

**GRATITUDE AND STRESS
OF HEALTH CARE PROFESSIONAL IN HONG KONG**

BY

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Abstract

Objectives: This study investigated the effect of gratitude intervention on promoting psychological well-being of the health care professionals in Hong Kong.

Methods: A convenience sample of 161 health care professionals (nurses, doctors, physical therapists and occupational therapists) were enrolled in the study. Baseline and post-intervention measures were taken before and after the gratitude manipulation.

Each participant was randomly assigned into one of two conditions: (a) gratitude or (b) hassle. They had to write down at least one grateful or hassle event twice a week for 4

conservative weeks, and the date was assigned in random. **Results:** Results showed

that the two experimental conditions differed in the number of hassle, gratitude and

neutral events. Group difference in psychological well-being emerged after gratitude

manipulation, showing gratitude group reported more grateful, higher life satisfaction,

increased positive affect, but lower depression and negative affect than the hassle

group. However higher perceived stress was reported in the gratitude condition

compared with that of the hassle condition. **Conclusion:** This is the first study to

demonstrate positive psychological well-being for the health care professionals in

Hong Kong with the randomized trial of gratitude intervention.

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**City University of Hong Kong
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Introduction

Stress of health care professionals

Numerous studies have demonstrated that health care professionals are under stress (Aziz, 2004; Callaghan, Shiu, & Wyatt, 2000; Communication Workers Union [CWU], 2001; Hamaideh, Mrayyan, Mudallal, Faouri & Khasawneh, 2008; McVicar, 2003; National Institute for Occupational Safety and Health [NIOSH], 2008; Shapiro, Astin, Bishop, & Cordova, 2005; Wilkins, 2007). According to NIOSH (2008, p. 1), occupational stress is defined as “the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker”. Major stressors in health care environments are, for instance, understaffing (McVicar, 2003), long working hours (Wilkins, 2007), shift work (Hamaideh et al., 2008; McVicar, 2003), workload (Aziz, 2004), role ambiguity (NIOSH, 2008; Sullivan, 1993) and professional conflict (McVicar, 2003; Sonneck & Wagner, 1996).

The negative impact of stress on health care professionals has been widely investigated (CWU, 2001; NIOSH, 2008; Royal College of General Practitioners [RCGP], 2002). Psychological distress (Sarafino, 2002), increased depression (Reimer, Trinkaus & Jurkat, 2005), burnout (Sprang, Clark & Whitt-Woosley, 2007) and high suicidal risk (Reimer et al., 2005) are documented as the hazardous effects on them.

Stress may impinge on their abilities to make decisions (Lehner, Seyed-Solorforough, O'Connor, Sak, & Mullin, 1997), sustain concentration (CWU, 2001; Smith, 1990) and develop strong positive relationships with patients (Pastore, Gambert, Plutchik, & Plutchik, 1995). It may decrease their job satisfaction (Lepnurm, Dobson, Backman, & Keegan, 2007) as well. Some health problems such as headaches (Callaghan et al., 2000) and fatigue (Sprang et al., 2007) are reported

Empirical studies have identified common coping strategies used by health care professionals, including searching and using alternative methods (Hendel, Fish, & Aboudi, 2000), distancing from problems or patients (Hendel et al., 2000), seeking social support (Hamaideh et al., 2008) and talking with others (Cole, 1992; Lee, 2003). They may cope with stress by engaging in use of medication, alcohol or smoking as well (Beletsioti-Stika, & Scriven, 2006; Reimer et al., 2005). These are regarded as a form of maladaptive coping (Lorne & Carlla, 1999).

Findings of various studies have demonstrated significant effectiveness of the coping strategies with improved self esteem and ability, and hence efficiency and quality of work (Boey, 1999). More effective use of coping is associated with less stress (Boey, 1999; Rout, 2000) and thus improved psychological well-being of the health care professionals (Boey, 1999; Rout, 2000). However, use of medication, alcohol or smoking may be detrimental to their health (Callaghan et al., 2000; Reimer et al., 2005).

Reducing workload by ensuring adequate staff level, defining and setting their roles and responsibilities, enhancing communication and lowering uncertainty about future development and career prospects have been introduced as measures to reduce occupational stress (CWU, 2001; Hospital Authority [HA], 2008a; HA, 2008b; NIOSH, 2008; Sprang et al., 2007). Training related to stress, time and risk management, interpersonal skills as well as relaxation techniques have been provided (CWU, 2001; NIOSH, 2008; Reimer et al., 2005).

Organizational initiatives and relevant management programmes have been shown to be effective in stress reduction in the medium to long term (Lee, 2003; RCGP, 2002; The Royal College of Nursing [RCN]; 2002). A period of time is needed to implement the plans and programmes, for instance, staff recruitment and training (McVicar, 2003; RCGP, 2002; RCN; 2002).

However, such previous attempts ignore an important aspect of the coping process. Various studies have demonstrated that cultivating gratitude can promote a greater sense of emotional well-being (Emmons, 2008; Sheldon & Lyubomirsky, 2006; Wood, Linley, & Joseph, 2007). According to Wood et al. (2007), gratitude is positively associated with seeking social support and active coping, and negatively correlated with substance use as well as self blame. In addition, stress is closely related to gratitude (Wood et al., 2007). Stressful situation for example, disasters and

bereavement can be coped by benefit-finding and grateful thought (Tennen & Affleck, 2002). In the study of Folkman and Lazarus (1988), positive reappraisal is regarded as a kind of coping which focuses on cognitive strategies to reappraise stressful conditions positively. People can value their efforts and develop positive affect in adverse circumstances (Folkman & Lazarus, 1988; Folkman & Moskowitz, 2000). Therefore positive aspects of events and feeling thankful can be a kind and focus of coping by the health care professional.

Gratitude and gratitude manipulations

Gratitude has been conceptualized as “an emotional state and an attitude toward life that is a source of human strength in enhancing one’s personal and relational well-being” (Emmons & Crumpler, 2000, p. 56). Therefore gratitude is regarded as “the positive recognition of benefits received” (Emmons, 2008, p. 470). It is recognized as an emotion that is based on the perception of under served merit because the grateful person considers the personal gain, benefits or gifts as unexpected or undeserved (Bertocci & Millard, 1963; Emmons, 2008). The gifts or benefits could be material or nonmaterial (e.g. spiritual) and the “object of gratitude” (Emmons, 2008, p. 470) could be human or nonhuman (e.g. God; Solomon 1977).

Gratitude can improve well-being and general positive functioning, for instance, happiness (Emmons, 2008; Seligman, Steen, Park, & Peterson, 2005; Sheldon &

Lyubomirsky, 2006; Watkins, Woodward, Stone, & Kolts, 2003), decreased personal depression (Seligman, et al., 2005; Watkins, Grim, & Kolts, 2004), and increased life satisfaction (McCullough, Emmons, & Tsang, 2002). According to Fredrickson's broaden-and-build theory (2001, p. 218), "experiences of positive emotions broaden people's momentary thought-action repertoires, which in turn serves to build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources". People can develop adaptive coping strategies to reinterpret the problematic situation and critical life events with grateful thought. With use of positive coping for instance, humor, secretory immunoglobulin is released (Dillon, Minchoff, & Baker, 1985-1986; Stone, Neale, Cox, Napoli, Valdimarsdottir, & Kennedy-Moore, 1994). It is a kind of antibody to defense against disease and enhance immune functioning (Dillon et al., 1985-1986; Salovey, 2000; Stone et al., 1994). In addition, spirituality and interpersonal relationships can be nurtured and strengthened by gratitude which encourages people to feel and value love received from others (Emmons, 2008; Fredrickson, 2001; McCullough et al., 2002). Moreover, gratitude can contribute to people's resilience in responding to stressful situation such as disasters and deadly diseases because positive ways of thinking is promoted by gratitude cultivation (Emmons, 2008; Nolen-Hoeksema & Davis, 2002; Tennen & Affleck, 2002). It builds up and strengthens personal resources such as developing positive

coping strategies, seeking emotional and social support in stressful events, which lead to a happy and healthy life (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Salovey, 2000).

Studies have been conducted to increase people's psychological well-being by way of gratitude manipulation. In experiments by Emmons and McCullough (2003), students were assigned randomly to three conditions: gratitude, hassles and events condition. The participants described up to five events for the condition assigned (thankful, hassles and events) daily or weekly for a period of time. Results showed that compared with those in the hassles condition, participants in the grateful condition experienced more gratitude and positive affect (for instance, joyful, energetic and excited). They also became optimistic about the future, satisfied with their lives and reported fewer health problems.

In another study in Emmons and McCullough (2003), participants who had neuromuscular diseases were randomly assigned to one of the conditions: gratitude condition and control condition in which they had to complete daily self report of affect, well-being, and global appraisals for 21 days. They were encouraged to complete the form at the end of the day. Similar to previous studies, the gratitude condition of more positive affect and life satisfaction were reported. Less negative affect was demonstrated as well.

To examine whether gratitude manipulation could strengthen positive affect, Watkins et al. (2003) implemented an experiment and randomly assigned the participants into one of two conditions. In the gratitude condition, participants were instructed to write down the things they did and felt grateful for in the previous summer. In another condition, participants were invited to recall the things they wanted to do but were unable to do over the last summer. Compared with those in the control group, improved mood and lower negative affect scores in the gratitude condition was reported. Negative relationship between gratitude and depression was demonstrated in study of Watkins et al. (2004) as well.

Lyubomirsky, Sheldon and Schkade (2005) asked university students to write the things that they felt grateful either once (one condition) or three times (second condition) a week for 6 weeks. Result showed that both conditions could increase well-being. A better result was noted from the once-a-week condition than three-times-a-week condition because the participants might feel bored, less excited and meaningful when practicing several times a week.

Although this brief review of the literature has demonstrated that gratitude manipulation can be effective in promoting positive psychological well-being, there is no research investigating the effect of gratitude manipulation on the improvement of emotional well-being of health care professionals.

Aims and Hypotheses

To address this knowledge gap, the current study aims to examine the effect of gratitude intervention on promoting positive well-being for the health care professionals in Hong Kong. The primary hypothesis of the study is that gratitude manipulation will lead to (i) increased subjective well-being, (ii) increased gratitude disposition, (iii) decreased stress and (iv) decreased depression of the health care professionals.

Methodology

Design

A randomized controlled trial design was adopted.

Participants

A convenience sample of 180 health care professionals (nurses, doctors, physical therapists and occupational therapists) was recruited and enrolled in the study. Inclusion criteria includes (i) being a current and full time health care professional in Hong Kong, (ii) having an age equal to or greater than 18 years, and (iii) ability to write in English. An exclusion criterion is being on long-term sick leave or maternity leave. All provided informed consent to participate. They were assured of the confidentiality of the data and the right to withdraw at any time point in the study.

Measures

Perceived stress was measured by using the 10-item Perceived Stress Scale (PSS; Cohen, Kamarck, Mermelstein, 1983) (Appendix A, Part 2) back-translated into Chinese. It measures stress perception over the past month and to what extent the people find their lives uncontrollable, unpredictable and overloaded. Items were rated on a 5-point scale and the scores were obtained by summing all the items with 4 items scored with reverse (4, 5, 7 and 8), e.g. 0=4, 1=3, 2=2. Score can range from 0 to 56 and higher scores indicated more stress perceived. The Cronbach's alpha of the present study was .74.

Gratitude was measured by the Gratitude Questionnaire-6 (GQ-6; Emmons, McCullough & Tsang, 2003) (Appendix A, Part 3) back-translated into Chinese. Through self-report of items, intensity (stronger grateful disposition with more intense gratitude), frequency (e.g. times per day), span (number of life events people feels grateful for) and density (number of people one feels grateful for a positive circumstances) can be assessed. In this study, the facet of span was measured. Six items with two reverse coded (3 and 6) were rated on a 7-point scale of 1 “strongly disagree” to 7 “strongly agree”. A higher gratitude disposition was associated with a higher score. The Cronbach's alpha of this study was .74.

In order to measure positive affect (PA) and negative affect (NA) for the Chinese, the Chinese Affect scale (CAS) (Appendix A, Part 4) was used (Hamid & Cheng, 1996) back-translated into Chinese. It is composed of 12 items with 6 for positive affect and 6 for negative affect. Each affect item was rated on a 5-point frequency scale of 1 “none or little” to 5 “a lot” and each affect score was obtained by summing all the 6 items. The Cronbach’s alpha of the present study was .80 for positive affect and .82 for the negative one.

Life satisfaction was measured by the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) (Appendix A, Part 3) back-translated into Chinese. It consists of 5 items rated on a 7-point scale ranging from 1 “strongly disagree” to 7 “strongly agree”. Higher satisfaction in life was associated with a higher score. The Cronbach’s alpha of SWLS in this study was .87.

Depression was measured by a 10-item version of the Center for Epidemiologic Studies Depression Scale (CES-D 10; Andresen, Malmgr, Carter, & Patrick, 1994; Radloff, 1977) (Appendix A, Part 5) back-translated into Chinese. Participants rated the frequency of each symptom in the past weeks from 0 (less than one day) to 3 (five to seven days). Items 5 and 8 are reverse coded. The Cronbach’s alpha in this present study was .60. It would be .71 if item 4 was deleted.

Procedure

Baseline and post-intervention measures were taken before and after the gratitude manipulations. All the measures along with sociodemographic data, were administered prior to the intervention. Each participant was then randomly assigned into one of two conditions: (a) gratitude or (b) hassles. They had to write down at least one grateful (Appendix B) or hassle event (Appendix C) twice a week for 4 conservative weeks. The date was assigned in random and some dates were excluded for instance, public holiday or working over-night for some participants such as, nurses and doctors. They had to hand in the responses before midnight (00:00) on the dates assigned. Any report sent or given before 9:00 am the next morning was accepted as well. All responses were returned by means of email, MSN or SMS. Participants filled out of PSS, GQ-6, CAS, SWLS and CES-D 10 (Appendix D) on the last day. They returned the completed questionnaires via email or in person.

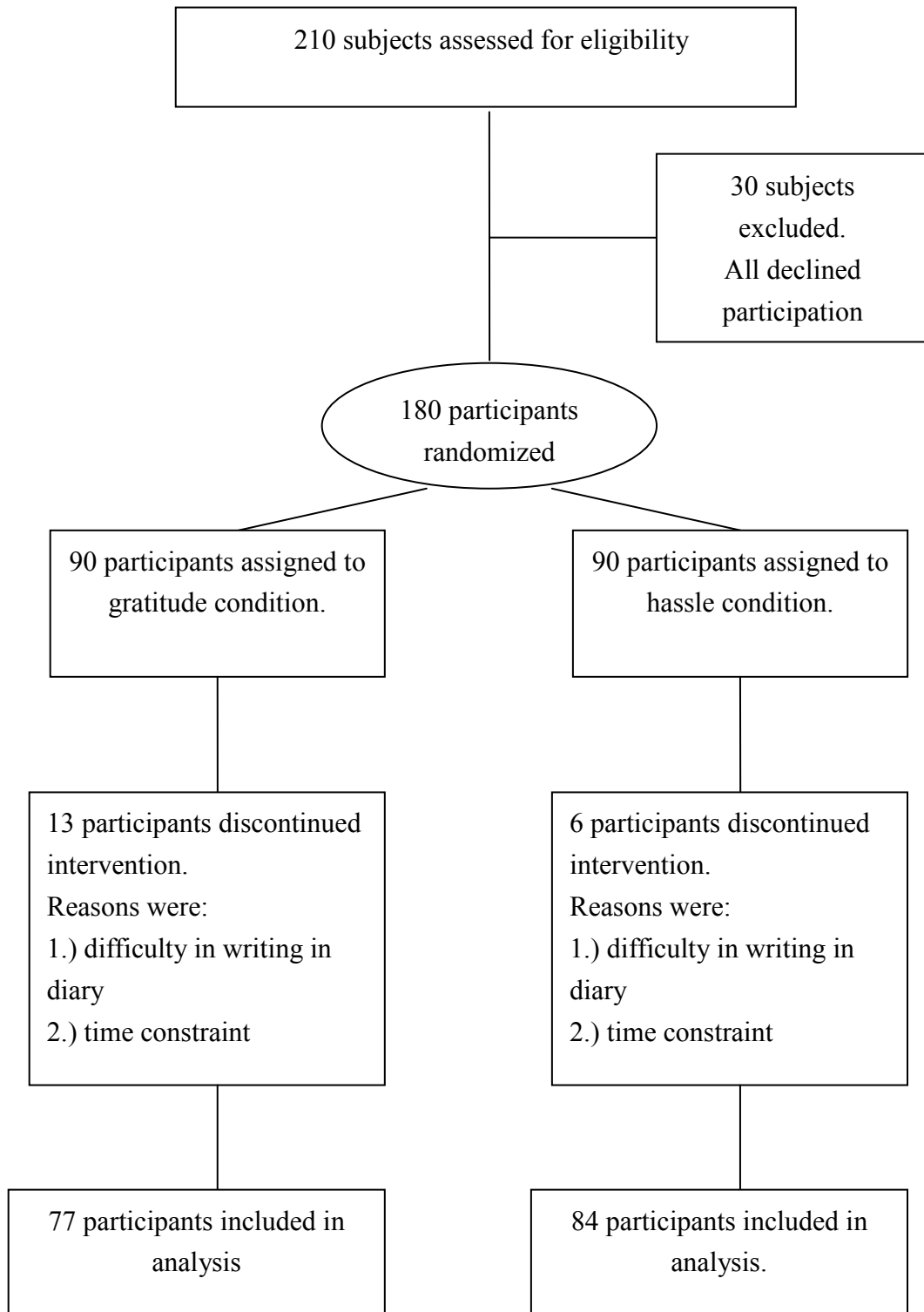


Figure 1. Flow chart of participants in the study

Statistical Analyses

Descriptive statistics were used to demonstrate demographic data of the participants. Differences of gratitude and hassle conditions in years of experiences and age were tested by independent sample t-tests. MANOVAs were conducted for manipulation check and group differences before and after interventions among the dependent variables: perceived stress, gratitude, life satisfaction, positive and negative affect, and depression. All events in the diaries were rated by the researcher to represent grateful, annoyed or neutral events.

In order to assess inter-rater reliability for the diaries, another person was invited to rate 10% of the total diaries in random which was equivalent to 130 diaries (65 gratitude diaries and 65 hassles diaries). One mark was given for each gratitude, hassle or neutral event. The value of the kappa test was .92 indicating high agreement between raters.

As shown in the Figure 1, 19 participants discontinued intervention. T-tests reported that the 19 participants did not differ from the 161 ones on age, gender, years of experience, education level, occupations, religious and marital statuses. Hence the baseline measures were not affected by the 19 participants.

Results

Sample characteristics

As summarized in Table 1, associations among groups with age, sex, occupation, education, years of experiences, marital and religious statuses were reported. It could be concluded that groups were not different as with regards to age, sex, occupation, education, years of experiences, marital and religious statuses.

Table 1

Sample Characteristics

Characteristics	<i>M/%</i>	χ^2	<i>df</i>	<i>p</i>
Age		1.78	3	.62
18-25	19.3			
26-30	43.5			
31-35	28.0			
36-50	9.3			
Sex		.00	1	.99
Female	58.4			
Male	41.6			
Marital status		1.80	2	.41
Single	59.6			
Married	39.8			

Divorced	.6			
Religion		6.92	3	.07
No religion	77.0			
Catholic	6.2			
Christian	15.5			
Buddhism	1.2			
Education level		4.37	2	.11
Master	29.2			
Postgraduate Diploma	9.9			
Bachelor	53.4			
High Diploma	7.5			
Occupation		.345	3	.95
Nurse	48.4			
Doctor	33.5			
Physical therapist	9.3			
Occupation therapist	8.7			
Years of experience		26.64	24	.32
0-3 years	30.4			
4-7 years	44.2			

8-10 years	17.3
> 10 years	7.9

Note: $N = 77$ for gratitude and 84 for hassle condition respectively. $M =$ mean.

Manipulation check

As a manipulation check, I conducted a multivariate analysis of variance (MANOVA) with the number of grateful, hassle, and neutral events as the dependent variables, and the experimental condition (2 levels) as the between-subjects factor. Results showed that the two experimental conditions differed in the number of hassle, gratitude and neutral events: Pillai's $F(3, 157) = 266.76, p < .001; \eta^2 = 0.836$. The mean scores of the diaries in gratitude and hassle conditions were summarized in Table 2.

Table 2

Mean scores of the diaries in gratitude and hassle conditions

	Gratitude group		Hassles group	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Gratitude score	8.18	.20	.79	.20
Hassle score	.51	.20	7.35	.19
Neutral score	.03	.06	.18	.06

Note: $M =$ adjusted mean, $SE =$ standard error.

A priori contrasts showed that the gratitude group wrote significantly more grateful events ($t(159) = -26.32, d = -5.50$), but fewer hassle events ($t(159) = 24.43, d = 3.68$). However the two groups did not differ in neutral events ($t(159) = 0.19, d = 0.29$).

Group difference: Pretest

Another MANOVA was conducted to investigate if the psychological well being measures were significantly different with the experimental conditions at baseline. The dependent variables were perceived stress, gratitude disposition, life satisfaction, positive and negative affect, and depression. Results showed that the two groups did not differ in psychological well-being, Pillai's $F(6, 154) = 1.60, p > .05; \eta^2 = .059$. Hence the two groups were equivalent at baseline. The descriptive for the psychology well being measures were shown in table 3.

Table 3

Psychological well-being measures broken down by experimental conditions (pre-test)

	Gratitude		Hassle	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Perceived stress	1.82	.04	1.91	.04
Gratitude	4.92	.06	4.93	.05
Life Satisfaction	4.78	.07	4.76	.07
Depression	1.02	.03	1.00	.03
Positive affect	3.50	.05	3.49	.05
Negative affect	2.33	.06	2.47	.06

Note: *M* = adjusted mean, *SE* = standard error.

Group difference: Post-test

We then proceed to test if group difference in psychological well-being emerged after gratitude manipulation. A main effect was shown: Pillai's $F(6, 154) = 18.46, p < .001; \eta^2 = .42$. Further univariate analyses suggested a main effect of the total well being after intervention $p < .001$. A priori contrasts showed that the gratitude group reported significantly higher gratitude ($t(159) = 6.91, d = 1.06$), higher life satisfaction ($t(159) = 5.93, d = .91$), increased positive affect ($t(159) = 5.82, d = 1.22$), but lower depression ($t(159) = -5.71, d = -0.82$), negative affect ($t(159) = -6.79, d = -1.11$) and

perceived stress ($t(159) = -8.69, d = -1.26$) than the hassle group. The descriptive for the psychology well being measures after intervention were shown in table 4.

Table 4

Psychological well-being measures broken down by experimental conditions (post-test)

	Gratitude		Hassle	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Perceived stress	1.62	.04	2.06	.04
Gratitude	5.25	.06	4.69	.06
Life Satisfaction	5.10	.08	4.43	.08
Depression	.89	.03	1.13	.03
Positive affect	3.77	.07	3.23	.07
Negative affect	2.17	.06	2.75	.06

Note: *M* = adjusted mean, *SE* = standard error.

Discussion

The main purpose of this study was to examine the effect of a gratitude intervention on promoting positive well-being for health care professionals. A randomized controlled trial design was used. Result showed a significant increase in the psychological well-being of those who received the gratitude intervention compared to those who received the hassle intervention. This is the first study to demonstrate

positive well-being for the health care professionals in Hong Kong with the randomized trial of gratitude interventions.

Previous studies have shown that gratitude interventions was effective in promoting people's better sense of well-being (Emmons, 2008; Seligman et al., 2005; Sheldon & Lyubomirsky, 2006; Watkins et al., 2003). Participants reported, for instance, increased happiness and being more optimistic about the future (Emmons & McCullough, 2003; Watkins et al., 2003; Sheldon & Lyubomirsky, 2006). However, in this study, results of lower depression and negative affect, and higher gratitude, life satisfaction and positive affect were reported after the participants were instructed to write grateful work event diaries two times a week for a duration of four weeks. Thus, gratitude manipulations could promote positive psychological well-being in health care professionals in Hong Kong.

According to Folkman and Lazarus (1988), positive reappraisal is a kind of cognitive coping strategies to reappraise stressful events with positive thinking. Thus the participants, as health care professionals, were believed to value their efforts and develop positive affect in face of stress at work. Examples of the grateful events showed by the nurse and doctor included "One of the patient found arrest and CPR applied to him last week. He was intubated and needed ventilator support. I was happy that he was extubated today and had good compliance to bipap support. The

physician also considered that the patient's condition was improving" and "I feel thankful to be able to teach some junior medical officers about skills and knowledge of surgery" respectively. In the Fredrickson's broaden-and-build theory (2001), people can develop adaptive coping strategy to reinterpret the stressful situations and critical life events with benefit findings in which physical, intellectual, social and psychological resources are built and strengthened. Therefore the immune system and hence physical health could be enhanced by the participants with writing grateful work events which is a kind of positive coping. In addition, social and interpersonal relationships could be nurtured and strengthened by grateful thought because they could feel and value love received from others. "I feel thankful that my colleague shared working experience with me today" and "I can share my ups and downs with my colleagues" were some of the examples.

They reported lower perceived stress after writing grateful events and this finding was expected. It demonstrated that gratitude cultivation could contribute to their resilience in responding to stressful working conditions such as heavy workload, shift work and long working hours. "I enjoy working as a team work even very busy moment" and "I feel thankful that other colleagues are working hard despite 2 seniors got sick" were some of the grateful events listed. Their life satisfaction, gratitude, positive affect were higher with lower depression and negative affect even they were

under stress. This can imply an interrelationship between stress and positive well-being of the health care professionals. Because they may have to develop a positive well-being so as to resist, tolerate and manage stress.

Therefore, the health care professionals in the studies could deal with stressful events or situations and regulate their emotions with grateful thought. They may develop positive psychological well-being by expressing gratitude and writing work event diaries is one of the ways.

Limitations

The convenience sampling in this study limits the generalizability of the findings. Variations such as occupations, age and working experiences may have an effect on the results reported. Future research should be carried out to examine the health care professionals with an even distribution in occupational and demographic variables.

Second, some of the health care providers such as nurses and doctors, had to work in shift and overnight, while some, for instance, physical and occupational therapists worked on regular time. Their moods and attitude of completing the diaries might be affected by irregular working time. Future studies are needed to investigate and compare the effect of gratitude manipulations in health care professionals with different working time.

Unknown duration of the gratitude manipulation effect is another limitation. The effect was measured immediately after intervention and it might not sustain. Future investigations should include follow-up assessments to see if the effects last.

Conclusion

In the study, gratitude manipulation was demonstrated to promote increased psychological well being of the health care professionals. Future study with suggestions provided above can be implemented to examine the effectiveness of gratitude manipulation for health care professionals in Hong Kong.

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Appendix A

City University of Hong Kong
Consent for participation in the study of
Psychological well being of Health care Professional in Hong Kong

You are now invited to participate in this study related to the psychological well being of health care professionals in Hong Kong. This research consists of two questionnaires and 8 diary reports of work events (twice a week over a one-month period).

Instructions:

- 1.) You will complete a survey now.
- 2.) You will be given a diary booklet. On the booklet there are 8 diary pages, with dates printed on them. These dates have been assigned by the researcher in a random manner. Please complete the report between 8:00 pm to midnight of the specified date and return the report to Miss *Kitty Tsui* in person, via email, SMS () or MSN () on or before midnight. Reports returned on next day by 9:00 am will be accepted as well.
- 3.) Finally, you have to finish another questionnaire a month from now. The survey will be given to you in person or through email.

You need to provide personal data for the purpose of matching your responses in this prospective study, but your personal data will be destroyed immediately when data collection is finished. All data collected will be used for research only and will be kept strictly confidential.

All information is personal opinion, and not related to any authority, department or organization. The research will be based on analysis of all the participants instead of any individual. Hence your individual data will not appear in any report and all participants will be anonymous.

Participation is completely voluntary. You are free to withdraw from the study any time.

If you are interested in this study, please sign the consent form below to express your consent to participate in this study. The signed consent form should be returned to *Miss. Kitty Tsui* in person or by email together with the completed the survey.

Please do not hesitate to contact *Miss. Kitty Tsui* (you have any problem.

I _____ (Name) have read the instructions of the study and agree to participate.

My email address _____ and mobile no. _____ are provided for contact. I understand that such information will not be used for purpose other than those stated on the consent form.

Signature: _____

Date: _____

Thank you for your participation!

Please complete the questionnaire with the instructions shown and choose the answers that you agree most.

Part 1: Demographic data

Please put a tick in the appropriate box below.

1.) Male Female

2.) Age: 18-25 26-30 31-35 36-40 41-45 46-50 50+

3.) Occupation:

Nurse Doctor Physical therapist Occupational therapist

4.) Years of working experience as a health care professional: _____

5.) Education level: PhD Master Post graduated Dip Bachelor

Higher Diploma Other, specify please _____

6.) Martial Status: Single Married Cohabitation Divorced

Separated

7.) Religion:

Catholic Christian Buddhism Other, specify please _____

No religion

Part 2:

These questions ask you about your feelings, thoughts and activities during **the last month**, including today.

Please **circle the number** to indicate how much you agree with the questions.

In the last month, how often have you:

	almost never	some- never	fairly times	very often	very often
1. been upset because of something that happened unexpectedly?	0	1	2	3	4
2. felt that you were unable to control the important things in your life?	0	1	2	3	4
3. felt nervous and "stressed"?	0	1	2	3	4
4. felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. felt that things were going your way?	0	1	2	3	4
6. found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. been able to control irritations in your life?	0	1	2	3	4
8. felt that you were on top of things?	0	1	2	3	4
9. been angered because of things that were outside of your control?	0	1	2	3	4
10. felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Part 3:

Please **circle the number** to indicate how much you agree with the questions.

	strongly disagree	disagree	slightly disagree	neutral	slightly agree	agree	strongly agree
1. I have so much in life to be thankful for.	1	2	3	4	5	6	7
2. If I had to list everything that I felt grateful for it, it would be a very long list.	1	2	3	4	5	6	7
3. When I look at the world, I don't see much to be grateful for.	1	2	3	4	5	6	7
4. I am grateful to a wide variety of people.	1	2	3	4	5	6	7
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.	1	2	3	4	5	6	7
6. Long amounts of time can go by before I feel grateful to something or someone.	1	2	3	4	5	6	7
7. In most ways my life is close to my ideal.	1	2	3	4	5	6	7
8. The conditions of my life are excellent.	1	2	3	4	5	6	7
9. I am satisfied with my life.	1	2	3	4	5	6	7
10. So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
11. If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

Part 4:

Please **circle the number** to indicate how much you agree with the questions.

In the past week, how often do you feel ...?

	Rarely				Very often
Disappointed	1	2	3	4	5
Relax	1	2	3	4	5
Happy	1	2	3	4	5
Depressed	1	2	3	4	5
Irritable	1	2	3	4	5
Bitter	1	2	3	4	5
Joyful	1	2	3	4	5
Sad	1	2	3	4	5
Comfortable	1	2	3	4	5
Excited	1	2	3	4	5
Content	1	2	3	4	5
Frightened	1	2	3	4	5

Part 5

Please **put a tick** in the box to indicate how much you agree with statement.

	less than 1 day	1-2 days	3-4 days	5-7 days
1. I was bothered by things that usually don't bother me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I had trouble keeping my mind on what I was doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I felt depressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt that everything I did was an effort	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I felt hopeful about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I felt fearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. My sleep was restless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I was happy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I felt lonely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I could not "get going"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B
Work Event Diary

Name: _____

Date: _____6/02/2009_____

Email Address: _____

Contact No: _____

Different things happen at work everyday. Some are minor, some are important. Whether minor or important, sometimes you feel thankful that these events have happened to you.

- 1.) Try to think about the event(s) at work today for which you feel thankful.
- 2.) Please write them down below in either English or Chinese, or even a mixture of English and Chinese.
- 3.) You need to write down at least one event and at most five events.
- 4.) This diary should be completed between 8:00 pm to midnight of the date indicated above.
- 5.) Please return the completed diary to Kitty Tsui
on or before midnight 00:00 in person, via email or MSN
(If that is not possible, returning the diary before
9:00 am the next day is also acceptable.

Example one: I feel thankful that my colleague could change work schedule with me.

Example two: I feel thankful to receive help from my colleague today.

1.) _____

2.) _____

3.) _____

4.) _____

5.) _____

Appendix C
Work Event Diary

Name: _____

Date: _____ 27/02/2008 _____

Email Address: _____

Contact No: _____

Different things happen at work everyday. Some are minor, some are important. Whether minor or important, sometimes you feel annoyed or even angry that these things actually happened to you.

- 1.) Try to think about the event(s) at work today for which you feel annoyed or angry.
- 2.) Please write them down below in either English or Chinese, or even a mixture of English and Chinese.
- 3.) You need to write down at least one event and at most five events.
- 4.) This diary should be completed between 8:00 pm to midnight of the date indicated above.
- 5.) Please return the completed diary to Kitty Tsui on or before midnight 00:00 in person, via email or MSN. If that is not possible, returning the diary before 9:00 am the next day is also acceptable.

Example one: I was complained by a relative of a patient today.

Example two: I feel exhausted due to the busy work and long working hour.

1.) _____

2.) _____

3.) _____

4.) _____

5.) _____

Appendix D

This is another and **the final questionnaire** you have to finish (Instructions, no 3, page 1). Please **complete it after finishing the 8 work event dairy** and return it to Kitty Tsui , via email or MSN

Part 1:

These questions ask you about your feelings, thoughts and activities during **the last month**, including today.

Please **circle the number** to indicate how much you agree with the questions.

In the last month, how often have you:

	almost never	some- never	fairly times	very often	very often
1. been upset because of something that happened unexpectedly?	0	1	2	3	4
2. felt that you were unable to control the important things in your life?	0	1	2	3	4
3. felt nervous and "stressed"?	0	1	2	3	4
4. felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. felt that things were going your way?	0	1	2	3	4
6. found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. been able to control irritations in your life?	0	1	2	3	4
8. felt that you were on top of things?	0	1	2	3	4
9. been angered because of things that were outside of your control?	0	1	2	3	4
10. felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Part 2:

Please **circle the number** to indicate how much you agree with the questions.

	strongly disagree	disagree	slightly disagree	neutral	slightly agree	agree	strongly agree
1. I have so much in life to be thankful for.	1	2	3	4	5	6	7
2. If I had to list everything that I felt grateful for it, it would be a very long list.	1	2	3	4	5	6	7
3. When I look at the world, I don't see much to be grateful for.	1	2	3	4	5	6	7
4. I am grateful to a wide variety of people.	1	2	3	4	5	6	7
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.	1	2	3	4	5	6	7
6. Long amounts of time can go by before I feel grateful to something or someone.	1	2	3	4	5	6	7
7. In most ways my life is close to my ideal.	1	2	3	4	5	6	7
8. The conditions of my life are excellent.	1	2	3	4	5	6	7
9. I am satisfied with my life.	1	2	3	4	5	6	7
10. So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
11. If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

Part 3:

Please **circle the number** to indicate how much you agree with the questions.

In the past week, how often do you feel ...?

	Rarely				Very often
Disappointed	1	2	3	4	5
Relax	1	2	3	4	5
Happy	1	2	3	4	5
Depressed	1	2	3	4	5
Irritable	1	2	3	4	5
Bitter	1	2	3	4	5
Joyful	1	2	3	4	5
Sad	1	2	3	4	5
Comfortable	1	2	3	4	5
Excited	1	2	3	4	5
Content	1	2	3	4	5
Frightened	1	2	3	4	5

Part 4

Please **put a tick** in the box to indicate how much you agree with statement.

	less than 1 day	1-2 days	3-4 days	5-7 days
1. I was bothered by things that usually don't bother me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I had trouble keeping my mind on what I was doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I felt depressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt that everything I did was an effort	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I felt hopeful about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I felt fearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. My sleep was restless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I was happy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I felt lonely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I could not "get going"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for your participation!