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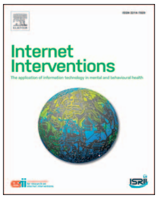

Effectiveness, acceptance and satisfaction of guided chat groups in psychosocial aftercare for outpatients with prostate cancer after prostatectomy

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ABSTRACT

Background: Physical and psychological symptoms associated with prostate cancer and its treatment can cause patients to feel distressed. Furthermore, patients still experience a range of unmet support needs. Online interventions have the potential to fill a gap in cancer care by augmenting the limited available mental health services.
Objective: The main goal of the study was to evaluate the effectiveness of guided chat groups in psychosocial aftercare for outpatients with prostate cancer. Additionally, the participants' satisfaction with and acceptance of the intervention was measured and evaluated.
Methods: A quasi-experimental design was used to analyze the research questions. 18 prostate cancer patients followed five web-based chat-group sessions. 26 patients received treatment as usual. The guided chat group enabled patients to exchange concerns, problems and support with fellow patients. The intervention group and control patients had to fill in self-reported questionnaires before the intervention and at a follow-up. Outcome measures include distress, anxiety, depression, anger, need for help, quality of life (QoL), fear of progression (FoP) and coping with cancer. To analyze the effectiveness of the chat groups, an analysis of covariance was conducted.
Results: The analysis of covariance revealed one significant difference between the two groups for the outcome anger. The difference had a large effect size ($\eta^2 = 0.160$) with higher scores for the intervention group. Further differences with a medium effect size were found for coping with cancer, the physical component of quality of life and depression. The intervention group scored higher on all three outcomes.

Additionally, participants reported that the atmosphere in the chat sessions was confidential and believed that the chat program worked as a bridge between inpatient treatment and daily life.
Conclusions: Intervention participants reported poorer results for the primary and secondary outcomes in comparison to the control group patients at follow up, which indicates that web based chat groups may not be an effective way to decrease prostate cancer perceived distress even if the intervention participants seem to accept the intervention.

1. Introduction

Carcinoma of the prostate is the most prevalent cancer diagnosis among men in Germany (Kaatsch et al., 2012). Localized prostate cancer is highly treatable which keeps the mortality rate at a low level. The five year relative survival rate, in Germany, was 93% in the year 2012 (Kaatsch et al., 2012). Despite the high survival rate, all treatment options may result in decreased health related quality of life, including symptoms as erectile dysfunction, urinary incontinence, and dysfunction of the bowel (Attard et al., 2016; Resnick et al., 2013). These symptoms may influence prostate cancer patients' mental health (Bokhour et al., 2001; Roth et al., 2008). The four week prevalence for any mental disorder in prostate cancer patients is about 21% (Mehnert et al., 2014), 10% of prostate cancer patients report an increased level of psychological distress (Chambers et al., 2014) and a previous study using the Memorial Anxiety Scale for Prostate Cancer (MAX-PC)

Abbreviations: MAX-PC, Memorial Anxiety Scale for Prostate Cancer; FoP, Fear of Progression; ET-5, The Emotion Thermometers; HADS, Hospital Anxiety and Depression Scale; CCQ, Cancer Coping Questionnaire; SE, Sensitivity; SP, Specificity; MCS, Mental Component Summary

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observed an increased level of anxiety in 10% of prostate cancer patients (Roth et al., 2006).

Psychosocial interventions are used by health care professionals trying to reduce the amount of distress that prostate cancer patients experience. A systematic review (Parahoo et al., 2015), including 19 psychosocial intervention studies showed that psychosocial interventions had small short-term effects, but failed to show statistically significant long-term effects (Parahoo et al., 2015). Despite the available psychosocial support prostate cancer patients still experience a range of unmet support needs with the most frequently reported being needs related to intimacy, health system/informational, physical and psychological needs (Paterson et al., 2015). Internet interventions have the potential to fill an important gap in quality cancer care by augmenting limited available mental health services (Leykin et al., 2012).

Internet based intervention programs may have certain characteristics that can be advantageous in comparison to standard intervention programs: using the internet keeps the costs low, holds appeal for many in accessing information and support anonymously, supports patients in rural areas and could bridge gaps in the provision of care (Andersson and Cuijpers, 2008; Cuijpers et al., 2008; Moessner and Bauer, 2017; Zepf et al., 2003). Internet based support programs seem to work effectively in numerous studies, improving psychosocial and physical symptoms in cancer patients with variant cancer diagnosis (Bouma et al., 2015).

However, only four studies (Osei et al., 2013; Schover et al., 2012; Wootten et al., 2015; Yanez et al., 2015) were found that concentrate on the group of prostate cancer patients, who tend to have positive attitude towards eHealth (Jansen et al., 2015). The treatment offered in these four interventions, the target groups as well as the results of these four interventions differed greatly. The treatments offered were: one self-guided cognitive behavioral group therapy (Wootten et al., 2015), a virtual group therapy (Yanez et al., 2015), a mail based couple therapy (Schover et al., 2012) and an educational support network (Osei et al., 2013). Two interventions targeted patients with localized prostate cancer patients (Schover et al., 2012; Wootten et al., 2015), while one addressed patients in an advanced stage (Yanez et al., 2015) and one study did not specify the patients' disease or treatment stage (Osei et al., 2013). Osei et al. (2013) did not find any significant improvements in patients' quality of life, while Wootten et al. (2015) observed a significant improvement in psychological distress within the intervention group from pre to post intervention. Yanez et al. (2013) could only report trends for improvement in distress and functional well-being in comparison with those in the control group and Schover et al. (2012) found improved scores of the International Index of Erectile Functioning (IIEF) within the groups who received the group therapy online or via face to face. One common limitation was the dropout or recruitment rate. Two studies had major problems with the recruitment of patients (Osei et al., 2013; Yanez et al., 2015), while one suffered from high dropout (Schover et al., 2012) and one had a dropout that was higher than expected (Wootten et al., 2015).

The online chat program used in this study has been tested in an unpublished pilot study. It was offered to breast and prostate cancer patients after inpatient rehabilitation. Significant improvements in general as cancer specific quality of life could be found for the intervention group ($n = 79$) in comparison to the control group ($n = 880$) at follow up (after completing the intervention). The recruitment of participants has been a major problem of the pilot study.

The main goal of this study was to evaluate the effectiveness of a web based chat group on the mental health of prostate cancer patients. We hypothesized that intervention participants will show greater improvements compared to the control group participants in the primary outcome, distress, from baseline to follow-up. Furthermore, we hypothesized that intervention participants will show greater improvements compared to control group participants in the secondary outcomes anxiety, depression, anger, need for help, FoP, health related quality of life (HRQoL) and coping with cancer from baseline to follow-up. Additionally, the participants' satisfaction with and acceptance of the intervention was measured and evaluated.

2. Method

2.1. Study design

The hypotheses were analyzed in a quasi-experimental design, with an internet chat program as the intervention condition and treatment as usual as the control condition. The patients were administered a series of self-report questionnaires in order to measure the effectiveness of and satisfaction with the intervention in comparison to the control group. Intervention and control participants had to complete the self-reported questionnaires at two measurement points. The baseline measurement was before starting the intervention. The second measurement point was after finishing the intervention.

A prior power analyses recommended including a sample of approximately 170 patients who would have been assigned to the intervention or control group. 60 patients per group would have been sufficient for the analyses of covariance to find a primary intervention effect with medium effect size (eta-squared = 0.058), using a level of significance of $\alpha = 0.05$ and a statistical power $(1 - \beta)$ of $P = 0.80$. The expected dropout rate at follow up was 30% which would increase the number of patients per group by another 25 individuals.

Due to low participation rates, we could not follow our planned study protocol and had to omit randomization. Patients got the possibility to choose if they wanted to participate in the intervention group, control group or reject participation. Informed consent was obtained from all patients who wanted to participate in the study.

The study was approved by the ethics committee of the Medical Chamber Hamburg. Written informed consent was obtained from the participants prior to enrollment.

2.2. Participants

Participants were recruited from July 2012 to January 2014 (17 month). They were approached while staying in the Martini-Klinik for their prostatectomy. The Martini-Klinik in Hamburg performs about 2200 prostate operations per year. The inclusion criteria for participation were: being 18 years or older, a medical diagnosis of prostate cancer, internet access at home and sufficient oral and written proficiency of the German language. Patients with severe emotional crisis were excluded and referred to a specialist.

Prostate cancer patients were informed about the novel aftercare program at the beginning of their hospital stay. Patients who decided to participate had to wait until further prostate cancer patients were recruited in order to form an intervention group. The average time between the date of the prostatectomy and the date of the intervention start was 5.3 months. The baseline questionnaires were mailed to intervention and control group participants' home address before the start of the first online group session. Follow up questionnaires were mailed to the participants after completion of the fifth chat session. A reminder letter was sent out to non-respondents with the same content, two weeks after the first letter.

2.3. Intervention

In the context of this intervention study, prostate cancer patients had the opportunity to exchange concerns, problems and support with fellow patients in online chat programs, which were guided by certified psychological psychotherapists who were experienced in the field of psycho-oncology and who were informed about the ongoing inpatient treatment by the clinic staff. In preparation for the chat groups, the patients participating in the program were handed over a user manual introduction for the chat program before leaving the hospital. The psychotherapists knew all group members in person, as they had a