omicron strains" (Callaway 2023 p223).

2. VACCINES

2.1. Vaccine uptake

2.2. Adverse events

2.2.1. Post-vaccine deaths

2.2.2. Post-vaccine psychiatric adverse events

2.1. VACCINE UPTAKE

Many individuals have not taken up the free covid-19 vaccines available in their country. This is important as 70% coverage is estimated to achieve herd immunity (Taber et al 2023). incentives have been used to increase the vaccination rate, including entry in \$1 million lottery in Ohio state in May 2021. Taber et al (2023) investigated such a strategy in two experiments.

Financial incentives have been shown to increase medication adherence generally in previous research. But these monetary incentives tend to be guaranteed small amounts, and individuals were less entrenched in negative views about the medication (Taber et al 2023). How the lottery is framed may be important also.

Taber et al (2023) recruited online US adults in May 2021 who were unvaccinated by choice (n = 589 for Experiment 1 and n = 274 for Experiment 2). Experiment 1 varied the amount of the lottery win (from \$10 to \$1 million) and the odds of winning (500 000 small winners to one large winner) in twelve independent conditions. Intention to be vaccinated was measured on a 100-point scale. Experiment 2 had four conditions, which varied in the frequency and amount (eg: one winner each week for five weeks), and the gain and loss framing (eg: "If your name is chosen and you are vaccinated, you win the money" or "If your name is chosen but you are not vaccinated, you cannot win the money"; p37).

Overall, around one-third of the participants would not be vaccinated whatever the financial incentive, and there was a clear relationship between negative attitude towards vaccination and this behaviour.

Where there was a pattern in the two experiments, the preference was for less money with a greater chance of winning (eg: 10 000 people win \$50).

Two conclusions can be drawn from the experiments, that:

- "large rewards may not be necessary to motivate those who are open to vaccination" (Taber et al 2023 p42).

- "monetary incentives in the form of vaccine lotteries are unlikely to motivate people who are the most resistant to vaccination" (Taber et al 2023 p42).

The framing of the lottery as a gain or a loss (as in Experiment 2) unexpectedly had no impact on intention to be vaccinated.

More generally, the study confirmed the "whole number bias" (WNB), in that individuals overestimated their chances of winning. "One instance of WNB occurs when people see a ratio but consider the individual whole numbers in isolation. For example, people told that five residents out of a state's population – a large, but unknown, denominator – will win money may focus only on the '5' and disregard the denominator" (Taber et al 2023 pp34-35). In Ohio, five lottery winners were offered in a population of nine million adults. If half the population was vaccinated, say, that is a chance of winning of 5 in 4.5 million or 0.00011% (Taber et al 2023). The researchers noted wryly that "people do not enter lotteries with precise knowledge of how likely they are to win, and lotteries are likely successful precisely because people overestimate their chance of winning" (Taber et al 2023 p42).

2.2. ADVERSE EVENTS

2.2.1. Post-Vaccine Deaths

Covid-19 vaccine-related adverse events have been reported (eg: increased risk of myocarditis, "although the risk was substantially increased after SARS-CoV-2 infection"; Suzuki et al 2022 p1). Focusing on Japan, Suzuki et al (2022) explained: "Considering the scale of vaccination programmes both locally and internationally, some deaths may inevitably occur close to a covid-19 vaccination, raising questions regarding the potential relationship between the death and the recent vaccination" (pp1-2).

These researchers analysed autopsy findings of 54 individuals who died within seven days after covid-19 vaccination in Tokyo between 1st April 2021 and 31st December 2021. Eight deaths were "non-natural" (drowning or poisoning), and three were undetermined cause/category. Thus, the focus was upon 43 cases ("natural causes"), which could have been linked to vaccination. The researchers concluded that "although

many cases of deaths occurring soon after covid-19 vaccination in this study showed no definite causal relationship between the vaccination and the death, a few cases showed possible adverse events, such as myocarditis" (Suzuki et al 2022 p6). Establishing causality is a problem. "Due to the large numbers of people being vaccinated, some people may co-incidentally experience medical events (eg: heart attacks) in the days or weeks after vaccination that may not be related to the vaccination, and such deaths are to be expected inevitably" (Suzuki et al 2022 p5).

One issue is how long after vaccination can a death be linked to it. In a Singapore study, for instance, Yeo et al (2022) used 72 hours. Suzuki et al (2022) explained that they chose seven days based on previous research, but "further studies including persons who died 14 days or longer after vaccination may clarify delayed presentation of severe adverse effects of vaccination" (p6).

Suzuki et al (2022) concentrated on previously known severe adverse effects, and admitted that "we cannot possibly deny that rare complications or complications difficult to be proven by autopsies, such as seizures, might be concerned with non-natural death (eg: drowning during bathing)" (p6). Finding rare complications may also depend on the tests carried out during the autopsy (eg: anti-PF4 anti-body level).

2.2.2. Post-Vaccine Psychiatric Adverse Events

There are reports of covid-19 vaccine-related psychiatric adverse events (eg: psychosis) (eg: Balasubramanian et al 2022).

Mopuru and Menon (2023) offered four possible mechanisms for such adverse events:

i) The immune response to the vaccine triggers the onset of psychosis.

ii) The immune response to the vaccine impacts psychotropic medication.

iii) "Auto-immune encephalitis" where the immune system "attacks" the brain.

iv) Stress associated with vaccination that triggers the psychiatric problems.

3. COVID-19 AND NEUROLOGICAL AND PSYCHIATRIC OUTCOMES

- 3.1. Unanswered questions
- 3.2. A case study

3.1. UNANSWERED QUESTIONS

Taquet et al (2022) outlined three unanswered questions about covid-19 and the neurological and psychiatric (NaP) risks:

1. When do risks of post-covid-19 complications end? "This information is important to patients (who want to know when they can stop worrying about potential complications of their SARS-CoV-2 infection), clinicians (who need to know whether a clinical presentation is plausibly attributable to a post-covid condition), and health policy makers (who must plan appropriate service provision)" (Taquet et al 2022 p816).

2. How do the risks vary between different age groups?

3. Have the different variants of SARS-CoV-2 changed the risk profile?

Taquet et al (2022) reported the analysis of retrospective cohort studies of two electronic health records networks in order to answer the above questions ¹. A sample of 1.3 million confirmed cases of covid-19 was created from "TriNex Analytics Network" data (which was mostly from the USA, but also seven other countries). To answer question 1 above, the follow-up was two years for fourteen NaP diagnoses, and covering three age groups (younger than eighteen years, 18-64 years, and above 65) (which would answer question 2 above). Risks were also compared for the alpha, delta, and omicron variants of SARS-CoV-2, along with the original strain (to answer question 3 above). A matched cohort of non-covid-19 respiratory infection patients was created for risk comparison.

The risk of NaP problems post-covid-19 varied. In terms of return to baseline risk (ie: question 1 above), for common psychiatric disorders like anxiety or mood disorder, this was 1-2 months, but "risks of cognitive

¹ This study was an extension of the six-month follow-up of Taquet et al (2021).
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deficit (known as brain fog), dementia, psychotic disorders, and epilepsy or seizures were still increased at the end of the 2-year follow-up period" (Taquet et al 2022 p815).

In answer to question 2 above, compared to adults, "children were not at an increased risk of mood... or anxiety... disorders, but did have an increased risk of cognitive deficit, insomnia, intra-cranial haemorrhage, ischaemic stroke, nerve, nerve root, and plexus disorders, psychotic disorders, and epilepsy or seizures" (Taquet et al 2022 p815). Many older adults died which limited the follow-up time, so it was difficult to make a generalisation about the longer term risk of NaP complications for that age group.

NaP risk profiles with the alpha and omicron variants were similar to the original strain of SARS-CoV-2, but with the delta variant "increased risks of ischaemic stroke, epilepsy or seizures, cognitive deficit, insomnia, and anxiety disorders were observed..." (Taquet et al 2022 p815). This answered question 3 above.

The study was based on electronic health records (ie: secondary data), and was thus dependent on the information recorded by health professionals from help-seeking patients. So, those who did not seek medical help, and/or asymptomatic covid-19 cases would be missed. The matched cohort was based on non-covid-19 respiratory illness, as recorded in the electronic health records, and did not control for the severity of the illness compared to covid-19.

In order to allow for the two-year follow-up, the sample include those diagnosed early in the pandemic for the original strain (in 2020), while the variants were diagnosed in 2021. These individuals may not be representative of all covid-19 patients.

Information on vaccination status was limited. "Previous vaccination is associated with reduced or unchanged risks of most neurological or psychiatric outcomes" (Taquet et al 2022 p826), according to other research. Table 3.1 lists the key strengths of Taquet et al (2022).

Returning to the three unanswered questions, generalising from the findings of Taquet et al (2022):

1. The length of risk of post-covid-19 NaP complications varies between conditions. For some conditions, the risk is short-time (or transitory; eg:

- 1. Two-year follow-up, which was the longest available at this time with the first cases included diagnosed on 20th January 2020, and in mid-April 2022 when analysis began.
- 2. Sample of 1.3 million taken from electronic health records of 89 million patients.
- 3. Matched cohort for comparison.
- 4. Risk of fourteen NaP conditions (based on ICD-10 diagnostic criteria).
- 5. Confirmed diagnosis of covid-19.
- 6. Analysis based on three age groupings, and three variants of SARS-CoV-2.
- 7. Anonymised health data.

Table 3.1 - Key strengths of Taquet et al (2022).

mood or anxiety disorders), but for others it continues even at two-year follow-up (eg: "brain fog").

2. Child and adults share similar risks, but the former "have a more benign profile of psychiatric risk than do adults and older adults, but their sustained higher risk of some diagnoses is of concern" (Taquet et al 2022 p816).

3. The delta variant may increase the risk of post-covid-19 NaP complications, though it is still early days in terms of the length of the existence of this variant in order to say.

3.2. A CASE STUDY

Sprenger et al (2022) reported the case of a 47 year-old woman in the USA with no psychiatric history, who showed acute mania seventeen days after the onset of covid-19. The initial symptoms were "elevated mood, bizarre behaviour, flight of ideas, talkativeness, sleeplessness, and grandiosity", followed subsequently by "bizarre behaviour including infatuation with the number three, magical thinking, and uncharacteristic behaviours. For example, her husband was afraid when she reportedly held a knife and offered to make it disappear as a magic trick" (Sprenger et al 2022 p2). She spent ten days in a psychiatric hospital.

Sprenger et al (2022) observed: "Although there is not a recognised association between covid-19 and new onset acute mania, previous reports have detailed similar presentations" (p3). For example, Varatharaj et al (2020) reported that among 125 cases of covid-19, 21 showed new onset psychiatric disorders, of which one was acute mania. Sprenger et al (2022) noted three case reports similar to their own, though all males, in China (Lu et al 2020), UK (Mawhinney et al 2020), and the USA (Noone et al 2020).

Possible explanations for the acute mania include (Sprenger et al 2022):

i) An "interplay of acute psychological stress brought on by the pandemic, self-isolation, and uncertainty regarding physical illness" (Sprenger et al 2022 p3).

ii) Previously undiagnosed episodes.

iii) Physiological changes in the body and brain due to SARS-CoV-2 or the reaction of the immune system to it.

4. MISCELLANEOUS

- 4.1. Sperm count
- 4.2. People with intellectual disabilities
- 4.3. Social change

4.1. SPERM COUNT

"Covid-19 infections can lower sperm count and the virus may even bind to receptors on the surface of the sperm cells. However, there is no evidence to suggest that the effects differ from those seen after other illnesses that involve fever, such as the flu" (Wong 2022 p16).

Wong (2022) quoted some preliminary evidence:

i) Oasis fertility clinic in India (Krishna Chaitanya Mantravadi at European Society of Human Reproduction and Embryology, Milan, July 2022) - Twenty men aged 25-35 years old who had the SARS-CoV-2 infection, and followed for five months after. Six men had no decline in sperm count, while the remainder had an average 49% decline at ten weeks post-covid. The latter group was tested eleven weeks later, and all but three of the fourteen had recovered in part (though the sperm count was on average 12% lower than prior to infection).

ii) Tunisia (Amira Sallem at European Society of Human Reproduction and Embryology, Milan, July 2022) - Ninety men who gave a semen sample before and during the pandemic. There was an average 5% decrease in the proportion of sperm that could swim. It is not clear how many of the men had had covid-19 (Wong 2022).

iii) University Hospital, Antwerp, Belgium (study led by Gilbert Donders 2021) - Sixty-seven men with an average age in the mid-30s tested for sperm count 1-2 months after covid-19. Fifteen of them had a below average sperm count (defined as fifteen million sperm cells per millilitre of semen). There was no pre-infection data (Wong 2022).

4.2. PEOPLE WITH INTELLECTUAL DISABILITIES

People with intellectual disabilities (PwID) were particularly vulnerable during the pandemic for reasons that include "multi-morbidity, low levels of health

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literacy, difficulties in understanding and communication, reliance on other people for care, low compliance with complex hygiene rules, the strong need for routine/sameness and low adaptive skills" (Shankar et al 2023 p1). So this population had a higher risk of succumbing to covid-19 (threefold higher than the general population), and it is likely also with "long covid" or "post-covid syndrome" (PCS) (Shankar et al 2023). "Furthermore, recognising PCS in PwID can be challenging as the ability to articulate symptoms or distress can be very limited because of communication difficulties and lower intellectual functioning in this cohort. As neuropsychiatric symptoms including depression, anxiety, delirium and psychosis are already prevalent in PwID they can be difficult to separate out as sequelae of PCS. It also creates clinical challenges and diagnostic dilemmas in identifying whether the symptoms are a sequelae of covid-19 or not. Key symptoms of PCS such as fatigue and pain are difficult to describe for people with communication problems leading to diagnostic overshadowing" (Shankar et al 2023 p2).

4.3. SOCIAL CHANGE

Covid-19 is one of many pandemics in history, and their social impact is often the same in terms of exacerbation of inequality, xenophobia, and the search for meaning, for instance (Spinney 2022). "Communicable disease plays a cultural and economic role that is repeated through time, up to the present day" (Louise Hitchcock in Spinney 2022).

It appears "how tightly entwined social discord, viral ideas and real viruses" (Spinney 2022 p43). The implication is that societies change in a major way after pandemics. "'Few if any society so far has collapsed solely as a result of an epidemic' [Jorrit Kelder]... But it is true that the same forces that make societies vulnerable to contagion - widening inequality, population explosion, globalisation - also makes them susceptible to revolutionary ideas, and they ignore these ideas at their peril. So, we should expect today's pandemic to bring change... 'History suggests that... the post-covid normal is unlikely to look much like the old normal' [Louise Hitchcock]" (Spinney 2022 p45).

The crisis of covid-19 has impacted on responses to other ongoing crises, like climate change, but how? Ekinici and Van Lange (2023) outlined two theoretical

positions:

i) The "finite-pool-of-worry hypothesis" - This proposes that "since individuals have limited cognitive and emotional resources, threats of covid-19 could decrease motivation to fight other crises" (Ekinici and Van Lange 2023 p2).

Hansen et al (2004 quoted in Ekinici and Van Lange 2023) provided support for this idea with a small experimental study of fourteen farmers. They were presented with details of future climate change or control information before being asked about other crises. The farmers that heard about climate change were less interested in other crises compared to the control group.

ii) The "affect-generalisation hypothesis" - This argues that "the worry induced by covid-19 threats could generalise to other crises and derive action against them" (Ekinici and Van Lange 2023 p2).

Sisco et al (2021) found that individuals who worried more about covid-19, also worried about climate change. This was a cross-cultural correlational study in 46 countries (Ekinici and Van Lange 2023).

Ekinici and Van Lange (2023) tested these two theories in two similar online studies. In Study 1, in May 2021, 402 UK participants read about covid-19 or a neutral topic before completing a series of questionnaires. These included measures of anxiety, and pro-environmental behaviours. There was no difference between the two groups in environmental behaviour intentions overall, but generally "elevated levels of anxiety predicted greater environmental donations to help mitigate climate change... This suggests that worry resulting from covid-19 might promote climate action" (Ekinici and Van Lange 2023 p6).

Study 2, with 400 more UK participants, was the same as Study 1, except attitude towards refugees was the outcome measure. In this case, "exposure to covid-19 threats did not influence pro-social intentions and behaviour towards refugees" (Ekinici and Van Lange 2023 p8).

Overall, neither theory was wholly supported. Exposure to information about covid-19 did not consistently influence intentions to help tackle climate change or the refugee crisis.

The researchers accepted that "the activation of covid-19 threats and the worry it evoked might have been

too short-lived to influence later behaviour. Since the pandemic was going on at the time of both studies, it was not possible to completely eliminate the covid-19 threat in the control group, which might have prevented us from observing a difference between the two groups" (Ekinici and Van Lange 2023 p9).

However, reading about covid-19 did raise anxiety levels. Anxiety is "linked to concerns about harm to self and close others. Such a concern might be more present in the case of climate change than in the refugee crisis since the latter involves helping others to reduce others' suffering with relatively less impact on oneself and close others" (Ekinici and Van Lange 2023 p9).

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6. FEATURE: COVID-19 AND ANTI-ASIAN AMERICAN FEELINGS

- 6.1. Introduction
- 6.2. Anti-Asian racism
- 6.3. Micro-aggressions
- 6.4. Mental health
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6.1. INTRODUCTION

Kim and Tummala-Narra (2022) began: "Asian Americans have faced a unique challenge in fighting the pandemic caused by the new coronavirus, covid-19. Not only are Asian Americans experiencing the illness, isolation, fear, and economic downturn associated with the pandemic, Asian Americans are also experiencing a widespread uptick in anti-Asian discrimination and hate crimes" (p217).

For example, a nationally representative survey in 2021 of Asian American and Pacific Islanders (AAPIs)² found that around one-fifth had experienced a "hate incident" in the previous year (ie: during the pandemic) (Kim and Tummala-Narra 2022).

It has been established that there is a relationship between racial discrimination and poorer mental health (eg: a meta-analysis by Lee and Ahn 2011).

6.2. ANTI-ASIAN RACISM

Covid-19 was described by such terms as "Chinese virus", "Kung Flu", and "Wuhan Virus" by certain politicians in the USA "to promulgate scapegoating, stigmatisation, and anti-Chinese sentiment" (Wang and Santos 2022 p220). Nearly 11 000 reports of anti-Asian "hate incidents" were reported to Stop AAPI Hate" between March 2020 and December 2021 (Wang and Santos 2022).

In order to understand such experiences in more detail, Wang and Santos (2022) undertook an online qualitative study with 193 self-identified Asian-Americans in April to October 2020. The survey was advertised to "102 organisations and accounts that

² APIDA (Asian Pacific Islander Desi American) to describe a wider group is a term also used, covering East Asian Americans, South Asian Americans, South-East Asian Americans, and Pacific Islanders (Yan et al 2022).

focused on issues of diversity, Asian American, and broadly, Black and Indigenous People of Colour (BIPOC) communities" (Wang and Santos 2022 p222). News stories about anti-Asian racism were also conducted for the same period.

The researchers summarised the findings under two overarching themes:

i) "Type of racist experience" - It was possible to distinguish eleven categories of anti-Asian racism (varying from covert to overt):

a) "No direct personal experience, only vicarious" - eg: in the news media; secondhand accounts from family members.

b) "Stared at, glared at, shunned" - eg: "I work in retail. A White customer entered my store (this was a few days before we closed due to covid), saw that I was Asian, and walked as far away from me as possible with her eyes wide open. I tried to engage but she didn't speak and kept trying to get away. She then engaged with and got very close to (both physically and in conversation) my White co-worker and acted like I didn't exist" (p224).

c) "Singled out and treated poorly" - eg: "One of my White classmates/friends clearly had the flu and was coughing/sneezing on everything, so I wore a mask to class every day, and people would ask me why I was even on campus and told ME to go home, even though she was the one with the obvious symptoms. I even tried to explain that I wasn't sick and was only wearing the mask to prevent getting anything from her, but they all still treated her kindly and were so rude to me!" (p224).

d) "Indirectly referenced in third person" - eg: "there was a male and female student that stood behind me [in line at the library]. After seeing me, they started commenting about Asians and the female proceeded to openly declare her hate towards the Asian community. Her rant kept on for a while as she mentioned the deep hate she had towards us" (p224).

e) "Was the butt of a racist joke" -eg: joke about "Asians eating bat soup".

f) "Blamed for the virus" - A department store employee was accused by a White customer, "You Chinese

are the reason we have to wear masks" (p224).

g) "Stereotyped with racist characteristics" - "One participant shared an example of two adult Black men making jokes about Chinese people 'ruining the world' because 'they eat dogs and that is how covid started'" (Wang and Santos 2022 p225).

h) "Told to go back to an Asian country".

i) "Called a racial slur".

j) "Hostile verbal assault" - "For example, on a bus ride, one participant was taunted by a White man for up to 10 min, which ultimately culminated in them being told to, 'go fuck off and die'" (Wang and Santos 2022 p225).

k) "Physically threatened" - "This sub-theme captures experiences of participants being followed, coughed on, spat on, being run into, or attempts by others to initiate a physical fight with them. Across incidents, participants described the ways in which perpetrators intentionally violated their spaces, for example, by 'ramming into' them with grocery carts, or 'threateningly moving towards' them when there was so much space between them. In situations where physical assault occurred, participants were coughed on, spat on, and hit on the head, after which the perpetrators would run, drive, or bike away" (Wang and Santos 2022 p225).

ii) "Context and perpetrator" - Seven categories of anti-Asian racism were distinguished here:

a) From friends and family.

b) At school and work.

c) In daily tasks.

d) While commuting - eg: "Those who drove their own cars described instances of racist road rage. On their daily work commute, a participant reported that 'a White man deliberately tried to crash into me, swearing racial slurs out their window'" (Wang and Santos 2022 p226).

e) In the socialisation of children - eg: Many participants overheard and witnessed non-Asian parents teaching young children to avoid and attribute covid-19

to Asian Americans" (Wang and Santos 2022 p226).

f) In online spaces.

g) From police and security officers.

The survey was in English, with a self-selecting sample, and no independent verification of the information provided. However, as Wang and Santos (2022) argued, the "findings shed light on the breadth of anti-Asian racist experiences, perpetrators, and contexts. We were able to underscore the distinctiveness of anti-Asian oppression to capture its pervasiveness, its distinctiveness, and its complexities, by inductively centring Asian American voices, perspectives, and experiences" (p228).

6.3. MICRO-AGGRESSIONS

Yan et al (2022) studied "micro-aggressions". These can be defined as "'brief and commonplace daily verbal, behavioural, and environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults to the target person or group' (Sue et al 2007...). Such acts were called 'micro' aggressions not because they were minor offences or insignificant, but because they operate at the interpersonal level compared to macro-aggressions which are directed to a whole group of people" (Yan et al 2022 p249). Sue et al (2007) distinguished three types of micro-aggressions - micro-assaults, micro-insults, and micro-invalidations. "Micro-assaults and micro-insults are 'overtly racial verbal and non-verbal attacks intended to harm the other person' (Tao et al 2017...). Micro-assaults and micro-insults include explicit acts of racial discrimination. Micro-invalidations are subtle acts of invalidation including invisibility, hypervisibility, and downplaying or ignoring that people of colour have feelings" (Yan et al 2022 p249).

A sample of 345 East Asian Americans was recruited for a short survey. Measures were taken of ten forms of verbal and non-verbal assault, stress, social support, coping strategies, personal resilience, and psychological well-being (table 6.1). Narrative descriptions of micro-aggressions were also collected.

Overall, 196 respondents described a negative experience related to covid-19, which were categorised under four themes:

Concept	Measure	Item example
Micro-aggressions	General Ethnic Discrimination Scale (Landrine et al 2006).	"Since corona started, I have been coughed on or spat at"
Stress	Perceived Stress Scale (Cohen et al 1983)	"I am worried about my personal physical safety"
Social support	Social Support Questionnaire (Cutrona & Russell 1987)	"I have people I can depend on for support if I really need it"
Personal resilience	Acculturation and Resilience Scale (Khawaja et al 2014)	"I can find many ways to solve a problem"
Coping strategies	Coping Strategy Inventory (Tobin et al 1989)	"I will seek available public services to fight anti-Asian discrimination related to covid-19" (engagement coping); "I believe, leave it alone and it will go away" (disengagement coping)
Psychological well-being	Mental Health Inventory (Sanchez et al 2018)	"The option [coping strategy] that I just selected would make me feel happy about myself"

Table 6.1 - Measures used by Yan et al (2022).

i) Non-verbal rejection - eg: "When I went grocery shopping, other shoppers try to stay as far away from me as possible. I also got dirty look from other shoppers even though I was doing my own shopping without disturbing anyone. Of course, I did not like all these attentions, but there is nothing I can do to change their attitude toward me" (p253).

ii) Verbal rejection - eg: "We were inside Rite Aid store, my friend spoke to me in Chinese. A lady approached us and asked if we're talking bad about her, bad mouthing her. She told us to speak English in the public, this is America and everybody must speak English, we can't speak foreign language. She told us to go back to China and bring back the 'kungflu' home. You are not welcome here. We were very sad and intimidated. A gentleman witnessed the incident. He defended us and told her that covid-19 was a global pandemic" (p253).

iii) Physical assaults and property damage - eg: "My neighbour has been beaten and threatened for being Asian

when she walked her dog" (p253).

iv) Stories in the media about anti-Asian micro-aggressions - eg: "When the head of a nation calling the virus China virus, he is giving the racists in the country the right to abuse Chinese Americans and this head of the country didn't do anything to correct the concept but continue to encourage these racists people to discriminate Chinese Americans" (p253).

The stress of such experiences was negative associated with psychological well-being, but this was mediated by social support, and coping strategy. "Even though engagement coping was associated with more stress, confronting aggressors was also associated with better psychological well-being compared to ignoring the threat (disengagement coping)" (Yan et al 2022 p248).

6.4. MENTAL HEALTH

Oh and Litam (2022) explored the relationship between racial discrimination and mental health with a sample of 725 AAPIs ³, who had experienced and/or witnessed such discrimination during the pandemic ⁴. The sample was recruited through AAPI communities, and Amazon MTurk. The online survey included measures of anxiety, depression, coping strategy, discrimination, life satisfaction, and ethnic identity exploration (table 6.2) ⁵.

Overall, racial discrimination during the covid-19 pandemic correlated positively with anxiety and depression scores (ie: higher discrimination and higher anxiety and depression scores), and negatively with life satisfaction score (ie: higher discrimination and lower life satisfaction). Coping strategy moderated the relationships with high coping providing a protective factor. Ethnic identity exploration differed in its mediating effect. "Specifically, the anxiety-life satisfaction link became weaker for those with low level of ethnic identity exploration, whereas the depression-life satisfaction link became weaker for those with high level of ethnic identity exploration" (Oh and Litam 2022 pp279-280) (table 6.3).

³ Volunteers with a mean age in early 30s.

⁴ 53% had experienced and witnessed discrimination; 39% witnessed only; remainder experienced only.

⁵ This was a cross-sectional study.

MEASURE	DESCRIPTION
Beck Anxiety Inventory (BAI) (Beck et al 1988)	Frequency of 21 symptoms in the past month, rated from 0 ("not at all") to 3 ("severely - it bothered me a lot")
Coping Strategies Inventory Short Form (CSI-SF) (Addison et al 2007)	15 items covering problem-focused and emotion-focused engagement, and disengagement strategies, rated 1 to 5. Engagement coping involves strategies that "actively seek to negotiate stressful situations" (Oh and Litam 2022 p271), whereas disengagement uses avoidance strategies
Centre for Epidemiologic Studies Depression Scale Revised (CESD-R) (Van Dem & Earleywine 2011)	20 symptoms, rated "not at all or less than one day" (1) to "nearly every day for two weeks" (5)
Multi-group Ethnic Identity Measure Revised (MEIM-R) (Phinney & Ong 2007)	6 items covering exploration of one's ethnic group (each score 1 to 5). Identity exploration is "the extent to which one has actively pursued information and cultivated meaning about their ethnic group" (Oh and Litam 2022 p272). The original MEIM-R included items related to commitment to ethnic group, but these were not used because of concerns about their reliability (Oh and Litam 2022)
Satisfaction with Life Scale (SWLS) (Diener et al 1985)	5 items scored on a seven-point scale

Table 6.2 - Main measures used by Oh and Litam (2022).

	Low Ethnic Identity Exploration	High Ethnic Identity Exploration
Low Anxiety	22	27
High Anxiety	23	23
Low Depression	25	25
High Depression	20	25

(Based on figure 3 p279 Oh and Litam 2022)

Table 6.3 - Approximate mean life satisfaction score based on ethnic identity exploration.

Previous research has shown that engagement coping strategies reduce the impact of stress generally, but this study was exploratory in terms of the role of ethnic

identity exploration due to the limited and mixed previous research (Oh and Litam 2022).

Specifically on AAPIs and coping with racial discrimination, Oh and Litam (2022) noted: "Whereas some studies reported engagement coping was associated with lower rates of mental health distress..., engagement coping among AAPIs who endorsed higher levels of ethnic identity and used problem-focused engagement responses reported worse mental health outcomes following racial discrimination experiences" (p272). This may be "shaped by traditional Asian cultural worldviews that highlight adapting their emotions to the environment for social harmony, accepting problems rather than confronting them, and saving face by concealing problems from others" (Oh and Litam 2022 p272).

Oh and Litam (2022) did not distinguish between the different ethnic groups of AAPIs, partly due to low numbers in some cases (eg: fourteen Thai and 51 Japanese participants).

Huynh et al (2022) performed a similar study with 380 East Asian and South-East Asian Americans in Ohio. Higher levels of ethnic identity were associated with higher anxiety, while there was no impact on depression. The researchers stated: "One interpretation is that East and South-east Asian Americans with higher ethnic identity are more aware of the implications of anti-Asian hate and thus are more worried and anxious. In contrast, those with lower ethnic identity may not be aware of or understand the implications of anti-Asian hate for Asian Americans" (Huynh et al 2022 p266).

The sample was recruited through Facebook in a US state that is predominately White. No distinction was made between the different ethnic groups.

Lu and Wang (2022) examined two potential buffers on the relationship between racial discrimination and anxiety and depression - social support, and locus of control (LOC). LOC is "the extent to which individuals believe that they, as opposed to external factors such as chance and other powerful people, have control over the outcome of events in their lives" (Lu and Wang 2022 pp284-285).

The participants were 218 Asian and Asian American students at a mid-Atlantic public university, surveyed in March-April 2020, about direct online racial discrimination, and general vicarious racial discrimination. Table 6.4 gives examples of the items used.

- Direct online racial discrimination (4 items) - eg: ""Due to covid-19, people have said mean or rude things about me because of my race or ethnic group online".
- General vicarious racial discrimination (5 items) - eg: ""Someone said something negative about Asian people related to the covid-19 outbreak".
- Perceived social support (6 items) - eg: "I can count on my friends when things go wrong".
- Locus of control (16 items) - eg: "To a greater extent my life is controlled by accidental happenings".
- Anxiety (7 items) - eg: "feeling nervous, anxious, or on edge".
- Depression (9 items) - eg: "little interest or pleasure in doing things".

Table 6.4 - Examples of items used by Lu and Wang (2022).

Overall, around 60% of respondents reported direct online racial discrimination, and nearly 90% general vicarious racial discrimination since the start of the covid-19 outbreak. Both types of racial discrimination were significantly related to anxiety and depression.

Higher perceived social support reduced the strength of this relationship, but participants with higher external LOC scores "tended to fare worse psychologically" (Lu and Wang 2022 p287). Social support, however, was only significant for direct online, but not general vicarious racial discrimination. "One explanation may be that individuals are more inclined to seek social support for direct racial discrimination than for vicarious racial discrimination because the former bears direct personal relevance and may be recognised as more impactful" (Lu and Wang 2022 p289).

The researchers continued: "The indirect psychological impact of vicarious racial discrimination, such as reading a racial hate crime on social media, may be difficult to recognise or express. Vicarious racism experiences may also be easily dismissed by others as unintentional, is ubiquitous and insidious, and may be rendered as non-personally relevant or not worthy of investing personal emotional energy. However, our results suggest that similar to direct racism, vicarious racism is also detrimental to one's mental health" (Lu and Wang 2022 p289).

Alternatively, social support may be less effective in buffering highly stressful and pervasive vicarious

racial discrimination (Lu and Wang 2022).

It was also found that social support was a significant benefit only for individuals with moderate to high external LOC. This fits with other research that suggested that individuals with high external LOC benefit more from social support (Lu and Wang 2022).

6.5. ETHNO-CULTURAL EMPATHY AND BYSTANDER BEHAVIOURS

"Ethno-cultural empathy" (Wang et al 2003) is "the individual's ability to understand the experiences of others who are of a different race or ethnicity" (Kim and Tausen 2022 p305).

Kim and Tausen (2022) investigated ethno-cultural empathy by 149 White college students (in Seattle) towards Asians and Asian Americans. The online data were collected in April 2020. The survey included items based on the "Scale of Ethno-cultural Empathy" (SEE) (Wang et al 2003) - eg: "I recognise that the media often portrays individuals of Asian descent based on racial or ethnic stereotypes", and "I am aware of the unique challenges that individuals of Asian descent are facing during the current health pandemic".

Perceptions of peer support for Asian and Asian American students was also measured (eg: "My peers strongly condemn racism and xenophobia pertaining to Asians and Asian Americans during the covid-19 outbreak"). It was expected that perceptions of peer support would be associated with increased levels of ethno-cultural empathy.

This was found to be the case - ie: "empathy was positively associated with observing their student peers speak up against racism directed toward Asians and Asian Americans, but this positive association was greater for men" (Kim and Tausen 2022 p309).

The study took place early in the pandemic, and the data were correlational.

A step beyond ethno-cultural empathy is bystander action (reactive and proactive). "Bystanders can interrupt or challenge the perpetrators before or during a discriminatory act, physically defend the victims of attacks, seek help from authority and other people, comfort and support the victims, and speak out against the incidents or perpetrators afterwards. These examples are both reactive and 'high risk' because they often require the bystanders to respond to ongoing discrimination and involve themselves directly with the

perpetrators, victims, or both... By doing so, bystanders may place themselves at an increased risk for retaliation" (Liu et al 2022 p296).

Proactive behaviours are "low risk", and include "joining or volunteering for advocacy groups, enhancing one's own or others' knowledge concerning discrimination, and speaking to others about injustices; these behaviours can reinforce anti-prejudice social norms to prevent future violence and discrimination" (Liu et al 2022 p296).

Liu et al (2022) analysed online data from 456 US respondents in April-May 2020 about discrimination and bystander behaviours. Around half of the respondents were Asian American. A seven-item scale was used to measure anti-racist bystander behaviours in response to anti-Asian discrimination in the last week (scored as "yes", "no" or "no opportunity"). An example of reactive bystander action was the item, "Confront a friend if I heard that they had treated Asian Americans unfairly", while "Talk with a friend about anti-Asian discrimination as an issue for our community" was a proactive item.

Overall, where there was opportunity, around half of the respondents engaged in reactive bystander behaviour, and about one-fifth in proactive action. In general, personal experience of discrimination prior to covid-19 was associated with reactive behaviours. But this was not the case for the Asian American respondents. Liu et al (2022) explained: "Asian Americans who recently (within the past week) experienced discrimination were less inclined to intervene when witnessing racism directed at other Asian individuals. They were also less inclined to engage in proactive anti-racism. These results suggest that the timing or recency of discrimination experiences may impact subsequent bystander behaviours. Individuals can become distressed, demoralised, and traumatised immediately after experiencing discrimination... In the short term, the negative psychological consequences may inhibit victims of racism from helping others who also experience discrimination. Over time, however, these immediate responses to discrimination may dissipate, and perhaps past discrimination experiences can facilitate the development of empathy and willingness to intervene as a bystander" (pp301-302).

The sample was volunteer, and was "over-represented by community adults who attained college and advanced education levels, made higher than national-average household income, and lives in the most populous states (ie: California, New York, and Texas). Communities with lower levels of educational attainment and household

income may be more likely to be essential workers who were unable to work from home amid the covid-19 outbreak. Thus, the present rates of anti-Asian discrimination experiences and engagement in anti-racist bystander behaviours may not represent the experiences of individuals in underprivileged segments of the population" (Liu et al 2022 p302).

The measure of anti-racist bystander behaviours was short, and concentrated mostly on responding to friends. "There is a need to assess a wider range of bystander actions, and to consider more carefully toward whom these actions were directed (eg: a friend vs a stranger). There is also a need to evaluate the extent to which self-reports of bystander behaviour correspond with observations of actual behaviour, and to understand individual and situational factors that contribute to individuals' behaviours" (Liu et al 2022 p302).

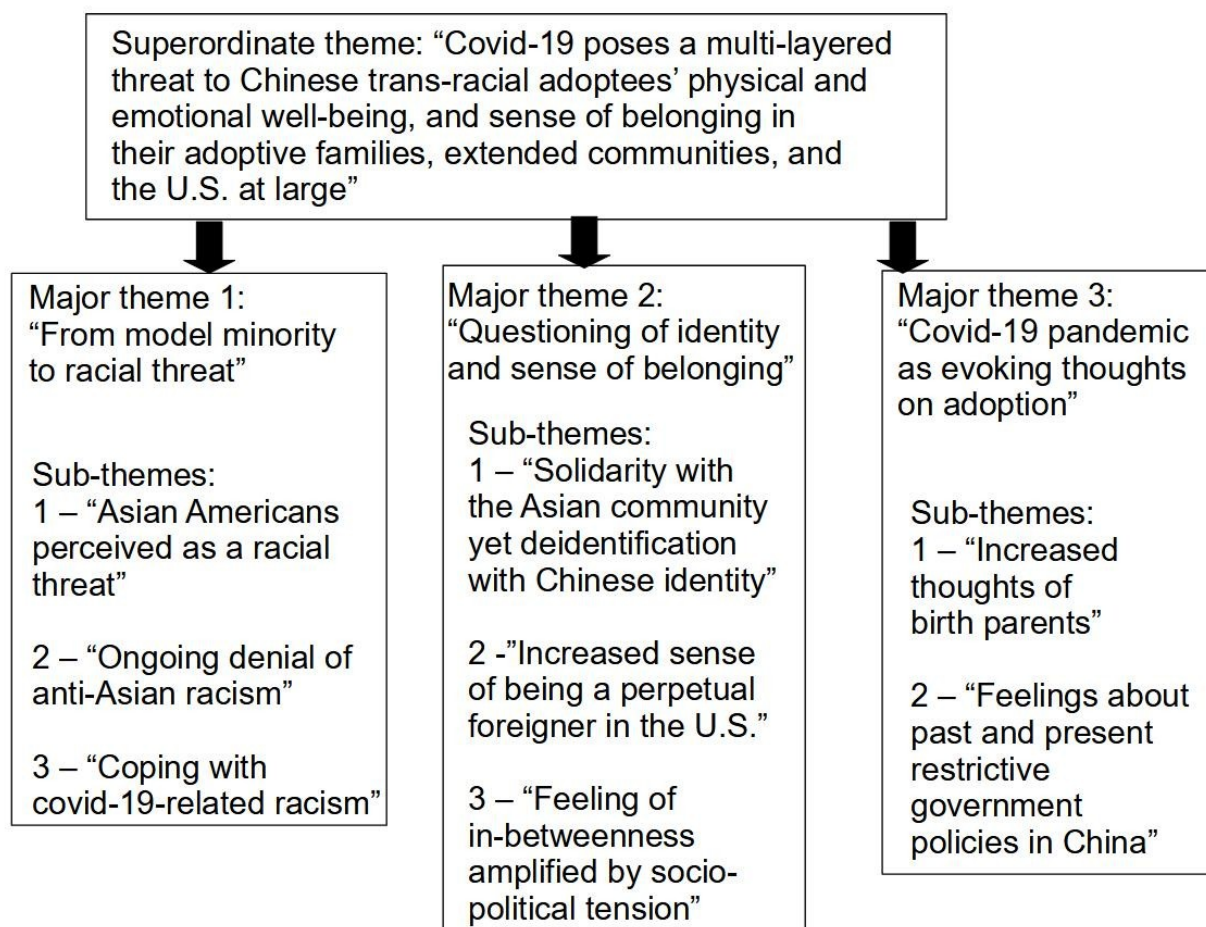
6.6. CHINESE TRANS-RACIAL ADOPTEES

Wang and Park-Taylor (2022) studied the experiences of Chinese trans-racial adoptees in the USA during the pandemic. It is estimated that there are around 80 000 children adopted mostly between 1999 and 2019, and the majority are now adolescents and young adults. Twenty such female-identifying individuals aged nineteen to 28 years old raised in White American families were interviewed.

One superordinate theme emerged from the interviews that lasted between 1-2 hours: "Covid-19 presents a multi-pronged threat to Chinese trans-racial adoptees. Because they are perceived by others as menacing, their physical safety and psychological well-being are at risk, and their sense of belonging within their families and the larger community is jeopardised" (Wang and Park-Taylor 2022 p238). Three subordinate themes emerged (each with sub-themes) (figure 6.1):

a) "From model minority to racial threat" - "Almost all participants (n = 18) commented on how Asian Americans' long-standing status as the model minority has been challenged amid the novel coronavirus pandemic. Patrice explained that 'Asians are the model minority but like, when times get bad, it's like, what difference does it make? They, White America, will just turn on us'" (Wang and Park-Taylor 2022 pp238-239).

b) "Question of identity and sense of belonging" -



(Source: table 2 p239 Wang and Park-Taylor 2022)

Figure 6.1 - Hierarchy of themes found by Wang and Park-Taylor (2022).

eg: "Violet" said: "I think the coronavirus pandemic also made me face more deeply the reality that even if I don't always see myself as very Asian, other people will. I was reading news reports of Asian people being stabbed in Brooklyn and Chinatown and that was terrifying because I realised how I am still being profiled as an Asian no matter my personal identity" (p239).

Lee (2003) talked of the "trans-racial adoption paradox" experienced generally by such individuals, and covid-19 and anti-Asian feelings had heightened this (ie: a tension between appearance and cultural self-identity as American).

c) "Covid-19 pandemic as evoking thoughts of adoption" - "Most of the participant sample (n = 17)

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described how the current global health crisis has spurred thoughts about their birth parents as well as the role the Chinese government played in their adoption narrative" (Wang and Park-Taylor 2022 p241).

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