



Janine C. Marinai
**The effectiveness of combined writing in preventing
psychological problems: the role of ambivalence**

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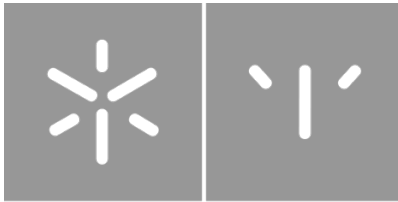


Universidade do Minho
Escola de Psicologia

Janine Cristina Marinai

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Preventing Psychological Problems:
The Role of Ambivalence**

junho de 2021



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Preventing Psychological Problems:
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Dissertação de Mestrado
Mestrado em Psicologia Aplicada

Trabalho realizado sob a orientação do

Doutor João Batista

e do

Professor Doutor Miguel M. Gonçalves

DIREITOS DE AUTOR E CONDIÇÕES DE UTILIZAÇÃO DO TRABALHO POR TERCEIROS

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

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A eficácia da escrita combinada na prevenção de problemas psicológicos: O papel da ambivalência

Resumo

Objetivo: A escrita expressiva tem uma longa tradição na psicologia com programas de baixo custo dirigidos à melhoria da saúde física e mental de diversas populações. Este estudo desenvolveu um programa piloto online baseado em escrita para estudantes universitários. Os objetivos foram testar a eficácia de instruções combinadas na redução do sofrimento psicológico e estudar o papel da ambivalência no contexto da intervenção. *Método:* Os estudantes, recrutados em universidades portuguesas (n=165), foram aleatorizados em 2 grupos. O grupo experimental realizou tarefas de escrita de 20 minutos em 4 dias consecutivos sobre um problema do participante. O grupo de controle ficou em lista de espera. Medidas psicológicas foram recolhidas no início do estudo, após cada tarefa, uma e duas semanas após a intervenção. *Resultados:* A análise multivariada entre grupos identificou uma redução significativa na ambivalência, mas nenhuma alteração nos sintomas e no bem-estar, embora o sofrimento psicológico aferido após as sessões se tenha reduzido significativamente. *Discussão:* A escrita combinada mostrou-se promissora na melhoria da ambivalência envolvida nas dificuldades psicológicas, havendo ainda indicações que sugerem uma diminuição do mal-estar entre sessões. A confirmação destes resultados pode ser um aspeto a favor da generalização do uso desta metodologia, dado o baixo custo envolvido.

Palavras-chave: escrita expressiva, escrita combinada, ambivalência, entrevista motivacional, estudantes universitários

The effectiveness of combined writing in preventing psychological problems: The role of ambivalence

Abstract

Aim: Expressive writing have a long tradition in psychology with low-cost programs aimed at improving the physical and mental health of various populations. This study developed an online writing-based pilot program for university students. The goals were to test the effectiveness of combined instructions in reducing psychological distress and to study the role of ambivalence in the context of the intervention.

Method: Students were recruited from Portuguese universities (n = 165) and randomized into 2 groups. The experimental group performed 20-minute writing tasks on 4 consecutive days related to the participant's problem. Controls were wait list. Psychological measures were collected at baseline, after each session, one and two weeks after the intervention. *Results:* Multivariate analysis between groups identified a significant reduction in ambivalence, but no change in symptoms and well-being, although psychological distress assessed after the sessions has reduced significantly. *Discussion:* Combined writing has shown promise in improving the ambivalence involved in psychological difficulties, with indications that suggest a decrease in distress between sessions. The confirmation of these results can be an aspect in favor of the widespread use of this methodology, given the low cost involved.

Keywords: expressive writing, combined writing, ambivalence, motivational interviewing, university students

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The effectiveness of combined writing in preventing psychological problems:

The role of ambivalence

Mental disorders related spending in Portugal account for 6.6 billion euros, about 3.7% of the country's gross domestic product (GDP) each year, and university students are among the affected population (Conselho Nacional de Saúde, 2019). A recent survey found that approximately 17% of the Portuguese university students reported being diagnosed with mental disorders during college (Angelini Farmacêutica, 2018). Considering such figures, the National Health Council recommended higher education institutions to develop equitable and universal interventions to promote mental health across the academic community and support students at risk (Conselho Nacional de Saúde, 2019).

In this study we introduce a pilot writing-based program, termed Write 'n' Let Go, that uses combined instructions to assist university students in reflecting on a current problem causing psychological distress. Writing-based interventions have a long tradition and a considerable body of research in psychology (Wright & Chung, 2001), either as complementary to psychotherapy or as an intervention in itself. The search for empirical evidence on writing interventions was initiated by Pennebaker and Beal (1986) who coined the term Expressive Writing (hereafter EW). According to the authors, the mere act of writing about traumatic experiences and disclosing suppressed emotions can improve mental and physical health (Pennebaker, 1997; Pennebaker & Beall, 1986). Typically, participants write about their deepest feelings and thoughts for a period of time (between 10 to 30 minutes), either for several consecutive days (between 1 and 5) or for several weeks (up to 4) (Pennebaker & Chung, 2007).

The academic population has been a target of EW studies, with several authors reporting positive effects in psychological measures such as depression, stress, affective valence and well-being (e.g. Booker & Dunsmore, 2017; Burton & King, 2004; Danoff-Burg et al., 2010; Dolev-Amit et al., 2020; Robertson et al., 2019). Notwithstanding the positive results, studies often detect effects on limited outcomes (Giannotta et al., 2009) or even contrary effects for some groups of participants (e.g. Baum & Rude, 2013), therefore a close examination around efficacy and best practices seems appropriate to identify relevant factors to drive our program design.

Meta-Analyses on Expressive Writing

We examined 15 meta-analyses (hereafter MA) on EW, collected through online databases, such as Google Scholar, using the following search terms in combination: *emotional disclosure; experimental disclosure; expressive writing; writing therapy; meta-analysis and meta-analytical review*. Summarized information is presented in Table 1. Due to the variety of studies and populations, MA assessed a diverse

set of outcomes and can be classified into 4 different clusters in terms of studies selection criteria: (1) 5 MA focused on the general effects of EW, (2) 3 MA focused on the effects of EW on specific disorders such as PTSD and depression, (3) 6 MA on specific populations such as adolescents, pregnant women, caregivers, cancer patients, and (4) 1 MA on EW physical outcomes.

Table 1

Summary of Meta-Analyses

Selection Criteria	MA Author, year	Population	# of studies	Effect Size Measure	Effect Size					
					General Psychol. health	Depression	Anxiety	PTSD	Satisfaction with Life	Positive affect
General effects	Frattaroli, 2006	Any	146	Pearson's <i>r</i>	<u>0.08</u>	<u>0.07</u>	<u>0.05</u>	-0.01	0.05	
	Mogk et al., 2006	Any	30	Hedge's <i>g</i>	0.01					
	Meads & Nouwen, 2005	Any	61	SMD		0.22	0.16			<u>0.56</u>
	Frisina et al., 2004	Any	9	Cohen's <i>d</i>	0.07	<u>0.56</u>	<u>0.39/0.18^a</u>			<u>0.55</u>
	Smyth, 1998	Any	13	Cohen's <i>d</i>	<u>0.66</u>					
Specific outcome measures	Pavlacic et al., 2019	PTS, PTG or Quality of Life	53	Cohen's <i>d</i>				<u>0.39</u>		
	Reinhold et al., 2018	Depression	39	Hedge's <i>g</i>		-0.03				
	Van Emmerik et al., 2013	PTSD + depression ^b	6	Hedge's <i>g</i>		<u>0.47</u>		<u>0.70</u>		
Specific populations	Qian et al., 2020	Pregnant women	8	SMD		<u>-0.40^c</u>	0.17	<u>0.39</u>		
	Riddle et al., 2016	Informal caregivers	10	SMD	<u>0.46</u>	0.00	0.01	<u>0.46</u>		
	Oh & Kim, 2016	Cancer Patients	14	SMD		-0.08	0.11			
	Travagin et al., 2015	Adolescents	21	Hedge's <i>g</i>	<u>0.13</u>					
	Zachariae & O'Toole, 2015	Cancer patients	16	Hedge's <i>g</i>	0.04	0.02				-0.02
	Zhou et al., 2015	Breast Cancer Patients	11	MD		-0.30				2.84
Physical outcomes	Harris, 2006	Any	29	Hedge's <i>g</i>						

Note. As effect size terminology varies in the literature (Kline, 2004), we transcribed effect sizes, its measures, and corresponding statistical significance as reported by the authors. Underlined cells indicate significant effects. Empty cells are variables not assessed by the MA.

^a Symptom Checklist-90 and Perceived Stress Scale effect sizes.

^b Studies included psychoeducation and feedback.

^c Significance obtained after removing 1 study highly heterogenous from the group.

As shown in Table 1, not all MA assessed all variables. Thus, EW efficacy rate was calculated using the number of MA with significant results for one variable divided by the number of MA that assessed this variable. General psychological health showed improvements in 57%. EW was less effective for anxiety (33%) and depression (40%), than for PTSD (80%) and positive affect (50%). Overall, 64% of the MA reported significant effects in at least one variable. Although these results suggest that EW is of practical relevance, further studies should investigate the conditions, procedures, populations and outcome variables in which significant results are produced (e.g. Qian et al., 2020; Reinhold et al., 2018).

The main MA recommendations were: the use of more than 3 sessions (Qian et al., 2020; Reinhold et al., 2018), longer sessions of at least 15 minutes (Frattaroli, 2006) and writing in private locations (Frattaroli, 2006). Concerning the writing topic, Frattaroli (2006) found larger effect sizes when participants are instructed not to switch topics within a session or throughout the intervention. Reinhold et al. (2018) also found larger effect sizes in studies that addressed a specific writing topic. Findings suggested that while participants should be provided with flexible instructions allowing to pick a topic of choice (Pennebaker & Chung, 2007), instructions must clearly state that all writing tasks should relate to the chosen topic. Concerning the choice of writing instructions, Mogk et al. (2006) suggested complementing the standard EW procedure with instructions that foster self-regulatory coping, self-efficacy or helping others. Reinhold et al. (2018) also found that better outcomes were obtained when instructions differed from session to session, guiding participants on the expected writing content for each session.

Writing Paradigms

Writing instructions are the primary interface between researcher and participants, driving the intervention. The choice of instructions is influenced by writing paradigms and the associated underlying mechanisms, lenses through which the investigator seeks to explain how EW produce effects.

Seminal Pennebaker's EW paradigm focused on negative emotions resulting from traumatic experiences. It all started with a simple question: *could writing about traumas improve people's health* (Smyth & Pennebaker, 2008)? Several theories and related mechanisms are hypothesized to mediate the effects of the negative-centered paradigm. Disinhibition theory argues that the inhibition of thoughts and feelings towards a disturbing event is harmful to health and, therefore, the act of writing about suppressed emotions leads to stress reduction (Pennebaker, 1992). For exposure theory, writing about a traumatic experience may lead to habituation or the extinction of such feelings and emotions (Sloan & Marx, 2004). Subsequent studies expanded the trauma lens to integrate other problems and challenging life situations, such as job loss (e.g. Spera et al., 1994), serious diseases (e.g. Low et al., 2010), bereavement (e.g.

Pennebaker et al., 1997), and transition to college (e.g. Cameron & Nicholls, 1998; Robertson et al., 2019). To accommodate these expanded lenses, the cognitive processing theory argues that writing effects result from the opportunity for people to form a coherent story, make sense of the event, gain insights and integrate the upsetting experience into one's self-schema (Pennebaker, 1993). Self-regulation theory complements with the idea that emotional disclosure enhances emotional regulation through the mastery experience of observing ourselves and controlling our emotions while writing (Range & Jenkins, 2010).

Derived from the positive psychology and under the influence of the trauma disclosure, studies began exploring the perceived benefits of traumatic experiences (e.g. King & Miner, 2000). Findings were that the positive writing (hereafter PW) paradigm was as or more effective than writing about negative emotions. Such outcomes were explained by several underlying mechanisms. For self-regulation theory, writing leads to readjustments of goals-related emotions, drastically impacted by the trauma (Frattaroli, 2006), whereas cognitive processing benefits are associated with the changes in the traumatic event appraisal noticed by the increased use of words indicating cognitive insight together with positive words (King & Miner, 2000). A progression of the PW paradigm was seen with the use of the "best possible self" exercise (e.g. King, 2001), in an effort to increase self-regulation through the mental simulation of successful outcomes that foster the thought and action relationship and lead to increased self-efficacy (Frattaroli, 2006). Further developments of the positive approach included writing about intensely positive experiences (e.g. Burton & King, 2004), gratitude (e.g. Booker & Dunsmore, 2017), and strengths and competencies (e.g. Dolev-Amit et al., 2020). In support of these studies, self-regulation theory argues that the raised awareness of values, strengths, and goals through self-observation leads to increased self-efficacy and a sense of control over life challenges (Frattaroli, 2006).

Despite the multiple hypothesized mechanisms, the consensus is that no single theory fully explains how EW works (Sloan & Marx, 2004). As Smyth and Pennebaker (2008) remarked, multiple interacting factors are likely driving its effectiveness. Experiments that attempt to leverage the various mechanisms seem a productive approach. However, the combination of paradigms is the least explored form of writing intervention. Studies with successful outcomes (e.g. Frederiksen et al., 2017; Gellaitry et al., 2010; Lu & Stanton, 2010) used different instructions per session, all related to the same writing topic. The combination of paradigms touches different processes elicited by each instruction and become a walk-through path in which participants reflect on the topic from different perspectives. In order to study how combined writing works, we propose an examination of transtheoretical processes that might influence and get in the way when participants reflect upon the problem in each proposed task. As in

psychotherapy, the goal becomes to help the participant to better deal with the situation, make adaptive changes and find new ways of dealing with the problem. This context raises particular interest on the role ambivalence might play in the interaction *participant* -< *problem* >- *instructions*.

Ambivalence and Expressive Writing

Ambivalence is one of the key constructs that respond to the question: *why don't people change?* Ambivalence can be defined as a conflict of opposite positions of the self, while one supports change, the other favors maintaining the status quo (Oliveira et al., 2020). In other words, when people face a problem or difficult life situation that causes distress, although they want to change things, at the same time they don't want to change. This back-and-forth erratic movement, as an approach-avoidance conflict is a natural movement that involves most situations in life (Engle & Arkowitz, 2006; Gonçalves et al., 2011; Miller & Rollnick, 2013). An adaptive change can assume different facets, such as change in behaviors, cognitions, relationships, meaning, views of oneself, of the other and the world (Engle & Arkowitz, 2006). Changes imply awareness and motivation to handle difficult internal conflicts and the wins and losses involved. Reducing the conflict may unfold from increasing the negotiation between the opposite (e.g. pro-change and pro-stability) positions of the self (Braga et al., 2018), as in *"an agreement that the two selves will work with rather than against each other"* (Engle & Arkowitz, 2006, pg. 143).

In the context of EW, ambivalence has been studied within specific situations. The concept of ambivalence over emotional expression was explored as a moderator of emotional disclosure tasks (e.g. Lu & Stanton, 2010; Niles et al., 2014). Another focus was ambivalence towards participants life goals (e.g. Heekerens et al., 2020; Kelly et al., 2012). Kelly et al., (2012) used the traditional EW instructions attempting to directly manipulate an ambivalent goal, defined as a goal that can make the person somehow unhappy even if achieved successfully. Although the intervention was successful to reduce the distress about ambivalence, it did not reduce the actual ambivalence level. Heekerens et al. (2020) used the "best possible self" exercise with instructions to write about the ideal future from 3 different perspectives (work/study, love/partnerships, leisure/hobbies). The goal was to help students commit to some life goals at the expense of others and the intervention did result in a reduction on goal ambivalence and increase on positive affect. Reflecting on both studies, ambivalence levels did not reduce when participants wrote about their ambivalent goal using a direct approach but did when they imagined and wrote about the ideal future. In psychotherapy, attempts to pressure for a resolution, or force in a particular direction have counterproductive results (Miller & Rollnick, 2013). The therapist's role must be one of acceptance and impartiality, helping the client to voice needs, wants, fears, desires, until reaching comfort to make an informed decision, congruent with values and with what truly matters for the patient.

These concepts are part of Motivational Interviewing (hereafter MI; Miller & Rollnick, 2013), a method developed by the authors to facilitate change, by working to resolve ambivalence. MI was conceived as a way to handle problems using a client-centered approach and has been extensively researched and developed clinically (Engle & Arkowitz, 2006). The method presupposes that change involves internal conflicts and encourages the person to increase intrinsic motivation for changing. It emphasizes the importance of clients' agency, while recognizing their stage of change (Miller & Rollnick, 2013). Although described as a directive approach, the therapist role is not to directly influence change, but to foster reflection and raise awareness of ambivalence. Using an empathetic posture, the therapist asks open questions and reflects back to the client. Several exercises are proposed, such as to query the extremes looking back and forward, hypothesize change, reflect on pros and cons of change, aiming to develop discrepancy, voice and balance both sides of the conflict, support self-efficacy, enhance confidence and elicit change talk.

Recent work leveraged MI in the context of EW, with a program to help people reflect about the COVID-19 pandemic impacts (Welch et al., 2020). Expressive interviewing, as denominated by the authors, is an automated system that combines EW and MI techniques. For Welch et al. (2020), MI share common fundamentals with EW in a sense that when speaking, or writing, people gain a sense of agency and coherence of the thoughts and emotions that surround their experience. Reflections around the pandemic impacts were promoted with the use of open-ended questions around multiple topics and through reflexive feedback.

The Present Study

Write 'n' Let Go uses combined instructions with close attention on ambivalence results and the role it plays in the context of the intervention. The program consisted of 20-minute writing tasks on 4 consecutive days related to a problem identified by the participant. The combined instructions guided participants in a journey of expressing emotions (1st task), organizing thoughts (2nd task), recognizing strengths and resources (3rd task) and imagining the problem solved (4th task). On the negative emotion's tasks (1 and 2), the mechanisms used for problem activation intended to foster emotional ventilation, raise awareness of emotions, gain insights, make sense or reappraise the problem, and form a coherent story (Pennebaker, 1993; Range & Jenkins, 2010). On the positive emotions tasks (3 and 4), resource activation intended to elicit positive emotions, raise awareness of values, strengths, competencies, and simulate successful outcomes about the problem (Frattaroli, 2006). According to Gassmann and Grawe (2006), problem activation and resource activation are general change mechanisms that when combined may lead to therapeutic progress in psychotherapy. Resource activation was studied in the context of EW

with instructions designed to elicit and recognize personal resources (Toepfer et al., 2016). Besides, a core component in all instructions was the emotional expression, expected to act as a change enabler by raising awareness of the different positions of the self and the world (Gassmann & Grawe, 2006) and to try to avoid contents in total absence of affect (Engle & Arkowitz, 2006).

Our main hypothesis was that the mechanisms evoked by combined instructions may lead participants to increased awareness, self-regulation, and self-efficacy, facing the conflict in a more resourceful way, hence reducing ambivalence. This, in turn may promote adaptive changes leading to an increase in well-being and a decrease in psychological symptoms and distress. Although speculative, this was an innovative aspect of our work since ambivalence has been little explored outside the context of psychotherapy and can be a relevant factor as a potential mediator or moderator in the effectiveness of writing interventions.

In sum, since Pennebaker and Beall's (1986) original study, EW has been target of an extensive body of research. The multiple applications of this accessible intervention have led researchers to test its efficacy in different formats with different populations. With this study we aimed to assess the effectiveness of an online writing-based program for university students in Portugal. More specifically, we sought to test the efficacy of combined instructions that guided participants to write about their chosen problem or life situation while studying ambivalence in this context. Assessing a potential mediator or moderator of the intervention results can contribute to the literature by exploring alternative underlying mechanisms of EW effects. All activities were carried out online and autonomously, thus the program could be widely offered. From a pragmatic perspective, this study was justified by the need to rapidly expand the capacity to provide continuous care in mental health, which is still very limited and asymmetric (Conselho Nacional de Saúde, 2019). EW interventions are inexpensive, easy to implement, and could become a preventive tool to enable self-reflection and increased awareness about the importance of mental health care.

Method

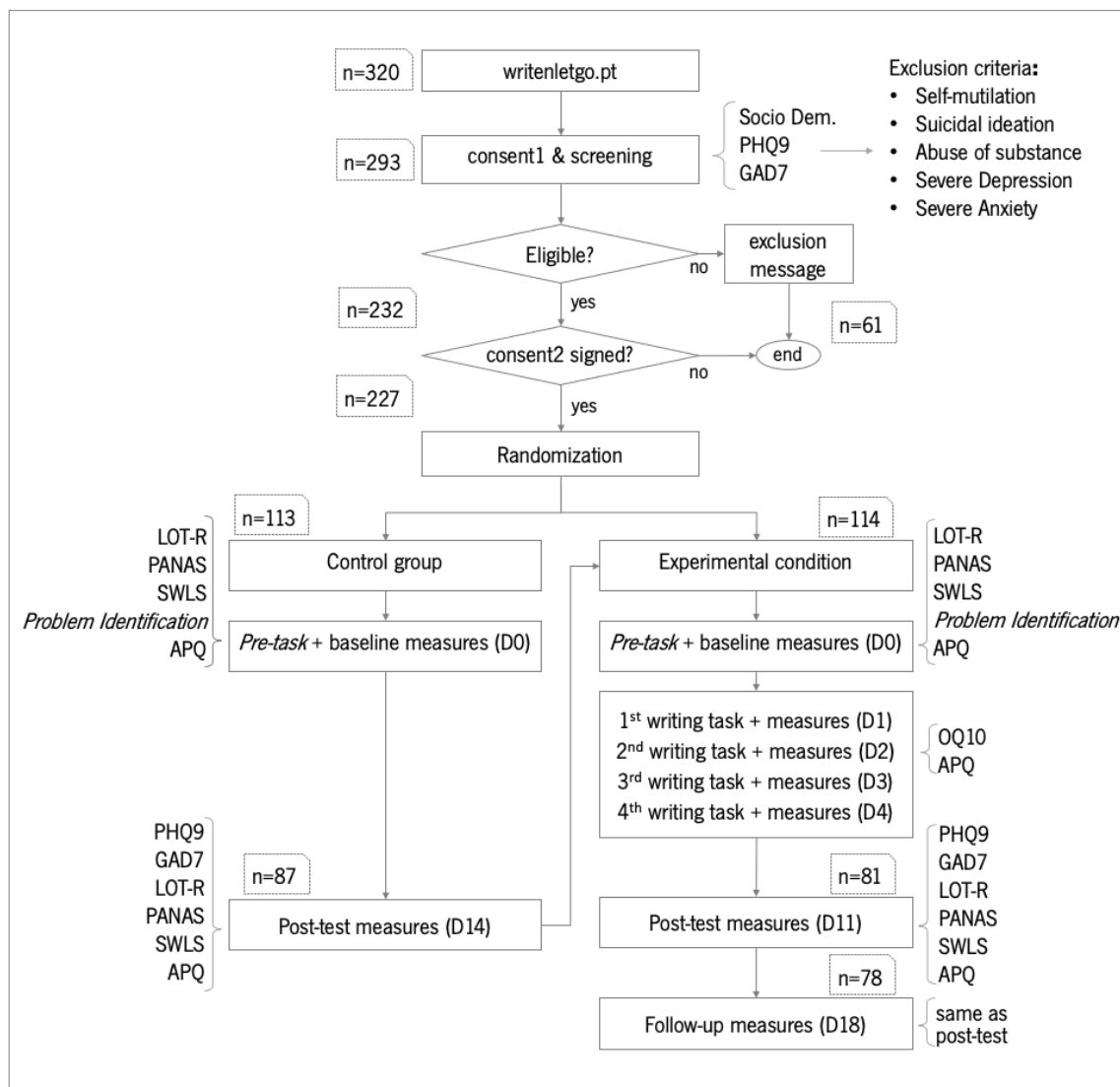
Participants

Between September 2020 and May 2021, 320 university students signed up for screening on our program's website (<http://writenletgo.pt>). Eligible participants had Portuguese as native language, were of legal age (≥ 18 years old), and did not present severe anxiety (GAD-7 ≥ 15), severe depression (PHQ-9 ≥ 20), suicidal ideation or risky behaviors such as self-mutilation or substance abuse. In the screening process, 93 participants were excluded according to the reasons: undergoing psychotherapy (23%), severe anxiety (22%), severe depression (10%), suicidal ideation (3%), self-mutilation behavior (4%),

didn't complete the screening (29%), or didn't sign the informed consent (5%). The students with severe anxiety or depression, suicidal ideation, and risky behaviors were recommended to look for psychological or medical support. The exclusion of participants undergoing psychotherapy ceased in the middle of the study due to the high demand from students in this situation. The 227 eligible participants were randomly assigned to the experimental group (n=114) and control (waitlist) group (n=113). The 27% dropout at various points along the program led to 165 completers, 78 in the experimental group and 87 in the control group. University of Minho (hereafter UMinho) psychology students that received credits for participating in the program represented 57% of the eligible participants and 77% of the completers. Figure 1 details the study design and the participants' flow from enrollment to follow-up.

Figure 1

Study Design and Participants' Flow



Participants' mean age was 22.8 years (SD = 6.97). The majority of the sample was female (86%), Portuguese (88%), single (94%) and student at the Integrated Master's Degree program (68%). Although we had participants from 10 different universities, most of them (91%) were from the UMinho. The mean baseline symptomatology scores were mild depression (M = 6.04, SD = 3.96) and mild anxiety (M = 6.14, SD = 3.89); 49% of the participants have had psychotherapy in the past and 10% are currently undergoing psychotherapy. The sociodemographic characteristics at baseline didn't differ between the groups (all p values > 0.05).

Measures

Generalized Anxiety Disorder Scale (GAD-7) (Spitzer et al., 2006; adapted by Sousa et al., 2015)

A self-report questionnaire with 7 items that assesses symptoms of general anxiety. Participants rated symptoms experienced within two weeks prior to the administration of the questionnaire, through a 4-point Likert scale, from 0 (not at all) to 3 (nearly every day). Scores range from 0–21, with a severity classification of minimal (0–4), mild (5–9), moderate (10–14), and severe (15–21). The Portuguese version showed internal consistency of .88 (Sousa et al., 2015). The GAD-7 was collected during the screening process/baseline, at post-test, and follow-up.

Patient Health Questionnaire (PHQ-9) (Kroenke & Spitzer, 2002; adapted by Monteiro et al., 2013)

A self-report questionnaire with 9 items used to monitor depression symptomatology. Participants rated each item with the symptoms experienced two weeks before the administration of the questionnaire, through a 4-point Likert scale, from 0 (not at all) to 3 (more than half of the days). Total scores range from 0–27, with a severity classification of minimal (0–4), mild (5–9), moderate (10–14), moderately severe (15–19), and severe (20–27). The Portuguese version showed an internal consistency of .86 (Monteiro et al., 2013). The PHQ-9 was collected during the screening process/baseline, at post-test, and follow-up.

Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988; adapted by Galinha & Pais-Ribeiro, 2005)

A self-report measure that assesses to what extent individuals experienced positive and negative emotions in the last two weeks. Positive affect (PA) and negative affect (NA) scales consist of 10 items each. Responses to each item use a 5-point Likert scale (from 1 = very slightly or not at all to 5 = extremely). Scales scores range from 10–50. Higher scores indicate higher levels of positive or negative affect. The Portuguese version showed internal consistency of .86 for the PA scale and .89 for the NA scale (Galinha & Pais-Ribeiro, 2005). The PANAS was collected at baseline, post-test, and follow-up.

Revised Life Orientation Test (LOT-R) (Scheier et al., 1994; adapted by Laranjeira, 2008)

A self-report measure that assesses dispositional optimism. It consists of 10 items, of which only 6 are scored (items 1, 3, 4, 7, 9, and 10). The 4 items not scored (2, 5, 6, and 8) are distractors and were not included in this study. Responses to each item use a 5-point Likert scale, from 0 (strongly disagree) to 4 (strongly agree). The minimum score is 0 and the maximum is 24. The Portuguese version showed internal consistency of .71 (Laranjeira, 2008). The LOT-R was collected at baseline, post-test, and follow-up.

Satisfaction with Life Scale (SWLS) (Diener et al., 1985; adapted by Neto, 1993)

A self-report measure that assesses life satisfaction perception. Each of the 5 items are rated on a 7-point Likert scale (from 1 = strongly disagree to 7 = strongly agree) with the total score ranging from 5–35. Higher scores indicate greater satisfaction with life. The Portuguese validation showed an internal consistency of .86 (Neto, 1993). The SWLS was collected at baseline, post-test, and follow-up.

Ambivalence in Psychotherapy Questionnaire (APQ) (Oliveira et al., 2020)

A self-report measure that provides a global score of clients' ambivalence levels towards change, and two sub-scales scores: demoralization and wavering. It is composed of 9 items answered on a Likert scale (from 1 = totally disagree to 5 = totally agree), with total scores ranging from 9–45. The demoralization dimension consists of 5 items (1, 6, 7, 8, and 9) and "*emerges as the consequence of a perceived lack of skills to achieve change and the confusion of goals due to internal conflict*" (Oliveira et al., 2020, pg. 6). The wavering dimension consists of 4 items (2, 3, 4, and 5) and "*refers to the oscillatory movements between two (or more) positions regarding a given object*" (Oliveira et al., 2020, pg. 6). Both the global score and sub-scales exhibit good psychometric properties. For the purpose of this study, APQ was adapted to switch from the psychotherapeutic setting to the EW pilot program. The APQ was collected at baseline, after each writing task, at post-test, and follow-up.

Outcome Questionnaire 10.2 (OQ10.2) (Lambert et al., 2005; adapted by Oliveira et al., 2019)

A self-report measure that monitors symptomatic change in the dimensions of psychological well-being and psychological distress. The 10 items are rated on a 5-point Likert scale ranging from 0 (never) to 4 (almost always). Higher total scores indicate more symptomatic distress. The Portuguese validation showed an internal consistency of .80 (Oliveira et al., 2019). The OQ-10.2 was collected after each writing task.

Procedure

The study was approved by the Research Ethics Committee in Social and Human Sciences at the University of Minho (process CEICSH 072/2020). A web application <http://writenletgo.pt> was developed

specifically for the program. Its workflow included enrollment, screening, online consent, data collection, and writing tasks that were accompanied by explanatory videos besides the written instructions. The application provided an exclusive area for each participant with a panel of planned activities/dates to be performed throughout the program and sent email with task reminders.

Write ‘n’ Let Go was promoted at national and regional media, at social networks, at the UMinho School of Psychology’ credits platform, and through direct emailing universities and its student associations. Students registered at the website and filled in the screening questionnaires. Eligible participants gave online consent and were randomly allocated to the control or the experimental group. In both conditions, participants began by performing the pre-task, which consisted of collecting additional baseline measures and identifying a ‘Problem’, i.e. a life situation, or an emotionally disturbing event that was causing psychological distress and significantly affecting life. A brief description of this problem, its nature, and the problem severity were registered and became the central theme of the writing intervention.

Participants in the experimental group wrote for 4 consecutive days, 20 minutes per day about their identified problem and responded to questionnaires. Different instructions were provided each day (see Table 2 for details).

Table 2

Experimental Condition

Session	Writing Task Name	Writing Instructions (summarized ideas) “Write about your most intimate thoughts and feelings about...”
1	Express your emotions	...your problem, your behaviors facing the problem, your relationships with others, the impact this problem has in your past, present, and future, in your life, and the person you are. ⇒ +collect psychological distress/ambivalence levels
2	Organize your thoughts	...your problem, describe it in detail, its origins, obstacles, maintenance factors, consequences if resolved, and the role of others. ⇒ +collect psychological distress/ambivalence levels
3	Recognize your strengths	...your skills, strengths, and resources, how these skills can be useful in solving the problem, how you dealt with other difficulties in the past, which resources were most useful to you, and the support of others. ⇒ +collect psychological distress/ambivalence levels
4	Imagine your problem solved	...your life in the near future, in which the problem you identified has been resolved or has stopped causing such great discomfort. Imagine everything went as smoothly as possible, and you were able to better deal with the problem or resolve it properly. ⇒ +collect psychological distress/ambivalence levels

The control group was a waitlist and responded to post-test measures 2 weeks after the pre-task. At this point, participants were able to begin the experimental condition activities. For the experimental group, post-test and follow-up measures were collected, respectively, 1 and 2 weeks after the last writing task (refer back to Figure 1 for details).

Data Analysis

All analyses were done using IBM SPSS Statistics for Mac, Version 27.0.

Preliminary Analysis

Independent-samples t-tests were used to validate if the experimental group differed from the control group on the measures collected at baseline.

Between Group analyses:

The impact of the intervention on the measures and its sub-scales, when applicable, and the corresponding effect sizes were estimated using independent-samples t-tests comparing the difference in means (post-test minus baseline) from the experimental condition and the control group. A one-way repeated measures MANOVA (multivariate analysis of variance), including all measures at baseline and post-test as dependent variables, was used to confirm the results obtained in the previous test.

Moderation and Mediation Analyses

The analyses of moderation and mediation of ambivalence were conditioned to the intervention producing significant effects on at least one other measure, and followed the models described in Baron and Kenny (1986).

Within-group Analyses

We estimated the effect size of the intervention using paired-samples t-tests comparing the experimental group measures at baseline and post-test. For the variables with significant results, the analysis was repeated using post-test and follow-up measures to assess if the gains persisted at follow up. To test the impact of the writing tasks on the measures collected immediately after each task, we used one-way repeated measures MANOVA. Post hoc pairwise comparisons using a Bonferroni correction for multiple comparisons assessed the impact of each pair of tasks individually.

Results

Preliminary Analysis

Table 3 presents the descriptive statistics of psychological measures collected at baseline, post-test and follow-up as a function of group. Preliminary analysis did not produce any significant differences

on baseline measures between the experimental and the control group (all p values >.05), indicating a successful randomization of participants.

Table 3

Descriptive Statistics for Psychological Measures by Group

Psychological measure	Baseline			Post-Test			Follow-up		
	n	M	SD	n	M	SD	n	M	SD
<i>Anxiety</i>									
Experimental	114	5.96	3.83	81	6.19	4.26	78	6.21	4.94
Control	113	6.32	3.96	87	6.33	4.53			
<i>Depression</i>									
Experimental	114	5.84	3.86	81	5.77	4.25	78	5.71	4.19
Control	113	6.25	4.07	87	6.45	4.65			
<i>Negative Affect</i>									
Experimental	106	19.63	7.42	81	17.95	6.63	78	17.37	6.44
Control	103	19.14	7.32	87	18.17	7.29			
<i>Positive affect</i>									
Experimental	106	26.25	8.02	81	25.42	7.93	78	25.09	7.91
Control	103	27.31	7.94	87	25.86	7.38			
<i>Dispositional Optimism</i>									
Experimental	106	14.01	4.95	81	13.91	5.17	78	14.21	5.08
Control	103	14.7	4.59	87	14.82	4.68			
<i>Satisfaction with Life</i>									
Experimental	106	16.64	3.72	81	17.53	3.77	78	17.63	3.68
Control	103	17.27	3.69	87	17.69	3.15			
<i>Ambivalence</i>									
Experimental	106	30.43	7.01	81	25.36	7.81	78	25.49	7.68
Control	100	30.87	6.44	86	29.52	7.03			
<i>Ambivalence Demoralization</i>									
Experimental	106	15.84	4.72	81	12.68	4.98	78	12.94	4.79
Control	100	16.34	4.07	86	15.49	4.45			
<i>Ambivalence Wavering</i>									
Experimental	106	14.59	3.20	81	12.68	3.54	78	12.55	3.54
Control	100	14.53	2.99	86	14.03	3.30			

Note. Empty cells are measures not collected at follow-up for the control group.

Between-group Analyses

The estimation of the impact and effect size of the intervention on the psychological measures between groups using independent-samples t-tests indicated a significant ambivalence reduction in participants of the experimental group ($t(165) = -4.12, p < .001, d = -.64$). Significant differences were found in the ambivalence sub-scales, with participants in the experimental group reporting lower levels of demoralization ($t(165) = -3.61, p < .001, d = -0.56$) and lower levels of wavering ($t(165) = -2.95, p = .004, d = -0.46$) than participants in the control group. The experimental group did not differ from the control group in depression, anxiety, positive affect, negative affect, dispositional optimism, and satisfaction with life (detailed results are presented in Table 4).

Table 4

Independent-Samples t-Tests Results Between Groups

Psychological measure	Difference in Means		<i>t</i>	df	<i>p</i>	Cohen's <i>d</i>
	Experimental	Control				
Anxiety	0.47	0.21	0.49	166	.628	0.08
Depression	0.38	0.10	0.53	166	.594	0.08
Negative Affect	-1.38	-0.94	-0.48	166	.631	-0.07
Positive affect	-1.00	-1.67	0.77	166	.442	0.12
Dispositional Optimism ^a	-0.01	0.13	-0.34	145	.734	-0.06
Satisfaction with Life	0.44	0.39	0.17	166	.862	0.03
Ambivalence	-4.93	-1.64	-4.12	165	.000***	-0.64
Ambivalence - Demoralization	-3.00	-0.94	-3.61	165	.000***	-0.56
Ambivalence - Wavering	-1.93	-0.70	-2.95	165	.004**	-0.46

Note. Difference in means calculated by subtracting the baseline mean from the post-test mean in each group. All *p* values in this table are two-tailed.

^a Equal variances not assumed, Glass's Delta effect size used.

** $p < .01$, *** $p < .001$

The results of a MANOVA, including all measures at baseline and post-test as dependent variables, indicated a significant effect on the group*time interaction (Pillai's Trace = 0.108, $F(7.159) = 2.76$, $p = .010$, $\eta_p^2 = 0.11$). From a univariate perspective, ambivalence was significantly different between the experimental and the control group ($F(1,165) = 16.98$, $p < .001$, $\eta_p^2 = 0.09$). No differences were found in depression, anxiety, negative affect, positive affect, dispositional optimism, and satisfaction with life (see table 5 for detailed MANOVA univariate results). Post hoc pairwise comparisons analyses using a Bonferroni correction indicated that ambivalence reduced significantly at post-test in both groups, but the reduction was more pronounced in the experimental group ($p < .001$) than in the control group ($p = .004$), confirming the independent-samples t-tests results.

Table 5

One-Way Repeated Measures MANOVA Between Groups

Psychological measure	M Experimental		M Control		$F(1,165)$	p	η_p^2
	Baseline	Post-test	Baseline	Post-test			
Anxiety	5.72	6.19	6.13	6.24	0.44	.510	0.003
Depression	5.38	5.77	6.28	6.43	0.20	.659	0.001
Negative Affect	19.33	17.95	19.03	17.84	0.04	.834	0.000
Positive affect	26.42	25.42	27.58	25.94	0.54	.463	0.003
Dispositional Optimism	13.93	13.91	14.74	14.92	0.22	.643	0.001
Satisfaction with Life	17.09	17.53	17.43	17.81	0.04	.845	0.000
Ambivalence	30.28	25.36	31.16	29.52	16.98	.000***	0.093

Note. All p values in this table are two-tailed.

*** $p < .001$

Moderation and Mediation Analyses

We didn't carry out the analyses of ambivalence as a moderator or mediator of the intervention results, since there were no significant differences between the groups in the other psychological measures.

Within-group Analyses

Paired-samples t-tests comparing the baseline and post-test measures within the experimental group indicated that the intervention produced, as expected, significant reductions on negative affect, with a small effect size ($t(80) = 2.36, p = .021, d = 0.26$), on ambivalence, with a large effect size ($t(80) = 8.23, p < .001, d = 0.91$) and a close to significant reduction on satisfaction with life ($t(80) = -1.84, p < .070, d = -0.20$). No significant differences were observed in depression, anxiety, positive affect, and dispositional optimism (see Table 6 for detailed results).

The gains obtained in negative affect, ambivalence, and satisfaction with life persisted at follow-up. This was confirmed using paired-samples t-tests within the experimental group, that resulted in no significant differences between post-test and follow-up on negative affect ($t(77) = 0.44, p = .659$), ambivalence ($t(77) = 0.21, p = .834$), and satisfaction with life ($t(77) = 0.25, p = .804$).

Table 6

Paired-Samples t-Tests Results Within the Experimental Group

Psychological measure	M		$t(80)$	p	Cohen's d
	Baseline	Post-test			
Anxiety	5.72	6.19	-1.22	.226	-0.14
Depression	5.38	5.77	-1.06	.291	-0.12
Negative Affect	19.33	17.95	2.36	.021*	0.26
Positive affect	26.42	25.42	1.65	.104	0.18
Dispositional Optimism	13.93	13.91	0.04	.971	0.00
Satisfaction with Life	17.09	17.53	-1.84	.070 [†]	-0.20
Ambivalence	30.28	25.36	8.23	.000***	0.91
Ambivalence - Demoralization	15.68	12.68	6.88	.000***	0.76
Ambivalence - Wavering	14.60	12.68	5.94	.000***	0.66

Note. All p values in this table are two-tailed.

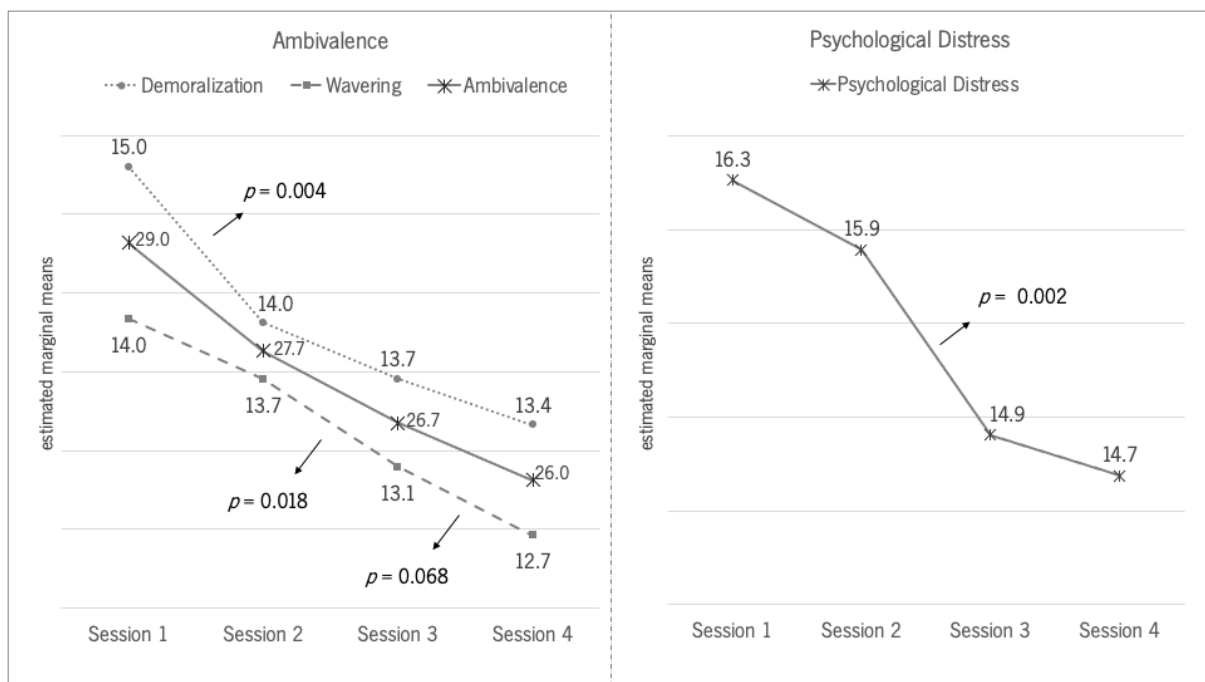
[†] $p < 0.1$, * $p < .05$, *** $p < .001$

The test of the efficacy of the writing tasks using one-way repeated measures MANOVA indicated significant differences in mean vectors among the 1st, 2nd, 3rd and 4th task across the two dependent variables, ambivalence and psychological distress, Pillai's Trace = 0.43, $F(6,77) = 9.70, p < .001, \eta_p^2 =$

0.43. From a univariate perspective, significant differences were found in psychological distress across tasks, $F(3,219) = 12.59, p < .001, \eta_p^2 = 0.13$ as well as in ambivalence across tasks, $F(3, 212) = 22.95, p < .001, \eta_p^2 = 0.22$. In a post hoc pairwise comparisons analyses using a Bonferroni correction (refer to Figure 2 for detailed results), psychological distress was significantly lower in the 3rd task when compared to the 2nd task ($p = .002$). Ambivalence, in turn, was significantly lower in the 2nd task when compared to the 1st task ($p = .003$) and in the 3rd task when compared to the 2nd task ($p = .044$). Analyzing this result in light of each ambivalence sub-scale, the demoralization sub-scale reduced significantly after the 2nd task ($p = .004$), whereas the wavering sub-scale reduced significantly after the 3rd task ($p = .018$) and close to significance after the 4th task ($p = .068$).

Figure 2

Ambivalence and Psychological Distress Evolution Across Tasks for the Experimental Group



Note. Significance level adjusted for several comparisons using a Bonferroni correction.

Discussion

This study explored combined writing instructions related to a single topic and investigated ambivalence as an underlying mechanism of the intervention effects. Writing for 20 minutes in 4 consecutive days following different instructions related to a current problem proved effective in reducing ambivalence, compared to the control group and in reducing psychological distress between the first and

last task. Contrary to expected, anxiety, depression, positive affect and dispositional optimism measures didn't improve after the intervention, whereas negative affect and satisfaction with life improved, but didn't differ between groups.

From an overall perspective, the ambivalence and distress reduction suggests that the combination of mechanisms elicited by the different instructions enabled participants to gauge different perspectives about the problem, building upon previous blocks and forming a more comprehensive view of the situation (Pennebaker & Chung, 2007). This increased awareness may have raised the perception of competence to handle the situation and reduced the oscillatory movements to and away from the problem, alleviating the distress likely associated with this conflict (Oliveira et al., 2020). These findings are consistent with the views of writing as a way to change perspectives, stand back, re-evaluate life situations and develop a better understanding of the problem (Pennebaker & Chung, 2007), resulting in increased sense of agency and greater thoughts and emotions coherence (Welch et al., 2020), thus with potential to address internal conflicts. As Kelly et al. concluded, EW *"might represent an analogue of therapeutic approaches to reducing individuals' ambivalence or distress about their ambivalence"* (Kelly et al., 2012, pg. 222).

Acknowledging that is not possible to determine whether ambivalence reductions resulted from a specific task, or from the combination of preceding tasks, we will offer some conjectures on the likely mechanisms associated to the moments in which significant reductions occurred. We know that for ambivalence, demoralization reduced significantly after Task 2, whereas wavering reduced after Tasks 3 and 4 (the latter was a close to significance reduction). Task 2 instructions led participants to reflect about the problem using strong cognitive focus. Bringing additional clarity around the conflict may have helped diminishing the perceived lack of ability to handle the situation (Oliveira et al., 2020). The wavering reduction after Task 3 could be explained by the self-regulation theory. Raising awareness of strengths and resources through self-observation may have led to increased self-efficacy and a sense of control over life challenges (Frattaroli, 2006), thus reducing the oscillatory movements towards the problem. Lastly, Task 4 may have diminished wavering by stimulating the thought and action relationship through mental simulation of successful outcomes, leading to increased self-efficacy (Frattaroli, 2006).

The absence of psychological distress collection at baseline and post-test reduced our ability to draw conclusions, however, its significant reduction after Task 3, suggests that personal resources brought to conscious awareness may have led to increased self-efficacy (Frattaroli, 2006), potentially reducing internal conflicts and alleviating distress. The overall drop between Tasks 1 and 4 suggests that balancing problem and resource activation was productive on this writing context, similarly as it leads to

therapeutic progress in psychotherapy (Gassmann & Grawe, 2006). As additional evidence, the experimental group also reduced significantly in negative affect and increased in satisfaction with life (close to significance increase) between baseline and post-test. Notwithstanding these results, the intervention failed to produce improvements in depression, anxiety, positive affect and dispositional optimism at posttest. In fact, our MA review showed that many interventions didn't produce effects as well (refer back to Table 1 for details). For Write 'n' Let Go, several factors may have contributed to this gap. At baseline, the fact that both groups performed the pre-task and identified a relevant problem may have created an unforeseen bias. In addition, although the immediate distress relief after sessions, the drop in ambivalence got participants a step closer to change, and this proximity is not free of anxiety (Engle & Arkowitz, 2006). The 1-week post-test measure may have captured this effect.

Given the relevant results obtained with ambivalence, we further examined the mechanisms that might have led to its reduction using the MI principles (Miller & Rollnick, 2013) as a conceptual background. The most relevant difference between Write 'n' Let Go and MI is the absence of a therapist, with participants subject to own insights and personal biases. However, this noninteractive task is also free of judgment, reactance, and social desirability. It's safe, anonymous and enables self-expression without consequences. The program focused on a problem, thus centered on participant's needs through autonomy and voluntary involvement. Following MI method of asking open-ended questions, the writing instructions provided clear, yet open and suggestive guidance, as door-openers to consider various perspectives. These reflections were combined with psychoeducation around ambivalence, provided in the questionnaire instructions in a nontechnical way. Thus, responding to the questionnaire at baseline and after each writing task may have deepened meaning by enabling reflections around core ambivalence dimensions. This positions ambivalence as normal, reflects an indirect way of influence as supported by the *roll with the resistance* principle (Miller & Rollnick, 2013), and may offer a suggestion on why ambivalence reduced significantly for the control group as well. Participants in this group also performed the pre-task, with the identification of a problem and filled out the ambivalence questionnaire at baseline.

Write 'n' Let Go writing tasks evoked emotional expression, more prominently in Task 1. Engle and Arkowitz (2006) suggested that MI could obtain stronger results with emotional arousal, as this facilitates access to overlooked wants, needs, and fears and deepens change talk from an intellectual to an emotional level. *Develop discrepancy* principle was mostly worked in Task 1, by writing about own behaviors and on how the problem impacts life and in Task 2, by reflecting about the problem, its origins, obstacles, maintenance factors, likely consequences if solved and the role others may play. For MI, the decisional balance is a relevant exercise to promote reflections around the pros and cons of changing

(Miller & Rollnick, 2013). *Support self-efficacy* principle was present in Task 3, with instructions moving participants away from the problem and exploring more general inner strengths, competences, resources, social support, past successes and how to leverage them all in solving the problem. Task 4 guided participants to write about life best case scenario in the near future, describe how things would be different, and how they managed to solve the problem, as in the *querying the extreme* and *hypothetical change* exercises, to help developing discrepancy and support self-efficacy (Miller & Rollnick, 2013).

In conclusion, combined writing has shown promise in improving the ambivalence involved in psychological difficulties, with indications that suggest a decrease in distress between sessions. The confirmation of these results can be an aspect in favor of the widespread use of this methodology, given the low cost involved. Future studies could attempt to identify the stage of change and tailor tasks accordingly, in addition to reinforcing psychoeducation and introducing feedback, when possible. Our results also suggest a potential for EW to get people to reflect about psychological processes not easily accessible otherwise. Future studies could explore combined writing and other processes, such as excessive preoccupation, rumination, or avoidance, bringing together psychoeducation and reflections around situations relevant to the participant. Using a narrower focus with a single target may be more effective, with designs fit for purpose in which we could draw participant's attention to the target, increasing psychoeducation. In this sense, we also envision the possibility of using multiple sequenced writing interventions to address stepped goals, with the minimum involvement of a therapist who drives the course of the intervention by identifying the most adequate tasks according to participant's moment and needs.

As limitations of this study, we identified the excessive number of questionnaires potentially causing fatigue, the use of free of charge symptoms questionnaires (PHQ-9/GAD-7), not often used in EW studies, and the extrinsic motivation to participate, with 57% of eligible participants awarded with credits. Despite the limitations, the 27% dropout rate is a feasibility indicator of EW online programs. The accessibility, availability, and ease of use characteristics of the web application developed for Write 'n' Let Go may also have contributed to prevent abandonment and can be easily replicable to future EW studies.

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Appendix

Ethics Committee Approval



Universidade do Minho

Conselho de Ética

Comissão de Ética para a Investigação em Ciências Sociais e Humanas

Identificação do documento: CEICSH 072/2020

Relatores: Emanuel Pedro Viana Barbas Albuquerque e Marlene Alexandra Veloso Matos

Título do projeto: *Estudo piloto de programa de escrita combinada para estudantes universitários: Write & Let Go*

Equipa de Investigação: Janine Cristina Marinai e Vera Melissa Gouveia Mestrado em Psicologia Aplicada (MPA), Escola de Psicologia, Universidade do Minho; João Carlos Batista Silva e Mário Miguel Osório Machado Gonçalves (Orientadores), Centro de Investigação em Psicologia (CIPsi), Escola de Psicologia, Universidade do Minho

PARECER

A Comissão de Ética para a Investigação em Ciências Sociais e Humanas (CEICSH) analisou o processo relativo ao projeto de investigação acima identificado, intitulado *Estudo piloto de programa de escrita combinada para estudantes universitários: Write & Let Go*.

Os documentos apresentados revelam que o projeto obedece aos requisitos exigidos para as boas práticas na investigação com humanos, em conformidade com as normas nacionais e internacionais que regulam a investigação em Ciências Sociais e Humanas.

Face ao exposto, a Comissão de Ética para a Investigação em Ciências Sociais e Humanas (CEICSH) nada tem a opor à realização do projeto, emitindo o seu parecer favorável, que foi aprovado por unanimidade pelos seus membros.

Braga, 6 de agosto de 2020.

O Presidente da CEICSH

(Acílio Estanqueiro Rocha)

Anexo: Formulário de identificação e caracterização do projeto