Recruiting participants to an Internet-based eating disorder prevention trial: Impact of the recruitment strategy on symptom severity and program utilization

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Abstract

Objective: Using data from a randomized controlled trial, we examined two different strategies to recruit participants for an indicated preventive intervention (StudentBodies-AN) for women at risk for anorexia nervosa and compared symptom severity and program utilization in participants recruited through each strategy.

Method: We recruited participants by announcing the study (a) in lectures at universities and handing out screening questionnaires (face-to-face recruitment) and (b) through different media channels, and the participants completed the screening questionnaire on our study website (media-based recruitment). We compared symptom severity and program utilization between the two groups.

Results: A total of 4,646 women (face-to-face: 3,741, media-based: 905) were screened and 168 women (face-to-face: 114, media-based: 54) were randomized to the intervention. We found a statistically and clinically significant association between recruitment strategy and symptom severity: Participants who were recruited through media were more likely to fulfill the inclusion criteria (40.6% vs. 13.3%; \(p < .001\)) and endorsed significantly more frequently core behaviors and attitudes of disordered eating (EDE global score: 2.72 vs. 2.17, \(p < .05\); Weight Concerns Scale [WCS] score: 66.05 vs. 56.40, \(p < .05\)) at baseline than participants recruited face-to-face. Also, participants recruited through media were more likely to log onto the program (\(\chi^2 = 5.06; p = .029\)) and accessed more of the intervention.

Discussion: Recruitment through media seems both more feasible and suitable to reach individuals in need of indicative prevention, and should be part of a multimodal recruitment package. Future studies should be explicitly designed to investigate the impact of recruitment modality on reach and effectiveness including cost-effectiveness analyses.

KEYWORDS
dissemination, eating disorders, Internet-based, prevention, recruitment
1 | INTRODUCTION

Providing preventive interventions online has shown to be feasible, acceptable, and effective both for common mental health disorders in general (Ebert, Cuijpers, Muñoz, & Baumeister, 2017; Sander, Rausch, & Baumeister, 2016) and for eating disorders (EDs) in particular (Beintner, Jacobi, & Taylor, 2012; Le, Barendregt, Hay, & Mihalopoulos, 2017; Loucas et al., 2014; Melioli et al., 2016).

However, the public health impact of such interventions is not only determined by their efficacy, but also by their reach. Reach "refers to the percentage and risk characteristics of persons who receive or are affected by a policy or program" (Glasgow, Vogt, & Boles, 1999) and also describes the ability to address and engage individuals or groups who are actually in need of an intervention. Due to lower access barriers compared with face-to-face interventions, the potential reach of internet interventions is large (Andersson, 2018; Mohr, Burns, Schueller, Clarke, & Klinkman, 2013). However, when targeting health problems that are characterized by low prevalence rates combined with reluctant help-seeking behavior—as is the case of EDs (Evans et al., 2011)—individuals at risk or affected individuals are often hard to reach.

In clinical trials, typically a variety of recruitment strategies are used to reach target groups and how individuals are recruited may also affect engagement. These strategies include face-to-face recruitment, telephone calls, advertising, flyers, and (social) media. Their costs and reach vary both by recruitment method and target group. A review investigating the viability of online recruitment methods including Facebook and Google ads for Internet-based health interventions showed no clear superiority of online recruitment methods over more traditional ones (e.g., newspaper and radio ads, flyers, word of mouth) in terms of participant enrollment (Lane, Armin, & Gordon, 2015). In some trials, online recruitment was favorable within hard-to-reach populations (e.g., Graham, Milner, Saul, & Pfaff, 2008), but more people were reached through traditional methods.

Only few studies investigated the impact of different recruitment strategies or participant characteristics in online intervention trials. A recent study reporting on the reach of an online screening to identify the ED risk status of college students in the United States found significant differences between the applied campus specific-recruitment strategies in terms of ED symptomatology (Fitzsimmons-Craft et al., 2019). Recruitment through email was the most effective strategy and resulted in a higher proportion of participants at high risk of or with (sub)threshold EDs compared to other recruitment sources including counseling center, flyer, website, peers/friends, and in class/professor, the latter revealed the smallest participant yield (Fitzsimmons-Craft et al., 2019).

In a trial on eating disorder prevention and early intervention, Bauer, Blic, Ozer, and Moessner (2020) found significant associations between access paths and sample characteristics. Recruitment via high schools was linked to the highest participant yield but lower levels of eating disorder symptomatology compared to recruitment through other paths that indicate a higher degree of self-selection (e.g., flyer/poster or online link (Bauer et al., 2020). Also, participants recruited through paths other than high schools logged on to the intervention more often and used it more intensely (Bauer et al., 2020).

A school or “classroom recruitment” might reflect a more universal recruitment strategy (Bauer et al., 2020) that acts like a “sprinkler” and reaches individuals with different risk status—including a high percentage of individuals at low(est) risk—and different motivational levels. On the other hand, recruitment through other channels (e.g., media-based) might act as a more targeted recruitment strategy that primarily triggers individuals with a more severe impairment who actively search for support and have an increased motivation to change their behaviors or attitudes.

Similar findings emerged in studies addressing online intervention for other mental health disorders. In one study, focusing on ICBT for depression, Lindner, Nyström, Hassmén, Andersson, and Carlbring (2015) compared six different recruitment sources and found that individuals recruited through channels that required an active help-seeking behavior (e.g., by explicitly searching for specific keywords on google) exhibited higher levels of depression and anxiety compared to channels that facilitate a more passive help-seeking behavior. For example, recruitment through newspapers resulted in a subgroup of older participants with less severe depression and anxiety compared to recruitment through Google. In the field of smoking cessation via a Web-based intervention, recruitment through general practices was associated with a lower level of addiction and a higher motivation to stop smoking compared to recruitment through mass media (Smit, Hoving, Cox, & de Vries, 2012; Stanczyk et al., 2014).

In the field of eating disorder prevention, recruiting participants with elevated risk for an ED (especially for anorexia nervosa) is generally challenging. Although weight and shape concerns are prevalent among women at all age levels and young women in particular, characteristics of women at risk for anorexia nervosa such as high dietary restraint in combination with low body weight are much less prevalent. In addition, high ambivalence and poor motivation to change eating habits are characteristic for these women (Casasnovas et al., 2007; Geller, Zaitsoff, & Srikameswaran, 2005; Leavey, Vallianatou, Johnson-Sabine, Rae, & Gunputh, 2011; Schmidt & Treasure, 2006). Recruitment for preventive interventions can therefore be severely impeded by these factors and also be more costly compared with recruitment for other target groups. Knowledge on which recruitment channels are most (cost-)effective and which are less promising can help to make optimal use of resources, not only for research purposes but also for the dissemination of evidence-based interventions. A better understanding of which recruitment strategies attract which specific groups of participants also allows researchers to systematically manipulate recruitment strategies, for example, when a more homogeneous or heterogeneous sample is needed.

The objective of this study is to assess the impact of recruitment on participant characteristics, symptom severity, and program utilization of an Internet-based prevention program for women at risk for anorexia nervosa (StudentBodies-AN). Using data from a randomized controlled trial (Jacobi et al., 2016; ISRCTN70380261), we examined and compared two different strategies (face-to-face vs. media-based recruitment) to recruit participants for the indicated preventive ED intervention.
METHODS

StudentBodies-AN

StudentBodies-AN is a guided, Internet-based intervention targeting women at risk for or with initial (or subclinical) symptoms of anorexia nervosa (AN). Within 10 weekly sessions, it covers topics related to EDs such as eating behavior and habits, body image and beauty ideals, emotions, and social skills. The sessions are supplemented by several diaries (weekly eating behavior checklist, personal journal, and self-monitoring diary) and an asynchronous, moderated discussion forum in which participants can share experiences with each other. Weekly individualized feedback was given by a clinical psychologist to participants based on their entries in the program.

StudentBodies-AN has been shown to be feasible, acceptable, and efficacious in terms of risk reduction, and reduction of initial symptoms and subclinical AN syndromes (Jacobi et al., 2016; Ohlmer, Jacobi, & Taylor, 2013).

Participants and recruitment

Participants were recruited through two different recruitment strategies. As part of the face-to-face recruitment (primary strategy), the study was announced in seminars and lectures at different universities in three Eastern German cities (Dresden, Halle, and Leipzig). The study team asked all attending female students to fill out the paper-pencil screening questionnaire and return it after the course. As part of the media-based recruitment, the study was announced through different (mass) media channels (e.g., posters, flyers, health insurance membership magazines, university email system) and interested women were invited to fill out an online screen on the welcome page of the StudentBodies-AN website. StudentBodies-AN was advertised as a program to improve body image, facilitate healthy eating and exercise, improve unfavorable eating habits, and strengthen self-esteem in areas other than weight and shape.

The core information given on the study and the goals of StudentBodies-AN basically were identical within both recruitment strategies. The face-to-face recruitment was accompanied by an oral presentation and the opportunity to ask questions. In the media-based recruitment, the length and informational content varied depending on the medium used, but the key message was the same.

Eligible study participants were females, aged 18 and above. They had to report high weight and shape concerns (Weight Concerns Scale [WCS] > 42) in the screening questionnaire in addition to (a) underweight or low body weight (17.5 ≤ BMI < 21 kg/m²) or (b) normal body weight (21 ≤ BMI ≤ 25) kg/m²) in combination with high dietary restraint (EDE-Q Restraint Score ≥ 2.6). Women fulfilling the screening criteria were invited to the face-to-face or telephone baseline interview. Participants who reported a current full-syndrome eating disorder, current psychological treatment, substance abuse, or critical medical or mental problems (e.g., suicidal ideation) during the baseline interview were excluded before randomization.

Randomization of participants was carried out stratified by weight group (underweight [17.5 ≤ BMI≤19], low weight [19 < BMI < 21], normal weight [21 ≤ BMI ≤ 25]) at baseline. At a later stage during recruitment, the normal weight and low weight subgroups had reached their calculated sample size and only underweight women were further invited to the baseline assessment.

Measures

Screening

The screening questionnaire included the German versions of the Weight Concerns Scale (WCS; Grund, 2003), the Restraint subscale of the Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994; Hilbert, Tuschen-Caffier, Karwautz, Niederhofer, & Munsch, 2007), and self-reported height and weight, which were used to calculate the body mass index.

Baseline assessment

The baseline assessment consisted of the EDE interview (Fairburn & Cooper, 1993; Hilbert & Tuschen-Caffier, 2006) measuring general ED pathology on four subscales (Restraint, Eating Concern, Weight Concern, Shape Concern), a global EDE score and the number of binges and different kinds of compensatory behaviors. Further questionnaires were the WCS (Grund, 2003; Killen et al., 1994), the Eating Disorder Inventory-2 (EDI-2; Garner, 1991) subscales Drive for Thinness, Bulimia, and Body Dissatisfaction, the Beck Depression Inventory-II (BDI-II; Hautzinger, Keller, & Kühner, 2009), the Brief Symptom Inventory (BSI; Derogatis, 1993; Geisheim et al., 2002), the Clinical Impairment Assessment (CIA; Bohn et al., 2008; Reas, Rø, Kapstad, & Lask, 2010), the Exercise Dependency Questionnaire (EDQ; Ogden, Veale, & Summers, 1997), and the Frost Multidimensional Perfectionism Scale (MPS-F; Frost, Marten, Lahart, & Rosenblate, 1990; Stöber, 1998). For all measures, good psychometric properties have been reported for both the original version and the German adaptations. A knowledge test was used to measure knowledge regarding the content of the intervention. Participants’ age, marital status, parenthood, and occupational status were assessed within a sociodemographic questionnaire.

Program utilization

Was tracked automatically once a participant had logged on to the program. Measures to reflect program utilization were initial login, the number of sessions opened, and percentage of pages opened as well as the number of times participants had used program elements that required an active input (i.e., the weekly eating behavior checklist, the personal journal, the self-monitoring log, and the discussion board). At the beginning of the first session, intervention group participants were
asked to rate their motivation regarding the change of their eating behavior and body image on a slider from 0 to 100%.

2.4 | Statistical analyses

We tested differences between our two recruitment strategies (face-to-face recruitment vs. media-based recruitment) by analyzing screening, baseline, and adherence data from participants in StudentBodies-AN. Differences in study eligibility were tested for all women who answered the screening questionnaire. Differences in sociodemographics and symptom severity were tested for participants who were randomized after the baseline assessment. Differences in program utilization by recruitment strategy were tested for participants randomized to the intervention group. We applied independent-sample t-tests for interval variables, and dichotomous variables were compared using two-sided chi-square tests. Significant differences between the two recruitment strategies are indicated by \( p \)-values below .05. All analyses were performed using SPSS 24.0.

3 | RESULTS

3.1 | Eligibility for study participation

A total of 4,646 women recruited face-to-face in lectures (\( N = 3,741 \)) or through media (\( N = 905 \)) filled in the screening questionnaire either as paper-pencil (lecture) or online (media) version. Of these, a significantly higher proportion of women recruited through media met the screening criteria for the study compared with women recruited face-to-face (40.6% vs. 13.3%; \( p < .001 \)). A total of 129 women recruited face-to-face and 75 women recruited through media participated in the baseline interview, of which 114 women recruited face-to-face and 54 women recruited through media were randomized to either the intervention group or the waiting list control condition (see Figure 1). Women who were recruited through media were more likely to fulfill one or more of the predefined exclusion criteria assessed at baseline (28% vs. 11.6%; \( \chi^2 = 8.747; p = .004 \)), including more cases of full-syndrome bulimia nervosa (\( N = 6 \) vs. \( N = 2 \)), current psychiatric medication (\( N = 7 \) vs. \( N = 2 \)), and women receiving psychological treatment (\( N = 13 \) vs. \( N = 3 \)). Women recruited through media were also more likely to fulfill more than one exclusion criterion (\( N = 10 \) vs. \( N = 4 \)).

3.2 | Sociodemographic characteristics

Sociodemographic characteristics were analyzed for women who were randomized to the trial only.

Participants who were recruited face-to-face were significantly younger than participants who were recruited through media (\( M = 21.83 \) years, \( SD = 2.48 \), range 18–28 vs. \( M = 25.17 \) years, \( SD = 4.60 \), range 18–36; \( p < .001 \)). While all but one of the participants who were recruited face-to-face were students, this was only true for half of the participants recruited through media (51.9%). Participants recruited through media were more likely to be in employment (38.9% vs. 0.9%; \( \chi^2 = 46.52, p = .000 \)), to be married (\( N = 6 \) vs. \( N = 3 \); 11.1% vs. 2.6%; \( \chi^2 = 5.36, p = .021 \)), and have children (\( N = 5 \) vs. \( N = 1 \); 9.3% vs. 0.9%; \( \chi^2 = 7.48, p = .006 \)) compared with

![FIGURE 1](image-url)  
**FIGURE 1** Participant flow from screening to randomization in both recruitment groups; Note: screen positive = met screening criteria; \(^*\) in the final stage of recruitment, only women with a BMI in the underweight range (BMIs < 19) were invited to the baseline assessment resulting in exclusion of further positively screened women with a BMI in the normal range; this applied to both recruitment groups equally.
face-to-face participants, although the percentage of women being married (N = 9; 5.4%) or having children (N = 6; 3.6%) was very small in the whole sample.

The majority of randomized participants that were recruited through media (N = 22; 40.8%) reported that they learned of the StudentBodies-AN program through the magazine of their health insurance company. Other sources of information were family or friends (N = 7; 13.0%), information from the university (N = 14; 25.9%), not-specified Web pages (N = 6; 11.1%), and other not-specified magazines (N = 5; 9.3%).

3.3 | Baseline symptom severity

At baseline, the group recruited through media showed significantly higher scores in almost all of the scales addressing ED attitude compared with the group recruited face-to-face. More specifically, they reported significantly higher dietary restraint, eating concerns, weight concerns, drive for thinness, and bulimic attitudes (Table 1). Participants recruited through media had a significantly lower BMI with a higher percentage of participants in the underweight range compared with participants recruited face-to-face.

Also, a significantly higher percentage of participants recruited through media reported (subjective) binge-eating and vomiting episodes compared with participants recruited face-to-face.

In terms of associated psychopathology, participants recruited through media scored higher on depression, general clinical impairment, and perfectionism. Scores in the knowledge test regarding EDs in general did not differ between both groups (p = .586).

3.4 | Program utilization

There was a significant difference between both recruitment groups in terms of initial login to the program: While 11 participants

### TABLE 1

|                                | Face-to-face (N = 114) | Media-based (N = 54) | T    | 95% CI        | p     |
|--------------------------------|------------------------|----------------------|------|---------------|-------|
| EDE total score                | 2.17                   | 2.72                 | 3.064| 0.191         | 0.905 | .003 |
| EDE-RS                         | 2.34                   | 2.96                 | 2.826| 0.185         | 1.060 | .006 |
| EDE-EC                         | 1.11                   | 1.85                 | 4.274| 0.400         | 1.089 | <.001|
| EDE-WC                         | 2.32                   | 2.82                 | 2.189| 0.047         | 0.959 | .031 |
| EDE-SC                         | 2.92                   | 3.24                 | 1.520| -0.097        | 0.737 | .132 |
| WCS                            | 56.40                  | 66.05                | 3.271| 3.794         | 15.502| .001 |
| EDI-2 drive for thinness       | 26.81                  | 30.48                | 2.922| 1.182         | 6.167 | .004 |
| EDI-2 bulimia                  | 12.05                  | 15.33                | 3.494| 1.417         | 5.144 | .001 |
| EDI-2 body dissatisfaction     | 37.86                  | 39.20                | .869 | -1.721        | 4.409 | .387 |
| BMI                            | 20.75                  | 19.84                | -3.149| -1.493        | -0.339| .002 |
| BDI-II                         | 11.11                  | 15.44                | 3.022| 1.488         | 7.190 | .003 |
| BSI global score               | 0.64                   | 0.87                 | 2.586| 0.053         | 0.402 | .011 |
| CIA                            | 10.98                  | 16.06                | 3.008| 1.721         | 8.425 | .003 |
| MPS-F                          | 99.84                  | 111.39               | 3.219| 4.440         | 18.654| .002 |
| Underweight participants       | 19                     | 22                   | 40.7 | 11.511        |       | .001 |
| Binge eating (obj. and/or subj.) | 28                      | 26                   | 48.2 | 9.346        |       | .002 |
| - objective BE                 | 10                     | 4                    | 7.4  | 0.089         |       | .765 |
| - subjective BE                | 20                     | 23                   | 42.6 | 12.073        |       | .001 |
| Vomiting                       | 6                      | 8                    | 14.8 | 4.376        |       | .036 |
| Fasting                        | 7                      | 3                    | 5.6  | 0.022         |       | .881 |
| Abuse of laxatives             | 4                      | 3                    | 5.6  | 0.384         |       | .535 |
| Abuse of diuretics             | 3                      | 2                    | 3.7  | 0.146         |       | .703 |
| Excessive exercise             | 97                     | 46                   | 85.2 | 0.000         |       | .987 |

Note: EDE scores range from 0 to 6; Higher scores (except for BMI) indicate higher symptom severity; BMI ranged from 17.58 to 25.0 in the overall sample; bold face values are significant.

Abbreviations: BMI, body mass index; EDE, Eating Disorder Examination; RS, Restraint Scale; EC, Eating Concern Scale; WC, Weight Concern Scale; SC, Shape Concern Scale; WCS, Weight Concerns Scale; EDI-2, Eating Disorder Inventory-2; BDI-II, Beck Depression Inventory-II; BSI, Brief Symptom Inventory; CIA, Clinical Impairment Assessment; MPS-F, Frost Multidimensional Perfectionism Scale; BE, binge eating.
(18.3%) recruited face-to-face never logged on to the program, all participants recruited through media logged in at least once ($\chi^2 = 5.06; p = .029$). Table 2 includes usage metrics for intervention group participants and shows that the group recruited through media utilized the program significantly more intense, for example, opened more sessions and pages, made more entries in diaries, and used the forum more often. However, when including only participants who logged on to the program at least once, none of the differences in program utilization measures remain significant, except for the self-monitoring log.

At the beginning of the program, participants recruited through media rated their motivation to change eating habits significantly higher than participants recruited face-to-face ($T = -2.614, p = .011$). Motivation to change body image did not differ significantly between both groups ($p = .201$). Bold face values are significant.

### DISCUSSION

The aim of this study was to compare face-to-face vs. media-based recruitment strategy for an RCT evaluating the Internet-based prevention program StudentBodies-AN for women at risk for anorexia nervosa. We found that recruitment through media resulted in a significantly higher proportion of women reporting subclinical symptoms of AN such as high weight concerns and dietary restraint in the screening questionnaire, thus were eligible for study participation. We also found a statistically and clinically significant relation between recruitment strategy and symptom severity: Participants recruited through media reported significantly higher levels of disordered eating and associated psychopathology in the baseline interview than participants recruited face-to-face.

The differences in participants recruited through the two strategies are in line with previous findings that showed an association between more severe symptoms and a more active help-seeking behavior (Bauer et al., 2020; Lindner et al., 2015). While participants recruited through lectures only needed to fill out the printed screening questionnaire handed out by the study team (and may have felt pressured to do so), participants recruited through media actively needed to visit the trial website and fill out the online screening. This active help-seeking behavior might reflect a high(er) readiness and motivation to participate in the program due to high(er) psychological impairment. This suggestion can be supported by the fact that participants who were recruited face-to-face and met inclusion criteria were more likely to have entered invalid contact details in the screening questionnaire and also were more likely to decline participation after being invited to the baseline assessment compared with participants recruited through media.

The higher levels of ED pathology found in the media recruited group might be partly explained by a higher level of perceived anonymity afforded by media recruitment (Lavender & Anderson, 2009). The majority of participants (75%) in the media-based recruitment group took part in an assessment interview by telephone, whereas almost all of the participants in the face-to-face recruitment group (98.4%) were assessed during a face-to-face interview session. The lack of the visual communication channel in the telephone assessment may have reduced participants’ tendency to provide socially desirable answers and increased the willingness to share more information that would be considered too intimate or associated with shame in a face-to-face context (Fairburn & Beglin, 1994). In addition, participants in the face-to-face recruitment group might have felt pressurized to fill in the questionnaire during the lecture, although not wanting to participate (or not showing eating disorder relevant attitudes and/or behaviors at all). This may also have led to a lower rate of participants responding to the interview invitation in this group.

Participants who were recruited through media were also more likely to log on to the intervention at least once, that is, start with the intervention, and access more pages of the intervention content. This is in line with previous findings by Bauer et al. (2020) who found that participants were more likely to engage in the online intervention when not being recruited via high schools but through access paths where self-selection is more likely to occur. However, when considering only StudentBodies-AN participants who logged on at least once, most differences in program usage except for the self-monitoring diary disappeared. This interactive intervention component aims at
analyzing specific situations in which problematic eating behaviors or poor body satisfaction occur, requires a high degree of engagement and self-reflection and can be used independently from the rest of the intervention. When combining participants from both recruitment paths, those with initially higher levels of eating pathology showed higher adherence to StudentBodies-AN (Vollert et al., 2019). This suggests that the media-based recruitment strategy, by recruiting individuals with higher levels of disordered eating, also recruited individuals who were more likely to adhere to the intervention.

With regard to the dissemination of this Internet-based prevention program, these findings are promising. As recruitment through media might reflect real-world conditions rather than a face-to-face recruitment and supports an active help-seeking behavior of people willing to engage in strategies to improve wellbeing, online screening and recruitment seems to be suitable to address those in need for eating disorder prevention or treatment (Fitzsimmons-Craft et al., 2019).

In this context, using announcements in health insurance membership magazines might be a promising and economic approach to disseminate Internet-based prevention and thereby address women who are already at risk for developing an eating disorder, although this might not be comparably applicable to countries other than Germany where this trial was conducted. Compared with face-to-face recruitment in university lectures that resulted in a relatively homogenous sample of students in their late teens and early twenties, recruitment through media seems to reach a much broader population with regards to age or occupation. Also, the type of (social) media we used to recruit participants may not have been consumed as much by younger women. The usage of social media seems to be subject to trends, with age group specific preferences that are evolving fast (Anderson & Jiang, 2018). In this context, it seems to be necessary to analyze which channels are currently used by the specific target group before starting recruitment.

For the current trial, one also has to consider that we dealt with both a rare condition and hard-to-reach population. Despite high recruitment efforts, the participant yield was very small compared with the number of screened women: Overall only 18.58% of women who filled out the screening questionnaire met the inclusion criteria and only 3.62% could finally be randomized to the trial. More than one third (38.1%) of women who met inclusion criteria and were invited for the baseline assessment did not want to participate. This again demonstrates the challenge to identify and reach women in need of preventive interventions for AN and motivate them to participate. This difficulty was also confirmed in a current ED dissemination trial in which women were allocated to different versions of an online intervention aiming to improve body image and eating behavior depending on their ED risk level (Nacke et al., 2019). Here, women with initial symptoms of AN (WCS > 42; 18.5 < BMI < 21; no occasional binge eating) also represent the smallest group compared with women without or other ED-related risk factors and initial symptoms (e.g., binge eating, overweight).

Although the absolute participants yield—when considering only the exact numbers of randomized participants in both recruitment groups—was higher for the face-to-face recruitment compared to the media recruitment (114 vs. 54 participants), the face-to-face strategy was very labor-intensive and the proportion of eligible and randomized women to those who were screened is quite low. The study was announced and screening questionnaires handed out in 132 lectures and seminars in three different cities by at least two recruiters (usually student research assistants) per lecture. The number of screens handed out and returned varied widely between lectures. In addition, face-to-face recruitment required preparation (e.g., scheduling recruitment activities with faculties and lecturers, printing of paper-pencil screening questionnaires) and follow-up processing (e.g., filled screening questionnaires were sent to an external institution that filtered the screen positive ones). Media-based recruitment was not directly associated with costs since print or online announcements (e.g., articles in health insurance membership magazines or a press release from the university) were free of charge. However, working hours were spent on preparing texts for publication and establishing contact to recruitment partners. As cost-effectiveness was not a primary outcome of the trial, post hoc estimations of the costs associated with both recruitment strategies are not possible. Overall, recruitment through media might be less “predictable” as recruitment activities rely on, for example, schedules from (health insurance) magazines, but more target group members can be addressed with manageable efforts than face-to-face recruitment in lectures. Future studies would benefit from systematically documenting any costs associated with recruiting methods (e.g., advertisements) and intervention delivery and report on costs per recruitment and successful completed intervention, comparing different strategies and channels.

Since the recruitment strategy may have an impact on the proportion of participants with high impairment that may require more intense guidance, the recruitment strategy may indirectly affect the costs for delivering the intervention (Bauer et al., 2020).

Strengths of this study are the assessment of eating pathology using validated measures. The structured EDE interview (Hilbert & Tuschen-Caaffier, 2006) was performed with all participants at any assessment point to confirm ED pathology. Also, we included a relatively large number of participants at risk for AN.

However, some limitations also have to be taken into account. We did not examine the impact of recruitment strategy on outcome, but recruitment strategy might act as a moderator within effectiveness analyses. However, recruitment strategy was confounded with symptom severity, so results have to be interpreted with caution. The study was also not specifically designed to estimate the cost-effectiveness of both recruitment strategies.

Lastly, it cannot be ruled out that some participants have received information from both recruitment strategies, since they were not completely mutually exclusive. For example, some participants may have learned about the study in a lecture but decided to fill in the screening questionnaire online, and thus were attributed to the group recruited through media. Compared to the sample recruited face-to-face, the sample recruited through media was more heterogeneous and included a variety of different recruitment sources (i.e., learned about the study through their health insurance, family or friends, university or other not-specified magazines) that may not be comparable.
However, the small size of single-media-based recruitment sources did not allow to analyze them separately. Future studies may address differences in the feasibility and costs of recruitment through different media channels that may reach different populations. Our current large StudentBodies-based dissemination trial aims to assess the populations addressed by different recruitment strategies in more detail (Nacke et al., 2019).

Finally, comparable with previous StudentBodies trials (Beintner et al., 2012), the recruited sample was highly homogenous in terms of socioeconomic variables. However, since StudentBodies-AN was designed as intervention for young women in college age, recruitment was conducted on university campuses in the first place. Generalizability to nonstudent populations is therefore unclear.

5 | CONCLUSION

In the present study, media-based recruitment for an ED prevention trial was associated with significantly higher ED-related symptoms and attitudes compared to face-to-face recruitment at universities. In addition, media-based recruitment was also associated with higher program utilization, specifically initial login to the program. Recruitment through media seems to be feasible and suitable to reach those already showing symptoms of AN, thus being at elevated risk for a full-syndrome ED. Using media to recruit participants and providing an online screening may therefore help to increase the number of participants at risk for AN in similar studies. However, as it is challenging and expensive to address women at risk for AN in particular, preventive interventions for this specific target group may be better integrated in a broader preventive care package for a wider audience, including women showing ED risk factors or who want to improve their body image and wellbeing. For dissemination purposes, future studies should be explicitly designed and powered to explore the impact of recruitment source or strategy on reach and effectiveness.

DATA AVAILABILITY STATEMENT

The data are not publicly available due to privacy or ethical restrictions.

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