POWER OF PEN: EXPRESSIVE WRITING AS AN INTERVENTION TOOL ON EXPOSURE TO THIN-IDEAL IMAGES WITH DIETARY RESTRAINT AND SELF-COMPASSION AS COVARIATES

By

DENNIS RELOJO *

ANGELO EMIL GAGANI **

* Learning Support Coach, Additional Learning Support, South Essex College, Essex, United Kingdom.

** PG Scholar, Graduate School, University of Santo Tomas, Manila, Philippines.

ABSTRACT

Expressive Writing (EW) has been recognised as an intervention tool for thin-ideal images. However, to date, there are limited studies which investigated its efficacy to involve dietary restraint and self-compassion as moderating variables. The present work assessed the efficacy of EW in improving levels of body satisfaction and positive affect among 140 Filipino female university students ageing 18-25. They were tested in groups and wrote either about life goals (n = 46), positive experiences (n = 49) or a control topic (n = 46). It further examined how EW could benefit people on the basis of their levels of dietary restraint and self-compassion. Results demonstrated that EW has no significant effect on body satisfaction and positive affect. However, it was revealed that dietary restraint and self-compassion have moderating effects.

Keywords: Body Satisfaction, Dietary Restraint, Expressive Writing, Positive Affect, Self-Compassion.

INTRODUCTION

On a previous study (Relojo, 2015), it has been observed that Expressive Writing (EW) has no significant effect on body satisfaction and positive affect. This is an important issue that needs to be considered since female adolescents are bombarded with thin-ideal images from the media, with music videos and magazines being the most popular sources of these images.

Meanwhile, it has been reported that self-compassion induction reduces distress and attenuates eating following the preload among highly restrictive eaters (Adams & Leary, 2007). These findings highlight the importance of specific individual differences observed among restrained eaters and indicate benefits of self-compassionate eating attitudes. Self-compassion involves being kind and understanding toward oneself in instances of pain or failure rather than being overly critical to oneself; perceiving one's experiences as part of the larger human experience rather than seeing them as isolating; and holding painful thoughts and feelings in mindful awareness rather than overidentifying with them (Neff, 2003). Additionally, self-

compassion was shown to partially mediate the relationship between body preoccupation and depressive symptoms. These findings highlight the potential that a consideration of self-compassion for body image may contribute to identifying who is most at vulnerable for body image concerns (Wasylkiw, MacKinnon, & MacLellan, 2012).

While exposure to thin-body ideals promotes body dissatisfaction, other factors come into play such as dietary restraint, which is a prospective risk factor for the development of eating disorders (Racine, Burt, Iacono, McGue, & Klump, 2011). It has been reported that restrained eaters exposed to thin-ideal images have decreased weight satisfaction and increase negative affect (Boyce, Kuijer, & Gleaves, 2013). Findings further suggest that restrained eaters are susceptible to a "thin fantasy" brought about by viewing thin-ideal body images. It has also been observed that strengthening thinness attainability beliefs can further enhance the thin fantasy demonstrated by restrained eaters following exposure to idealised body images (Mills, Polivy, Herman, & Tiggemann, 2002).

1. Purpose

A host of intervention programmes are being developed to address the effects of thin-ideal images among adolescents. However, to date, there have only been a handful of studies which explored EW as an intervention programme in reducing the effects of exposure to thin-ideal images. It is worthy to investigate the effectiveness of EW as an intervention programme since it has been found to improve psychological well-being (e.g., Troop, Chilcot, Hutchings, & Varnaite, 2013). Such an intervention could potentially minimise the negative effects brought about by exposure to slim images on body satisfaction and positive affect. It could be assumed however, that some people are just more susceptible to those kinds of images.

Interestingly, it has been found that self-compassion had a significant positive association with self-reported measures of happiness, optimism, positive affect, wisdom, personal initiative, curiosity and exploration, agreeableness, extroversion and conscientiousness. It also had a significant negative association with negative affect and neuroticism. Self-compassion predicted significant variance in positive psychological health beyond that attributable to personality (Neff, Rude, & Kirkpatrick, 2007). There are also findings which suggest that training oneself to self-regulate from a self-compassionate stance might be especially effective for individuals who are able to visualise a compassionate image and whose personality and motivation would be expected to undermine the impact of traditional treatments (Kelly, Zuroff, Foa, & Gilbert, 2010). It has also been found that EW and the inclusion of a selfcompassion instruction may have additional benefits (Imrie & Troop, 2012). On the other hand, Neumark-Sztainer, Paxton, Hannan, Haines, & Story (2006) found out that females who are less satisfied with their bodies are likely to engage in higher levels of dieting which could include unhealthy weight control behaviours and binge eating, aside from their lower levels of physical activity and fruit and vegetable intake.

2. Method

2.1 Participants

One hundred forty one female university students ageing 18–25 years old were recruited as users of magazines with

thin-ideal images and were randomised into one of the three experimental conditions: writing about life goals, writing about positive experiences and writing a review of a film they have recently seen. Contrary to the intended age range, one participant was age 17, and two participants did not indicate their age. These two participants were not included in the end as age is not a variable which this work focussed. Participants were recruitment inside the university lectures. Their participation was voluntary and no credits or tokens were given. The study received ethical approval from the local ethics committee and informed consents have been obtained from all participants.

2.2 Measures

To assess dietary restraint, Revised Restraint Scale (RRS; Herman & Polivy, 1980) was used. All items on RRS are presented in a multiple choice format; items are rated on a four- to five-point scale, with a maximum total score of 35, with higher total scores indicating greater dietary restraint. RRS consists of two subscales (a) Weight Fluctuation (WF) with four items for assessing history of weight fluctuation and (b) Concern with Dieting (CD) with six items for assessing the attitudes towards dieting but can be computed as a single overall score. In the current study, internal consistency for the total score is good ($\alpha = .66$).

Self-compassion was assessed using Self-Compassion Scale (SCS; Neff, 2003). The SCS is a 26-item measure tapping self-kindness, self-judgement, common humanity, isolation, mindfulness, and over-identification. Participants respond to various items about "How I typically act toward myself in difficult times" on a 5-point scale, with higher total scores indicating greater self-compassion. In the current study, internal consistency for the scale is good ($\alpha = .72$).

The Body Image States Scale (BISS; Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002) is designed to gauge the temporary aspects of evaluative or affective body image, for example body dissatisfaction. It is a sensitive measure that can recognise momentary changes, and consists of six questions regarding how satisfied an individual feels with their physical appearance "right now at this present moment". Higher total scores indicate greater body satisfaction. In the current study, the internal consistency was high (baseline $\alpha=.70$, follow-up α

= .78) and test-retest consistency (α = .81).

The Types of Positive Affect Scale (TPAS; Gilbert, et al., 2008) is an 18-item scale in which respondents rate their feelings on a series of 5-point scale to indicate how characteristic those feelings are of them (ranging from 1 = not characteristic of me to 5 = very characteristic of me). The TPAS measures three types of positive affect: activating positive affect (e.g., energetic, excited, active); relaxed positive affect (e.g., relaxed, peaceful, calm); and safeness/contentment positive affect (e.g., safe, secure, warm). Higher total scores indicate greater positive affect. In the current study, the internal consistency was high (baseline α = .82, follow-up α = .86) and test-retest reliability (α = .80).

2.3 Procedure

Upon hearing a brief description of the study and signing consent forms, participants completed the SCS and RRS which were used to identify their susceptibility to exposure to thin-ideal images, Afterwards, they were given 15 minutes to fill out BISS and TPAS (this was the baseline). Participants proceeded with the writing tasks. Envelopes with questionnaires and one of the three writing tasks were randomly distributed. They were tested in groups and wrote either about life goals (n=46), positive experiences (n=49), or a control topic, for example write a review of a film they have recently seen (n=46).

3. Data Analysis

The study initially proposed to recruit 150 female participants ageing 18-25. However, 141 participated. Of these, one participant was age 17, and two participants did not indicate their age. It has been decided not to exclude the data from these participants as age was not a main variable in the study. Furthermore, given the sample size of the study, it has been assumed that their data would not have significant influence on data analysis. However,

one participant was excluded from the main analyses as she did not fill out the baseline measures for both BISS and TPAS. Hence, a total of 140 participants were considered for the analyses.

In analysing the main variables, the obtained BISS and TPAS scores were grouped into two, whereby BISS scores were categorised as low body satisfaction (15-31) and high body satisfaction (32-48); and TPAS were categorised as low positive affect (28-48) and high positive affect (49-69). Similarly, in analysing the covariates, the obtained RRS and SCS scores were grouped into two whereby RRS were categorised as low dietary restraint (13-23) and high dietary restraint (24-34); and SCS were categorised as low self-compassion (27-40) and high self-compassion (41-53). In addition, the three subscales of TPAS: active positive affect, relaxed positive affect and safe/warmth positive affect were also analysed relative to their baseline and follow-up scores.

4. Results

Before conducting the main analyses, it has been explored whether there were any differences in baseline and followup scores among the experimental conditions of the main study variables (Table 1). This analysis revealed that BISS scores decreased from pre-intervention in life goals (M = 33.02), positive experiences (M = 34.49) and the control group (M = 33.64) to post-intervention in life goals (M =31.48), positive experiences (M = 32.04) and control group (M = 33.36). Meanwhile, TPAS scores increased from preintervention in life goals (M = 50.20), positive experiences (M = 49.90) and control group (M = 53.42) to postintervention in life goals (M = 52.28), positive experiences (M = 52.33) and control group (M = 53.98). Finally, baseline scores indicate that participants have high levels of body satisfaction and positive affect. Therefore in order to control for these baseline differences, scores on dietary restraint and self-compassion have been included in the

	LG					PE	Control					
	В		FU B		В	FU		В		FU		
	M	SD	M	SD	М	SD	M	SD	M	SD	М	SD
BISS	33.02	8.51	31.48	8.12	34.49	5.76	32.04	6.52	33.64	6.93	33.36	7.62
TPAS	50.20	10.65	52.28	8.29	49.90	8.90	52.33	8.45	53.42	7.59	53.98	7.37

Note. BISS, Body Image States Scale; TPAS, Types of Positive Affect Scale; BISS scores of 15-31: low body satisfaction, 32-48: high body satisfaction; TPAS scores of 28-48: low body satisfaction; 49-69 high body satisfaction. LG: life goals; PE: positive experiences; B: baseline, FU: follow-up

Table 1. Descriptive Statistics for Main Study Variables at Baseline and Follow-up

succeeding analyses (Table 3).

TPAS was further explored relative to its three subscales: active positive affect, relaxed positive affect and safe/warmth positive affect (Table 2). Analysis revealed that active positive affect showed an increase from the baseline scores (M=2.982), following the writing tasks (M=3.046).

Scores for the covariates have been explored. Participants from all three conditions have low levels of dietary restraint. Participants in the life goals writing tasks and control condition have lower levels of self-compassion, whereas those in positive experiences group have higher levels of self-compassion (M = 41.408).

Repeated measures ANOVA was carried out to determine if time, dietary restraint, self-compassion and writing task have significant effect on body satisfaction. Data analysis reveals that there was no significant main effect based on time, F(1, 135) = 1.82, p = .180; time and dietary restraint, F(1, 135) = 0.43, p = .512; time and self-compassion, F(1, 135) = 2.63, p = .107; and, time and writing task, F(2, 135) = 2.07, p = .131.

Repeated measures ANOVA was carried out to determine if

	Bas	eline	Follow-up		
	M	SD	M	SD	
Active	2.982	0.049	3.046	0.053	
Relaxed	2.631	0.063	2.756	0.079	
Safe	2.881	0.053	2.943	0.022	

Note. Active, active positive affect; Relaxed, relaxed positive affect; Safe/warmth positive affect. 0 = not characteristic of me; 4 = very characteristic of me

Table 2. Descriptive Statistics for Subscales of TPAS

	Life Goals		Positive Exp	periences	Control		
	M	SD	M	SD	M	SD	
RRS	23.823	0.670	23.041	0.699	23.533	0.565	
SCS	40.913	0.787	41.408	0.769	39.822	0.912	

Note: RRS, Revised Restraint Scale; SCS, Self-compassion Scale; RRS scores of 13-23: low dietary restraint, 24-34 high dietary restraint; SCS scores of 27-40: low self-compassion, 41-53 high self-compassion

Table 3. Descriptive Statistics for the Covariates

	df	F	η	ρ
Time	1	1.82	.013	.180
Time X dietary restraint	1	0.43	.003	.512
Time X self-compassion	1	2.63	.019	.107
Time X writing task	2	2.07	.030	.131
Error	135			

Table 4. Analysis of Variance Controlling for Body Satisfaction as Dependent Variable

	df	F	η	ρ
Time	1	1.11	.008	.293
Time X dietary restraint	1	24.28	.014	.163
Time X self-compassion	1	7.70	.005	.431
Time X writing task	2	42.58	.025	.181
Error	135			

Table 5. Analysis of Variance Controlling for Positive Affect as Dependent Variable

time, dietary restraint, self-compassion and writing task have significant effect for TPAS. Data analysis reveals that there was no significant main effect based on time, F(1, 135) = 1.11, p = .293; time and dietary restraint, F(1, 135) = 24.28, p = .163; time and self-compassion, F(1, 135) = 7.70,p = .431; and, time and writing task, F(2, 135) = 42.58, p = .181.

5. Discussion

The present study examined the effect of writing about life goals and positive experiences on body satisfaction and positive affect. In addition, it also investigated whether the effects of EW is moderated by levels of dietary restraint and self-compassion. Previous findings (Troop, et al., 2013) reveal that EW shows promise as a means by which people may decrease in their self-criticism. The notion is that EW could protect positive affect and body dissatisfaction, as a result of which, there will be less effect to psychological well-being following exposure to thin-ideal images. Previous works also indicate that EW has a wide range of social, emotional, and physical health benefits for individuals coping with stressful events (Lepore, Greenberg, Bruno, & Smyth, 2002). Almost all available literatures show that EW is effective, however, the existing studies all have the same population and most have delivered EW on more than one occasion.

5.1 Findings

This study has investigated the beneficial effects of EW (both on writing about life goals and writing about positive experiences) on positive affect and body satisfaction. This is an important finding as it has explored whether the positive effects of EW may still be achieved even if it has only been administered on a single instance.

Although this is contrary to conventional procedures (O'Connor, et al., 2011) where participants are usually invited again to continue the writing tasks, it has still

demonstrated that EW, even though administered as oneoff task, has been powerful enough to affect positive changes in the outcome variables. This strengthens previous findings where EW was administered as a one-off task (Kuiken, Dunn, & LoVerso, 2008) and it has shown positive effects.

Table 4 illustrates that time (i.e. how long you spend on doing expressive writing) has no significant relationship with dietary restraint, self-compassion, or the type of writing task. This has been demonstrated on Table 5 where Repeated measures ANOVA was carried out.

Both Table 4 and Table 5 show interesting result, mainly because results are inconsistent to findings that EW results in significant positive outcomes (Arigo & Smyth, 2012; Kirk, Schutte, & Hine, 2011; Lafont, 2011; Smyth, Hockmeyer, & Tulloch, 2008), and a number of factors may also be taken into account. First, participants spent 15 minutes of writing about their designated topic and no other writing tasks followed.

Furthermore, given that participants were not selected on the basis of their levels of dietary restraint and their levels of self-compassion, the significant effect may then be attributable to the sample being relatively "healthy".

6. Implications

Not withstanding the limitations described above, the implications on this study are threefold. First, findings from the present study have shed light on the beneficial effects that could potentially be derived from this form of intervention. It further investigated the roles self-compassion and dietary restraint on positive affect and body satisfaction.

Second, the effectiveness of EW has been established on Western population. There were a few studies that explored it on non-English speakers (Lu, Zheng, Young, Kagawa-Singer, & Loh, 2012), but with a small sample (N = 19). To date, this was the first study to investigate EW as an intervention tool on a Filipino population. Its findings will lead to comparison on future studies that will examine the effects of EW on Southeast Asian population.

Lastly, the result of this study will best serve as a pilot for future studies that will evaluate the efficacy of EW as an

intervention tool relative to forms of expressive writing (i.e. writing about life goals and writing about positive experience), and relative to how it is administered (i.e. whether to administer it individually or in groups, and whether to administer it on a single instance or for a consecutive number of periods) to better ascertain its effects. Future work that intend to explore the effects of EW relative to positive affect should further consider different kinds of positive emotions such as active positive affect, relaxed positive affect, safe/warmth positive affect as it may yield interesting insights in this area.

Conclusion

Images portraying idealised slender bodies are here to stay. They are already a staple of magazines and music videos; and existing literatures are rich in evidence which confirm that exposure to these images can impact one's psychological well-being. The field of psychology has already proven its adverse effects—the next goal then is to discover new and effective interventions to address those negative impacts.

In light of the results of this study, two strong conclusions can be drawn with regard to the benefit of EW. First, drawing from most of the literature, EW may result to a host of health benefits. Results of this study offer insights as to what factors contribute to ensure the efficacy of EW as an intervention tool. This may be attributable to the fact that EW affects people on a number of aspects –biological, cognitive, emotional and social –making a single explanatory theory unlikely. Second, a variety of mechanisms can be posited as to ensure its efficacy.

Recommendation

It is recommended that future research looking into the efficacy of expressive writing propose a theoretical framework why expressive writing do not work for certain age groups. Also, this cost-effective intervention may also be further assessed if it will yield similar results to older age group like the elderly. Needless to say, future research should further explore its boundary conditions. In addition to addressing theory-relevant questions, researchers and therapists must now address how, when and with whom this form of therapy is most beneficial and, at the same time, further evaluate how and why this intervention produces

positive outcomes.

References

- [1]. Adams, C. E., & Leary, M. R. (2007). "Promoting self-compassionate attitudes toward eating among restrictive and guilty eaters". *Journal of Social and Clinical Psychology*, Vol.26, No.10, pp.1120–1144. doi:10.1521/jscp.2007.26.10.1120
- [2]. Arigo, D., & Smyth, J. M. (2012). "The benefits of expressive writing on sleep difficulty and appearance concerns for college women". *Psychology & Health*, Vol.27, No.2, pp.210-226. doi:10.1080/08870446.2011.558196
- [3]. Boyce, J. A., Kuijer, R. G., & Gleaves, D. H. (2013). "Positive fantasies or negative contrasts: The effect of media body ideals on restrained eaters' mood, weight satisfaction, and food intake". *Body Image*, Vol.10, No.4, pp.535-543. doi:10.1016/j.bodyim.2013.07.002
- [4]. Cash, T., Fleming, E., Alindogan, J., Steadman, L., & Whitehead, A. (2002). "Beyond body image as a trait: The development and validation of the Body Image States Scale". *Eating Disorders*, Vol.10, No.2, pp.103-113. doi:10.1080/10640260290081678
- [5]. Gilbert, P., McEwan, K., Mitra, R., Franks, L., Richter, A., & Rockliff, H. (2008). "Feeling safe and content: A specific affect regulation system? Relationship to depression, anxiety, stress, and self-criticism". *The Journal of Positive Psychology*, Vol.3, No.3, pp.182-191. doi:10.1080/17439760801999461
- [6]. Herman, C.P. & Polivy, J. (1980). "Restrained eating". In A.J. Stunkard (Ed.), *Obesity*, pp.208-225. Philadelphia, PA: W. B. Saunders.
- [7]. Imrie, S., & Troop, N. A. (2012). "A pilot study on the effects and feasibility of compassion-focused expressive writing in day hospice patients". *Palliative and Supportive Care*, Vol.10, No.2, pp.115-122. doi:10.1017/s1478951512000181
- [8]. Kelly, A. C., Zuroff, D. C., Foa, C. L., & Gilbert, P. (2010). "Who benefits from training in self-compassionate self-regulation? A study of smoking reduction". *Journal of Social and Clinical Psychology*, Vol.29, No.7, pp.727-755. doi:10.1521/jscp.2010.29.7.727
- [9]. Kirk, B. A., Schutte, N. S., & Hine, D. W. (2011). "The effect

- of an expressive-writing intervention for employees on emotional self-efficacy, emotional intelligence, affect, and workplace incivility". *Journal of Applied Social Psychology*, Vol.41, No.1, pp.179-195. doi:10.1111/j.1559-1816.2010.00708.x
- [10]. Kuiken, D., Dunn, S., & LoVerso, T. (2008). "Expressive writing about dreams that follow trauma and loss". *Dreaming*, Vol.18, No.2, pp.77. doi:10.1037/1053-0797. 18.2.77
- [11]. Lafont, J. (2011). "A comparison of expressive writing effects on body image: Symptomatic vs. asymptomatic women". (Doctoral dissertation, Texas State University-San Marcos). doi:10.4236/psych.2014.55053
- [12]. Lepore, S. J., Greenberg, M. A., Bruno, M., & Smyth, J. M. (2002). "Expressive writing and health: self-regulation of emotion-related experience, physiology, and behavior". In S.J. Lepore & J.M. Smyth (Eds.), *The Writing Cure: How Expressive Writing Promotes Health and Emotional Wellbeing*, pp.99-117, Washington, DC: American Psychological Association. doi:10.1037/10451-005
- [13]. Lu, Q., Zheng, D., Young, L., Kagawa-Singer, M., & Loh, A. (2012). "A pilot study of expressive writing intervention among Chinese-speaking breast cancer survivors". *Health Psychology*, Vol.31, No.5, pp.548. doi:10.1037/a0026834
- [14]. Mills, J. S., Polivy, J., Herman, C. P., & Tiggemann, M. (2002). "Effects of exposure to thin media images: Evidence of self-enhancement among restrained eaters". *Personality and Social Psychology Bulletin*, Vol.28, No.12, pp.1687-1699. doi:10.1177/014616702237650
- [15]. Neff, K. D. (2003). "The development and validation of a scale to measure self-compassion". *Self and Identity*, Vol.2, No.3, pp.223-250. doi:10.1080/15298860309027
- [16]. Neff, K. D., Rude, S. S., & Kirkpatrick, K. L. (2007). "An examination of self-compassion in relation to positive psychological functioning and personality traits". *Journal of Research in Personality*, Vol.41, No.4, pp.908-916. doi:10.1016/j.jrp.2006.08.002
- [17]. Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., & Story, M. (2006). "Does body satisfaction matter? Five-year longitudinal associations between body

satisfaction and health behaviors in adolescent females and males". *Journal of Adolescent Health*, Vol.39, No.2, pp.244-251. doi:10.1016/j.jadohealth.2005.12.001

[18]. O'Connor, D. B., Hurling, R., Hendrickx, H., Osborne, G., Hall, J., Walklet, E., Whaley, A., & Wood, H. (2011). "Effects of written emotional disclosure on implicit self-esteem and body image". *British Journal of Health Psychology*, Vol.16, No.3, pp.488-501. doi:10.1348/135910710x523210

[19]. Racine, S. E., Burt, S. A., Iacono, W. G., McGue, M., & Klump, K. L. (2011). "Dietary restraint moderates genetic risk for binge eating". *Journal of Abnormal Psychology*, Vol.120, No.1, pp.119. doi:10.1037/a0020895

[20]. Relojo, D. (2015). "A randomised controlled trial on brief expressive writing as an intervention tool on exposure to thin-ideal images". *Journal on Innovation in Psychology,*

Education and Didactics, Vol.19, No.2, pp.295-306.

[21]. Smyth, J. M., Hockemeyer, J. R., & Tulloch, H. (2008). "Expressive writing and post-traumatic stress disorder: Effects on trauma symptoms, mood states, and cortisol reactivity". *British Journal of Health Psychology*, Vol.13, No.1, pp.85-93. doi:10.1348/135910707x250866

[22]. Troop, N. A., Chilcot, J., Hutchings, L., &Varnaite, G. (2013). "Expressive writing, self-criticism, and self-reassurance". *Psychology and Psychotherapy: Theory, Research and Practice*, Vol.86, No.4, pp.374-386. doi:10.1111/j.2044-8341.2012.02065.x

[23]. Wasylkiw, L., MacKinnon, A. L., &MacLellan, A. M. (2012). "Exploring the link between self-compassion and body image in university women". *Body Image*, Vol.9, No.2, pp.236-245. doi:10.1016/j.bodyim.2012.01.007

ABOUT THE AUTHORS

Dennis Relojo is currently a Learning Support Coach at South Essex College, UK. His role involves supporting students with a range of learning needs and disabilities. He is also the creator of Psychreg.org, an online resource in psychology and allied fields. He earned his MSc Research Methods in Psychology at the University of Hertfordshire.



Angelo Emil Gagani is currently pursuing his Master's Degree at the University of Santo Tomas in Manila, Philippines. Also, he is an Instructor at the Department of Psychology of Centro Escolar University. His wide range of research interests include Health Psychology, Clinical Psychology and Educational Psychology. He is investigating the stage of denial and acceptance among patients with chronic kidney disease.

