Written emotional disclosure for women with ovarian cancer and their partners: Randomized controlled trial

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Abstract

Objective: Written emotional disclosure for 15-**20** minutes a day over **3-4** days improves physical and psychological health, and may benefit cancer patients. However, **no** studies have tested the effectiveness of guided writing in cancer patients and their partners. A randomized controlled trial tested whether writing about the patient's diagnosis and treatment of ovarian cancer using the Guided Disclosure Protocol (GDP) is effective in reducing perceived stress and improving quality of life (QoL) in ovarian cancer couples. The study also tested two theories that may account for beneficial effects of written emotional disclosure, the cognitive processing hypothesis and the social interaction hypothesis.

Methods: Patients and their partners (N=102 couples) were randomised to write at home for 15 minutes a day over three days about the patient's diagnosis and treatment **using the** GDP or what the patient did the previous day (control). Couples were assessed at baseline, three and six month follow-ups on **the primary outcomes of** perceived stress and QoL, and **secondary outcomes of** intrusive thoughts (testing the cognitive processing hypothesis), and illness-related couple communication (testing the social interaction hypothesis).

Results: There were no main effects for **any** outcomes. However, in patients, the GDP improved QoL if illness-related couple communication improved, and buffered the effect of intrusive thoughts on perceived stress.

Conclusions: The GDP **might** benefit patients in certain circumstances, through changes in communication (in line with the social interaction hypothesis). Further research is needed to determine whether patients benefit from interventions to improve illness-related couple communication, and under which conditions.

Keywords: written emotional disclosure, ovarian cancer, randomized controlled trial; partners

Ovarian cancer is the leading cause of death from gynaecological malignancies. Five-year survival in the UK is 41% [1]. It is often diagnosed at an advanced stage due to lack of or non-specific symptoms [2]. Consequently, despite aggressive treatment, most patients relapse within two years. Patients often experience elevated levels of distress [3] and poor quality of life (QoL) [4-5], suggesting that psychological interventions should be well received. However, in a systematic review of 18 interventions for patients with gynaecological cancers, only one reduced distress, and there were no effects on physical symptoms or functioning [6]. Furthermore, due to multiple methodological limitations **including small sample sizes, low consent rates, floor effects and high loss to follow-up**, generalizability of these studies to the clinic is questionable. Finally, such interventions are costly and time-consuming.

An inexpensive, adjunct alternative may be written emotional disclosure of traumatic events for as little as 15 minutes a day over three days, which has led to improved mental and physical health across 146 studies [7], and physical health in clinical populations [8]. Fourteen studies have tested written disclosure in cancer patients [9-22]. Although some small, possibly underpowered studies [9-11, 14, 16] demonstrated negative findings, improvements have been demonstrated in physical symptoms [12, 18, 22], psychological distress [18], and QoL [22] in breast cancer, **particularly when participants are required to write about their cancer [12, 18, 22]**. **One large study with negative findings [20] demonstrated reductions in depressive symptoms in women who wrote about their cancer.** Written disclosure has also improved couple-related outcomes in other populations [23-25]. By inducing self-reflection, couple-related writing may act as a springboard for discussing the illness, and thus reduce distress and improve QoL in both partners.

Several theories may explain the effectiveness of written disclosure. The cognitive processing hypothesis holds that written disclosure may enable coherent restructuring of

traumatic memories into existing schemas [26-27], leading to resolution of the trauma and improved physical health [28]. Based on this theory, improved mood following writing should be mediated through reductions in intrusive thoughts, reflecting more cognitive control over traumatic information. Also, structured writing should facilitate cognitive restructuring of traumatic memories. Duncan and Gidron [29] therefore developed the Guided Disclosure Protocol (GDP). In addition to describing their thoughts and feelings at the time of the event (Day 2), participants describe the event chronologically, with causal links between the event's segments (Day 1), reflect on how the event affected their life (Day 2) and write how they currently think and feel about the event, and reflect on future coping with a similar event (Day 3) (see [29-30]). The GDP has reduced visits to general practitioners in frequent attendees [30], and reduced PTSD symptoms in parents of children with cancer [31]. Also, similar structured writing has reduced disease activity in rheumatoid arthritis [32] and improved psychological wellbeing in fibromyalgia [33]. However, the GDP has not been tested in cancer.

The social interaction hypothesis [34] holds that people may be able to interact with others more positively following written disclosure, due to reduced distress and greater self-control. Subsequent increased social sharing following written disclosure (see [35-36]) alerts others to the person's psychological state, and may increase social support and problem-solving, leading to improved psychological well-being

This study tested the effectiveness of writing about the patient's diagnosis and treatment for 15 minutes a day over 3 days, using the GDP, on reducing **perceived stress** and improving QoL in ovarian cancer couples, relative to writing about what the patient did the previous day. GDP participants were expected to demonstrate significantly greater improvements in QoL and reductions in **perceived stress** three months post intervention, maintained at six months. A secondary aim was to test whether improvements were mediated

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through reductions in intrusive thoughts, based on the cognitive processing hypothesis, or via improved illness-related couple communication, based on the social interaction hypothesis.

Method

The GDP [25] for written emotional disclosure was compared to control writing in a randomized controlled trial (RCT). The study was approved by the relevant departmental ethics committee. It followed CONSORT guidelines for designing and reporting RCTs [37].

Participants

Participants were members of a UK charity for patients with ovarian cancer who had consented to be contacted by third parties, and their spouses/partners. Invitation letters were sent out to 530 patients with the title 'Mrs' (to maximize recruitment of couples), at four time points over 13 months. Interested individuals returned their details in a stamped addressed envelope, and were screened by telephone to determine eligibility and stratify accurately. Uninterested individuals were requested to fill in a slip indicating why from 'I am not interested', 'I am too busy,' 'I am not feeling well' or 'Other'. Eligible participants had been diagnosed with ovarian cancer, were no more than five years post-treatment, able to read and write in English, and age 18 years or above. Spouses lived with a partner with ovarian cancer.

Of 336 respondents who returned a slip or contacted the researcher indicating receipt of the letter[1], 203 (60%) expressed interest in the study, and 141 couples were eligible. The other 133 were not interested (felt too ill, too busy, or thought the study was not relevant, often due to length of time since their last treatment). Reasons for ineligibility included being single (n=28), and more than five years since their last treatment (n=34). Of these 141 couples, 102 completed baseline measures and were randomized.

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[1]The Ovacome database is not based on hospital records, but updated by members and their families. Many of those who did not respond to the initial letter may have been in hospital, died, moved away or been ineligible to participate.

Procedure

As participants lived all over the UK, assessments and experimental procedures were carried out by mail and telephone, and the writing completed at home. Eligible participants were sent the initial questionnaire (including all measures described below) and a consent form. Following consent, the writing booklet was sent out, and the writing scheduled for three days within the same week (ideally consecutive). Patients and their partners could choose to write at the same time or different times.

Each day, the participant was telephoned at a designated time, and asked to go to a quiet place, and write continuously for 15 minutes, after which the researcher telephoned again, to tell them to stop. After the last session, participants returned the writing by post, to be typed up and content analyzed. At three and six months, follow-up questionnaires were mailed out. Mail was returned to a researcher who had no contact with the participants. Recruitment took place over 13 months. Flow of participants through the trial and follow-up rates at each time point are reported in Figure 1.

Design

In an RCT, couples were randomly assigned to written emotional disclosure about the patient's diagnosis and treatment (GDP; n=53) or writing about what the patient did the previous day, (control; n=49), for 15 minutes a day over three days. This controlled for experimenter contact (participants were telephoned before and after writing), and the partner thinking about the patient (partners wrote about the patient's activities) [33]. Randomization was conducted before study commencement, in blocks of 10, using www.randomization.com, matching for recurrence since initial diagnosis, to increase the probability of obtaining equivalent groups regarding prognosis. Opaque envelopes were numbered and the appropriate condition written inside each envelope according to the randomization table, which was then destroyed. The envelopes were locked in a cabinet and inaccessible to anyone

involved in the project. Each participant was allocated a number based on the order in which they entered the trial, which corresponded with a numbered envelope. An independent administrator opened the cabinet and appropriate envelope, and informed the first author of group assignment, after which the appropriate task was posted out.

As a single researcher carried out this study, double blinding was not possible. To reduce risk of measurement bias, questionnaires were returned to a researcher who had no contact with the participants and was unaware of group allocation. Also, all outcomes were assessed by self-report questionnaires, which participants filled in at home. To reduce risk of performance variability, the writing instructions were stated clearly on the booklet, and the writing tasks timed. Participants were informed that writing had improved health across a variety of illnesses, and they would be asked to write about events in either an emotional or a non-emotional way, to ensure expectations did not differ by group.

Written emotional disclosure

The GDP protocol was as follows:

Day 1: Describe the diagnosis and treatment chronologically, and what led to what, without mentioning emotions.

Day 2: Part 1: Describe how you felt and what you thought at the time of the diagnosis; Part 2: What impact has your diagnosis and treatment had on your life, and has it caused you to change priorities?

Day 3: How do you currently feel and think about the diagnosis and treatment. Are your current thoughts and feelings the same as at diagnosis? Would you be able to cope with similar situations better because you have experienced it.

Spouses received similar instructions regarding their partner's cancer and their own responses/reflections.

Neutral writing

Both members of the couple wrote about what the patient did the previous day.

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Measures

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Demographic and medical information

This included age, occupation, educational level, marital status and time married. For patients, medical information about disease stage, time since diagnosis, time since last treatment, treatment (surgery, chemotherapy and radiotherapy), number of courses of chemotherapy, whether currently undergoing treatment (question repeated at each follow-up), and CA 125 level (a tumour marker with high prognostic value in ovarian cancer) were self-reported. Thirty one of the CA 125 results were later checked with the patients' oncologists, with patient consent (correlation r=.99). CA 125 scores were then categorized as above or below 35 U/ml [38], and inter-rater reliability was Kappa=**.995** (p <.0.001).

Primary Outcomes

Quality of Life (QoL)

The Functional Assessment of Cancer Therapy- General (FACT-G; [39]) assesses QoL in patients with cancer. Patients completed the physical (7 items), social/family (6 items), and functional wellbeing (7 items) subscales[2]. Cronbach's Alpha ranged from .88 to .91, indicating good reliability. Partners completed the physical (6 items), social/family (5 items), and functional wellbeing (6 items) subscales of the FACT-GP [40], an equivalent scale for assessing QoL in the general population. Cronbach's alpha ranged from .81 to .84. In both scales, higher scores indicate better QoL.

Perceived Stress

The Perceived Stress Scale (PSS; [41]) is a 10-item scale measuring the extent to which individuals **perceived** they were unable to cope with stress during the past month.

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[2] The emotional well-being subscale had low reliability in a pilot study, hence was not utilized.

Higher scores indicate higher levels of perceived stress. Cronbach's alpha ranged from .90 to .91 for patients, and from .87 to .89 for partners, indicating excellent reliability.

Secondary Outcomes

Intrusive thoughts

The intrusions subscale (8 items, higher scores indicate higher levels of intrusive thoughts) of the Impact of Event Scale-Revised (IES-R; [42]) assesses intensity of intrusive thoughts 'during the past seven days'. It was completed with regard to the patient's cancer. Cronbach's alpha ranged from .91 to .92 for patients, and from .90 to .92 for partners, indicating excellent reliability.

Couple communication

The Couples' Illness Communication Scale (CICS) is a 4 item scale assessing illness-related couple communication [43]. Higher scores indicate better communication. Items cover the individual's ability to discuss the illness with their partner and their impression of their partner's willingness to discuss the illness with them. Cronbach's alpha ranged from .80 to .85 for patients, and from .72 to .80 for partners, indicating good reliability.

Word counts and Manipulation Checks

Percentages of positive emotion, negative emotion, and insight (e.g., understood, realised) words were computed for each writing day, using the programme Linguistic Inquiry and Word Count (LIWC; [44]). Also, after each writing session, participants rated how personal and revealing of emotions they felt their essays were (Pennebaker, 1994, unpublished manuscript).

Sample size calculation

This was based on the results for the PSS (one of the primary outcomes) from an unpublished pilot study on written emotional disclosure and telephone-based stress management in **27 women with** ovarian cancer. A calculation based on the difference

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between the means at first baseline and **one month** following written disclosure revealed an effect size of 0.70. With 80% power and p < .05 statistical significance, using two-tailed tests, 32 participants per group were required to obtain statistical significance. However, as it included two primary outcomes and a longer follow-up period, we aimed to recruit 50 participants per group.

Statistical analysis

To determine equivalence between groups on demographic and biomedical characteristics, independent samples T-tests were used for continuous data, and chi-square analysis for categorical data. To test the research questions, 2 x 3 mixed-design repeated measures analyses of covariances (ANCOVA) were performed, with group (GDP, control) as the between-subjects factor, and time (baseline, 3 and 6 months follow-up) as the within-subjects factor. The main test was a time x group interaction, followed by tests to determine the source of any observed interaction. Effect sizes (Cohen's d) were calculated from η^2. Analyses controlled for baseline demographic and illness differences between groups and were intention-to-treat, by carrying the last observation forward [45].

Results

Baseline demographic and disease-related characteristics of patients and partners by group are reported in Table 1. GDP participants were significantly younger than controls, and more time had passed since their diagnosis. Therefore, patient age and time since diagnosis were added as covariates. Also, having treatment at retest was included as a covariate, to partly rule out effects of disease progression and new treatments on outcomes.

Manipulation checks

GDP participants used more positive and negative emotion and insight words on days 2 and 3 than controls. They also rated their essays as more personal and revealing of emotions across all three days (all *p* values <.01).

Primary Outcomes: Effects of Written Emotional Disclosure on Perceived Stress and Quality of Life (QoL)

The general linear models showed that for perceived stress, there was no group by time interaction for patients (F (2, 168) = .30, p=.74; **Cohen's d = 0.11**) or partners (F (2, 168) = 2.18, p=.12; **Cohen's d = 0.35**). Similarly, for QoL, there was no group by time interaction for patients (F (2, 168) = 2.56, p=.08; **Cohen's d = 0.35**) or partners (F (1.75, 145.45) = 1.30, p = .28; **Cohen's d = 0.29**). The descriptive data are presented in Table 2.

Secondary Outcomes: Cognitive processing hypothesis and social interaction hypothesis

There was no group by time interaction for intrusive thoughts in patients (F (2, 168) = 0.46, p=.63; **Cohen's d = 0.14**), but a significant interaction for partners (F (2, 168) = 3.76, p=.03; **Cohen's d = 0.4**). Planned contrasts revealed the change occurred between baseline and three months (F (1, 83) = 6.87, p=.01) but not between three and six months (F (1, 78) = 0.007, p=.94). The effect was linear, indicating this was due to an increase in intrusive thoughts from baseline to three months in the GDP group only. There was no group by time interaction for illness-related couple communication in patients (F (1.72, 144.53) = .77, p=.45; **Cohen's d = 0.19**) or partners (F (2, 168) = 2.44, p=.09; **Cohen's d = 0.35**).

Mediators and Moderators

As there was no effect of the GDP on the primary outcomes, no tests for mediators were carried out. Nevertheless, the intervention was hypothesised to have benefited participants who improved on the secondary outcomes (intrusive thoughts and illness-related communication). To test this, change in intrusive thoughts and change in illness-related

communication were hypothesised to be moderated mediators (moderator variables whose values influence the process by which treatment leads to the outcome: [46]) of the relation between group and the primary outcomes. These change scores were centred to reduce multicollinearity. Analyses covered only the period from baseline to three months, when most change was expected to take place, to reduce chance of type-I errors.

As both hypothesized moderated mediators were continuous variables, hierarchical multiple linear regressions were utilised. The primary outcome at three months (i.e., QoL) was entered as the DV. The primary outcome at baseline was entered as a predictor on the first step, followed by group, the z-score of the moderated mediator and the interaction term of group by the z-score of the moderated mediator on the second step.

Change in illness-related communication moderated the effect of group on QoL in patients. The interaction explained 2.3% of the variance in QoL at three month follow-up: (B = 1.17, SE = .52, β = .20; $F (1, 85) = 5.16$, p=.03). Plotting QoL against change in illness-related communication for each group following [47] (see Figure **2**) showed that for the control group, QoL was high regardless of change in illness-related communication, whereas for the GDP group, QoL was better if illness-related communication improved, and worse if it worsened. Change in intrusive thoughts moderated the effect of group on perceived stress in patients. This interaction explained 3% of the variance in perceived stress at three month follow-up (B = -.43, SE = .16, β = -2.66; $F (1, 84) = 7.07$, p=.009). Plotting perceived stress against change in intrusive thoughts for each group (see Figure **3**) showed that for the control group, an increase in intrusive thoughts was associated with more perceived stress at three months, whereas for the GDP group, change in intrusive thoughts did not influence perceived stress. No moderated mediators were identified for partners.

Discussion

This study aimed to determine the effect of the GDP on perceived stress and QoL in ovarian cancer couples. However, contrary to expectations, despite including partners, there was no effect of the GDP on the primary outcomes. Approximately half the participants experienced a recurrence during the study. Written disclosure may be ineffective for dealing with recurrent stressors, as it does not teach strategies for dealing with possible recurrences. Studies with positive effects of writing on outcomes [12, 18, 22] have been carried out in patients with breast cancer, which has a much better prognosis than ovarian cancer, and have used standard non-guided writing, which may account for the differences in outcome.

Similarly, the cognitive processing hypothesis was not supported. Intrusive thoughts even increased in partners in the GDP group. Many patients may have already come to terms with the event (few reported high levels of intrusive thoughts). Alternatively, reductions in intrusive thoughts after writing have not been demonstrated in patients with chronic illness [8], which may be considered a concurrent stressor. Although it can be methodologically difficult to capture changes in cognitive processing, this finding means the GDP cannot be recommended for partners of patients with cancer.

Similarly, the social interaction hypothesis was not supported. There was no effect of the GDP on communication. Distressed couples are less likely to agree to participate in such studies [48], and CICS scores at baseline were high, suggesting communication was close to ceiling level. The GDP may be more effective in improving communication in couples experiencing communication problems. Alternatively, for illness-related communication to improve, couples may require training in communication skills.

In patients, enhanced illness-related communication was associated with better QoL in the GDP group only. Writing about emotional aspects of the cancer may have led some couples to share feelings and thoughts not previously revealed, leading to improved illness-related communication and coping with the disease, and thus improved QoL. This

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relationship fits in with the moderated mediation model outlined by Preacher where a fourth variable affects the path between the independent variable and the moderator [49] (see Figure 4). Writing prior to discussing the illness may help break down social constraints, organize thoughts and enhance disclosure [13, 31]. Conversely, writing and not talking may resurface issues that are not addressed, leading to increased social constraint. To test this hypothesis, direct assessment of communication by asking participants about how much they discussed the illness with their partner after writing is required.

In patients, the GDP buffered the effect of increased intrusive thoughts. An increase in intrusive thoughts was not associated with increased perceived stress at three months, in the GDP group only. The GDP may have enhanced self-efficacy for dealing with distressing cancer-related thoughts, by enabling reflection on coping with the illness. Precise verbal labelling of unpleasant emotions and causally linking aspects of their memories in the GDP may enable individuals to process such contents in more controlled prefrontal regions, and regulate unpleasant intrusions possibly emanating from limbic-level processing [50]. **Further research is needed to test whether the GDP is effective in** preventing distress in individuals experiencing high levels of intrusive thoughts.

Several issues need to be addressed in future research. Fifteen minutes was often insufficient for participants to describe their diagnosis and treatment. On Day 1, participants should be invited to write until they feel they have completed all necessary details or be provided with e.g., 30 minutes. Also, the results were based on a cancer that affects only women. The effects of structured writing about cancer/other chronic illnesses where the man is the patient need to be determined.

This study had several limitations. First, for ethical reasons, no demographic information was collected about non-responders, preventing comparisons with responders. Second, the power analysis was based on an anticipated large effect size. **Basing it on**

effects of written disclosure in cancer from previous studies (with smaller effects) might have been more appropriate. Third, medical data was self-reported. Although the high correlation between patient- and consultant-reported CA 125 levels suggested it was accurate, medical information would ideally have been validated against records. Fourth, the participants were members of a support charity, thus possibly more motivated to engage in the study than the general population with ovarian cancer due to use of more active coping strategies [51]. **Finally, the PSS may not have captured cancer-related distress sufficiently. The full IES might have been a more appropriate measure of cancer-related distress. Avoidant coping as measured by the IES avoidance subscale could also have mediated the results.**

Overall, the findings suggest guided written emotional disclosure is not effective for all ovarian cancer couples, and may even cause negative effects in partners. However, in patients, change in illness-related communication moderated improvements in QoL**,** suggesting that **further research is required to determine whether** the GDP **benefits** patients if the instructions promote communication. **Testing whether** the GDP **reduces** intrusive thoughts **in individuals high in** perceived stress **is also recommended**. **If these protective effects can be replicated, it is important** to understand the mechanisms by which they may occur and whom the GDP may benefit.

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Table 1: Baseline demographic and illness characteristics of patients and partners

	GDP (n=53)	Control (n=49)	Statistical comparison
Patients' Age (Mean, SD)	53.02 (10.30)	57.39 (8.09)	t = 2.32 (p=.02)*
Disease stage:			
I	12 (22.6%)	11 (22.4%)	χ^2 = 3.89 (p=.27)
II	4 (7.55%)	10 (20.4%)	
III	30 (56.6%)	24 (49.0%)	
IV	7 (13.2%)	4 (8.16%)	
Months since diagnosis (Mean, SD)	43.29 (34.05)	31.54 (21.22)	t = -2.09 (p=.04)*
Months since treatment (Mean, SD)	16.40 (19.44)	13.65 (15.34)	t = -.78 (p=.44)
Having treatment	7 (13.2%)	6 (12.2%)	χ^2 = .02 (p=1)
Had recurrence	30 (56.6%)	24 (49.0%)	χ^2 = .59 (p=.55)
Number of chemotherapy courses (Mean, SD)	1.85 (1.35)	1.53 (0.96)	t = -1.36 (p=.18)
Had surgery	51 (96.2%)	43 (87.8%)	χ^2 = 2.52 (p=.15)
Had radiotherapy	6 (11.3%)	5 (10.2%)	χ^2 = .03 (p=1)
Years married/ living with partner (Mean, SD)	25.67 (13.66)	28.62 (10.98)	t = 1.11 (p=.27)
Education:			χ^2 = 1.92 (p=.38)
GCSEs	16 (30.2%)	21 (42.9%)	
A-levels/ equivalent	18 (34.0%)	15 (30.6%)	
Degree	19 (35.8%)	13 (26.5%)	
Employed	23 (43.4%)	14 (28.6%)	χ^2 =2.42 (p=.15)
Partners' age (Mean, SD)	55.34 (10.92)	60.43 (9.22)	t = 2.33 (p=.02)
Partners' education:			χ^2 = .15 (p=.93)
GCSEs	14 (26.4%)	11 (22.4%)	
A-levels/ equivalent	18 (34.0%)	16 (32.7%)	
Degree	21 (39.6%)	22 (44.9%)	
Partner employed	24 (45.2%)	35 (71.4%)	χ^2 = 3.04 (p=.11)
CA 125 level (Mean, SD)	60.43 (165.64)	65.64 (105.25)	t = .21 (p=.83)

*p<.05

Table 2: Scores for the primary and secondary outcomes by group: patients and partners (means presented with standard deviations in brackets)

| Outcome	Group		Baseline	3 month follow-up	6 month follow-up
Quality of Life	Patients	GDP	58.87 (12.53)	56.00 (15.30)	56.30 (14.96)
		Control	60.13 (11.06)	60.26 (11.77)	60.26 (12.58)
	Partners	GDP	45.75 (7.40)	46.86 (7.61)	45.50 (7.63)
		Control	50.94 (8.99)	49.57 (8.53)	49.11 (8.90)
Perceived Stress	Patients	GDP	18.10 (7.70)	18.95 (7.68)	18.85 (7.74)
		Control	14.17 (7.67)	15.09 (6.92)	16.23 (7.82)
	Partners	GDP	15.13 (6.69)	17.13 (6.52)	16.45 (6.19)
		Control	12.29 (6.92)	12.40 (6.36)	13.29 (7.68)
Intrusive thoughts	Patients	GDP	10.90 (7.46)	10.68 (8.00)	11.40 (7.59)
		Control	8.92 (6.96)	9.06 (6.55)	9.36 (6.90)
	Partners	GDP	8.14 (5.95)	9.95 (7.49)	10.24 (6.92)
		Control	8.54 (6.59)	7.86 (6.28)	8.03 (6.21)
Illness-related couple communication	Patients	GDP	13.63 (4.10)	14.00 (3.72)	14.10 (3.62)
		Control	13.58 (3.65)	14.39 (3.27)	14.28 (3.34)
	Partners	GDP	14.65 (3.58)	14.30 (3.79)	14.38 (3.45)
		Control	16.20 (2.71)	14.86 (3.43)	15.26 (3.27)
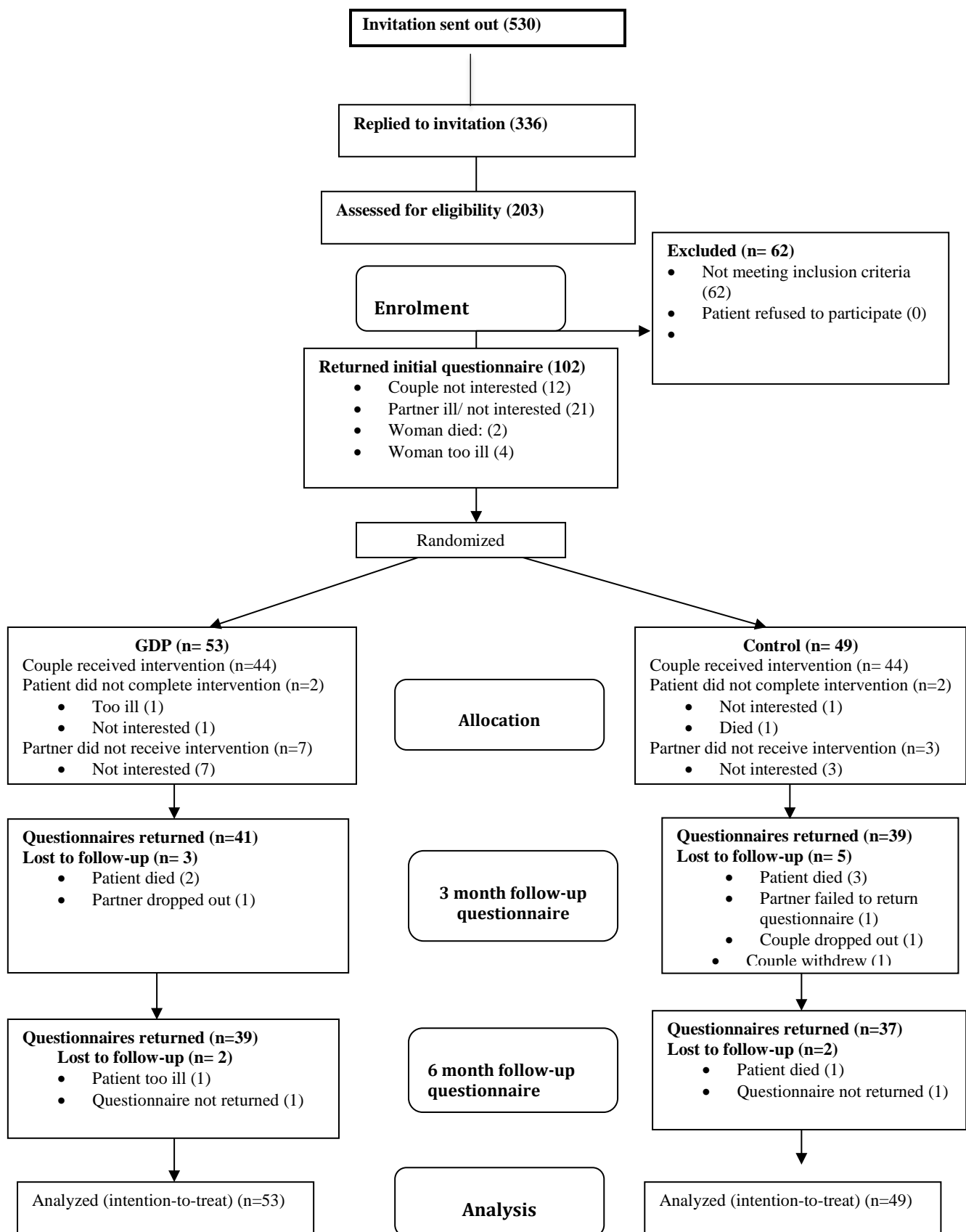
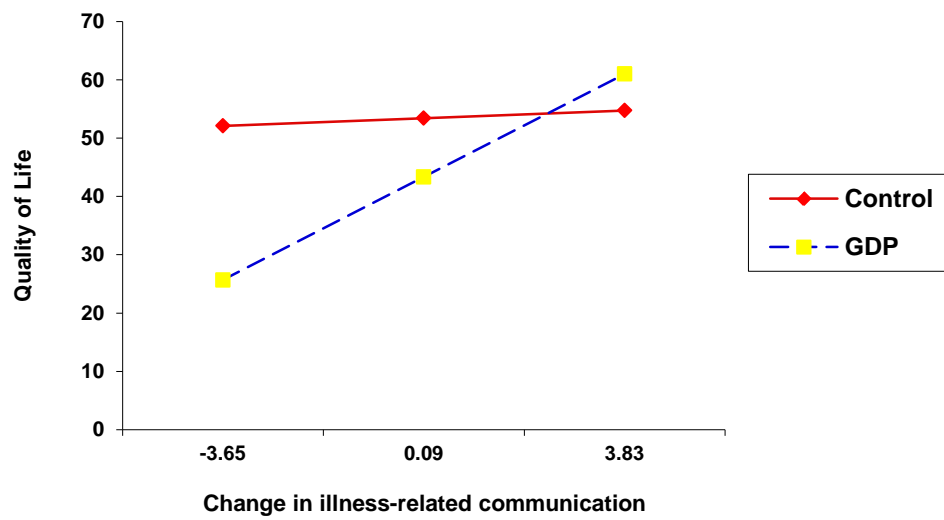Figure 1: Flow of participants through the trial

Figure **2**: Change in illness-related communication as a moderator of the effects of group on quality of life – patients
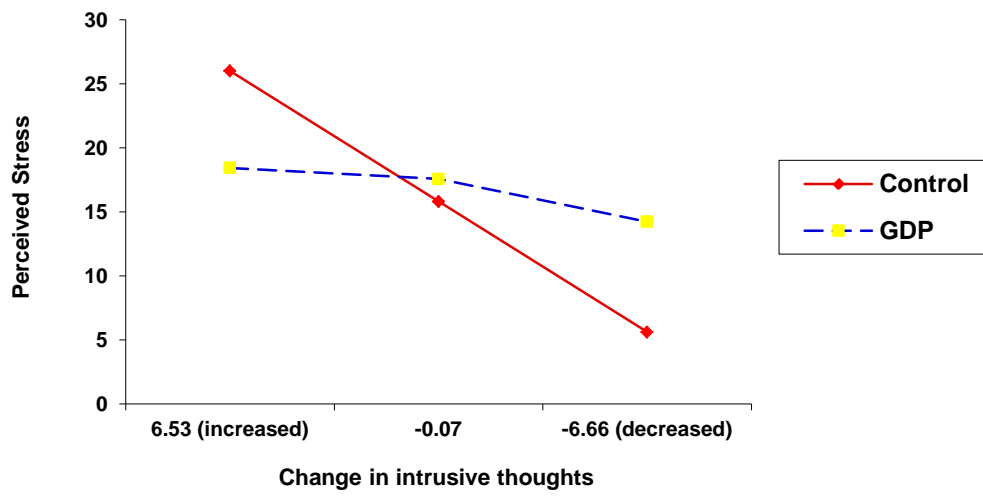
Figure **3**: Change in intrusive thoughts as a moderator of the effects of group on perceived stress – patients