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REVIEW ARTICLE

Examining the "usual" in usual care: a critical review and recommendations for usual care conditions in psycho-oncology

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Abstract

Purpose Within psycho-oncology clinical trials, *usual care* (UC) represents a common and important control condition. Yet recent shifts in oncology, coupled with insufficient description of such conditions, threaten to render UC increasingly difficult to define and interpret. This paper offers evidence of these shifts and recommendations for addressing them.

Methods The broader literature on usual care as a control condition in psychosocial/behavioral intervention trials was assessed, and usual care-controlled trials in psycho-oncology were selectively reviewed, toward to goal of conceptual synthesis.

Results We offer evidence that (1) UC control conditions are often insufficiently defined and assessed; and (2) the context of supportive care in oncology has shifted in a manner that contributes to this problem, with implications for interpreting and comparing findings across clinical trials. Three converging findings support these conclusions. First, the scientific literature increasingly documents the diversity in how "usual care" conditions are defined across psychosocial and behavioral trials, with important considerations for trial interpretation. Second, evidence suggests that the availability of psychosocial oncology care has increased over the past few decades. The increasing availability and variety of psychosocial care introduces potential confounds for UC conditions. Third, mental health care trends in the general population affect the supportive interventions available to oncology patients in UC conditions today versus in the past.

Conclusions Shifts in psychosocial oncology and broader mental health care underscore the importance of carefully defining and assessing UC in psycho-oncology trials. Recommendations are offered for improving the design, evaluation, and interpretation of UC conditions, toward the ultimate goal of improving the quality of the evidence in psycho-oncology.

Keywords Psycho-oncology · Supportive care · Cancer · Usual care · Control group · Randomized trial

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Introduction

An exciting era in psycho-oncology is at hand [1]. In the USA and Canada, national organizations now require distress screening for accreditation [2–4]. In the USA, National Cancer Institute (NCI)-designated comprehensive cancer centers now offer professional staff to address patients' psychosocial needs; community cancer care centers show similar increases [5, 6]. The number of people surviving cancer is increasing in many industrialized countries [7–9], which has prompted greater attention to psychosocial needs among post-treatment cancer survivors [1, 10–12]. Oncology is increasingly adopting the view that caring for cancer patients and survivors includes attending to their psychosocial needs.

These shifts underscore the importance of building the psycho-oncology evidence base by conducting high-quality randomized controlled trials. Ideally, such trials provide first-rate evidence for identifying the psychosocial interventions that

most benefit cancer survivors, producing findings that can be generalized beyond the immediate trial setting. Within psycho-oncology trials, *usual care* (*UC*) represents a common and important control condition. When we need to know whether a new psycho-oncology intervention improves care or cost beyond the offerings already in place, UC represents the most logical control condition. Areán and Alvidrex [13] thus argue that in behavioral intervention research, UC represents the "most ecologically valid comparison intervention" (p. 72). In addition, Mohr et al. [14] state that: "…what an RCT reveals about the effectiveness of the experimental treatment inherently depends as much on the control condition as on the experimental treatment" (p. 275).

On this basis, we contend that the rigor applied to define and assess UC control conditions should approach the rigor applied to define and assess active intervention conditions. This possibility has generated much interest in the psychotherapy and behavioral intervention literatures [14–20], but has not yet been considered sufficiently in psycho-oncology. Growing efforts to address psychosocial concerns among cancer survivors translate into a need to maximize the quality of trials that inform such efforts, many of which rely on UC control conditions.

In considering the challenges that UC conditions pose for psycho-oncology, we offer evidence on the variability in how such conditions are defined and assessed and review historical shifts in oncology and mental health care on the availability, form, and use of psychosocial care. We consider how these challenges threaten the internal validity of clinical trials in psycho-oncology by making UC comparisons ever more difficult to define and interpret. Finally, we offer recommendations for tackling these challenges, toward the goal of increasing the quality and generalizability of clinical trials in psycho-oncology.

Variability in what is meant by "UC"

The interpretation of UC conditions is complicated by variability in what is meant or encompassed by UC, also known as "treatment as usual." Mohr and Freedland [14, 17] emphasize that UC is a heterogeneous term that refers to many different types of control conditions, depending on the study. UC most commonly refers to routine care provided for the target problem in the trial setting. Depending on the setting, however, this can range from guideline-driven, gold-standard care to highly variable care to no care. Freedland et al. [17] also argue that all study conditions, including UC conditions, include nonstudy care—care received outside the study setting, such as patient-elected private psychotherapy. They show that the availability and quality of nonstudy care can influence patients' decisions to participate in clinical trials as well as their adherence and retention after trial enrollment. Thus, UC-controlled trials actually reflect UC + nonstudy care versus the active intervention + nonstudy care. When patients in the UC condition seek more (or less) nonstudy care than those in the intervention condition, then the impact of condition becomes confounded with nonstudy care. Psycho-oncology mirrors these known challenges in defining and assessing UC and presents its own particular challenges.

The first source of variability in UC and nonstudy care is in availability and access, which likely varies by country, region, rural vs. urban or suburban trial catchment regions, and particularly for nonstudy care, by patients' socioeconomic status, gender, race/ethnicity, religious and cultural orientation, immigration status, and the presence and quality of health insurance, among other factors. Such sociodemographic characteristics influence access to and use of mental health and medical care in general populations [21–23], and thus likely influence access to and use of UC and nonstudy care in psycho-oncology.

Complicating this picture, UC in psycho-oncology is challenging to define because sparse data are available on its composition in some nations, even at top cancer centers. Deshields et al. [11] surveyed National Comprehensive Cancer Network institutions—among the top cancer care institutions in the USA—on their psychosocial services. Although respondents reported the types and numbers of psychosocial support staff they employed, they were largely unable to report on the form, dose, or content of psychosocial services provided—that is, of UC. In response to questions on how many patients were seen for specific psychosocial services (pp. 165–166):

> Five institutions did not provide a specific answer to this question, noting that that they did not track this information. Others tracked number of contacts, but not the numbers of individual patients, and some did not track types of psychosocial services provided. For those who responded (n = 15), the range was 550–70,751 patients. The numbers varied dramatically for specific services. For instance, one institution reported seeing 16,000 patients for psychotherapy, while another institution indicated serving 50 patients.

Clearly, even top cancer care centers can lack basic information about what constitutes usual psychosocial care. In many psycho-oncology study settings, there may be an assumption of what comprises UC but a dearth of data on which to base such conclusions.

Second, in psycho-oncology, variability in UC reflects variability in professional staff training and orientation. An array of professionals, including nurses, social workers, psychologists, psychiatrists, and chaplains, provide psychosocial support services to cancer patients [11, 12]. Each offers distinct care orientations, training, and traditions. Kazdin [15] and Mohr [14] further note that specific UC procedures and

patient-provider relationships vary tremendously by individual providers within and between sites. For example, the same type of professional may have different theoretical orientations (e.g., a psychologist with a behavioral versus psychodynamic orientation) that affect UC in important ways.

Third, UC varies by the content of interventions and resources. Under ideal circumstances, UC would reflect national or international guidelines and standards of care. In contrast to highly specified national and international guidelines for cancer treatment [e.g., 24, 25], guidelines for providing psychosocial care to cancer survivors [e.g., 26, 27] allow for significant variability. For example, recommendations for treating anxiety and anxiety disorders in cancer populations [e.g., 26, 28, 29] encompass numerous psychosocial treatment options with varying degrees of evidence, including relaxation training, general supportive counseling, cognitive behavioral interventions, and education. These diverse recommendations likely translate into wide variability in addressing cancer-related anxiety (or any other psychosocial concern) according to guidelines. Although it is helpful to have diverse intervention options, this variability in psychosocial care complicates the interpretation of UC conditions in psycho-oncology.

Variability in the content of UC may be even greater in psycho-oncology than in traditional mental health care because cancer survivors still meet regularly with their oncology or primary care team. These care teams can provide formal and informal, difficult-to-track forms of supportive care at varying dose, quality, and frequency. Thus, the possibility of contaminating a UC condition with psychosocial support from the patient's medical team remains a greater risk in studying psycho-oncology populations than general populations. Moreover, if a patient communicates his or her UC status to the care team, and team members become concerned that the patient is not receiving the study's active intervention (if distressed, for example), then providers may be even more likely to offer extra psychosocial support. Finally, variability in UC content is complicated by the fact that many elements of evidence-based practice are often incorporated into UC, for example, basic cognitive behavioral therapy strategies, which risks blurring the distinction between UC and the active intervention [15].

Fourth, variability in UC (and nonstudy care) is influenced by patient choice and preference. The movement toward patient-centered care [30] ideally means that patients have more agency and choice in their psychosocial care. At a cancer center with robust psychosocial offerings, this means that one patient randomized to UC could choose to meet monthly with a chaplain, another in UC could seek weekly cognitive behavioral therapy from a psychologist, another could be prescribed anti-depressant and sleep medication, and another could elect not to receive any psychosocial care. Patient choice and preference thus increases variability in UC.

Trends in psycho-oncology that affect UC

Recent trends in psycho-oncology further amplify the variability in UC. First, the psychosocial concerns of cancer survivors have gained increasing attention in the field and broader public [1]. In parallel, broader technological and intervention shifts have increased the visibility and availability of psychosocial support and intervention options for cancer patients and survivors. We review evidence for these historical shifts and then consider their implications for UC conditions.

The increasing visibility, variety, accessibility, and specificity of psychosocial and emotional support in oncology is evidenced in numerous ways. First, the 1999 Institute of Medicine Report on "Ensuring quality cancer care" recommended that key elements of quality cancer care include psychosocial support, and stated that these key elements should be provided to every person with cancer [31]. In 2006, and again in 2008, two landmark Institute of Medicine reports [8, 9] shone a spotlight on the psychosocial needs of cancer survivors. Following these reports, screening for distress became mandatory for accreditation in Canada [4]. In 2012, a Commission on Cancer report from the American College of Surgeons (ASCO) recommended universal distress screening for cancer patients, which was made mandatory for ASCO accreditation in 2015 [2]. These developments illustrate a historic shift in prioritizing psychosocial assessment and care in oncology.

Second, evidence points toward the greater availability of psychosocial and supportive services in oncology over the past few decades. In 1995, for example, a survey of supportive care service offerings at NCI-designated cancer centers in the USA [32] showed that 10% offered no counseling services or support groups at all (and one quarter of centers did not respond to the survey; thus, the actual number may have been higher). In this cross-sectional survey, centers rated the overall effectiveness of their supportive care services (e.g., counseling, support groups, pain management, symptom management) at the time of the survey (in 1995) and retrospectively estimated their effectiveness 5 years earlier. Respondents' ratings suggested an improvement in the quality of services over the 5 years (10.3% gave "very good to excellent" retrospective ratings of 1990 services versus 53.8% in 1995), although retrospective bias can influence ratings [33]. Two decades later, a survey of NCI-designated cancer centers in the National Comprehensive Cancer Network [11] found that *all* surveyed institutions had psychosocial support staff, suggesting a cultural shift toward the provision of psychosocial services. In fact, the 20 responding institutions collectively reported 486 full-time equivalent psychosocial support staff, averaging to more than 24 psychosocial support staff per center. Most centers also offered psychosocial training programs for social workers, psychologists, psychiatrists, and chaplains. Importantly, a 2013 survey commissioned by the American

Psychosocial Oncology Society (APOS) [12] of its members and annual meeting attendees showed that comprehensive cancer centers and community-based treatment centers reported similar support group and counseling offerings. Similarly, many Northern and Western European nations have increased attention to the psychosocial needs of cancer survivors over the past few decades [34], with more standardized program offerings. Thus, the availability of robust psychosocial resources among industrialized nations appears increasingly common.

Third, studies demonstrate that cancer survivors access professional psychosocial support at higher rates than adults with other serious or chronic health conditions, at least in the USA. Data from 9187 Californian patients showed that support group use was higher among cancer survivors (23.7%) than among adults with other chronic health conditions such as cardiovascular and pulmonary disease (14.5%) [35]. In a large study of US adults interviewed in 1998–2000 as part of the National Health Interview Study [36], cancer survivors reported more contact with mental health providers over the past year and greater use of mental health services than did adults with no cancer history. Convergently, data from the World Mental Health Surveys [37] showed that the majority of adults with cancer who met criteria for a mood or anxiety disorder in the past year accessed professional help for mental health problems (59%), which was double the rate of adults with mood or anxiety disorders who did not have cancer (28%) or who had chronic health conditions such as HIV or diabetes (32%). In summary, epidemiologic data suggest that US cancer survivors access psychosocial support services at higher rates than those with other types of medical conditions or than community adults without cancer. These data point both to the distress that the cancer experience can cause as well as the field's success at providing services to address such concerns, with implications for UC conditions.

Fourth, another major trend is the increased availability of supportive cancer resources *online* [e.g., 38]. Forms of available online cancer information and support include interactive and non-interactive websites, listservs, online communities, and resources linking patients to clinicians or to local support communities. They encompass informational/educational, emotional, and support group-type resources. Availability of high-quality cancer information and support as well as misinformation and cause for despair both are ever-present. According to a recent Healthline survey of 1140 adults diagnosed with cancer [39], 89% went online for cancer information, most on the same day or within a week of diagnosis. Three quarters of young adults with cancer joined an online cancer community yet half said that cancer-related internet use caused them more anxiety, pointing toward mixed impact. A recent review found that online supportive oncology interventions have not shown uniformly positive effects [38]. Online resources also can overwhelm—Google searching "online cancer groups" yielded 311,000,000 results (on August 20, 2018). A 2013 review located 111 online communities for breast cancer survivors, containing nearly 5 million posts [40]. Access to the vast online resources available today for cancer survivors represents an international game-changing factor in defining UC and nonstudy care in psycho-oncology.

Looking ahead, the trend toward greater availability of psychosocial services in cancer care settings can be expected to continue as mandatory distress screening takes firmer hold. Similarly, the trend toward greater availability and use of online psychosocial support is likely to continue as new generations of people with cancer become ever more tech savvy.

Broader mental health care trends that affect UC

The broader landscape of mental health care has shifted in significant ways over the past few decades, at least in the USA, with implications for UC control conditions in psycho-oncology. Attitudes toward mental health help-seeking have improved. From 1990 to 2003, US survey data show significant increases in Americans' willingness to seek mental health care [41]. This shift is reflected in greater public acceptance [42] and more frequent use [43] of psychiatric medication, as well as greater reliance on medication alone to address mental health issues, without any counseling/psychotherapy. In fact, by 2007 the majority of Americans accessing outpatient mental health care received medication alone (57%), a significant increase from just 9 years earlier (44%) [43]. The use of psychotherapy alone or psychotherapy combined with medication stagnated during this period. Similarly, an earlier study comparing mental health and addiction care among tens of thousands of US adults between 1987 and 1996 showed that while use of mental health service use increased, it was driven by a dramatic increase in psychiatric medication use [44]. Similar trends in increased psychiatric medication use are evidence in other industrialized countries, including Canada, Australia, and most of Europe [45–47].

These trends are likely reflected in mental health care for cancer survivors. We surveyed 345 US cancer survivors with diverse forms of cancer on their supportive intervention preferences [48]. Professional individual counseling was the most preferred intervention followed by cancer support groups and peer individual counseling. Anti-depressants or other psychiatric medication was the *least* preferred intervention, but nonetheless it was the one they were *most likely to receive currently*. If replicated, this study suggests that the broader trend toward increasing reliance on psychiatric medication is reflected among cancer survivors, at least in the USA, despite their notable preference for counseling and support groups. Yet psycho-oncology trials comparing an active intervention to UC or limited care (less intensive care than the active

intervention) often do not report rates of psychiatric medication use, compare rates between groups at baseline or over time, or account for medication use in statistical analyses [e.g., 49–52]. Thus, as a field, we are generally failing to account for the influence of psychiatric medication on study outcomes.

Second, both among cancer survivors and the general population, adults increasingly rely on alternative, complementary, and integrative medicine to address mental health and well-being concerns, particularly in the USA [53, 54]. Culturally, practices such as acupuncture, massage, reiki, meditation, energy healing, homeopathy, vitamins, herbs, and supplements, major dietary changes (e.g., gluten-free, paleo), are increasingly accepted and sought to address psychosocial concerns. In that some cancer centers offer such services, this trend has implications for both UC and nonstudy care in psycho-oncology studies. In support, a recent meta-analysis of complementary and alternative medicine (CAM) use among cancer patients in Europe, Canada, USA, New Zealand, and Australia suggested a doubling in CAM use from the 1970s and 1980s to the early 2000s [55].

Implications for UC arms in psycho-oncology trials today

Collectively, what implications do these shifts in psycho-oncology and general mental health care have for UC control conditions in psycho-oncology? Imagine that Theresa, Diane, and Jada are each randomized to the UC arm of a two-arm trial comparing cognitive behavioral therapy (CBT) to UC for depressed women with late-stage breast cancer. Theresa, who is motivated to seek professional support, meets weekly with a clinical social worker at her oncologic treatment site to receive supportive counseling. At her church, she and her partner take part in a retreat for couples coping with medical problems. By the end of the trial, Theresa's depression has improved dramatically.

Diane, on the other hand, agreed to participate in the study out of a sense that it might help other women with breast cancer. Feeling depressed has reduced her motivation to seek help. After she is randomized to UC, Diane says to herself, "What's the use?", and she feels uninterested in exploring other forms of help. She spends most of her days alone at home, and by the end of the study, her depression has worsened.

Jada feels disappointed that she is randomized to UC; she really wanted CBT, which she has read is an evidence-based treatment for depression. She finds a CBT therapist in the community who accepts her health insurance. Over 15 individual CBT sessions, her depression lifts.

These three women's distinct "UC" paths, magnified by the 100 women in the study's UC condition, translate into diverse care dose, content, and efficacy. Within UC conditions in psycho-oncology, we can no longer assume that little to no professional psychosocial care is provided nor can we assume that similar care is provided from one participant to another. Both UC and nonstudy care options threaten a study's internal validity. What could we conclude if this trial yielded a null result—if CBT for depression was no more efficacious than UC? How might we assess UC and nonstudy care (in both arms) in a manner that would allow us to conclude more from such a study?

As noted, UC represents a fundamentally different comparison than just a few decades ago, one that is more active and involves more available and diverse psychosocial services onsite at many cancer care sites, including increased reliance on psychiatric medication and online resources. We consider the implications of each of these developments in turn.

First, the finding that psychosocial care is more available in many cancer care settings has numerous implications, including the following: (a) Though psychosocial care may be equal between novel intervention and UC conditions at baseline, to the extent that UC participants are more motivated to seek additional support (or unblinded providers are more motivated to provide it) [17], this assumption may not hold throughout the trial. Though nonstudy care is rarely assessed, several studies in the behavioral trial literature [56–58] have found that indeed, UC participants use more nonstudy care during the trial than active intervention participants. (b) Psychosocial UC resource availability will likely differ between sites in a multi-site trial, even more so if the trial is conducted at multiple international sites, introducing confounds between sites in the definition of UC at baseline, as well as *during* the course of the trial if those in UC seek support that differs between sites *and* differs from participants in the active intervention. (c) To the extent that UC participants access effective supportive services, particularly at higher rates than active intervention participants, then the active condition will appear weaker and less effective, and will generate smaller between-group effect sizes and more frequent null results. (d) Acknowledging the increased availability of psycho-oncology resources in many countries, we believe that it is no longer reasonable to expect that effect sizes from current trials comparing an active intervention to UC will reflect the effect sizes of similar trials done only a few decades earlier (or the same forms of UC and nonstudy care). From a patient perspective, recent increases in evidence-based psychosocial services in cancer are clearly positive. From a research perspective, the era in which UC patients could access little psychosocial care outside of the trial, and thus researchers could have confidence in what they were comparing to, has long ended. (e) For ethical reasons, researchers often cannot or do not wish to restrict UC or nonstudy care, particularly for adults with metastatic cancer.

Even if UC is somewhat restricted by the researchers, today in many cancer care settings and most notably online, numerous other options remain available.

Second, psychosocial care options are more diverse and variable than in previous decades, with the following implications: (a) Comparisons between active treatment and UC arms will lead to more *variable* between-group effects that reflect the varied availability, use, form, content, dose, and efficacy of UC and nonstudy care. (b) In a multi-site study, such variability risks generating greater differences between sites, leading to greater likelihood that between-group effect sizes will vary significantly by site, limiting generalizability from any single site. (c) To overcome variability in UC and nonstudy care within and between sites, comparisons between an active intervention and UC will likely require larger samples to demonstrate reliable effects. Diversity in care reflects the various types of professionals involved in psychosocial cancer care as well increased use of integrative care, psychiatric medication, and online resources.

Third, it is worth considering the implications of individual trends in psychosocial care. For example, the increasing reliance on psychiatric medication to address mental health concerns [43], including among cancer survivors [48], represents a core trend over the past few decades in many industrialized countries [43, 46, 47]. Considering this trend illustrates how a single trend can affect UC in complex ways. First, clinical researchers should assume that a portion of patients randomized to all trial conditions will access psychiatric medication. To the extent that UC participants seek out such medications to a greater extent than novel intervention participants, the rates of medication use between arms will become imbalanced. To the extent that such medication improves patients' mental health and quality of life, patients will improve on outcomes of core interest in most psycho-oncology trials, introducing a potential confound. Furthermore, all psychiatric medications result in side effects for at least some users, including insomnia, fatigue, dampened sex drive, erectile dysfunction, nervousness, dizziness, nausea, and diarrhea/constipation for anti-depressants [59] with more severe side effects for anti-psychotics [60] that are increasingly used to treat depression and anxiety, at least in the USA [61]. Each of these side effects can impact quality of life, physical symptoms, sleep and fatigue, and numerous other outcomes of interest in psycho-oncology. If UC participants take medication more frequently than novel intervention participants, a different portion within each condition will be affected by side effects. Further complicating this picture, cognitive behavioral therapy, an intervention commonly compared to UC in psycho-oncology trials, has sometimes been found to reduce the dose and use of psychiatric medication, particularly in the context of anxiety disorders [e.g., 57, 58]. Thus, even if matched at baseline, over the course of the study, the dose and frequency of medication use could decrease in the CBT arm but remain the same or increase in the UC arm. The impacts of this single trend on UC and nonstudy care are multiplied when trends in psycho-oncology and broader mental health care are considered collectively.

Recommendations

UC is a key comparison condition in psycho-oncology trials for multiple reasons; we do not suggest jettisoning it. Rather, we offer recommendations for improving the design, analysis, and interpretation of trials involving UC control conditions, and provide broader considerations for the field. Most suggestions fall under the design stage, emphasizing the importance of incorporating UC considerations very early in trial development, from study conception. Recommendations are also summarized in Table 1.

Regarding study design, we first recommend deliberating carefully on the advantages and limitations of using a UC control condition, including considering uncontrolled variables, third variables, historical shifts in mental health care and in the availability of supportive care in oncology, the recent impact of mandatory distress screening, and so forth. Second, we recommend investigating which UC and nonstudy care options are available to patients at all study sites, including site-specific options and between-site differences in options and in patients' typical insurance status and coverage, which may impact which, if any, options they can access. Third, in accounting for UC and nonstudy care options available to patients, investigators need to consider which ones draw upon evidence-based practices, such as cognitive behavioral therapy techniques for treating anxiety or depression [15], or overlap with the active intervention, which might be a cognitive behavioral intervention. Fourth, during a priori statistical power and sample size estimation, investigators should help statisticians to appreciate that the availability of robust UC or nonstudy care offerings will reduce group differences between the UC and active intervention condition(s), biasing the trial toward null differences. The assumption of no change or no improvement over time in the UC condition will likely not be met for many outcomes, and larger sample sizes will likely be required to find reliable group differences. Estimating power from studies conducted recently in the same country and in a similar setting will minimize confounds stemming from international or other contextual differences in the availability and nature of UC and nonstudy care, historic shifts in the availability and nature of supportive care and mental health care broadly, and so forth. Significantly older studies will likely have had fewer UC and nonstudy care options available to participants, and thus should be avoided as sources of power and sample size estimation. Fifth, we recommend developing clear, easy-to-use methods to track participants' use of UC and nonstudy care services

Table 1 Recommendations for improving UC conditions

Design	1. Consider advantages and limitations of UC conditions relative to other control/comparison conditions [see 14, 17–19] 2. Assess UC and nonstudy care available to participants at all study sites. Consider variability between sites. 3. Evaluate the extent to which available supportive care draws upon evidence-based practices or overlaps with the active intervention(s). 4. Consider available UC and nonstudy care on an a priori basis in research design and power and statistical analyses. Estimate statistical power from recent studies conducted in a similar context (if possible). Avoid estimating from significantly older studies. 5. Have participants systematically track their use of supportive care services of all types. Check against medical records, if possible. Consider having patients rate the perceived usefulness of supportive services. 6. Include measures of theory-derived mediators for active intervention(s) to evaluate intervention specificity.
Analysis	1. Distinguish UC from nonstudy care. Test for between-group differences in use of UC and nonstudy care. 2. Rate the extent to which UC and nonstudy care draw upon evidence-based practices or overlap with the active intervention(s). 3. Consider statistical control of supportive care services used by participants in all conditions (e.g., psychotropic medication, support groups, counseling). 4. Evaluate theory-derived mediators of active interventions to test the specificity of the intervention relative to UC.
Interpretation	1. Acknowledge the risks and limitations of comparing to UC. 2. Recognize that both conditions include nonstudy care and discuss the nature and implication of such care.
Broader for the field	1. Classify UC conditions in finer-grade detail, considering content, delivery format, context, and dose. 2. Consider supportive resources perceived versus accessed. 3. For meta-analyses on the efficacy of psychosocial interventions in cancer, compare active interventions to distinct types of control groups. 4. Contemplate adapting for psycho-oncology recent decision frameworks for control group selection [18, 62].

broadly, for example, by tracking all forms of supportive care in and out of the clinic, and forms of care most relevant to the particular study. For example, participants in an intervention trial for cancer-related fatigue should be tracked on fatigue-relevant interventions such as the use of sleep medication and attendance at cancer survivor physical exercise groups. Both participants' self-report and medical chart review ideally would be used to track UC and nonstudy care. Sixth, we encourage researchers to measure theory-derived mediators specific to the active intervention(s), as well as nonspecific therapeutic processes. Doing so informs the extent to which improvement in outcomes is driven by intervention-specific processes (e.g., reductions in ruminative thinking following mindfulness training) or by nonspecific therapeutic processes (e.g., perceived social support) that could come from various sources, including UC and nonstudy care.

Regarding data analysis, we recommend distinguishing UC from nonstudy care in the database, and then testing and reporting group differences in each, along with descriptive statistics that characterize participants' use of UC and nonstudy care. Second, if it is possible to derive the content of such care, we recommend *rating* the extent to which UC and nonstudy care draw upon evidence-based practices or overlap with the active intervention(s), publishing these findings alongside the results of the trial. Third, we recommend statistically controlling for participants' UC and nonstudy supportive care service use during the trial, if possible. Finally, we recommend statistically evaluating the theoretical mediators of active interventions to evaluate intervention specificity. Investigators could go a step further and test the relative contribution of theory-derived mediators versus nonspecific therapeutic process mediators in a multiple mediation model.

Regarding trial interpretation, we recommend acknowledging the risks and limitations of comparing to UC, and allowing these to inform trial interpretation. We also encourage researchers to explicitly note in Discussion sections of manuscripts that both conditions included nonstudy care (assuming such care was available), note the nature of such care, and discuss how the use of nonstudy care may have influenced the trial results.

Regarding broader recommendations for the field, we build on the Institute of Medicine's report on *Cancer care for the whole patient: Meeting psychosocial health needs* [8] to echo the call for classifying psychosocial care in cancer. Specifically, we recommend classifying UC conditions in finer-grade detail to more accurately compare effect sizes between studies that use similar UC conditions, particularly in the context of meta-analyses. A classification system might differentiate UC conditions in terms of content (e.g., education, cognitive behavioral therapy, referral to a general support group), format (e.g., individual versus group delivery, online versus in-person), and dose. Acknowledging the importance of *perceived* support for mental well-being (beyond support that is actually received) [e.g., 63], a classification system might also account for the types of resources, professionals, and number of sessions that patients *perceive* that they have *access to*, apart from whether they use them.

Convergently, meta-analyses of the efficacy of psychosocial interventions in cancer should compare active

interventions by different types of control groups, which have been shown to result in different meta-analytic findings in CBT for depression, for example [19]. Meta-analyses in psycho-oncology—including otherwise high-quality meta-analyses published in top oncology journals—generally do not differentiate among control conditions [e.g., 64–70]. Some even merge comparisons to other active intervention conditions together with UC comparisons. One meta-analysis noted that the small number of trials precluded examining control group type as a moderator [67] but generally researchers have not considered the important possibility of moderation of meta-analytic findings by control group type. A UC classification system would help to differentiate control conditions systematically in meta-analyses. Finally, we recommend that the field consider adopting a decision framework for control group selection, building upon recent efforts [e.g., 18, 62].

We note that these recommendations, and this review generally, were informed by the broader and the psychosocial oncology-specific trial literature and our experience conducting UC-controlled trials in various settings. This is not intended as a systematic review of UC-controlled psycho-oncology trials and thus, there may be evidence that was overlooked. In addition, our perspective was most strongly informed by healthcare and policies in the USA. Though many of the perspectives and recommendations have relevance internationally, they likely have more relevance to high-income nations. In an era of increasing multi-site international trials, it remains especially important to carefully track, report, and test for group and site differences in UC and nonstudy care. It also remains an important next step to consider in more detail how issues of UC and nonstudy care function within particular national, regional, and sociocultural contexts. Recently, the NIH convened an Expert Panel on Comparator Selection in Social Science and Behavioral Clinical Trials [62]. Similarly, national and international panels could offer methods and recommendations for tracking the content of UC and nonstudy care, as well as designing, analyzing, and interpreting trials that include UC comparisons.

Conclusions

We have integrated the literatures on ongoing and recent trends in psycho-oncology and more general mental healthcare to argue for the increasing importance of tracking and accounting for psychosocial UC (and nonstudy care) in intervention trials for cancer survivors. Observations from this literature provide the foundation for recommendations to researchers toward the goal of increasing the internal validity of randomized trials comparing active interventions to UC. Specifically, these recommendations aim to increase the rigor with which UC conditions are defined and classified, improve the accuracy of comparisons among such studies, raise the likelihood that findings can be replicated in a similar setting, and ultimately increase the accuracy of and confidence in the conclusions from such studies and resultant practice guidelines.

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Compliance with ethical standards

Conflict of interest The authors declare no conflicts of interest. The authors maintained full control and responsibility for the content and primary data connected to this manuscript. We agree to allow the journal to review our data if requested.

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