Nowhere Else to Go:

Help Seeking Online and Maladaptive Decisional Styles.

Jisoo Kim, James G. Phillips, & Rowan P. Ogeil

Highlights

An online survey looked at risk, decisional styles, and willingness to seek help

A preference for online assistance was associated with hypervigilance

A reluctance to seek offline help was documented from online activity

ABSTRACT

Many high-risk individuals do not use mental health services. This is a concern for mental health and suicide prevention efforts, and requires an examination of the role of decision-making style upon willingness to seek help. To consider whether defensive avoidance influenced willingness to engage with Professionals or online assistance, participants (N=189) answered an online survey, completing the Melbourne Decision Making Questionnaire and WHOQOLBref. Participants were then asked their preferred source of assistance, and their subsequent behaviour (time, clicks) was tracked on a debrief page listing sources of assistance. Overall quality of life was used to determine risk. Multiple regression indicated that people with poorer quality of life had poorer decisional styles. A 2x4 Risk by Preferred Source of Assistance MANOVA found that: (1) people seeking online assistance were hypervigilant procrastinators; (2) self-sufficiency and an unwillingness to seek professional assistance by those at risk was linked to panic and confirmed behaviourally from the increased number of clicks on a debrief page. Decision making styles can influence quality of life, and help-seeking behaviors, and this has implications for outreach towards those with poor engagement with offline mental health services.

Keywords: Treatment seeking; Decision-Making; Quality of Life; Depression; Suicide; Mental Health.

1. Introduction

Professional help has not been sought by most individuals that commit suicide (University of Manchester, 2016), with less than 30% of people with past-year suicide ideation or suicide-attempts seeking help from mental health services (Homs, Stanley, & Joiner, 2015). This can be a serious concern when distressed individuals finally announce that they are "in crisis", because there is no guarantee that the general public will render effective assistance. Indeed, approximately 45% of public suicide attempts may actually be encouraged by some spectators (Mann, 1981; Phillips & Mann, 2019; Smith, Dzik, & Fornicola, 2019). Hence, the present study considered how decision making style might contribute to risk and *assistance seeking* (Ophir, 2017; Vogel, Wester, Larson, & Wade, 2006).

1.1 Failure to Seek Help by the Suicidal

Suicide is an urgent global health problem, responsible for approximately 800,000 deaths annually (World Health Organisation, 2019). Attempted suicide rates are higher, making suicide the second leading cause of death in youths aged 15-29 years old (World Health Organisation, 2019). However, *nearly half of Americans with a severe mental illness do not seek treatment* (Satcher, 2000). Indeed, the majority - 72% of suicides did not seek professional help 12 months prior to death (University of Manchester, 2016), and an estimated 70% of mental illness sufferers do not seek professional help globally (Thornicroft, 2007).

Reviews have reported barriers to help-seeking include: a fear of hospitalization, stigmatizing attitudes, and socioeconomic or structural factors (e.g., time, finances) (Homs et al., 2015; Han, Batterham, Calear, & Randall, 2018). As an alternative to professional help, people may prefer to publicly announce their distress (Kingsbury et al., 2021) or seek

assistance online (Amichai-Hamburger, Klomek, Friedman, Zuckerman, & Shani-Sherman, 2014; Barak, 2007).

1.2 Online "Assistance"

Instead of seeking professional assistance, people may prefer going online or using a mobile application 'app' to seek mental health help information (Witt et al., 2017). For example, Fox and Duggan (2013) reported that one in three US adults seek online health support. Indeed, Cole, Nick, Zelkowitz, Roeder, and Spinelli (2017) found people benefitted from additional online social support (particularly those with less offline support). More specifically, Scherr and Reinemann's (2016) longitudinal study indicated that accessible and helpful information online had preventive potential. Other studies have considered the feasibility (Kelleher, Moreno, &, Wilt, 2018), acceptability (Berry, Lobban, Emsley, & Bucci, 2018), and reported benefits of online help (Drentea, Goldner, Cotten & Hale, 2008). Online treatment options address some problems of face to face mental health services such as: stigma and a slow and complex health system (Jacobs, Amuta & Jeon, 2017). Online mental health can possibly address privacy needs while providing immediate access to support and information (Jacobs et al., 2017).

However, internet use can also have negative mental health outcomes (Drentea et al., 2008). There can be strong associations between rates of social media use, suicidality (Bevan, Gomez, & Sparks, 2014; Kingsbury et al., 2021; Twenge, Joiner, Rogers, & Martin, 2017), and loneliness (Fässberg et al., 2012; Lawlor & Kirakowski, 2014). Although, there are concerns that online forums increase suicidality (Jasso-Medrano & López-Rosales, 2018), these seem to reflect specific patterns of use - passive use, social exclusion (Macrynikola & Miranda, 2019), social comparison and public status updates (Kingsbury et al., 2021) have

been associated with increased risk. Unfortunately, the online environment diffuses the responsibility for assistance (Markey, 2000; Polder-Verkiel, 2012).

There have also been concerns as to the amounts of information available (Swar, Hameed, & Reychav, 2017). Online mental health help can be poorly monitored for quality, and has previously been criticized due to the lack of trustworthiness, validity of information sources, and access to harmful material (Procaci, Siqueira, Braz, & Vasconcelos de Andrade, 2015; Quinn, Bond, & Nugent, 2016; Rains, 2007). Indeed, a systematic review and meta-analysis of studies of online help-seeking and 'apps', questioned whether any improvements were clinically meaningful (Witt et al., 2017).

An issue with people seeking help online for suicide is that they may instead find details of the methods to commit suicide (Alao, Soderberg, Pohl & Alao, 2006). An early study by Dobson (1999) indicated there were over a 100,000 such websites encouraging suicide and outlining methods, and a more recent study by Biddle, Derges, Goldsmith, and Gunnell (2018) reported that participants who were deemed 'low risk' of suicide had more haphazard internet searches that may 'stumble across information associated with suicide methods'. In particular, high risk participants with a history of suicide-related behaviors were more purposeful and strategic – their searching focused around 'researching' methods to maximize effectiveness (Biddle et al., 2018). Regrettably, some "support" sites (e.g. Alt. Suicide Holiday) have actively discouraged the vulnerable from seeking support from mental health professionals (McDonald, Horstmann, Strom, & Pope, 2009), and have members that have deliberately encouraged suicide attempts (Phillips, Diesfeld, & Mann, 2019).

1.3 Harm Associated with Online Suicide Threats

The need for urgent attention in the online environment (Lazarus, 2018; Stow, 2019), is indicated by the appreciable differences in lethality of suicide attempts announced online

(e.g. jumping from heights versus attempts in front of webcams). While Mann (1981) found 33% of jumpers did not go through with their suicide attempts, by contrast a staggering 92% of webcammers were injured in front of their webcams (Phillips & Mann, 2019). Sadly larger online audiences to a suicide attempt were more likely to have members that baited and encouraged the suicide attempt (Phillips & Mann, 2019), reinforcing the *importance of rapid responses and some form of professional intervention*. Currently, if individuals seek help from the general public online for their suicidal feelings, it seems 42% may actually receive baiting that encourages them to complete their suicide attempt (Phillips & Mann, 2019).

Although search engines may display mental health help-seeking information, this can be mixed with the websites of illegal or immoral communities (Adler & Adler, 2008). Because the internet is a poorly controlled and unregulated environment (Kim, Jeong, Kim, & So, 2011), it can connect individuals to others that catalyze participation in deviant (Frissen, 2021; McDonald et al., 2009) or harmful behaviors, such as suicide (Adler & Adler, 2008; Phillips et al., 2019).

1.4 Index of Risk – Quality of Life

For the purposes of this study, some indices of risk are required. Rather than take the narrower definition of mental health as being the diametric opposite of mental illness (Keyes, 2005), the present paper defines mental health according to World Health Organization (WHO) guidelines (World Health Organization, 1996). According to the WHO this state of well-being and overall quality of life can be divided into physical, psychological, social, and environmental domains (World Health Organization, 1996). Those with higher scores can be considered to be “flourishing” whereas those with poorer scores not just on the psychological but also poorer scores on the other domains would be more likely to be “at risk” (Keyes, 2007).

People with mental health problems have poorer Quality of Life (Chern & Huang, 2018; Evans, Banerjee, Leese, & Huxley, 2007; Jenkins et al., 2020). For instance, depression and sleep disturbances feature in the history of ambulance attendances for suicide attempts and suicidal ideation (Ogeil, Witt, Scott, Smith, & Lubman, 2020). In particular, people that have suicidal ideation (Uysal, Karabagir, & Arıkan, 2017) or have made suicide attempts (Saharan & Bhaskar, 2014) have poorer quality of life.

However *people experiencing low mental health and wellbeing may not necessarily seek to address their problems*, *but instead seek to soothe their emotional distress* (Kingsbury et al., 2021; Vollrath, Alnaes, & Torgersen, 1996). For the purposes of this study, the Melbourne Decision Making Questionnaire (MDMQ) was used to address coping behaviours as it has a confirmed factor structure and specifically addresses adaptive behaviours, avoidance and crisis (Mann, Burnett, Radford, & Ford, 1997).

1.5 Faulty Decision Making and Failure to Seek Assistance

The decision to seek help is a potential source of conflict (Vogel et al., 2006). Janis and Mann (1977) considered decision makers' responses to potential threat or crisis and found people's responses to problems may be tempered by resource availability and optimism. If there is hope for a solution and resources are available, an appropriate search through available options can be performed (Herek, Janis, & Huth, 1987). But if no immediate need for a solution is perceived, procrastination can prevent effective action from being taken, with consequences for subsequent outcomes (Beswick, Rothblum, & Mann, 1988).

Janis and Mann's model of decision-making has been validated in laboratory settings (i.e. time pressure and panic) (Mann & Tan, 1993), and upon hospitalised patients with major depression (i.e. avoidant behaviors) (Radford, Mann & Kalucy, 1986). Patients with major depression are less able to appropriately balance probabilities and values, more likely to be

defensively avoidant, and more likely to have maladaptive decisional styles such as hypervigilance (Radford et al., 1986).

Indeed, faulty decision making styles are not just associated with depression (Radford et al., 1986), they can also predict failures to seek help (Evans, Ogeil, & Phillips, 2019; Phillips & Ogeil, 2015). Phillips and Ogeil (2015) found *overconfidence* prevented the people who were dependent on stimulant drugs from seeking further information online, whereas Evans et al., (2019) found *defensively avoidant* decisional styles were associated with a reluctance to seek further assistance in problematic cannabis users.

Maladaptive decision making styles are not just linked to poor emotional wellbeing, but may also influence problem solving and the willingness to seek assistance in the advent of difficulty. Hence it is expected that a person's faulty decisional style can contribute to increased risk and the experience of crisis in different domains of their life. Risk would be indicated by ill health and poorer quality of life. It was expected that *an unwillingness to seek professional help (and a behavioural preference for online assistance) in those at higher risk would be associated with poor decisional styles* (i.e. procrastination, buckpassing, hypervigilance).

2. Method

2.1 Participants

Participants were members of the general population who responded to an online survey, advertised on public online noticeboards. Of the total 189 respondents, 32.4% were male and 64.4% were female, ranging in ages between 16-59, with a mean of 25.42 years (*SD*=10.32). Most of the sample (131, 69.3%) reported no illness, but some reported problems with mental (24, 12.7%) or physical health (25, 13.2%) or co-existing mental and physical health problems (9, 4.8%).

2.2 Measures

Demographic questions were followed by scales assessing quality of life (WHOQOL-BREF (World Health Organization, 1996) and decision making Style (Melbourne Decision Making Questionnaire) (Mann et al., 1997). The last section of the questionnaire solicited participants' intentions to seek help. And as an index of actual help-seeking - measured their behaviour (time and clicks) on a debrief page that listed online sources of support and assistance.

2.2.1 Decision Making Style. To measure quality of decision-making, participants completed the Melbourne Decision Making Questionnaire (MDMQ) (Mann, et al, 1997). The MDMQ is a 22-item scale; the first part measuring self-esteem in decision making processes, and consists of six-items. Items are answered using a three-point scale, where (2 = True for Me, 1 = Sometimes True for Me, 0 = Not True for Me). Higher scores on this first part indicate higher self-esteem in decision-making (Mann, et al, 1997).

The second section of the MDMQ assesses four different decision making styles; adaptive *vigilant* decision making, and defensively avoidant (*procrastination, buck-passing*) or faulty decisional styles (*hypervigilance*). A vigilant decision-making style is hypothesised to be the optimal coping strategy, while the other decisional styles (hypervigilance, procrastination, buck-passing) are considered less effective (Mann, et al, 1997). Higher scores on these subscales indicate the greater use of that decisional style.

The MDMQ is sensitive to disturbances in decision making associated with depressive illnesses (Cotrena, Branco & Fonseca, 2018), and has previously been used to examine symptoms of depression and anxiety (Umeh & Omari-Asor, 2011), major depression (Radford et al., 1986; Radford, Nakane, Ohta, Mann, & Kalucy, 1991), and substance use (Gorodetzky, Sahakian, Robbins, & Ersche, 2011). The MDMQ is a well-established measure of decision-

making styles that has been cross-culturally validated (Mann et al., 1998). In the present study, the MDMQ obtained good Cronbach's alpha for Decisional Self-esteem (.81); Vigilance (.73); Buckpassing (.86); Procrastination (.85); and Hypervigilance (.72).

2.2.2 Quality of Life. As an indicator of risk, the WHOQOL-BREF self-report questionnaire was used to investigate the quality of life. The World Health Organization (1996) has confirmed the WHOQOL-BREF shows excellent validity, providing a good measure of wellbeing. This 26-item questionnaire assesses four facets: physical health, psychological health, social relationships, and environment, as well as measuring overall Quality of Life and general health or presence of illness (Group, 1998). Responses to WHOQOL-BREF items are recorded on a 5-point Likert scale ranging from 1 (none/very poor/very dissatisfied) to 5 (extremely/very good/very satisfied). The WHOQOL-BREF also asks whether people are ill (Yes/No) and the nature of the illness experienced.

The WHOQOL-BREF is reliable (Krägeloh et al., 2012; Tsutsumi et al., 2006) and sensitive to depressive illness (Michalak, Yatham, & Lam, 2007). The WHOQOL-BREF manual indicates that Cronbach alpha values for the four domain scores are: Physical Health (.74); Psychological Health (.80); Social Relationships (.70); Environment (.84), and for the present sample, the Cronbach's alphas were: Physical Health (.80); Psychological Health (.80); Social (.63); Environment (.80).

2.2.3 Online help-seeking behavior. On the penultimate page of the survey questions were included that considered the likely sources of assistance participants would engage with (Tishby et al., 2001). This was done to document and characterise differences in assistance seeking behavior. Participants were asked: 1) "If you were concerned about depression, would you look for help or support online", with the option to respond yes or no, and; 2) "If you were very depressed would you tell" and were given five response options: a close friend, family member, professional, other, or no one, and; 3) "There will be a debrief screen at the end of the

survey listing links for further information. Do you think you would follow these links?" with the option to respond yes or no.

As a behavioral index of the willingness to seek assistance, Qualtrics enabled us to measure the activity associated with the debrief page at the end of the survey. Help-seeking behavior was measured by assessing the time spent on the page and counting the number of clicks participants devoted to this list of health resources. This *measured self-sufficiency and actual engagement with online mental health support information*.

2.3 Procedure

All procedures were conducted in accordance with requirements of the institutional ethics committee. Participants were recruited through an anonymous online survey, advertised through email, Facebook, and websites, that was available for three months. Participants were given a link to access that supplied a participant information sheet informing the research objectives, providing informed consent, stressing the anonymity and voluntary nature of the survey. A questionnaire was then provided to assess the contribution of decision-making styles to quality of life and likely help-seeking behaviors.

2.4 Analysis

Data were exported directly from Qualtrics into SPSS. To determine overall trends, multiple regression or MANOVA were performed. These procedures seek to control experiment-wise error rates by performing an omnibus test. When a significant overall test was significant, univariate tests were then performed to determine the locus of any effect.

Willingness to seek assistance was initially examined using Chi Square. As few participants selected "Other" as a source of assistance, these participants were omitted from

the subsequent MANOVA. Risk was inferred from Quality of Life scores. People with untransformed overall Quality of Life scores less than 15 were deemed "at risk".

A 2x 4 Risk by Preferred Source of Assistance MANOVA was then used to identify variables (i.e. decisional style; debrief page behaviours) associated with the seeking of treatment or further information. As the behavioural measures had appreciable skew they were subjected to transforms (Logarithm plus one). Where statistical significances occurred the raw mean scores are reported for purposes of interpretability.

3. Results

3.1 Overall Risk

To identify potential risk factors, a multiple regression sought to explain overall Quality of Life from the Melbourne Decision Making Questionnaire subscales (i.e. decisional self-esteem, vigilance, procrastination, buck-passing, and hypervigilance), and demographic variables (age, gender, educational attainment, illness).

The predictors explained a significant proportion of the variance (25%) in overall Quality of Life ($F(9,177)=7.841$, $p<.001$). Of the variables considered, the following had non-zero slopes: illness ($t(177)=-3.769$, $p=.001$), decisional self-esteem ($t(177)=2.405$, $p=.017$); and hypervigilance ($t(177)=-2.496$, $p=.013$) (see Table 1). *People that were ill, reported making poorer decisions, and those that were hypervigilant had poorer overall quality of life.* Given that this combination of variables could explain overall quality of life, the following analyses considered the specific domains of the WHOQOL-BREF.

3.1.1 Physical Quality of Life. Decisional style appeared to influence Physical Quality of Life, as the predictors explained a significant proportion of the variance (27%) ($F(9,178)=8.738$, $p<.001$). The significant predictors were illness ($t(178)=-4.356$, $p<.001$), age ($t(178)=-2.001$, $p=.047$), vigilance ($t(178)=2.269$, $p=.024$); and hypervigilance ($t(178)=-$

3.392, p=.001) (see Table 1). *People reporting poorer physical quality of life were older, ill, hypervigilant but not vigilant.*

3.1.2 Psychological Quality of Life. The results of the regression indicated the predictors explained a significant proportion of the variance (41%) of the Psychological Quality of Life subscale (F(9,178)=15.470, p<.001). Decisional Self-esteem (t(178)=2.256, p=.025) and Hypervigilance (t(178)=-4.722, p<.001) made meaningful contributions to the regression equation (see Table 2). *People that reported being poorer decision makers and were hypervigilant had poorer psychological quality of life.*

3.1.3 Social Quality of Life. Decisional style also explained a significant proportion of the variance (21%) of the Social Quality of Life subscale (F(9,178)=6.533, p<.001). Vigilance (t(178)=2.245, p=.026) and Hypervigilance (t(178)=-2.601, p=.01) were predictors with non-zero slopes (see Table 1). *People that reported that they were hypervigilant but not vigilant had poorer social quality of life.*

3.1.4 Environmental Quality of Life. A smaller but significant proportion of the variance (18%) in Environmental Quality of Life (F(9,178)=5.417, p<.001) was explained by the predictor variables. Illness (t(178)=-2.643, p=.009) and Hypervigilance (t(178)=-3.315, p=.001) were significant predictors (see Table 1). *People with poorer environmental quality of life were ill and hypervigilant.*

3.2 Risk and Assistance Seeking

Just because someone was ill, this does not guarantee that they will seek help, and this could have consequences for their well-being. Indeed the data showed little relationship between ill-health and willingness to seek online support. Even if people were ill, 34.5% reported they would not seek online support if depressed (χ^2(1df)=0.232 (N=189), p=.630). (see Table 1).

Nor was there an association between poor quality of life and willingness to seek online support (χ^2(1df)=0.009 (*N*=189), *p*=.922). Only 31.2% of those that were actually "at risk" (i.e. scoring less than 15 on overall quality of life) indicated that they would seek online support if depressed.

Even so, people that indicated they would look at the debrief page (*M*=13.77s, *SE*=2.11) spent significantly more time (*t*(187)=5.236, *p*<.001) on the debrief page than people that did not indicate they would not look (*M*=6.40s, *SE*=0.55). And people indicating they would look at the debrief page (*M*=3.22, *SE*=0.46) tended to click more often (*t*(187)=1.664, *p*=.098) than people that said they would not look the debrief page (*M*=2.28, *SE*=0.22). For such reasons, it is important to understand personal characteristics that were associated with increased risk and the likely choice of assistance.

INSERT TABLE 2 HERE

A 2x4 Risk by Preferred Source of Assistance MANOVA considered decisional style and behaviour on the debrief page. There were significant multivariate effects of Risk (Pillai's Trace=.103, *F*(7,174)=2.866, *p*=.007, η^2=.10). The variables that differed with risk were identified using univariate tests. There were significant differences in Decisional Self-Esteem (*F*(1,180)=11.381, *p*=.001, η^2=.06), Procrastination (*F*(1,180)=11.697, *p*=.001, η^2=.06), and Hypervigilance (*F*(1,180)=11.866, *p*=.001, η^2=.06). *Participants with lower decisional self-esteem and higher procrastination and hypervigilance scores had lower quality of life and were thus at higher risk.*

People were asked who they would tell if they were very depressed (a close friend, family member, professional, other, or no one). Very few people selected "other" and were consequently dropped from further analysis. As part of the same 2x4 Risk by Preferred

Source of Assistance MANOVA, there were significant multivariate differences associated with Preferred Source of Assistance (Pillai's Trace=.185, $F(21,528)=1.648$, $p=.035$, $\eta^2=.06$). This effect was due to the significant univariate differences in Procrastination ($F(3,180)=4.888$, $p=.003$, $\eta^2=.08$). and Hypervigilance ($F(3,180)=3.666$, $p=.013$, $\eta^2=.06$). Simple contrasts indicated that those that would tell "No One" if they were depressed had higher procrastination scores ($M=6.72$, $SE=0.50$) than those that would tell Family ($M=4.06$, $SE=0.50$), Close Friends ($M=5.40$, $SE=0.33$), or Professionals ($M=5.10$, $SE=0.40$). And those that indicated that they would tell "No One" also had higher hypervigilance scores ($M=6.81$, $SE=0.43$) than those that would tell Family ($M=4.97$, $SE=0.43$), Close Friends ($M=5.71$, $SE=0.28$), or Professionals ($M=5.29$, $SE=0.35$). *People that would tell no-one if they were depressed were panicked and defensively avoidant*.

The effects of Risk and Preferred Source of Assistance interacted. There was a significant multivariate interaction (Pillai's Trace=.226, $F(21,528)=2.052$, $p=.004$, $\eta^2=.08$). The source of the interaction involved Hypervigilance ($F(3,180)=3.347$, $p=.020$, $\eta^2=.05$), and the number of clicks on the debrief page ($F(3,180)=2.974$, $p=.033$, $\eta^2=.05$).

The significant interactive effects of Risk and Preferred Source of Assistance upon Hypervigilance may be seen in Figure 1. Simple main effects indicated that those people that were more at risk, were significantly more hypervigilant (Close Friend ($F(1,180)=14.317$, $p<.001$), Family ($F(1,180)=6.616$, $p=.011$), Professional ($F(1,180)=5.031$, $p=.026$), *except if they indicated they would tell "No One"*. Those people that indicated they would tell "No One" were actually as hypervigilant as those that were at risk ($F(1,180)=1.075$, $p=.301$).

INSERT FIGURE 1 HERE

The number of clicks on the debrief page varied with Risk and Preferred Source of Assistance and can be seen Figure 2. On average participants clicked on the debrief page 2.71 times (*SE*=0.23). Simple main effects indicated that low-risk people that indicated they would tell "No One" were more self-sufficient (*M*=4.75, *SE*=0.85), and clicked on the debrief page significantly more than people at risk (*M*=2.36, *SE*=0.63) ($F(1,180)=5.122$, $p=.025$). There were no differences in the number of clicks on the debrief page made by people selecting Close Friends ($F(1,180)=1.644$, $p=.201$), Family ($F(1,180)=0.507$, $p=.477$), or Professionals ($F(1,180)=0.208$, $p=.649$). *People that were self-sufficient and considered online sources of support were hypervigilant.*

INSERT FIGURE 2 HERE

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4. Discussion

As rates of assistance seeking can be low in populations that are "at risk", the present study considered how decision-making style varied with quality of life and preferred sources of assistance. Poorer quality of life and a reluctance to seek assistance were both associated with dysfunctional decision-making styles. Participants that were "at risk", were ill and tended to be poor decision makers, specifically having poorer decisional self-esteem, and being more prone to procrastination and hypervigilance. In particular, self-sufficient individuals that would not seek professional assistance even if they were at risk seemed to be hypervigilant. People who indicated 'no one' as a preferred source of assistance already resembled those 'at risk' and tended to click more on online sources of assistance.

In the present data, a poorer overall quality of life was associated with low decisional self-esteem, illness and *hypervigilance*. Hypervigilance was a consistent indicator of problems. Hypervigilance has been strongly linked to dissatisfaction with life (Filipe,

Alvarez, Roberto, & Ferreira, 2020), and exaggerated response to stressful stimuli (Kimble, Fleming, & Bennion, 2013). In particular, those people that indicated they would contact no one for support were hypervigilant. This should not be surprising. Mann and Tan (1993) demonstrated that simply telling people that they lacked resources would lead to panicked canvasing of options and defective decision making. Indeed, among the reasons provided by 'at risk' individuals for not seeking assistance was a perceived lack of time (Czyz, Horwitz, Eisenberg, Kramer, & King, 2013). Moreover, hypervigilance is a predictor of suicidal ideation (Steyn, Vawda, Wyatt, Williams, & Madu, 2013), and is a component of Suicide Crisis Syndrome (Schuck, Calati, Barzilay, Bloch-Elkouby, & Galynker, 2019).

People that would tell no-one if they were depressed were *procrastinators*. Depressed individuals tend to be rigid in their outlook, have poor problem solving and social skills (Dieserud, Roysamb, Braverman, Dalgard, & Ekeberg, 2003; Linehan, Camper, Chiles, Strosahl, & Shearin, 1987). As consequence of conducting defective search for solutions (Ball, Mann, & Stamm, 1999; Phillips & Landhuis, 2021) they may not be aware of the options that are available (Fischhoff, Slovic, & Lichtenstein, 1978; Lagoe & Atkin, 2015), or even understand how much they do not know (Lichtenstein & Fischhoff, 1977; Swar et al., 2017). Procrastination may then prevent a person from identifying the necessary knowledge bases and thus having the ability to determine the information required to accurately select appropriate options (Kruger & Dunning, 1999; Lagoe & Atkin, 2015; Swar, Hameed, & Reychav, 2017). Indeed, others have also found less vigilant decisional styles were linked to poorer life satisfaction (Filipe et al., 2020), suicidal ideation (Steyn et al., 2013), or worse (Schuck et al., & Galynker, 2019).

In this regard the internet could potentially function like an aeroplane's "black-box" documenting people's searches and activity levels before misadventure (Phillips et al., 2019), and the present data imply an interplay between decision-making style, sources of support and

quality of life, with some elements manifesting behaviorally online (see Table 3). Although these interpretations could appear simplistic to some psychologists, they arise directly from decision-making theory (e.g. Janis & Mann, 1977) and studies tracking internet use (e.g. Phillips & Landhuis, 2021). In each category of decision-makers we outline associated search behaviors and potential interventions.

INSERT TABLE 3 HERE

4.1 Having Sources of Support

4.1.1 Engaged. People with better quality of life and sources of support appear to be **engaged** with life (Keyes, 2005; 2007). Their vigilance and effective search for solutions contributes to better physical and social outcomes (see Table 1) (Ball et al., 1999; Filipe et al., 2020; Phillips & Landhuis, 2021). Engaged individuals are likely to spend less time on the internet as they make more efficient use of their time (Phillips & Landhuis, 2021). Whereas greater amounts of internet usage have been associated with problems and lower self-esteem (Widyanto & Griffiths, 2011). It seems that it is the quality of online activity that contributes to problems, as it is passive social media use that has specifically been associated with depression (Escobar-Viera et al, 2018).

4.1.1.1 Engaged – Interventions. Except for a possible "pull" in the form of an invitation for self-reflection (Schafer, Konstan, & Riedl, 2001) no interventions are suggested for an engaged cohort as it is expected that they help themselves, or are monitored by those that support them.

4.1.2 Dependent. People with sources of support, or addicts that rely upon others to solve their problems (Doweiko, 1990; Phillips, Evans, Hughes, & Ogeil, 2020), may be provided

with solutions that are not congruent with their interests and this may be associated with avoidance (Evans et al., 2019; Gorodetzky et al, 2011), complaint or a poorer quality of life (Filipe et al., 2020). However, there may also be a bidirectional confound. For people with sources of support, the shirking of obligations associated with defensively avoidant coping may also potentially enhance quality of life. A short-term avoidance of responsibility can provide temporary relief, and this possibility is indicated by a tendency for buckpassing to improve quality of life in the present data (Table 1).

4.1.2.1 Dependent - Interventions. Given that this cohort believes they have sources of support, interventions could encourage this cohort's support people to act as informal case workers and ask their dependents if they are ok.

4.2 No Source of Support

People who felt there was no one they could ask for support, tended to be hypervigilant. A perceived scarcity of resources has previously been shown to cause a poorer search for suitable options and defective decision making (Mann & Tan, 1993). Hypervigilance online is associated with greater amounts of logins, and inefficient search (Phillips & Landhuis, 2021). As will be outlined, the amount of searching people conduct within solution spaces (Koehler, 1991) has implications for eventual outcomes.

4.2.1 Self- Sufficient. Those **self-sufficient** individuals with a higher quality of life and no other sources of support, seem to persist behaviourally in a greater search for options (see Figure 2). Although there are higher levels of procrastination in those not seeking assistance, the self-sufficient seemingly availed themselves of information that was provided.

In this regard it is appropriate to be guided by those better decision makers that have better quality lives. It seems the vigilant have better physical and social quality of life, and it

is likely this arises because they engage in considered deliberation, more carefully weigh the risks, appropriately canvas available options, and sensibly map their selected options to available resources (Herek et al., 1987). The development of personalised recommenders has the potential to assist in this regard (Montaner, Lopez, & De La Rosa, 2003), but still requires users to able to distinguish reputable forms of assistance (Lam, Frankowski, & Riedl, 2006) from the deceitful and manipulative (Kim et al., 2011).

4.2.1.1 Self-Sufficient - Interventions. Given that this group is prepared to help themselves, it is important to ensure that *accurate* information is available, but given tendencies towards procrastination and hypervigilance, the provision of a simple "push" with an offer of assistance might also be necessary for this cohort (Schafer et al., 2001) with the occasional "pull" inviting them to engage in self-reflection.

4.2.2 Vulnerable. As both the self-sufficient and vulnerable have similar levels of hypervigilance (Figure 1), the transition between good and poor quality of life could be as simple as misadventure that has overwhelmed coping resources (Keyes, 2005; 2007), or an absence of hope that stops the search for solution (Figure 2) (Janis & Mann, 1977; Radford et al., 1986). Those **vulnerable** individuals with a poorer quality of life and no other sources of support, exhibited lesser amounts of search online when sources of assistance were provided. And at a behavioral level this could be detected as an "offset" of activity (Keyes, 2005; 2007).

4.2.2.1 Vulnerable – Interventions. As there are higher levels of procrastination and hypervigilance in those not seeking assistance, there does seems to be a greater need for more assertive outreach in cohorts that feel they have no one they can approach for help, as they may not process messages as effectively (Shirren & Phillips, 2011). Perhaps a "push" involving direct contact and follow-up if deemed "higher risk" (Gravenhorst et al., 2015;

Milward, Day, Wadsworth, Strang, & Lynskey, 2015). The problem being what sorts of online activity might suitably trigger such offers of assistance.

4.4 Implications

Variations in online activity in those with potential mental health problems have some analogs in behavioral neuro-psychiatry. Previously during online study, procrastinating or hypervigilant students were found to be avoidant or inefficient (spending more time online and accessing more files for comparable quality outcomes) (Phillips & Landhuis, 2021). Similar changes in activity have also been reported in patients with Major Depression (Northoff, Hirjak, Wolf, Magioncalda, & Martino, 2021). Major depressives exhibit abnormal levels of movement, demonstrating agitation (excess activity) or psychomotor retardation (reduced activity) (Sandmeir et al, 2021). Major depressives also exhibit differences in brain activity (Rogers, Bradshaw, Pantelis, & Phillips, 1998). Indeed, activity in the cerebral cortex is reduced in major depressives. Implying a shift from rational planned behaviors towards more habitual behaviors (Saling & Phillips, 2007).

It is likely that changes in internet activity (onset or offset) could be usefully employed as a trigger for offers of assistance. Hypervigilance and excess internet activity appears to be an indicator of problem for both the vulnerable and the self-sufficient. Conceivably a reduction in internet activity in the previously self-sufficient could indicate the transition to vulnerability.

The appropriate triggers for offers of assistance would ~~be~~ require further research, but within a learning environment it is feasible to use appreciable departures from the average activity levels (Phillips & Landhuis, 2021), whereas the directness, breadth, and depth of search has been used as an indicator of intent by others (Kim, Yum, Song, & Kim, 2005). Activity levels could also be used in conjunction with social networks (Masuda, Kurahashi, &

Onari, 2013) or techniques such as Sentiment Analysis to identify higher risk individuals (Fahey, Boo, & Ueda, 2020; Gaspar, Pedro, Panagiotopoulos, & Seibt, 2016).

4.3 Future Research

Given the low rates of treatment seeking in high-risk populations there is a need to understand, predict, and then prevent failures to seek appropriate assistance (Satcher, 2000; University of Manchester, 2016). Hitherto assistance seeking has been considered to be a rational choice, albeit sometimes couched in terms of approach/avoidance conflict (Magaard, Seeralan, Schulz, & Brütt, 2017; Vogel et al., 2006).

It seems that it is the overloaded and under-resourced (Swar et al., 2017) that could be needing professional help, but are less likely to avail themselves of this help. Unfortunately, those reporting the highest levels of distress can be the least willing to seek help for interpersonal problems and depressed mood (Tishby et al, 2001).

The indication that one would approach "no one" if one had a problem seems to be an admission that one is lacking support (Keyes, 2007). Under such circumstances it is perhaps not surprising that people then go online (Cole et al., 2017; Ophir, 2017) or make public appeals for assistance (Kingsbury et al., 2021). However it is then a concern which forums the person approaches for assistance. Several famous online suicides approached "insult" or "troll" sites (e.g. Westerlund, Hadlaczky, & Wasserman, 2015). While this may have been acts of desperation, the negative audience response was reasonably foreseeable. Moreover, what was shocking was the difficulty rendering assistance (Polder-Verkiel, 2012), and the lethality associated with these incidents (Phillips & Mann, 2019) compared to levels of assistance rendered during offline suicide attempts (Mann, 1981).

Vogel et al. (2006) reasonably advocated a range of educational and outreach interventions to lower barriers to professional help-seeking. For instance, medical professionals receive Crisis Resource Management training during which they are encouraged

to monitor their environment, maintain situational awareness, avoid fixation, and *ask for help early*, *to prevent crises* (e.g. Gaba, 2010; Parsons et al., 2018).

Systems are under development to detect depression (Cavazos-Rehg et al., 2016; Doraiswamy & Firth-Butterfield, 2018). Online technologies in platforms such as Facebook or Google+ now allow people with specific interests or behaviors to be sent targeted advertisements and interventions (Alnahdi, Alim, & Alkayid, 2014; Chen & Stallaert, 2014), for instance, it is possible to conduct brief interventions for anxiety online (Saddichha, Al-Desouki, Lamia, Linden, & Krausz, 2014). However the present data indicate that procrastination and panic contribute to poorer help- seeking behaviors. In other words, those people that need assistance may be less likely or able to avail themselves of such assistance, and may require more specialized online interventions to address procrastination (Rozental & Carlbring, 2013), or panic (Carlbring, Ekselius & Andersson, 2003). Perhaps future online interventions might benefit from more assertive offers of assistance that could be customized to a person's current mental status (Amichai-Hamburger et al., 2014; Myrick, 2017).

5. Conclusion

The rates of assistance seeking in those "at risk" are regrettably low, and are potentially linked to defective decisional styles. A reluctance to seek offline assistance was associated with procrastination and panic, seemingly due to a lack of sources of support.

Although the present study presents correlational data from a cross-section of the community, there are indications that defective decision making could also play a causal role as avoidance and a perceived lack of resources can contribute to panic (Janis & Mann, 1977). Indeed, the present study demonstrates a better quality of life for those that engaged in more careful vigilant styles of decision making. Whereas there were higher levels of panic in those reporting that there was no one that they would approach for assistance.

Self-sufficiency, the intention to seek assistance specifically from online sources, was documented behaviourally from the number of clicks on a debrief page, demonstrating an interplay between decisional style, social support, and online activity. This should not be surprising. Activity levels have long been known to vary with mental health (Rogers, 1985; Rogers, 1992) and are likely to be the behavioural manifestation of underlying changes in brain activity (Rogers, Bradshaw, Pantelis, & Phillips, 1998). However, it is surprising that these differences can be documented online as an onset (or offset) of activity (Phillips & Landhuis, 2021) within the context of social networks (Masuda et al., 2013), and such differences in activity could be used in the future as a trigger for online interventions.

This indicates the potential importance of the internet and social media, but given the wealth of dubious or harmful material online, there is a very real need for more assertive online support systems that could target segments of the community that are at risk. As decision making and crisis avoidance can be trained, a range of interventions are feasible. Indeed, people can be trained to identify the likely triggers precipitating crisis (Parsons et al., 2018; Van Wormer & Davis, 2014). However, a key point would be the need to overcome tendencies towards procrastination (Shirren & Phillips, 2011). For some this might entail more assertive outreach to encourage engagement. Whereas the consistent links to hypervigilance in the present study also suggest a capacity for the online environment to detect panicked activity and an ability to provide suitable resources as support.

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Table 1. Relationships between demographic factors, decision-making Styles and quality of life.

	Overall			Physical			Psychological			Social			Environmental		
	β	*t*	*β*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
Gender	-.016	-.238	.812	-.033	-.497	.620	-.036	-.600	.549	.096	1.391	.166	.077	1.092	.276
Age	-.121	-1.626	.106	-.145	-2.001	.047*	.016	.247	.805	.001	.011	.991	-.141	-1.827	.069
Education	.060	.828	.409	.050	.708	.480	.080	1.264	.208	.094	1.282	.202	-.050	-.671	.503
Illness	-.249	-3.769	.000**	-.282	-4.356	.000**	-.060	-1.031	.304	-.017	-.251	.802	-.182	-2.643	.009*
Decisional Self-esteem	.281	2.405	.017*	.141	1.224	.223	.234	2.256	.025*	.076	.634	.527	.152	1.239	.217
Vigilance	.104	1.519	.131	.153	2.269	.024*	.114	1.891	.060	.157	2.245	.026*	.121	1.693	.092
Buckpassing	.194	1.825	.070	.103	.986	.325	.133	1.411	.160	.097	.888	.376	-.086	-.771	.442
Procrastination	-.081	-.749	.455	-.066	-.618	.538	-.096	-1.003	.317	-.187	-1.684	.094	.151	1.331	.185
Hypervigilance	-.252	-2.496	.013*	-.338	-3.392	.001**	-.423	-4.722	.000**	-.269	-2.601	.010*	-.351	-3.315	.001**

* $p < .05$

** $p < .001$

Table 2. Self-reported illness and willingness to seek online support or further information.

	Are you currently ill?			Quality of Life		
If you are concerned about depression would you look for help or support online?	Yes	No	Total	Low	High	Total
Yes	19	112	131	64	66	130
No	10	48	58	29	29	58
Total	29	160	189	93	95	188

Table 3. Decision-making styles contributing to relationships between support and outcomes (Quality of Life), and recommended interventions.

		Sources of Support	
		Several	None
Quality of Life	High	Engaged	Self-sufficient
		Vigilant	Hypervigilant
		Pull	Push/Pull
	Low	Dependent	Vulnerable
		Buckpasser?	Hypervigilant
		RUOK	Push

Figure 1. Interaction between Risk and Preferred Source of Assistance for Hypervigilance scores.

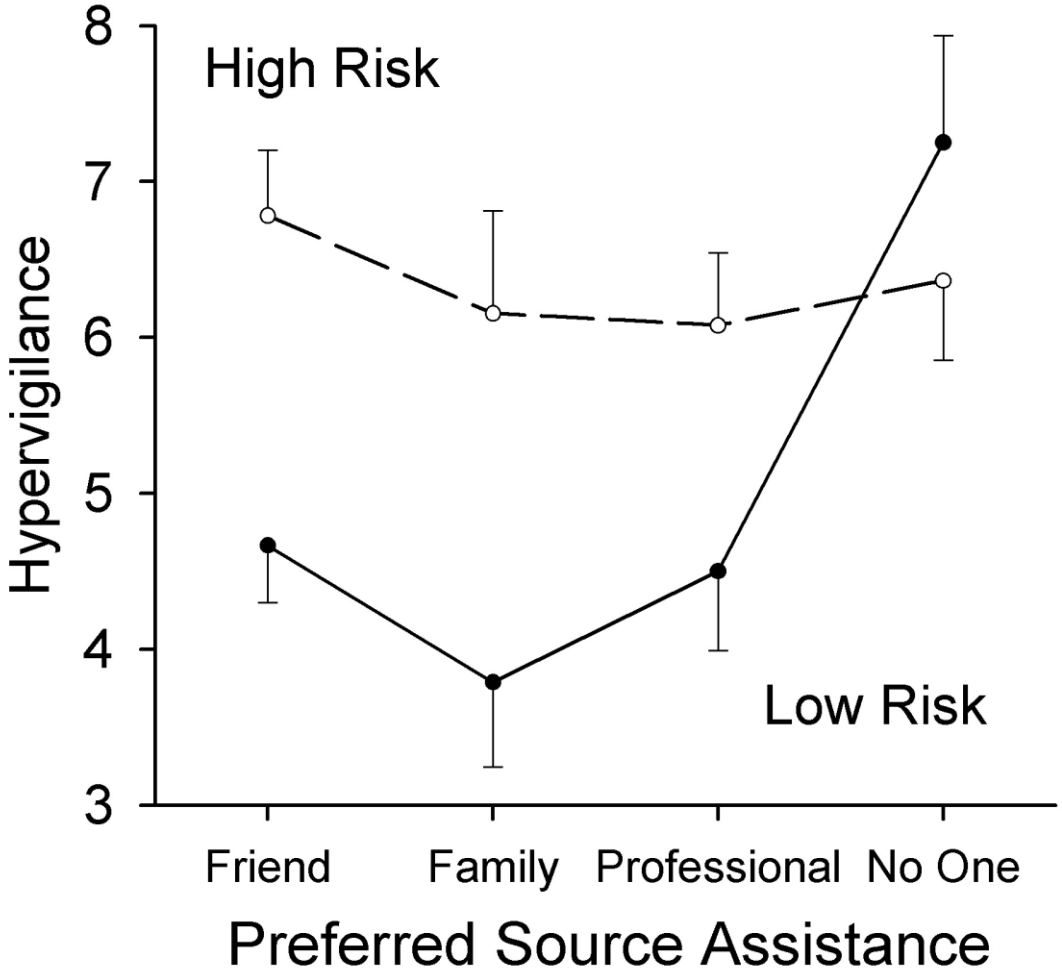

Figure 2. Number of clicks on debrief page varies with Preferred Source of Assistance and Risk.