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symptoms.

I certify that the material now submitted is entirely my own work and I have cited all sources used and have faithfully indicated their origin.

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Does self-help intervention help undergraduate students in Hong Kong to increase
psychological well-being and reduce depression symptoms.

By

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Submitted in partial fulfilment for the degree of
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Abstract

An increasing number of studies indicates that positive psychological interventions may enhance mental wellness for both clinical and non-clinical populations. The current work compared the efficacy of Self-Help Interpersonal Gratitude Letter Intervention (Gratitude) and Self-Help Goal-Setting and Planning Intervention (GAP) in decreasing depressive symptoms and increasing multidimensional well-being of Hong Kong undergraduates. Seventy-nine students participated in a four-week randomized control trial with three arms (Gratitude vs GAP vs control). Results show that participants in both positive psychological interventions experienced significant decreases in depressive symptoms. Participants in the Gratitude condition also had significantly decreased physical distress, and increased total affect and positive affect, while daily functioning in participants in GAP significantly increased. The findings corroborate those of previous studies such that self-help intervention might have reduced depressive symptoms and enhanced functioning, despite the unstable social environment during the period of data collection. Implications on supporting mental wellness of undergraduates with low-dose, self-help interventions are discussed. (154 words)

Submitted by Hotinpo (Sky) Kanagawa (16P036) for the degree of Bachelor of Social Sciences (Honours) in Psychology at Hong Kong Shue Yan University

Declaration

I declare that the thesis and the research work thereof represents my own work, except where due acknowledge is made, and that it is not previously included in a thesis, dissertation or report submitted to Hong Kong Shue Yan University or to any other institutions for a degree, diploma or any other qualifications.

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Date: 30 April 2020

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Introduction

Entering university may be an impactful and joyful event for individuals in Hong Kong, as only 18,138 out of 59,039 students in Hong Kong (30.72%) had successfully admitted into University Grants Committee (UGC) funded university in 2017(University Grants Committee, 2017). Even though the individuals who have entered the university may be joyful for a while, it can be stressful for many students, as the education system is vastly different and students have to adapt to the new life in university (Voelker, 2003; Adlaf, Gliksman, Demers & Newton-Taylor, 2001). The psychological distress in the student is not a problem that only Hong Kong faces, studies conducted in the UK shows that student report increased psychological disturbance during the transition phase from secondary education to tertiary education, and about 30% of the first-year college student felt overwhelmed by the differences (Furr et al., 2001; Tomoda et al., 2000; Stewart-Brown et al., 2000).

Student depression has been a severe public health concern, as the student depression rate has been increasing steadily in the western society since 2007 to 2017 (Twenge, Cooper, Joiner, Duffy & Binau, 2019). In 2016, there were 75 suicides between the age group of 15 to 24 years old, which the suicide rates are 9.5%, the highest since 2005, according to The HKJC Centre for Suicide Research and Prevention, HKU. Understanding the phenomenon and identifying the problem is

necessary, and it is crucial to find solutions to help individuals who are in the struggle.

Well-Being

Well-being is typically conceptualised as a multidimensional domain, including psychological, physical, and spiritual (Sirgy et al., 2009). Psychological well-being has three essential components: life satisfaction, positive affect and negative affect (Diener, Suh, Lucas, & Smith, 1999). Physical well-being is not just the absence of disease, but the choices individuals make to ensure health, avoid preventable diseases and conditions, and live in a balanced state of body, mind and spirit (Scheidt, 2010). Spiritual well-being refers to an individual's sense of connection with the aspects of life, like the purpose of life and the meaning of life. Study shows that higher spiritual well-being will directly affect life satisfaction, which is the measure of the individual's cognitive evaluation with how satisfied they are with themselves (Canda and Furman 2010; Nelson Becker 2005; Nelson-Becker et al., 2006).

Well-being is a crucial predictor of achievement, engagement and motivation, and a critical factor for students. (Fogarty et al, 2014, Seligman et al, 2009, Suldo et al, 2006). Seligman et al., (2009) also suggest that student well-being plays a

significant role in maintaining a healthy physical and psychological well-being, and it can be an antidote to depression, the drive for higher life satisfaction and aid for better academic performance. Technological advances and an overall improvement in life do not play a significant factor in subjective well-being for students, as the depression among young people is growing and it is estimated that depression is ten times more common now than it was fifty years ago (Wickramaratne et al, 1989). Kuhl suggests that changes in the academic expectation play a role, as more educational system begin to focus on the analytical, exam-based and grade focused system, which could cause higher academic distress for students (Kuhl, 1983).

Depression

Depression disorders affect students' emotional, cognitive, interpersonal and physical functioning (Kitzrow, 2003). The depression symptoms were associated with psychological distress, lack of confidence and lack of optimism. The students in Hong Kong experience an equal, or even higher level of depression compared to a student in western society (Siu, 2006). A study conducted by HKU surveying 1,119 undergraduate students displayed that 68.5% experience mild to severe depression symptoms and 54.4% experience mild to severe anxiety symptoms (Lun et al, 2018).

On the other hand, data from the Hong Kong Playground Association, stated that around 30% (30.2%~38.7%) of youth in Hong Kong suffers from depression (Hong Kong Playground Association, 2018). Comparing those two results, it has a large discrepancy, and many studies in the past explained depression or other mental illness are often being underreported or under-treated due to many factors, including stigmatisation, cultural taboo and lack of awareness of the mental illness (Hazell, 2002). Many factors affect the psychological well-being of the undergraduate student, which also includes factors outside of the academic aspect, including the increasing academic pressure after the significant education reform, uncertainties in future prospective due to the socio-political environmental changes, the massive increasing cost of living, and more prevalent use of social media (Yeh et al, 2007; LaRosa, 2011). Early-onset of depression increases the chance of relapse in the later stage, and it is essential to have a proper treatment when it occurs in the early stage (Beshai, Dobson Bockting & Quigley, 2011).

According to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) by the American Psychiatric Association, to be diagnosed with Major Depressive Symptoms (MDD) or Clinical Depression, the individual must experience five or more symptoms during the same 2-week span, and at least one of the symptoms must be present; either depressed mood or loss of interest or pleasure

(American Psychiatric Association, 2013). Individuals who suffer from depression experience constant feelings of sadness, hopelessness, and anhedonia. Anhedonia is a common symptom in depression, and the symptoms are the inability to feel pleasure, loss of interest, and lack of motivation. Anhedonia can be classified into two categories; Social Anhedonia and Physical Anhedonia (Parker, Parker & Net Library, 2004). Social Anhedonia is the loss of interest and pleasure in interaction with others, and physical anhedonia is when the person loses interest and pleasure in the activities or lack of motivation to complete any tasks (Ritsner, 2014). Anhedonia is a severe concern for the university student, as social interaction is a significant part of university life, and many assignments and classwork are group work, so lack of interaction with others have an adverse effect to a student with social anhedonia (Winer, Drapeau, Veilleux, & Nadorff, 2015).

Self-Help Intervention

Despite a high percentage of students having mood disorders, such as depression and anxiety, many do not seek help, let alone professional help as well. Research shows that stigma is a huge barrier for students to seek treatment, especially for college students (Eisenberg, Downs, Golberstein & Zivin, 2009; Clement et al, 2015). Two distinct stigma types of stigma have been conceptualised, which is self-stigma and perceived stigma. (Vogel, Wade & Hackler, 2007). Vogel, Wade and

Hackler (2007) stated that self-stigma for treatment is the self-devaluation that occurs due to the internalisation of negative attitudes towards itself (accepting that you are weak and need to seek help), and perceived stigma for treatment is the concerns about being discriminated or devalued by others for seeking mental health service and being classified as crazy.

To reduce stigmatisation, self-help is a strategy that can be used, and using online, offline, books, self-administered and other self-help resources can increase the rate of treatment-seeking (considering self-help as a way of treatment) (Deandrea, 2014; Klein & Cook, 2010). Deandrea (2014) suggests that providing an anonymous means of seeking help can increase the rate of treatment-seeking. Klein and Cook (2010) believe that using online self-help could also increase the rate of treatment-seeking, as well as providing more cost-effective methods for individuals. Self-help might be a promising way to increase treatment-seeking rate, but many studies suggest that complete self-help is not as effective as self-help that has guidance from professionals or close individuals (Apolinário-Hagen, Kemper, & Stürmer, 2017). To improve on that, Apolinário-Hagen, Kemper, and Stürmer (2017) believes little to moderate amount of help from professionals will increase the effectiveness of self-help treatment.

Positive Psychology

Research on Positive Psychology has been gaining attention from many parties, as positive psychology intervention can cultivate positive behaviours, cognitive and feelings, rather than just fixing or changing the negative thoughts and behaviours (Carr, & Finnegan, 2015). Positive emotion can be more than just the outcome of positive psychology intervention, as studies showed that positive emotion leads to psychological growth, improved mental and physical health, more satisfying and lasting social and marital relationships and even positive societal changes (Boehm & Lyubomirsky, 2008; Diener & Seligman, 2002; Isen, 1999; Lyubomirsky, King & Diener, 2005; Pressman & Cohen, 2005). Studies from the past may only classify positive emotion as the outcome of positive psychology intervention and use positive emotion to describe happiness. However, Boehm and Lyubomirsky (2008) believe that positive emotion itself can contribute to psychological well-being. Study shows that individuals engaging in social activities, personal recreation, goal-oriented behaviours and spiritual activities show higher positive emotions and happier (Henricksen & Stephens, 2013; Tkach & Lyubomirsky, 2006; Warner & Vroman, 2011). Those techniques which increase positive emotions are referred to as positive psychology intervention, which can be defined as increasing well-being, and promoting positive emotions, thoughts and behaviours, and not just reducing negative

symptoms (Parks & Biswas-Diener, 2013; Schueller, Kashdan & Parks, 2014). The positive psychological resources have also been the target of study, as an effective way to reduce the relapse of a variety of mental illness and for example; positive feeling, positive emotion, positive cognition, hope, gratitude, optimism and resilience are types of positive psychological resources (Hobfoll, 2002).

Positive psychology intervention is an option for treating mental disorders, such as anxiety and depression, as it is effective in reducing depressive symptoms and enhancing psychological well-being (Seligman, Steen, Park & Peterson, 2005). The positive psychology movement has increased awareness of the meaning of a happy life, and people began to realise a well-lived life is not a life without depression or any other mental disorder, but living a life with positive emotion, engagement, good relationships, meaning and purpose, and accomplishment (Keyes & Haidt, 2003). The study from Keyes (2005) believes that well-being can be increased even when the individual has ongoing depression and that it is possible to help people to have a better life by increasing well-being instead of just reducing depression symptoms. Keyes (2005) also suggested that well-being may also lead to a beneficial effect on depression. Positive psychology traits are also beneficial for individuals to increase psychological well-being and reduce psychological distress. Resilience is one of the traits that could increase the ability to adapt to changes and be less prone to get

relapses (Mak, Ng, & Wong, 2011). Mak, Ng and Wong (2011) suggested that resilience is a trait that can increase adaptation to sudden changes in life and reduces the chances of relapse. Acceptance is also a positive psychology trait that is effective in regulating an individual's emotions (Burckhardt et al., 2016). Burckhardt et al., (2016) conducted a study with acceptance-based positive psychology intervention, and it states that accepting the failure, stressor or negative emotion can help the student to regulate their emotions, and deal with the stressor more effectively.

Burckhardt, Manicavasagar, Batterham and Hadzi-Pavlovic (2016) suggested that the reasons why students experience fewer negative symptoms is due to increase and development of coping skills.

Many studies have concluded that well-being intervention is an effective way of treating depression and other mood disorders (Sin & Lyubomirsky, 2009). Sin and Lyubomirsky (2009) conducted a meta-analysis of fifty-one well-being interventions, using Goal-Setting and Planning, Gratitude Diary, Hope Therapy, Meditations, Gratitude Listing and many others. Those well-being interventions aim to bring positive thoughts, feelings and behaviours to the individuals with depression and other mood disorders, and it significantly enhances well-being and reduction in depressive symptoms. In the study from Sin and Lyubomirsky (2009), it suggested that different cultures have different outcomes when the same intervention is registered. Goal-

setting and planning intervention may benefit individualist cultures more, who may value and support individual strength and happiness more. On the other hand, collectivist culture may experience more significant effect when gratitude intervention was used, as practising prosocial and other-focused activities such as performing acts of kindness, gratitude letter increases their positive emotion more. As a result, Sin and Lyubomirsky (2009) suggested that it is essential to consider the individual's cultural background and their characteristics before implementing positive psychology intervention.

Positive psychology can be used for clinical and nonclinical populations. Positive psychology focuses on increasing psychological well-being, enhancing positive psychological traits and personal growth instead of solely focusing on reducing negative symptoms, and the nonclinical population can also use to increase their well-being. (Fordyce, 1977; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2008; Ruini, Belaise, Brombin, Caffo, & Fava, 2006). Because of the availability and the simplicity compared to traditional intervention, individuals may feel less stigmatised when using positive psychology intervention, and it can also be used as self-help intervention if the individual is not comfortable seeing a professional. Moreover, positive psychology intervention can increase the resilience of the

nonclinical population or clinical population, so that the chances of relapse will decrease and individuals will be less prone to depression symptoms.

Gratitude Intervention

Gratitude is a widely used term, used differently by many, including psychologist, counsellor, helping professions or even normal individuals. Gratitude is an effective trait; it is a generalised tendency to recognise and respond with grateful emotions to others' benevolence in positive experience and outcomes that others obtain (McCullough, Emmons & Tsang, 2002). Gratitude is known as an emotion that promotes prosocial behaviour, increase interpersonal relationships, increase well-being and better morality (Wood, Joseph & Maltby, 2009). A series of a meta-analysis by Dickens has proven that although there are many different types of gratitude intervention, studies administered by the psychologist, including self-help intervention, showed a significant result in an increase of subjective well-being, as well as a decrease in depressive symptoms (Dickens, 2017). Dickens (2017) stated that simple practice such as gratitude listing, gratitude dairy and gratitude drawing showed evidence of the increased feeling of self-reported mood, optimism, physical health, and reduced symptoms of depression.

Gratitude intervention is a popular way to increase subjective well-being and reduce psychological symptoms. Berger, Bachner-Melman and Lev-Ari conducted a study on the efficacy of different types of gratitude, comparing interpersonal gratitude and non-interpersonal gratitude (Berger, Bachner-Melman and Lev-Ari, 2019).

Berger, Bachner-Melman and Lev-Ari (2019) separated 210 participants into five groups, which are 1) Interpersonal List Group (n=40), 2) Non-Interpersonal List Group (n=45), 3) Interpersonal Letter Group (n=39), 4) Interpersonal List and Letter Group (n=45) and 5) Control Group (n=41), to measure the effectiveness and the growth of different types of gratitude after the intervention. All the gratitude intervention groups have increased in satisfaction with life, decreased negative emotion, and psychological well-being compared to the 5) Control Group. The 2) Non-interpersonal Gratitude Group and 3) Interpersonal Letter Group led to an increase in both non-interpersonal and interpersonal gratitude, however, the 3) Interpersonal Letter Group showed the highest effectiveness compared to other groups. The 3) Interpersonal Letter group and 4) Interpersonal List and Letter group's results were similar, and the researcher believes that listing interpersonal gratitude is not as effective as writing an interpersonal letter. Berger, Bachner-Melman and Lev-Ari (2019) also stated that just thinking about gratitude is not as effective as writing it down, which is why the 1) Interpersonal List Group had the lowest effectiveness out

of all the intervention groups. After the intervention has been completed, researchers have done a follow-up survey to measure the effectiveness of the treatment. Berger, Bachner-Melman and Lev-Ari (2019) found the effects were higher on the follow-up survey compared to the post-questionnaire the participants have filled in after completion, suggesting the effects of the intervention are long-lasting, and there may be time-delay on the effect of the intervention.

Goal-Setting and Planning (GAP) Intervention

Goal-Setting and Planning (GAP) intervention have also risen in popularity as a treatment for mood disorders. Having a goal and progress are the theoretical approaches to well-being (Schmuck & Sheldon, 2001; Sheldon, Kasser, Smith & Share, 2002). The goals in GAP intervention must be something important or valuable to the individuals according to Schmuck and Sheldon (2001), as the goals have to match the individual's underlying motivational system and the individual should feel enjoyment reaching that goal. GAP intervention may increase well-being through facilitating goal attainment, as attainment is one of the mechanisms that link goal setting and planning into well-being (MacLeod, Coates, & Hetherington, 2008). Sheldon, Kasser, Smith and Share (2002) believes that a sense of progress or the satisfaction of improvement towards the goals is an essential factor to increase well-being, more than attaining the goal itself, as people feel good when they experience desirable future

outcomes, from progress and improvement. The reason why having a significant or meaningful goal for the individual is that it increases the engagement and motivation for the individual to continue pursuing the tasks instead of giving up during the process or hardship (Cantor and Sanderson 1999). Cantor and Sanderson (1999) also suggest that the continuation also is a part of increasing subjective well-being during the GAP intervention.

On the other hand, studies are showing an association between goals and depression, as individuals with depression may have more difficulties at goal pursuing, or not achieving the goal they have planned (Nezlek, 2001; Debats, 1998). Nezlek (2001) believes that depression may lead to difficulties in goal pursuit as it interferes with the progress, and Debats (1998) believes that depression leads to absence or interruptions of pursuing goals. On the other hand, some researchers suggested that depression and low levels of well-being are the reason why some individuals may have difficulties in achieving their goals (Carver & Scheier, 1990). Carver and Scheier (1990) suggest that people who have ongoing depression tend to choose unattainable goals and are unable to let them go, which leads to a negative cycle of depression. People who are prone to depression set conditional goals that they believe achieving them leads them into a better future or better self. Because those individuals believed that achieving those goals leads them into a better future,

without completing them will feed to the cycle (Hadley & MacLeod, 2010; Street, 2002). Instead of setting unattainable goals, MacLeod, Coates and Hetherington (2008) stated that goal-setting and planning are linked to well-being. Instead of how an individual completed a big goal, the number of planned steps taken to achieve that goal led to positive thinking about the future, which was also associated with high positive affect and life satisfaction. Nezelek (2001) suggests that depressed people plan less carefully, which makes the plan not as attainable, and confirming the depressed individual's original prediction that they cannot achieve their goal, leads to going back to the negative cycle of depression.

Hadley and MacLeod (2010) stated that depressed individuals are encouraged to set achievable, self-concordant daily goals based on the SMART (Specific, Measurable, Action, Realistic and Time) principle. GAP intervention is aimed at individuals who are depressed, do not have life goals, unable to find a goal to pursue or unable to set an achievable goal, to encourage them to develop positive goals to improve well-being, rather than just reducing depressive symptoms. GAP interventions are an effective way to increase subjective well-being, life satisfaction and decrease depressive symptoms (Coote & MacLeod, 2012). The study from Coote and MacLeod (2012) stated that past studies have used GAP intervention as a treatment for depression, and it shows definite improvement compared to the

individuals in the control group. Due to the successfulness of GAP intervention, Coote and MacLeod experimented with self-help methods of GAP intervention and compared to the ones with non-self-help (administered by the psychologist) and control group. Both intervention groups showed a significant improvement overall. Results showed that non-self-help GAP intervention had better results compared to the self-help group; however, the difference was not markedly different. Coote and MacLeod stated that if the self-help group had better instruction and little more contact, the result could have been better for the self-help group. Similar to the gratitude intervention, Hadley and MacLeod (2010) have also done a follow-up survey to measure the effectiveness of the intervention, and the results were similar with the post-questionnaire the participants filled two months ago, showing the effect of the intervention is long-lasting.

Purpose of Study

Two interventions were carried out for this study, self-help interpersonal gratitude intervention and self-help GAP Intervention. Both interventions focus on increasing psychological well-being and decreasing the symptoms of depression for undergraduate students within one month. According to Sin and Lyubomirsky (2009), collectivist culture benefits more from gratitude intervention while individualist culture benefits more from GAP intervention, suggesting no intervention could satisfy all criteria. A meta-analysis from Dickens (2017) on gratitude intervention also shows that different types of intervention have a different effect and that although some intervention is more effective than others, it is not perfect. This raises the question of in Hong Kong, a collectivist culture, would gratitude intervention be more effective in increasing psychological well-being and reducing depressive symptoms than GAP intervention, or does GAP intervention have its advantage compared to gratitude intervention. Interpersonal gratitude intervention and goal-setting and planning were chosen out of other different positive psychology intervention due to multiple reasons.

GAP intervention may work better with individualistic culture; however, Sin and Lyubomirsky (2009) did not specify the age group of the population. Many Asian populations can be classified as a collectivist culture. However, Hong Kong is a unique location with many cultures interacting with each other, as more than 8% of the population are non-Chinese (Hong Kong Census and Statistics Department, 2016).

Moreover, individuals in university may change their mindset due to the change in the education system, as the secondary education system encourages the student to practice questions over and over to memorise the format, while tertiary education encourages creativeness, innovativeness and practicality (Baile, 2015). Interpersonal gratitude intervention increases the subjective well-being of the individual; on the other hand, GAP intervention increases the objective well-being, as well as subjective well-being, but not as high as interpersonal gratitude intervention. In the meta-analysis by Sin and Lyubomirsky (2009), they did not explicitly compare those two interventions with the same population. There is no research comparing the total effectiveness of GAP intervention and interpersonal gratitude intervention for the undergraduate student.

As Sin and Lyubomirsky (2009) has suggested, some intervention may work better with different cultures. By implementing a self-construal scale, measuring the independence or the interdependence of the participants, it can solidify the theory they have suggested. As well as understanding which intervention works better with different kinds of cultures, which in the future, by using the self-construal scale, it can give the individual with more appropriate and effective intervention.

Instead of different control groups for each study, only one control group are present in this study, and it is the food diary group. The reason food diary was used in

the control group is so that it does not have any psychological effect on the participants while staying in touch with the participants to decrease the chance of no response. Standard diaries were not used, as there might be events or activities that would have affected the participant's emotion, to eliminate the possibility, food diary has been selected for the control group.

This study hopes that it can increase the awareness of mental health in Hong Kong and to improve the quality of life for undergraduate students who are currently suffering from mental health problems. Many Asian countries have large negative images on mental illness. They do not acknowledge the existence of mental health problems, especially the older population, where they may have higher resilience due to many factors, such as immigrating from Hong Kong without any help or from colonialism from the British Empire. Not only the negative images on mental health problems, but the amount of Clinical Psychologist/Psychiatrist to the population is one of the lowest in the OECD countries. Averagely, the patient has to wait 159 weeks to see the psychiatrist in the government-funded hospitals, and a meeting less than 8 minutes (South China Morning Post, 2018). If the patient cannot afford private mental health professions, the chance of worsening is incredibly high.

Research Questions

Does self-help goal-setting and planning intervention and self-help interpersonal gratitude letter intervention help undergraduate students in Hong Kong to increase psychological well-being and reduce depression symptoms.

Hypothesis

H₀: Both interpersonal gratitude intervention and GAP intervention have no effects in the well-being and the depressive symptoms.

H₁: Interpersonal gratitude intervention will lead to a greater increase in affect and spirituality than GAP intervention and the control group.

H₂: GAP intervention will lead to a greater increase in daily functioning and reduce physical distress than interpersonal gratitude intervention and the control group.

H₃: Both self-help interventions will lead to a greater decrease in depressive symptoms than the control group.

H₄: Interpersonal gratitude intervention works better with individuals who have higher interdependent scores compared to individuals who have higher independent scores.

H₅: GAP intervention works better with individuals who have higher independent scores compared to individuals who have higher interdependent scores.

Methodologies

Experimental design

A randomized controlled trial was used. Participants were randomly allocated to either the Interpersonal Gratitude Letter Group (gratitude group), Goal-Setting and Planning Group (GAP group) or Food Diary Group (wait-list control group). All groups were asked to complete a set of well-being, depression and self-construals measures questionnaire before the intervention (Time 1/Pre) and only the set of well-being and depression questionnaire post-intervention (Time 2/Post), and for those who have difficulty completing the online surveys can complete paper-and-pencil forms provided by the researcher. However, no one had difficulties in the online format. For post-questionnaire (Time 2/Post), demographic questions and self-construal scale will be removed, and questions about the overall experience were added to improve the future studies.

Participants

The target population were full-time undergraduate students from Hong Kong. Participants were eligible if they were full-time undergraduate students aged above 18 years or above from Hong Kong. The participants have no marked functional mental disability and can read either Chinese or English. Participants who scored more than 20 in the PHQ-9, which is considered as severe depression, will be excluded and

referred to mental health professionals. Participants were recruited in Hong Kong through social media, school emails and snowballing. Demographic information was asked on the pre-questionnaire to understand more about the participants, and questions include; age, gender, year of study, income and past mental health history.

Participants were randomly allocated into one of the three groups in the three-week intervention. Calculated using G*Power 3.1.9.4.

Effect size $f = 0.4$

α error prob = 0.05

Power = .95

Numerator df = 4

Number of groups = 3

Number of covariates = 3

Target Sample Size = 121

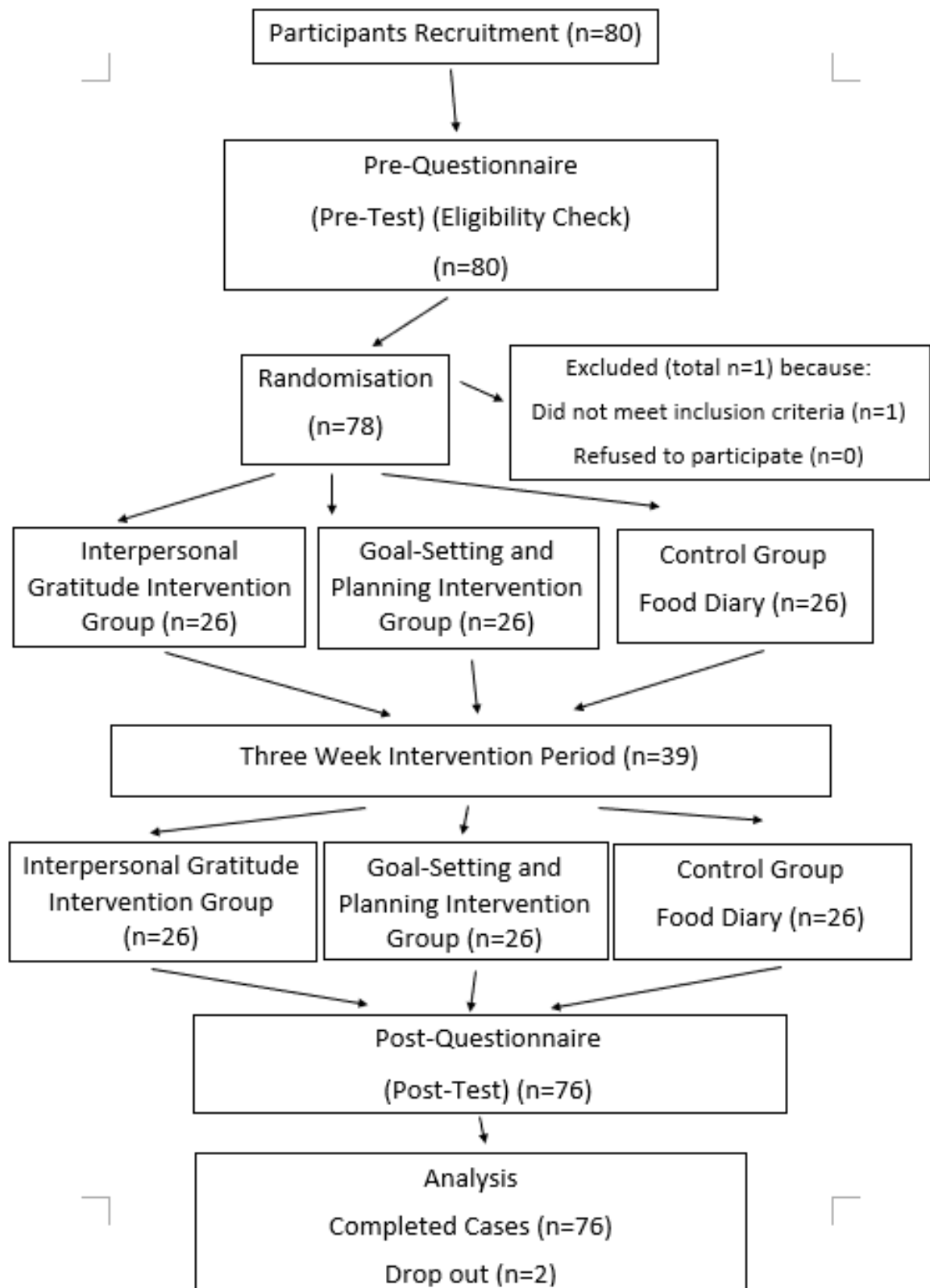
1. Interpersonal Gratitude Letter (N=41)
2. Goal-Setting and Planning (N=41)
3. Control Group (N=41)

Despite the 121-target sample size, this study only recruited 80 participants, due to the social unrest caused by the extradition bill and the COVID-19 Coronavirus.

In the 80 participants, one participant was excluded due to a PHQ-9 score over 20,

and the other did not complete the post-questionnaire survey.

Figure 1



Ethical approval

Ethics approval was obtained from the Departmental Ethics Reviewer of the affiliated university before the research was implemented.

Instruments

The outcome variables are:

1. The Chinese version of the Patient Health Questionnaire (PHQ-9).

The depressive symptoms were measured with the PHQ-9, the Chinese version of the 9-item self-report questionnaire PHQ-9 (Kroenke, Spitzer & Williams, 2001). The questionnaire was rated on a four-point scale ranging from 0 (“Not at all”) to 3 (“Nearly every day”), with all items sharing the header “Over the last 2 weeks, how often have you been bothered by any of the following problems?”.

The scores ranging from 1 to 27 and the higher score indicates severe depression symptoms (1-4 were minimal depression, 5-9 were mild depression, 10-14 were moderate depression, 15-19 were moderately severe depression and 20-27 were severe depression). The PHQ-9 has good internal consistency ($\alpha = .78$).

2. Body-Mind-Spirit Well-Being Inventory (BMSWBS) Chinese Version.

The (BMSWBS) provides a self-reported assessment for physical, psychological and spiritual well-being (Ng, et al., 2005). The inventory was

constructed to supplement extant measurements used in health intervention that focuses mostly on negative symptoms of physical and mental health.

Physical Distress

The physical distress scale ($\alpha = .93$) assesses the level of subjective distress caused by 14 specific physical symptoms during the previous week. Total score: Summation of all answers. The higher the score, the worse the health.

Daily Functioning

The unifactorial daily functioning scale ($\alpha = .95$) contains 10 items measuring physical functions, cognitive functions and motivational functions. Total score: Summation of all answers. The higher the score, the better the health

Affect

The Affect scale ($\alpha = .87$) contains two subscales.

I. Negative Affect State

Eleven items measuring negative affect ($\alpha = .93$). The higher the score, the worse the health

II. Positive Affect State

Eight items were measuring positive affect ($\alpha = .93$). The higher the score, the better the health

Total score: Summation of the two subscales and reverse the Negative Affect items.

The higher the score, the better the health

Spirituality

The spirituality scale ($\alpha = .84$) contains three subscales, measuring core values and life philosophy.

I. Tranquillity

Five items measuring tranquillity ($\alpha = .95$). The higher the score, the better the health

II. Disorientation

Five items measuring disorientation ($\alpha = .92$). The higher the score, the worse the health

III. Resilience

Three items were measuring resilience ($\alpha = .89$). The higher the score, the better the health

Total score: Summation of all three subscales and reverse the Disorientation items. The higher the score, the better the health)

3. Self-Construal Scale Chinese Version.

The self-construal scale is a 24-item questionnaire developed to measure the independence and the interdependence of the individual (Singelis 1994).

This scale contains 12 items that measured independent self-construal ($\alpha = .91$) and 12 items that measured interdependent self-construal ($\alpha = .89$). Responses were measured by a 7-point Likert scale that ranged from 1 (strongly disagree) to 7 (strongly agree).

4. Demographic Characteristics

Demographics of the participants were also assessed. This includes name, student number, email, contact number, age, gender, academic year, monthly income and past mental health histories.

Procedure

Participants reached to the researcher and provided informed consent after receiving full information about this study. Participants were randomised into one of the three groups using random sequences generator, after which they will be contacted by the researcher to complete the pre-questionnaire. Participants who scored more than 20 in the PHQ-9 will be excluded from the research and will be referred to mental health professionals, which one participant scored over 20 in PHQ-9, and advised to seek professional help. Both the intervention and control group finished this study within three weeks. After the intervention, post-questionnaire has been completed within one week of the completion of the intervention.

During the intervention, participants received WhatsApp reminders throughout the three weeks about their assignment and were required to complete their task through google surveys. If the participants who failed to send in their task, a reminder WhatsApp message will be sent again.

Study participants were blind to their group condition. The researcher could not be blinded to group conditions, as their task requires monitoring, helping with problems, data collection, and data analysis. The data analysis was performed with IBM SPSS Statistics 23, repeated measures ANOVAs, a paired sample t-test and the PROCESS macro from Dr Heyes was used (Heyes, 2013). All the procedures performed in this study were in accordance with the ethical standards of the Hong Kong Shue Yan University and did not violate any ethical concern.

Self-Help Interpersonal Gratitude Letter Intervention

Participants were required to write a letter towards someone who they were grateful for, thankful for, feels gratitude or someone they appreciate. The gratitude letter does not have to be lengthy, around one to two paragraphs each time.

Participants were required to write a gratitude letter per week, a total of three weeks.

The gratitude letter can be written to a different person each time; participants do not have to include the name of the person they were writing to (they can include the name if they want to). The letter does not have to be formal or informal; it was the

choice of the participants. There was no specific language requirement for the participants for the gratitude letter, as the text itself will not be analysed, as the purpose of the gratitude letter was to express gratitude towards someone.

Self-Help Goal-Setting and Planning (GAP) Intervention

GAP participants were sent a self-help manual and the self-help report measures to clarify the procedures and the task. The manuals were detailed, to enable participants to work through it on their own. Emails and texts will be sent to participants when they were required to complete the task they have set for themselves.

Session 1:

- Introductions/Welcome/Explanation of the sessions and manual

- Explanation of key concepts (well-being, goals).

- Selecting and refining goals

- Envisaging goals

- Planning to achieve goals—what constitutes good plans and developing plans of action

- Summary and homework

Session 2 (1 week later)

- Review of plan implementation

-Putting goals in perspective

-Obstacles to goal progress—identifying obstacles and solutions

-Pros and cons of implementing plan steps

-Summary and homework

Session 3 (2 weeks later)

-Review of plan implementation

-Overview of material covered

-Maintaining progress – pros and cons of using GAP approach – dealing with black and white thinking – focusing on the path rather than the goal

Food Diary (Waitlist Control Group)

Participants assigned to this group were required to write food diaries for the next three weeks. After completing all the tasks and post-questionnaires, the participants in the control group received either Self-Help Interpersonal Gratitude Letter Intervention or Self-Help Goal-Setting and Planning (GAP) Intervention, which was assigned randomly. However, the participants were not required to complete the intervention tasks, meaning reminders were not sent despite not completing the task, and follow-up questionnaires were not asked.

Statistical analysis

3 (group) x 2 (time) repeated measures ANOVAs were used to explore the interaction effects between time and group. Upon obtaining significant interaction effects, pair-sample t-tests were conducted to scrutinize the change of scores across time in each group. Cohen's d was used to denote the magnitude of intra-group changes in scores (Social Science Statistic, 2020).

For the moderation effects of self-construals, the PROCESS from Hayes (2013) was used. The PROCESS from Hayes (2013) is a logistic regression path analysis and observed variable OLS modelling tool. It is used for estimating direct and indirect effects in single and multiple mediator models (parallel and serial), two and three-way interactions in moderation models along with simple slopes and regions of significance for probing interactions, and conditional indirect effects in moderated mediation models with a single or multiple mediators or moderators. All analyses were conducted with SPSS Version 23.

Results

Seventy-eight participants completed the study. One participant (1.27%) dropped out on the eligibility check, and one participant (1.27%) dropped out between the intervention period and the post-test period. The flow of participants is shown in figure 1.

Repeated Measure Anova

3 (group) x 2 (time) repeated measures ANOVAs were conducted to explore the interaction effects between time and group. Upon obtaining significant interaction effects for PHQ-9, physical distress, daily functioning, total affect and positive affect state, pair-sample t-tests were conducted to scrutinize the change of scores across time in each group.

Figure 2

All Measures	Food Diary Control Group (n=26)					Goal and Plan Setting Intervention Intervention Group 1 (n=26)					Interpersonal Gratitude Letter Intervention Group 2 (n=26)					Partial Eta Squared	
	Pre-Test		Post-Test		Cohen's D	Pre-Test		Post-Test		Cohen's D	Pre-Test		Post-Test		Cohen's D		F
	Mean	SD	Mean	SD		Mean	SD	Mean	SD		Mean	SD	Mean	SD			
PHQ-9	6.536	3.982	7.423	4.851	0.208	7.167	3.691	5.417	3.844	0.445*	7.630	5.241	5.259	4.184	0.923**	5.570	0.132
BMSWBI																	
Physical Distress	25.42	22.36	28.62	27.87	0.164	24.96	23.39	20.50	23.30	0.315	35.30	30.41	27.22	26.92	0.668**	3.314	0.083
Daily Functioning	59.20	15.62	55.12	17.40	0.274	49.86	15.08	57.81	18.16	0.727**	57.92	18.27	61.13	20.48	0.163	3.378	0.093
Total Affect	100.7	19.19	94.00	21.85	0.320	106.1	27.35	114.5	26.84	0.290	102.1	32.87	112.4	25.80	0.549*	3.714	0.010
Negative Affect State	44.12	16.01	47.76	18.50	0.251	35.96	22.66	31.00	22.17	0.243	41.48	25.68	37.44	21.16	0.357	2.127	.058
Positive Affect State	36.13	9.018	32.67	9.676	0.313	32.38	15.49	35.88	14.75	0.249	33.65	16.97	40.31	17.48	0.423*	1.179	.063
Spirituality	74.00	24.64	70.75	14.76	0.196	81.71	23.54	81.07	19.96	0.037	75.21	22.22	75.00	20.54	0.010	.075	.005
Tranquillity	19.71	7.410	22.04	7.375	0.269	27.04	12.52	25.71	11.10	0.169	22.62	12.25	23.69	12.80	0.094	0.940	0.026
Disorientation	16.95	9.786	17.32	10.73	0.044	12.08	11.36	12.38	11.78	0.026	12.63	11.94	10.26	8.569	0.332	0.633	0.018
Resilience	13.38	6.134	15.58	6.338	0.043	15.58	7.723	15.17	8.830	0.078	14.50	7.463	15.08	6.675	0.081	1.159	0.032

Note. PHQ-9 = Patient-Health Questionnaire 9. BMSWBI = Body-Mind-Spirit Well-Being Inventory

n=Number of Participants. SD=Standard Deviation. n=Number of Participants. F=F-Value from Time x Intervention Group Effect.

*=Sig smaller than 0.05, **=Sig smaller than 0.016 (0.05/3 due to paired sample t-test)

Sig=Significance Level from Time x Intervention Group Effect

Time x Group interactions

Time (Pre-/Post-) and group (GAP vs Gratitude vs Control) interactions were explored by repeated-measures ANOVAs. No interactions were significant for the outcomes, as only two interactions which had the significant level below 0.1, which are the Negative Affect (Sig = 0.076) and Disorientation (Sig = 0.058), and the rest of the interactions were not significant. Post-hoc analysis with paired-sample t-tests was conducted group by group.

Goal-Setting and Planning Intervention Group

H₀ was rejected, and H₃ was confirmed. GAP intervention decreased the depression symptoms from pre-test (M = 7.167, SD = 3.691) to post-test (M = 5.417, SD = 3.844) with the effect size of Cohen's D = 0.445. H₂ was partially confirmed. As seen in figure 1, the GAP intervention leads to a significant increase in daily functioning. As the daily functioning has significantly increased from pre-test (M = 49.86, SD = 15.08) to post-test (M = 57.81, SD = 18.16) with the effect size of Cohen's D = 0.727. Despite the increase of daily functioning of the participants in GAP intervention, there was no significant decrease in the physical distress of the participants.

Interpersonal Gratitude Letter Intervention Group

H_0 was rejected, and H_3 was confirmed. Interpersonal gratitude letter intervention has decreased the depression symptoms from pre-test ($M = 7.630$, $SD = 5.241$) to post-test ($M = 5.259$, $SD = 4.184$) with the effect size of Cohen's $D = 0.923$.

H_1 was partially confirmed. As seen in figure 1, the interpersonal gratitude letter intervention leads to a greater increase in affect, especially in positive affect. As the affect has significantly increased from pre-test ($M = 102.1$, $SD = 32.87$) to post-test ($M = 112.4$, $SD = 25.80$) with the effect size of Cohen's $D = 0.549$ and the positive affect has increased from pre-test ($M = 33.65$, $SD = 16.97$) to post-test ($M = 40.31$, $SD = 17.48$) with the effect size of Cohen's $D = 0.423$. The reason H_1 was only partially confirmed that there was no significant increase in the spirituality of the participants.

Food Diary Control Group

There was no significance in the relationship between PHQ-9 and BMSWBI with the food diary control group.

Moderating role of self-construals

The PROCESS from Hayes (2013) was used to analyze the interaction between the Self-Construal Scale (socio-culture of the participants) and the domain of the questionnaire. H_4 was rejected, the PROCESS from Hayes (2013) was used to

investigate the interaction between the Self-Construal Scale and the interpersonal gratitude letter intervention. However, there was no significant level of interaction between the two variables. H₅ was also rejected, the PROCESS from Hayes (2013) was used to investigate the interaction between the Self-Construal Scale and the GAP intervention. However, there was no significant level of interaction between the two variables.

Discussion

The present study replicated past findings on the effectiveness of interpersonal gratitude letter intervention and goal-setting and planning intervention on increasing undergraduate students' well-being and decreasing the symptoms of depression in Hong Kong. This study found that both interventions had decreased the symptoms of depression significantly, and increased varieties of well-being in the participants. Compared to the intervention group, the food diary control group did not affect the decrease of the depression symptoms, which confirmed our hypothesis that both self-help intervention groups would lead to a more significant decrease in depressive symptoms than the control group.

The interpersonal gratitude letter intervention had a more significant change in the decrease of depression symptoms compared to GAP intervention, and the effect size was also large. According to Berger et al., (2019)'s study, it shows that the effects were higher on the follow-up survey compared to the post-questionnaire for the gratitude intervention, suggesting the effects of the intervention are long-lasting, and there may be time-delay on the effect of the intervention. Due to the limitation of resources, follow up survey was not in the plan of this study, but from the fact that the post-questionnaire showing the effectiveness of the intervention, the long-lasting effect can be expected.

GAP intervention decreased the symptoms of depression over time, the effect size was only small to moderate, and the significance was lower compared to the gratitude intervention. This supports the idea of Sin and Lyubomirsky (2009); however, there may be different factors which have affected the effectiveness of the GAP intervention. Cantor and Sanderson (1999) suggested that the continuation was a part of increasing subjective well-being during the GAP intervention, however, due to the anti-extradition-bill protest (AEB protest) which began from June and the Coronavirus outbreak in January, the participant's task towards the goals may have interrupted, which results in less effective outcome from GAP intervention. Nexlek (2001) have suggested that individuals with depression may have more difficulties in goal pursuit, which may lead to not achieving the goal they have planned. If the participants had mild to moderate depression symptoms, it could deter the participants from achieving their goals, which may explain why GAP intervention was not as effective as the gratitude intervention.

Sirgy et al., (2009) suggested that well-being can be broadly separated into three categories; which are psychological, physical, and spiritual, and Diener et al., (1999) suggests that in psychological well-being, the three essential components are life satisfaction, positive affect and negative affect. For physical well-being, Scheidel (2010) suggested that it should not be limited to absence of disease, but to include

choices individuals make to ensure health, avoid preventable diseases and conditions, and live in a balanced state of body, mind and spirit.

For physical distress, only individuals from the gratitude intervention group showed effectiveness of the intervention. The gratitude intervention significantly decreased the physical distress of the individuals in the gratitude intervention, and an effect sizes of moderate to high. The result from this study confirms Dickens (2017) theory that simple practice of gratitude will increase the feeling of self-reported mood, optimism, physical health, and reduced symptoms of depression. Although GAP intervention decreased the symptoms of depression, the result from the study was not significant enough to prove that the GAP intervention was an effective way to decrease the physical distress.

Kitzrow (2003) suggests that depression disorders also affect the physical functioning of the individuals, meaning decreasing the symptoms of depression would also increase the functioning of the person. For GAP intervention, the daily functioning has increased significantly, with large effect size. This study believes that the GAP intervention has increased the daily functioning of the individual by decreasing the symptoms of anhedonia of the individual. Despite not being mentioned in Kitzrow's study (2003), Parker et al., (2004) and Ritsner (2014) states that individuals who suffer from depression may have symptoms of anhedonia, which

causes the individual to be unable to feel pleasure, loss of interest, and lack of motivation. Past studies did not mention GAP intervention could reduce the symptoms of anhedonia, but the results from this study suggest that GAP intervention may have the effect of reducing anhedonia symptoms for individuals, by increasing their daily functioning.

Diener et al., (1999) state that there are three essential components in psychological well-being, which includes life satisfaction, positive affect and negative affect. The gratitude intervention has increased the total affect of the individual, especially on positive affect. McCullough et al., (2002) state that gratitude was an effective trait, that it responds with grateful emotion, and Wood (2009) states that gratitude is known as an emotion which promotes prosocial behaviour and increases interpersonal relationships. This study confirms the idea of McCullough et al., (2002) and Wood (2009) that the gratitude intervention increases the positive affect of the individual, which results in higher response to positive emotions.

For GAP intervention, the result was not significant enough to prove that the intervention has increased the positive affect nor decreased the negative affect.

However, Macleod et al., (2008) stated that goal-setting and planning are directly linked to well-being, as completing the small steps towards the goal are associated with high positive affect and life satisfaction. Similar to the reason why GAP

intervention was not sufficient for decreasing physical distress, the social unrest could have resulted in interrupting the individual's plan. For the food diary control group, it had no effect on total affect, negative affect and positive affect.

Spiritual well-being refers to an individual's sense of connection with the aspects of life, the purpose of life and meaning of life. It is believed that spiritual well-being directly affects the life satisfaction of the individual according to Canda and Furman (2010), Nelson-Becker (2005) and Nelson-Becker et al., (2006). Both intervention groups and control groups are not effective in increasing the spirituality of the individual, despite Sirgy et al., (2009) suggesting that spirituality is one of the major categories in well-being. The possibility that the spirituality did not increase or decrease significantly is due to the questionnaire, as it only measured tranquillity, disorientation and resilience. Spirituality is a broad concept with no concrete definitions, the participants may have increased in spirituality, such as purposefulness, let-go attitude and etcetera, but not the features which were measured in the BMSWBI. It is also possible that spirituality may take longer time to have a significant change, as Hadley and MacLeod (2010) and Berger et al., (2019) mentioned, and the effect may have weakened due to the general pessimistic attitudes from the participants due to the social unrest for the past six months.

For the interaction between the socio-culture and the result, there were no significant relationships between the two, with the analysis using The PROCESS from Hayes (2013). This could be due to the culture of Hong Kong, as Hong Kong is a multicultural city, with over 7 million population and many different nationalities living in the area. It is possible that many factors regarding their socio-culture characteristics influenced the participants, and that they do not have distinctive socio-culture characteristics compared to populations outside of Hong Kong. Although there was no significant interaction between the SCS and the types of intervention, the results from gratitude intervention were more effective compared to GAP intervention, which supports the idea from Sin and Lyubomirsky (2009). Collectivist culture may experience more significant effects when gratitude intervention was used, as practising prosocial and other-focused activities such as gratitude intervention may increase their positive emotion more compared to goal-oriented intervention.

Limitations

A study from Yeh et al., (2007) and LaRosa (2011) suggest that student's psychological well-being will be affected not only from academic reasons, but also from uncertainties in future prospective due to the socio-political environmental changes, massive increase in cost of living, and more prevalent use of social media.

For the past nine months, the anti-extradition bill protest and the coronavirus outbreak

has dramatically affected the citizens in Hong Kong, especially students. Onsite university class has been suspended since the early November due to violent clashes between the police and the protesters and followed by the Coronavirus outbreak which resulted in school shutdowns. Many students in Hong Kong, especially undergraduate students, have not participated in a regular class for more than six months since November and this may have negatively affected their psychological well-being. The Education Bureau of Hong Kong has also suspended all classes until further notice, and it is expected that all undergraduate classes will not resume regularly within this academic year.

A study published by the School of Public Health, Hong Kong University states that nearly one in three adults reported symptoms of post-traumatic stress disorder and around one in ten had symptoms of probable depression (Ni, et al., 2020). The study from Ni et al., (2020) states that the probable depression was reported by 11.2% of participants in 2019 while it was just 1.9% during 2009 and 2014, and 6.5% in 2017 after the Occupy Central Movement and before the current unrest. Ni et al., (2020) also suggested that people who spent two or more hours a day monitoring the socio-political news were at higher risk of reporting depression and PTSD symptoms according to the study found. The data from the Hong Kong Police Force published on December 16th, 2019, states that out of 6,105 people who were

arrested, 2,430 were students, which makes up 39.8% of arrested suspects (頭條日報, 2019). Moreover, many undergraduate students in Hong Kong have also participated in the protest in the past nine months, that the symptoms of depression and PTSD may even be higher compared to the participants which Ni et al., (2020) has surveyed.

From the factors above, it should be acknowledged that the effect of the intervention may not be as effective as the past papers are based on, and the result of the research may not be statistically significant because of it.

The other factor that may affect the result of this research is the sample sizes. In the planning of the research, G*Power was used to calculate the sample size, with effect size $f = 0.4$, α error prob = 0.05, power = .95, numerator df = 4, number of groups = 3, number of covariates = 3, the calculated sample size were hundred twenty-one, which should be forty-one participants per group. However, due to the socio-political unrest and the global pandemic, recruitment of participants has become more difficult, which resulted in recruiting only eighty participants out of the hundred twenty-one target participants, which is 66.1 %. Fortunately, only two participants were unable to complete the study, which is due to PHQ-9 score over twenty and the other did not complete the post-questionnaire, which resulted in having a 97.5% of completion rate from pre-questionnaire to post-questionnaire.

The use of randomized control trials was also a limitation for this study.

Despite conducting a self-construal questionnaire for the participants on the pre-test, it did not locate the participants according to their suitable intervention style.

Individuals who fit the collectivist culture would be located in gratitude intervention, in contrast, individuals who fit the individualist culture would be located in GAP intervention. Sin and Lyubomirsky (2009) suggested different cultures may work better with different intervention, however, to increase the representation of the population by the sample and reduce the biases, the participants were randomized and allocated into their groups.

Although some participants needed reminders to complete their weekly task, the majority of the participants completed their task on time. Surprisingly, the food diary control group needed the most reminder compared to the other two intervention groups. This suggests that the intervention encourages the participants to continue on their weekly task, which may play a role in decreasing the depression symptoms while increasing well-being.

Directions for Future Studies

For future studies, the design of the GAP intervention should be modified, and more detailed instruction on the goal-setting should be made and follow up on the progress should be given to the participants. Other than the design of the intervention,

emergency instruction should also be made for the future studies, as no additional steps or follow-ups were done during the social unrest, which the participants' plan or goal may have been affected, which changes the effectiveness of the intervention. If the participants showed mild to moderate depression symptoms, gratitude intervention should be recommended. Nezelek (2001) stated that depression symptoms may deter participants from achieving their goals, so the GAP intervention maybe should only be recommended to people with little to no depression symptoms to achieve the highest effect of the intervention.

For interpersonal gratitude letter intervention, follow up questionnaires could be done to find the effectiveness of long-term effect, as Hadley and MacLeod (2010) and Berger et al., (2019) suggest that the effect of the gratitude intervention usually has delays, and the effects are even more significant on the follow-up questionnaires.

Questions regarding the stigmatization and perception of mental health issues could also be asked in the future studies, as one of the purposes of the self-help intervention is to increase awareness of mental health issues among undergraduate students, with limited to little resources.

Different types of positive psychology intervention could also be explored for future studies. In this study, it only used interpersonal gratitude letter intervention for gratitude intervention and GAP intervention for goal-oriented intervention. By

choosing different types of positive psychology intervention, such as kindness booster, empathy oriented, strength-oriented and etcetera for future studies, it could achieve comparative efficacy. By understanding which types of positive psychology intervention are more effective in treating people from different kinds of population or things they suffer from, it could lead to a better allocation of resources or treatment plan in the future.

For the overall design, the improvement could be made by allocating the participants accordingly to the intervention group based on their culture. Sin and Lyubomirsky (2009) suggested that different cultures work differently with different intervention by allocating the participants after the self-construal questionnaire, it may increase the effectiveness of the intervention.

Practical Implication

In interpersonal gratitude letter inter, the participants are allowed to write a gratitude letter towards anyone they want to within the three intervention weeks. The person whom they are writing may affect the effectiveness of the intervention. If the participants decided to write a gratitude letter towards his significant others and their parental figure in different weeks, the effectiveness of the intervention might vary, as they may use different kinds of wordings and have different intentions when they are writing the letter. By setting a particular person whom the participants are writing a

gratitude letter towards, it could also improve their relationships, which could be a beneficial situation for people who are not involved in the intervention as well; however, this could be evaluated in future studies.

In GAP intervention, the participants are free to set their goals, with the annotation that the goal should be meaningful and set with SMART. This may increase difficulties for the participants, as the study from Carver and Scheier (1990) states that people who are suffering from depression tend to choose unattainable goals, and if the goals are unable to be attained, the depression symptoms are worsened. If the participants have set an unrealistic goal or meaningless goals, then it could reduce the effect of the GAP intervention. According to Apolinário-Hagen, Kemper, and Stürmer (2017), goal-related intervention works better with guidance from professionals. Accordingly, if the goals are set with the assistance of a professional or the researcher, the chances of completing the goal would significantly increase, which increases the effectiveness of the GAP intervention.

The most common age of the participants is 19 years old (18/80 participants). Recruiting younger participation could be an option for future studies, to evaluate the effectiveness of self-help interventions on younger students compared to undergraduate students. By evaluating the effectiveness of the self-help intervention on the younger population, it could be used for the high stressed Hong Kong Diploma

of Secondary Education (HKDSE) or other high school students. They are undergoing examinations in order to reduce their depression symptoms and increase their well-being. The advantage of this self-help intervention is it is free of charge and relatively easy to operate, with the effective outcome with low dosage. As highschool students undergoing public examination face burdensome amounts of revisional work, assignment and after school tutorial every day, the options for the student to use self-help intervention are a convenient way to deal with the stress and depression symptoms. By encouraging the younger population to take care and be aware of the mental health condition, it could significantly decrease the depression rates as they are maturing.

The use of self-help intervention may also be beneficial for undergraduate students in Hong Kong. Seeing mental health professionals are still stigmatized in many Asian societies, self-help intervention can be used individually, and it also increases the awareness of mental health within the community. Moreover, compared to traditional strategies used for non-clinical populations like psychoeducation, the self-help interventions are more accessible and significantly lower in cost and time.

Conclusion

Despite the ongoing social unrest and the global pandemic, the result from the research shows that both GAP intervention and interpersonal gratitude letter intervention significantly decreased the depression symptoms and increased a variety of mindfulness. Which proves that self-help studies could be a way to help the undergraduate student in Hong Kong with the ongoing difficulties that the student has to face.

Interpersonal gratitude letter intervention had a significant effect on decreasing the symptoms of depression, decreased physical distress and increased positive affect. In contrast, GAP intervention had smaller but a significant effect of a decrease in depression symptoms while increased in daily functioning.

By directly comparing the two interventions, it can conclude that interpersonal gratitude letter intervention may be more effective in decreasing the depression symptoms and increasing well-being in the individuals for undergraduate students in Hong Kong.

The purpose of this research is to compare and evaluate the effectiveness of the self-help GAP intervention and interpersonal gratitude letter intervention on decreasing the symptoms of depression and increasing well-being among undergraduate students in Hong Kong. From the result, it shows that the self-help

interventions were effective in decreasing the symptoms of depression while increasing different aspects of well-being in different types of intervention.

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Appendix I Consent Form

Informed Consent Form

Does self-help GAP intervention and self-help gratitude intervention help undergraduate student in Hong Kong to increase psychological well-being and reduce depression symptoms.

You are invited to participate in a research study conducted by Hotinpo Sky Kanagawa in the Department of Counselling & Psychology under the supervision Dr. LAU Hi Po Bobo at the Hong Kong Shue Yan University.

PURPOSE OF THE STUDY

To investigate whether self-help intervention is able to help undergraduate student in Hong Kong to increase psychological well-being (happiness) and reduce depressive symptoms (sadness).

PROCEDURES

Potential participants reached to the researcher and provided informed consent after receiving full information about this study. Participants were randomized into one of the three groups using random sequences generator, after which they will be contacted by the researcher to complete the pre-questionnaire.

During the intervention, participants will receive WhatsApp reminders throughout the three weeks about their task and were required to complete their task through google forms.

Study participants are blind to their group condition.

POTENTIAL RISKS / DISCOMFORTS AND THEIR MINIMIZATION

- This procedure has no known risks or discomforts*
- In the pre-questionnaire, PHQ-9 will be used, and if the participants scored more than 20 will be excluded from the research and will be referred to mental health professionals.*

COMPENSATION FOR PARTICIPATION

The participants who enrolled into this study will given participation credits by the Department of Counselling & Psychology.

The duration of study is estimated to be around one month, with one task per week, total of three weeks.

POTENTIAL BENEFITS

There are potential benefits to you, which may increase your psychological well-being

and reduces your depressive symptoms.

This study will also provide valuable information on the effectiveness of the intervention.

CONFIDENTIALITY

Any information obtained in this study will remain very strictly confidential, will be known to no-one, and will be used for research purposes only. Codes, not names, are used on all test instruments to protect confidentiality.

DATA RETENTION

Research data and records will be retained for as long as they are of continuing value to the researcher and the wider research community. The minimum retention period for research data and records is three years after publication or public release of the work of the research. In many instances, researchers will resolve to retain research data and records for a longer period than the minimum requirement.

PARTICIPATION AND WITHDRAWAL

Your participation is voluntary. This means that you can choose to stop at any time without negative consequences.

QUESTIONS AND CONCERNS

If you have any questions or concerns about this research study, please feel free to contact the Principal Investigator Mr Hotinpo Kanagawa.

Telephone: [9517-9614]; Email: [amayasuskykanagawa@gmail.com].

If you have questions about your rights as a research participant, contact the Human Research Ethics Committee (HREC), HKSJU (2804 8438).

SIGNATURE

- I _____ (Name of Participant) understand the procedures described above and agree to participate in this study; and
- I would / would not like to be identified.

Signature of Participant

Date

Date of Preparation:

HREC Approval Expiration date:

Appendix II Debriefing Notes

Debriefing Form

Thank you for agreeing to participate in this study. The general purpose of this research is to investigate on the effect of different self-help intervention to help undergraduate student in Hong Kong to increase psychological well-being and reduce depression symptoms.

We invited people who are full-time undergraduate students aged above 18 years or above from Hong Kong, with no marked functional mental disability and can read either Chinese or English.

In this study, you were asked to complete either GAP intervention, interpersonal gratitude letter intervention or food dairy. The results from this study will provide valuable information on the effectiveness of the intervention.

Because the participants are randomized into one of the groups, and you wish to try the other intervention, you can contact the researcher, who will provide you with the other types of intervention, however, data will not be collected for this instance.

If you feel or encounter any distress due to the experiment, please feel free to contact the researcher Hotinpo Sky Kanagawa (Email: amayasuskykanagawa@gmail.com or Telephone: 9517-9614), or the supervisor Dr. LAU Hi Po Bobo (Email: hplau@hksyu.edu or Telephone: 2570-7110).

Thank you for your participation in this study. If you have further questions about the study, please contact Hotinpo Sky Kanagawa. In addition, if you have any concerns about any aspect of the study, you may contact Hotinpo Sky Kanagawa for further clarification.

Email: amayasuskykanagawa@gmail.com

Telephone: 9517-9614

Appendix III Samples of Questionnaires

Name: _____
Student Number: _____

Date: ____/____/____

Demographics:

- | | |
|------------------------------------|--------------------------|
| 1) Age: _____ | 2) Gender: _____ |
| 3) Date of Birth: _____ | 4) Contact Number: _____ |
| 5) Year of Study: _____ | 6) Monthly Income: _____ |
| 7) Mental Health History: _____ | |
| 8) If you answered Yes in 5: _____ | |

Note:

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