

Supportive Care Needs During Active Cancer Treatment: Closing the Loop from Assessment to Action

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Abstract:

Supportive care is an important part of cancer care; however, supportive-care needs are not always identified or met in routine cancer care. This narrative literature review summarizes existing evidence about the multidimensionality, predictors, measurement, outcomes, and clinical implications of supportive-care needs in adult patients undergoing active anticancer treatment. Psychological/emotional needs are consistently reported, along with health system and information needs, along with physical/practical, financial, spiritual, and sexual needs. Specific types and extent of these needs depend on the cancer, anticancer treatment, disease status, age, socioeconomic background, and healthcare context, and can change during treatment. There are validated tools such as Supportive Care Needs Survey and NCCN Distress Thermometer that facilitate systematic measurement, but which measure different aspects of supportive-care needs and thus cannot be interchangeable. Interventions for patients' needs, including nurse-led interventions, psycho-oncology interventions, and ePRO monitoring, might have positive impacts following the needs assessment and clinical actions. A common problem is ensuring proper follow-through from the identification of needs to provision of support and reassessment. Current evidence suggests shifting from episodic screening of needs towards a more comprehensive approach that involves assessment, triage, intervention, follow-up, and reassessment of needs. Future studies should explore patients' outcomes, reach, response time, completion rate, resolution of needs, sustainability, and equity.

Keywords: Supportive Care Needs, Supportive Oncology, Needs Assessment, Patient-Reported Outcomes, Psychosocial Oncology, Financial Toxicity.

Discipline: Medical & Pharmacy > Oncology.

1. Introduction

Cancer continues to be a significant public health challenge worldwide and the process of diagnosis and treatment has become more complex and for many more extended over time [1]. Patients may suffer from consequences that are much more profound than those from the direct effects of the disease and anti-cancer therapy during active treatment. These can range from physical symptoms, to feelings of sadness, anxiety, confusion, disruption of family and work life, the ability to access and understand information becoming more difficult, financial worries and the ability to access more complex health services becoming more difficult. It is important to deal with these concerns as part of a comprehensive cancer care plan.

Supportive care is a structure for dealing with the physical, psychological, social, practical, informational and other negative effects of cancer and its treatment throughout the cancer experience. MASCC [2] defines supportive care as the prevention and management of adverse effects of cancer and its treatment. In this context supportive-care need is also separate from related concepts like symptom burden, psychological distress and quality of life. A patient may be having a symptom or problem but not be aware of a need, while an unmet need might be a perceived need for information, assistance, intervention or care that has not been met. The distinction is crucial because the definition, measurement and interpretation of need varies across studies, making it difficult to make comparisons across populations and settings [3].

Evidence, however, shows that supportive care needs associated with cancer treatment are multi-dimensional and shared across various patient groups. Paterson et al. [4] conducted a systematic review of 30 systematic reviews and found that there were consistent needs across psychological, health-system and information, interpersonal, social, physical, family, practical, daily-living, spiritual, and communication domains. A more recent meta-analysis of 95 studies that utilized the Supportive Care Needs Survey (SCNS-SF34) revealed high pooled scores for health-system and information and psychological needs and significant inter-study differences in scores based on cancer type, age, and treatment attributes [5]. This is because there is a level of heterogeneity, which suggests that supportive-care needs are not the same from patient to patient or constant throughout the treatment pathway.

The clinical challenge is then not just to prove the existence of supportive-care needs but to define them. Patients' needs need to be identified in a suitable way but being identified does not necessarily guarantee that patients are given an appropriate response. Assessment is useful when followed by a process of interpretation and prioritization of the concerns that were identified, timely triage or referral and access to the appropriate interventions and evaluation of whether the need has been met. However, in practice, there are potential weak links at any point in this pathway that can mean that clinically relevant needs are not addressed when they are identified.

The aim of the present narrative review was to provide a synthesis of the existing evidence in relation to supportive-care needs of adults receiving active anticancer treatment. It explores the conceptualization and key areas of need, factors that influence the pattern and intensity of need, how needs are assessed, the impact of not meeting the need and evidence of interventions for the support of need and models of service delivery. The interface between needs assessments and clinical response is given special attention. The review suggests that the usefulness of supportive care is not so much the identification of need, as the

establishment of pathways over time including multiple services and an understanding of the need to act, follow-up and re-evaluate appropriately.

2. Scope and Review Approach

This narrative review is based on adults receiving active anticancer treatment who have supportive care needs. It does not aim at giving a comprehensive or formally systematic evaluation of all the literature, but rather an integrated clinical and conceptual review. The review focuses on recent systematic and umbrella reviews, important clinical guidance, validated needs assessment studies and representative intervention studies, and in some cases, landmark publications that are still relevant to the development of key concepts or instruments.

The synthesis focuses on five related themes — conceptualization and domains of supportive-care need, factors associated with variation in need, approaches to assessment, consequences of unmet need, and models of supportive-care intervention and service delivery. Evaluation of evidence with a focus on differentiating the need for identification from the need for a clinical response. The review is narrative in design, and thus does not rely on a prespecified systematic search strategy, duplicate study selection, a formal study-level risk-of-bias assessment or de novo quantitative study pooling. Pooled estimates or comparative findings are used when applying these and are obtained from published systematic reviews and meta-analyses. The conclusions should thus be understood as an evidence-informed synthesis for clarity on clinically relevant patterns, conceptual differences, and implementation priorities rather than as a precise prevalence or intervention effect.

3. Conceptualizing Supportive-Care Need

Supportive care describes the care that is provided for the body, mind, information, social, practical, financial, spiritual and relational needs related to cancer and its treatment. These needs can arise from diagnosis and continue or evolve during treatment, survivorship, disease course and end of life. Therefore, supportive care is best viewed as care that occurs with the disease-directed care as opposed to care being provided after the cessation of the use of anticancer therapy. While supportive care and specialist palliative care share many common threads, they are not identical — supportive care applies to all stages of a disease and treatment intent.

One of the key conceptual differences is between a problem and an unmet supportive-care need. Symptoms, psychological distress, functional limitation and impaired quality of life are indicators of areas where support may be needed, but do not necessarily establish a patient's perception of a need for further information, assistance and/or intervention. An unmet need, on the other hand, can be a result of challenges that are not just captured by symptoms — and issues that may be related to uncertainty, communication problems, financial burden or difficulties navigating care. Supportive-care assessment is not just about what patients experience but whether the support they have is adequate (from their perspective).

This multidimensional nature of supportive-care need can be further understood by applying the three lines of work model developed by Corbin and Strauss [6], which were adapted to cancer supportive-care needs by Evans Webb et al. [7]. Illness work involves learning about the disease and treatment, interacting

with health care providers, and coping with symptoms and care. Everyday life work relates to keeping the common routines, duties and responsibilities such as work, care, transportation and household everyday activities. Biographical work has to do with the impact of cancer on identity, relationships, meaning and the person's sense of life trajectory.

In this review, the principal supportive-care domains examined are organized in this framework in Figure 1. There are close relationships between physical and daily-living needs and illness work, and between social, practical, and financial and everyday life work, and biographical dimensions for psychological and emotional, spiritual and existential, and sexuality, intimacy, and fertility needs and concerns. These associations should not be seen as definite boundaries, but rather as an organizing heuristic. Individual needs can span multiple lines of work, and can be intertwined across domains. For instance, cancer treatment-related fatigue can affect people's jobs, losing their job can create financial stress, financial stress can lead to psychological distress or impact treatment choices.

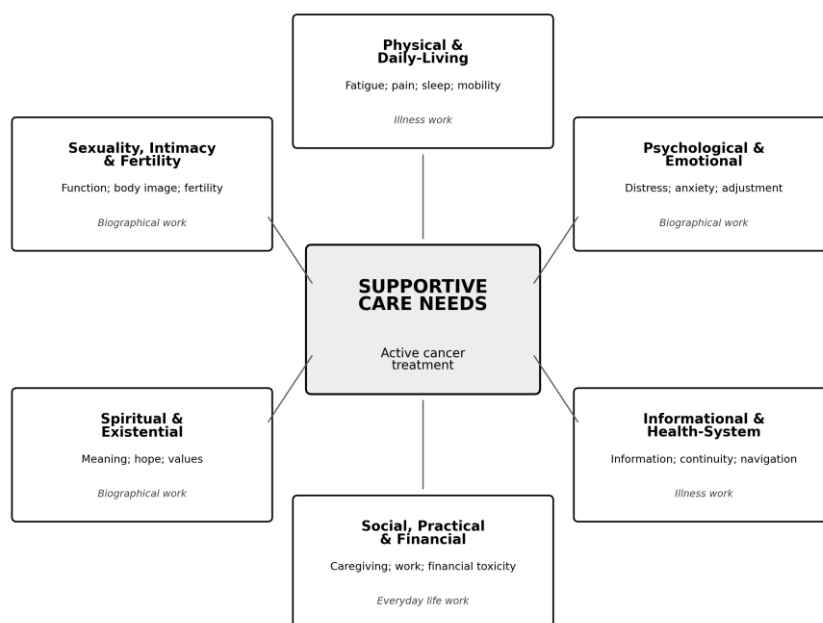


Figure 1. Multidimensional domains of supportive-care need during active cancer treatment, organised using Corbin and Strauss's [6] three lines of work framework as applied to cancer supportive-care needs by Evans Webb et al. [7]. Domains are illustrative and overlapping rather than mutually exclusive.

However, the concepts and measurement of supportive-care need in the literature is still rather ambiguous. Definitions of need, the scope of the need assessed, the tool used to do the assessment, the scale of the responses, and thresholds for determining when a need has not been met have been variable across studies [3]. Thus, reported prevalence and domain scores reflect both differences in patient population and in the way they were measured, as well as differences in the timing of measurement, in the health care context, and in the cultural environment. Interstudy comparisons should, therefore, be viewed with some caution. In this review, supportive-care need is defined as a patient perceived need for information, assistance,

intervention, or other support that is not met, and which can be multidimensional, and potentially dynamic. The domains in Figure 1 are used to structure the evidence, but do not suggest that supportive-care needs are independent, uniform or consistent across time. This conceptualization is the foundation for the discussion of the specific domains of need and clinical implications in the next section.

4. Domains of Supportive-Care Need

The domains of supportive cancer care during active treatment are multi-faceted and interconnected. There is no universal hierarchy of needs for any cancer population, treatment or stage of treatment. However, there is some recent evidence of recurring themes: psychological and emotional needs, health-system and information needs are often among the most salient, in addition to clinically important physical, practical, financial, spiritual and relational issues [4], [5]. The domains listed below are therefore analyzed in isolation for analytical purposes, but are not mutually exclusive as individual needs can overlap and can reinforce each other as shown in Figure 1.

4.1 Physical and Daily-Living Needs

Physical symptoms are still a significant source of supportive-care need at the time of active treatment. Fatigue, pain, nausea, trouble sleeping, loss of mobility, and other side effects related to treatment and/or disease may all happen at once and impact self-care, household activities, food preparation, work and attendance at treatment and follow-up visits. Their effects, therefore, are not only limited to how severe they are, but on how patients function in their daily lives.

Importantly, the symptom should not be automatically assumed to be and the severity of a symptom should not be assumed to be an unmet need. A clinically significant symptom may have only a small amount of additional perceived need if patients are informed, advised promptly and correctly, offered treatments to control the symptom, and have confidence in their ability to control it, while a less severe symptom may have a much greater amount of unmet need when the patient has not been informed, timely and correctly clinically, provided with treatments to control the symptom, and has low confidence in their ability to control it. Assessment of supportive-care need should thus be performed in addition to rather than instead of or in place of the regular toxicity and symptom assessment. Not only is it important to gain insight into the signs and symptoms, but into whether patients have support to manage their effects.

4.2 Psychological and Emotional Needs

One of the most consistently reported supportive-care needs in oncology has been psychological and emotional needs. Anxiety, depression, fear of further progression or recurrence, uncertainty, feeling out of control and problems adjusting to the illness and treatment can all occur at various stages of the cancer journey. Distress can be especially prominent at the time of diagnosis, starting or changing treatment, getting imaging or response testing, upon recurrence or progression, and at the end of one phase of treatment and the beginning of another. Results of large observational studies suggest that clinically relevant distress in cancer patients occurs in a significant percentage of individuals, varying by type of cancer and clinical situation [8].

The clinical relevance of psychological need is partly linked to the heterogeneity of psychological need. Not all patients having distress need the same intervention and not all distress needs to be solved with the same level of intensity. Other concerns can be addressed with clear information, supportive communication and reassurance, or through self-management resources; if persistent or severe psychological morbidity, then structured psychological intervention or specialist psychiatric care may be necessary. Therefore, current NCCN and ESMO recommendations suggest not to leave the identification and management of clinically relevant distress solely to the clinician's impression but to systematically identify and manage distress [9], [10]. Effective supportive care consequently requires both recognition of psychological need and a proportionate response matched to severity, risk, patient preference, and available services.

4.3 Informational, Communication, and Health-System Needs

Information is a recurrent supportive-care need throughout cancer treatment, but the issue is more complex than simply providing greater quantities of information. Clear, timely explanations of diagnosis, treatment plan, expected outcomes, risks, self-care, warning signs, and seeking advice when problems arise. As treatment unfolds, patients' questions, priorities, and information processing ability may change and information may need to be revisited.

Unnecessary, conflicting, and out-of-time or out-of-reach information can be a burden. For effective communication, therefore, information needs to be understandable, timely, and address individual communication needs, language, culture, and patient preferences [11]. The quality of the communication is thus as significant as the quantity of information transmitted. Continuity, coordination and navigation are additional health-system needs. Current care for cancer could involve supportive cancer care in many disciplines, diagnostic services, radiotherapy, systemic anticancer therapy and surgery. This can therefore make it necessary for patients to have someone explain to them who is responsible for what, who to call if they have concerns between appointments, how different parts of treatment relate to each other and how information will flow between services. These needs provide an example of why supportive care is more effectively understood as a pathway rather than a series of referrals.

4.4 Social, Practical, and Financial Needs

Treatment for cancer has an impact on the social and practical aspects of daily life. Access to treatment, childcare, caring, housework, work and income are all affected when a person is receiving treatment. They can also have an impact on family members and informal caregivers, for whom adverse impact to physical, emotional, social, and financial quality of life can be found throughout the cancer journey [12]. So, practical considerations may affect a patient's access to care even if the recommended care is clinically sound.

Financial toxicity is especially important as it includes the physical burden of financial strain, as well as the financial strain or loss of income that causes distress. Sources are different between healthcare systems and can include direct out-of-pocket spending, traveling, staying away from work, losing wages, and caregiving costs. Financial toxicity is recognized as a clinical issue and the discussion and counselling of

financial risk encouraged in recent ESMO consensus guidance, and financial risk should be identified in cancer care [13].

There's a strong equity aspect to financial burden, too. Some groups of patients, for example those with less economic resources, insecure employment, more caring responsibilities or less access to welfare, financial counselling and navigation services may have less capacity to absorb direct and indirect costs of treatment. Financial and practical need should thus be assessed within the context of the patient's individual social situation and not as an additional problem to their clinical care.

4.5 Spiritual and Existential Needs

Cancer can raise issues of purpose, identity, hope, death, responsibility, forgiveness, priorities and values. Spiritual and existential needs should not be assumed to be synonymous with religious needs. These can be understood as religious convictions but can also refer to beliefs about relationships, values, reviewing one's life, purpose, or making sense of illness and uncertainty.

While less commonly evaluated than many physical or informational needs, these concerns are an important component of the biographical work that is related to serious illness [4], [7]. They are highly individual, and it is important to avoid drawing conclusions about their relevance and expression and about the desire for assistance in the spiritual or existential realm. If sensitive discussion is appropriate within the clinical team or provision of spiritual care, psychological support, or other services consistent with the patient's preference and values then this is appropriate.

4.6 Sexuality, Intimacy, and Fertility Needs

Supportive care issues related to sexuality, intimacy and fertility are clinically significant and potentially sensitive. Surgery, systemic anticancer therapy, radiotherapy, and endocrine treatment can have an impact on sexual function, desire, fertility, body image, confidence and intimate relationships. These can have significant impacts on wellbeing and identity, but these effects might not be brought up spontaneously in a routine consultation.

Sexuality is a specific domain in the SCNS-SF34, because it has a long history as a domain in multidimensional needs assessment [14]. Interestingly, the lowest pooled mean score in the meta-analysis of studies with the SCNS-SF34 was for the sexuality domain [5]. This discovery must be viewed with some skepticism. A lower score on the population level does not mean that sexuality-related needs are not relevant for individual patients or specific patient groups. The size of the need may be very large within certain subgroups and embarrassment, assumption about age or relationship status, cultural norms and lack of a clear opportunity for discussion may all contribute to underreporting.

This impact in clinical practice is not that sexuality/fertility issues need to be addressed in everyone, but that an appropriate opportunity should be taken when there is an issue to identify it. Inappropriate information or specialist support may not be accessed due to perceived difficulty in disclosing needs, but this can be avoided with sensitive enquiry and/or access based on consent. These areas show that supportive-care need is not solely related to symptom burden or to the use of a single type of intervention. The physical, psychological, informational, social, financial, spiritual and relational issues can overlap

and influence each other, and can be of different priorities at different stages of treatment. It is therefore a practical challenge to identify the identified needs of a specific patient at a specific stage in the treatment pathway, and to link needs to a suitable response. This variation is taken further into account in the next section on determinants and dynamics in time of unmet need.

5. Determinants and Temporal Dynamics of Unmet Need

Supportive-care need is not a constant patient trait nor a predictable cancer by-product. It is a product of disease properties, therapy, personal situation, resources and health care systems. The unmet need for a specific patient can thus vary significantly from one occasion to another and between two patients with the same diagnosis.

This variation is due to clinical factors. The nature and intensity of supportive-care needs can be influenced by cancer type, disease status, treatment modality, treatment burden, and transitions in care. In a recent meta-analysis of the SCNS-SF34, the type of cancer was found to account for variations in several domains of needs, whereas treatment status was associated with the health-system and information needs domains, in particular [5]. The needs of advanced cancer patients are also found to be significant in financial, health-system and information, psychological, and physical and daily-living areas [15]. The results reinforce the concept that the evaluation of supportive care must be flexible, taking into account the clinical context, and not dependent on a single profile which is commonly thought to be applicable to all cancer patients. Need is also experienced and reported by personal and social factors. Problems patients have and their ability to solve them can be affected by age, family and caregiving needs, work and income situation, health literacy, culture, prior health service experiences and informal or formal supports. However, the associations between the reported need and demographic characteristics must be viewed with some caution. The number of cases reported in a specific age or population group, for instance, is not a reliable indicator of the actual burden in that population. The expectations of care, adaptation, cultural norms, stigma, willingness to disclose concerns, and knowledge of available services can all have an impact on questionnaire responses and help-seeking.

It is important to note that this is a distinction between experienced burden and reported unmet need and has implications for interpretation. Although patients can have a high symptom burden and relatively low unmet need (when effective support is easily accessible), a relatively modest clinical problem can produce a large unmet need when there are barriers where patients need information, access, communication or practical help but cannot get it. Therefore, risk factors may be used to identify populations who may have more specific needs, but should not replace a dedicated evaluation of the individual patient's concerns, preferences and priorities.

Another factor is the context of healthcare. The clinical problem may create varying amounts of unmet needs depending on the availability, accessibility and coordination of appropriate services. Availability of specialist supportive services, continuity of teams, language and communication support, geographical access, financial protection and clear referral routes can have an impact on a problem becoming an unmet need. Not only does unmet need reflect characteristics of the patient or disease, but it also reflects responsiveness of the health system that provides care.

The temporal variation is also significant. The needs of supportive care can develop or worsen at the time of diagnosis, when treatment starts, at the onset of toxicity from treatment, as the treatment changes, at hospital discharge, after the evaluation of the response to treatment, at the time of disease recurrence or progression, and when leaving active treatment. Prominent needs can wane at certain points and other needs are more salient at that moment. One evaluation thus only offers a snapshot of a person's needs at a particular point in time.

The observations given above reflect the need for a longitudinal assessment of supportive care. A clinically meaningful reassessment more accurately reflects the dynamic nature of cancer therapy and patients' changing circumstances than would a one-off screening at the time of diagnosis. Repeated assessment is not about collecting further data, but discovering new needs, needs that persist, and/or needs that have been met or changed, and to decide if the supportive response continues to be appropriate. This temporal perspective is important in moving from identifying need to assessment-to-action, as explored in the following sections.

6. Assessing Supportive-Care Need in Clinical Practice

The clinical utility of supporting-care assessment is contingent with the understanding of what is being assessed and "why." These are separate constructs that are addressed by multidimensional needs instruments, distress screening tools and symptom patient-reported outcome measures. A needs assessment determines areas for which the patient feels he needs more assistance or support; a distress screen measures emotional or global distress; and a symptom measure assesses the presence, severity, and/or change of specific symptoms.

These methods may be used in conjunction with each other, but are not synonymous. One widely-used multidimensional measure of supportive-care need is the Supportive Care Needs Survey-Short Form 34 (SCNS-SF34). Its 34 items cover five domains: psychological; health-system and information; physical and daily living; patient care and support; and sexuality [14]. This instrument has been validated and adapted in a variety of cancer cohorts, such as men with prostate cancer, and men surviving testicular cancer [16], [17]. It has the main advantage of being broad; it does not only alert the reader that the patient has a problem, it also shows the areas that the patient feels would benefit from extra assistance.

In contrast, the NCCN Distress Thermometer is intended to be a short screening tool. It represents a single 0–10 distress rating, a Problem List, and is designed to help identify concerns that might need to be followed-up with further assessment or intervention [9]. This compactness is not to be confused with its other purpose and is useful in a busy clinical setting. Distress screening is not as sophisticated or comprehensive a tool for measuring unmet supportive-care need as is the SCNS-SF34. Also, a complete needs questionnaire may not be warranted if the current clinical goal is to quickly assess for a major distress level.

Therefore selection of instrument should be made based on the question being asked, the population to be studied, the setting of the study and the desired response. A psychometrically sound tool that is not readily available to the target population, is hard to administer, or is not well integrated into clinical workflow may not be very useful, in practice. A short instrument, on the other hand, can be extremely useful if the

limitations of this instrument are well understood and there is a clear route for further investigation where needed.

The quality of assessments also relies on the mode, timing, and audience for assessment. The supportive-care needs may vary during or at the completion of treatment and may be best assessed at potentially meaningful time points throughout the treatment course, rather than once, if possible. Ideally, language, literacy, accessibility and burden on patient should be taken into account when assessing approaches, with a focus on questionnaires when used in conjunction with other clinical assessments.

Most of all, the screening/needs assessment process should not be seen as an end goal. If a patient's needs are to be identified from assessment results then they must be shared with an identifiable clinical team, thresholds or triggers for further action must be established, who is going to act on identified concerns must be clear and follow up must be in place to confirm whether the identified need has been met. These components are essential for screening to produce more information without increasing care delivery.

It should therefore be viewed as a part of the clinical process rather than a stand-alone activity of assessment. There is a high quality pathway of supportive care that connects assessment to interpretation, prioritization, intervention or referral and then reassessment. This is key to bridging the gap between identifying supportive-care need and assessment of that need in everyday oncology care.

7. Consequences of Unmet Supportive-Care Need

Unmet supportive care needs are clinically relevant because they have been long recognized as linked to worse patients' reported outcomes and less positive cancer care experiences. More unmet need is correlated with worse quality of life and higher psychological morbidity, but these relationships are not consistent in terms of their strength and direction across populations and domains of the psychometrics [4], [7]. The impact of unmet need is therefore not just the continued presence of a single symptom or concern, but can be on the experience of care, the way care is managed, and the way patients interact with the rest of the care pathway.

The implications vary also with the nature of the unresolved need. Patients may not know what treatment is, how they will feel, who can help, or where to get help if their information and/or health system needs are not met. Becoming too ill to sustain travel, work, caregiving, and other care-related tasks can be practical and financial challenges. Financial toxicity is especially important because it can impact treatment decisions and patients' ability to manage direct and indirect financial burden from cancer treatment. The financial burden has recently been mentioned in ESMO consensus recommendations as an important issue that needs to be treated actively in the clinic and supported appropriately [13].

Wellbeing and the treatment experience may also be influenced by psychological and emotional needs. The distress, uncertainty, or adjustment issues may be ongoing, along with physical symptoms and day-to-day challenges, further highlighting the multi-dimensionality of supportive-care need. These connections are critical because challenges do not happen in a vacuum: physical challenges can affect work, financial challenges can add to psychological challenges, and lack of information can add to uncertainty. Unmet need is thus in part about the sum total of a number of concerns that remain unresolved simultaneously.

However, such associations should be taken with a grain of salt. Additionally, observational evidence cannot prove that unmet supportive-care need causes worse outcomes, or is a direct cause of worse outcomes. There are also important considerations of unmet need and the risk of poorer quality of life or psychological morbidity being compounded by advanced disease, higher treatment toxicity, pre-existing disadvantage and limited access to supportive services. Likewise, a correlation between unmet need and treatment-difficulty does not imply that resolving the unmet need will necessarily lead to better clinical outcomes.

This is why the argument for integrated supportive care must be based on more than an unmet need and poor outcomes. When there is evidence of specific supportive-care interventions that can have a positive and measurable impact on patient-reported outcomes, it enables a clearer understanding of what needs to be acted upon and how. It is not only important to demonstrate links between unmet need and poorer outcomes, it is also important to demonstrate that identified needs can be met with effective, accessible and proportionate responses. This distinction offers the basis for a consideration of supportive-care interventions and models of service delivery in the next section.

8. Interventions and Models of Supportive-Care Delivery

The nature of supportive-care interventions varies greatly in purpose, intensity, method of delivery and evidence base. Some address a specific domain (for example psychological distress) and others focus on multiple needs along the treatment pathway. The question then is not if a single model can meet all supportive-care needs, but how identified needs can be matched to proportionate, accessible and evidence-informed responses. There is evidence to support a range of complementary strategies such as nurse-led supportive care, psycho-oncology interventions and electronic patient-reported outcome monitoring. However, their clinical utility will depend on the quality of their integration into the normal care of oncology patients as well as their actual intervention.

8.1 Nurse-Led Supportive Care

Nurses can play a key role in providing longitudinal supportive care because they may have multiple visits with patients for treatment, symptom assessment, patient education, and symptom management. Nurse-led models can thus offer the chance for early identification of concerns, reinforcement of self-management strategies, continuity of care across clinical encounters and referral coordination to more specialized care when needed.

There is some indication of potential benefit, with differing effectiveness and applicability. In a pilot study conducted in 2024, a nurse-led supportive-care programme for breast cancer patients receiving adjuvant chemotherapy resulted in better quality-of-life outcomes than conventional care, showing a beneficial effect on the patients' quality of life [18]. The results provides some evidence for the feasibility and beneficial nature of a structured nurse-led approach to care, but the pilot design and the disease-specific population prevent generalizations to a broader oncology context. Assessment of these models should thus take into account the cancer population, the configuration of the cancer workforce, intensity of the

interventions, local capacity to refer to interventions, and the extent to which the responsibilities can be integrated into existing services in a sustainable way.

The nurse-led care may then not be as significant as setting a single standardized intervention, but rather continuity and coordination within a wider supportive care pathway. Nurse-led models can be of specific advantage when the roles for assessment, escalation, referral and follow-up are clearly defined and when specialist services are available for needs that go beyond the general scope of supportive services.

8.2 Psycho-Oncological Interventions

There is more evidence supporting the psychological interventions than other parts of supportive care. Faller et al. [19] conducted a systematic review and a meta-analysis of interventions offered to patients with cancer and their emotional distress, which found small-to-moderate benefits of psycho-oncological interventions containing cognitive-behavioral, psychoeducational, and supportive components. Current ESMO recommendations also recommend the evaluation and treatment of anxiety and depression based on the severity of the mood disorders and the clinical context [10].

This does not mean that all psychological distress needs specialist intervention. Support should be commensurate to the nature and level of need. The information, supportive communication, self-management resources, and/or short psychosocial interventions may help some patients, while others may need formal psychological therapy or psychiatric evaluation. A stepped or stratified approach is thus more consistent with the psychological need's heterogeneity than a uniform referral approach.

From a service perspective, the major challenge is to make psychological distress cues part of an accessible response. If there is a poor understanding of referral pathways, specialist capacity is low, and the practical access to specialist care is poor then screening has little clinical value. Psycho-oncology should be integrated into (or easily accessible to) the broader oncology process and not operated on an ad hoc basis as a service of last resort.

8.3 Electronic Patient-Reported Outcomes and Digital Support

Electronic patient-reported outcome (ePRO) systems can take assessment beyond the scheduled consultation, enabling patients to report symptoms and concerns in between. This could be especially important during systemic therapy as there may be a rapid fluctuation in toxicity and supportive care requirements between visits.

Evidence is randomly distributed, suggesting that electronic symptom monitoring can be beneficial for certain patient-reported outcomes. In cancer patients with metastasis, use of electronic symptom monitoring was correlated with improvements in patients' reported outcomes over usual care [20]. A systematic review and meta-analysis of RCTs conducted in 2024 also found weak but significant effects of ePRO interventions for health-related quality of life (HRQoL), and effects were stronger when systems provided tailored advice or clinician alerts, or were more than just a data-collection platform [21].

This is very important. The clinical utility of digital monitoring will most likely be realized when the information results in action; not just when the information is captured electronically. Systems have to have thresholds, review on a timely basis, defined responsibilities to act on an alert, and escalation paths

for clinically significant concerns. For digital tools to be useful they should therefore be considered as tools for facilitating communication and response, not as interventions outside of clinical work.

Electronic symptom monitoring should not be confused with a full supportive care needs assessment. Informational, relational, practical, financial, sexual, and/or existential issues may be identified by a more general supportive-care inquiry rather than by symptom-focused ePROs, which are well-suited for detecting toxicity and changes in symptom severity. These two are therefore complementary.

Another set of issues concerns digital delivery and accessibility and equity. Technology can save some patients time, allow for more frequent communication and make things more convenient for some patients, but can also present challenges for patients who do not have access to digital technologies, do not have digital literacy, have limited language skills, may have cognitive or physical impairments, or prefer non-digital care. Digital supportive-care systems should thus have alternative pathways for assessment and communication and be tested for reach, burden and differential uptake as well as effectiveness.

8.4 From Screening to a Closed-Loop Care Pathway

All of these methods share a common tenet: that assessment does not do the therapy. It can only be clinically useful if there is a need identified and an appropriate response, and then an assessment of the result of the response. This separation is most important to the shift from supportive-care screening to supportive-care delivery.

A closed loop pathway may be thought of as four interconnected steps: continuous patient-reported need assessment; identification and prioritization of concerns; multidisciplinary response proportional to level of concern; assessment of need for further multidisciplinary responses or for need to be resolved. Responses can be self-management support, nurse-led, symptom management, psycho-oncology, social work, rehabilitation, nutrition, spiritual care, fertility and sexual health, counselling for finances, and/or specialist palliative care, depending on the nature and complexity of the concern.

This model takes into account that not all the identified needs will need specialist referral and that the need for support of an appropriate level or intensity can vary between patients and over time. It also ensures that the responsibility for seeing that clinically relevant information is reviewed, acted upon and followed-through is taken up by the care system, not just the screening instrument. Hence, the model has clear ownership, defined escalation pathways, service capacity, communication across disciplines and documentation of follow-up.

The quality question becomes: Was there a suitable and timely response to an identified need and did the need improve? The closed loop pathway is summarized in Figure 2, and the potential sites for barriers to the pathway from assessment to outcome are highlighted.

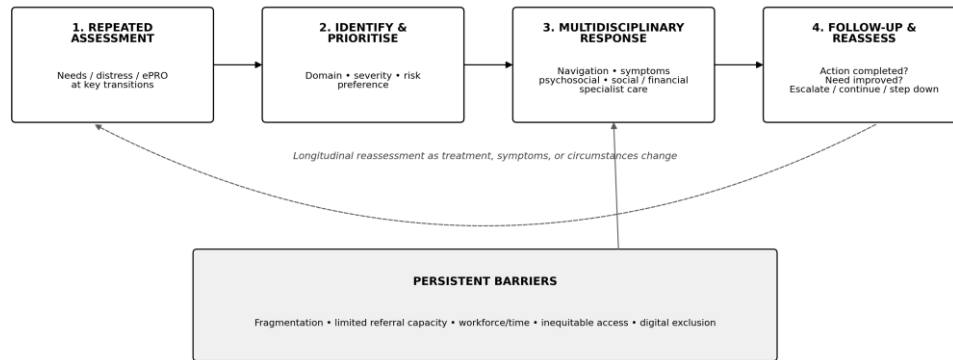


Figure 2. Closed-loop model of supportive-care delivery during active cancer treatment. Patient-reported assessment informs identification and prioritization of unmet need, followed by a proportionate multidisciplinary response and subsequent reassessment. Barriers at patient, clinician, service, and health-system levels may interrupt progression through the pathway.

The overall evidence does not argue for a single "one size fits all" approach to supportive-care delivery. Instead, it proposes that there needs to be a coordinated system of care, where various interventions are tailored to the nature of need and intensity, and linked by a series of clearly designated responsibilities, escalations and follow-up. The success of such a system relies on the identification of the right interventions as well as on their accessibility, regularity and integration in the treatment pathway of the patient.

9. Persistent Implementation Gaps and Inequities

One of the greatest challenges in supportive oncology is to convert the identified need to clinical response, which is consistent and equitable. Supportive care delivery is tied to the function of the components within routine services, even if effective services and assessment tools have been validated and referral pathways are in place. There can be a discrepancy between assessment/review, identification/referral and referral/received appropriate support. Therefore, a supportive-care pathway is only as effective as its individual components, but it is also as effective as it is continuous, has capacity, is accessible and is clearly responsible for across the pathway.

One of the barriers to care is fragmentation of care. The care for a person with cancer is often provided by several professional services, specialties and in several settings, and general responsibilities for addressing the broader supportive-care needs are often unclear. Where there are poor linkages between information systems or where there is no clear accountability for the review of assessment outcomes and completing referrals, the outcome of one service may not be apparent to another. Self-referral should not, therefore, be taken as a measurement of a need being met. Closed loop care involves clear accountability for any identified concerns, service to service communication and follow up to determine if the patient reached the desired care and if additional steps are needed to be taken.

An associated constraint might be the gap between capacity to recognize need and capacity to address the need. Enhanced screening can lead to greater recognition of psychological distress, financial problems, rehabilitation requirements, complex social issues, and/or other unmet needs, but limited value if downstream services are not in place or easily accessible. If assessment is to result in action, there must be sufficient capacity, including supportive services such as psycho-oncology, social work, rehabilitation, specialist palliative care, navigation, etc. Screening infrastructure and response capacity should be viewed as part of a whole, and should not be developed as stand-alone elements of care.

Supportive care is also not accessible to everyone. Factors such as geography, language, health literacy, disability, employment status, financial resources, digital access, and the structure of the healthcare system could have an impact on the likelihood that a need is identified and subsequently met with appropriate support. Digital approaches convey this dichotomy perhaps most clearly: They can help to shorten travel time and enable patients to communicate, but can also introduce new obstacles for others. An equity-sensitive pathway needs to be communicated in an accessible way, be written in accessible language, offer language assistance and provide alternative assessment and care delivery methods as needed. Assessment and referral uptake and outcomes should not be the sole measure of success and failure, but also who they are reaching and who is not.

There are some supportive-care needs that are more likely to be underestimated. Issues involving sexuality and fertility, financial issues, family issues, spiritual/existential issues and mental health issues may not be spontaneously presented. Their seeming unawareness at a consultation should not be considered as unawareness of the need. There may be additional barriers to disclosure for time constraints, clinician discomfort, limited training, perceived stigma, and doubts about the availability of support. Enquiry and provision of appropriate support are therefore crucial elements of need-led care that are sensitive and based on consent.

This is complicated by an ongoing concept and methodological diversity in the supportive-care literature. The definitions of what constitutes "need" are variable, as are assessment instruments, domain structures, thresholds, populations, and the time at which assessment is conducted [3]. This variation can make direct comparison of prevalence estimates more difficult and can also make it challenging to make decisions about the translation of research results across clinical settings. Comparability would be enhanced by a greater degree of methodological uniformity; but standardization should not take the place of consideration for the differences in the population, culture, nature of health care organization and resources available. The performance of supportive-care systems should be evaluated on the basis of more than just the percentage of patients screened, as indicated by the challenges mentioned above. Questions to ask are: Is the assessment process and population reached, does the identified need get the appropriate and timely response, has the referral been completed, does the needs improve or get resolved, are the processes and outcomes distributed equitably? Answers to these questions prompt supportive oncology to move from stand-alone screening programs to assessing the entire care pathway. This serves as the foundation for the priorities for practice, policy and research discussed in the subsequent section.

10. Priorities for Practice, Policy and Research

In the evidence reviewed here, the need to shift away from screening for supportive care in isolation towards screening for supportive care along with systems for clinical response and follow-up to identified needs is supported. The right combination of these systems will differ depending on the type of patient population, treatment environment, staffing, services provided and resources in the health care environment. The stated priorities should thus be considered a set of guiding principles, not a single blueprint for service design and assessment.

10.1 Priorities for Clinical Practice

Assessment of supportive care should take place at clinically significant times, not just at diagnosis. This could include the initiation of treatment, development of serious toxicity, treatment change or treatment for different purpose, hospital discharge, recurrence or progression, or treatment cessation. Repeated assessment is intended to identify change in need and to ascertain the need for ongoing interventions.

Assessment should also be integrated into a well-defined pathway for responding. The authority for reviewing results and making decisions about the level of response, the initiation of referral or intervention and the confirmation of follow-up should be clear. The nature, severity, complexity and persistent nature of the need may require either information and self-management support, nurse-led intervention or specialist multidisciplinary intervention depending on the need and patients preference.

However, assessment of the quality of supportive-care delivery should be assessed beyond screening completion. The percentage of needs identified that are resolved, the time from identified need to response, completed referrals, reassessment and improvement or resolution of the need are indicators that can be helpful.

10.2 Priorities for Health-System and Policy Development

Health systems should also think about the assessment and response to supportive care alongside. Increasing screening programs without adequate downstream services could result in more people identifying as having a need for services while not receiving the appropriate services. Implementing workforce planning, referral, information sharing, and interfacing between oncology, psycho-oncology, rehabilitation, social care, specialist palliative care, financial support, and other relevant services are therefore crucial.

Equity is a component of pathway design and evaluation. Other structural factors such as language, health literacy, disability, geography, digital access, employment conditions, financial factors, and more can impact being identified as needing support and accessing it. Assessment and communication should be made possible with accessible and culturally appropriate services, such as non-digital if needed. It is important to assess if there are differences in outcomes, reach and referral completion by population group(s) when carrying out evaluation rather than using the aggregate figure alone.

Digital technologies can be used to support repeated assessment and communication, but this will be dependent on integration with clinical workflows. Electronic patient-reported outcome systems should

have established processes for review, escalation, and response, and not be used as a data collection tool. They also should consider patient burden, clinician burden, access, safety, and exacerbation of disparities.

10.3 Priorities for Research

Future studies should make a clearer distinction between identifying a supportive-care need and addressing it. Process outcomes such as response time, referral uptake and completion, escalation, follow-up, persistence or resolution of identified need should also be reported for studies evaluating needs assessment or screening.

Comparative studies are also required to identify the most effective and feasible options for the various frequencies of assessments, navigation, multidisciplinary care, digital monitoring, and specialist support in different oncology settings. The effectiveness of supportive-care systems is dependent on the workforce, funding, service availability and the organization of the health-care system within the local context, and findings in one context should not automatically be taken over into another.

Efficacy of interventions needs to be attended to, in addition to implementation outcomes. Research should focus on reach, adoption, fidelity, sustainability, implications for the health workforce, resource use, and transferability within and across health systems. Commonly under-represented populations should be represented and analyses should focus on the equity of benefits and burdens of new models.

Table 1 summarizes these priorities and proposes corresponding indicators that may be useful when evaluating supportive-care pathways.

Priority	Clinical or policy implication	Suggested evaluation indicators
Longitudinal assessment	Reassess supportive-care needs at clinically meaningful points rather than relying on a single baseline screen.	Assessment completion over time; proportion reassessed after relevant clinical transitions; change in need over time.
Closed-loop response	Assign responsibility for reviewing results, initiating appropriate action, tracking referrals, and confirming follow-up.	Time to response; proportion of identified needs acted upon; referral completion; reassessment; need improvement or resolution.
Stratified multidisciplinary care	Match the intensity and type of support to the nature, severity, complexity, risk, and patient preference associated with the identified need.	Appropriateness of triage; uptake of recommended support; escalation and de-escalation; patient-reported benefit.

Priority	Clinical or policy implication	Suggested evaluation indicators
Equity by design	Provide accessible communication, language support, appropriate accommodations, and alternative modes of assessment and care where required.	Reach, assessment completion, referral completion, and outcomes stratified by relevant demographic, socioeconomic, geographic, and accessibility characteristics.
Digital integration with clinical response	Use ePRO and other digital systems when they facilitate reporting and trigger defined clinical workflows rather than functioning primarily as passive data collection.	Alert response time; engagement; patient and clinician burden; accessibility; safety; patient-reported outcomes.
Implementation-focused research	Evaluate how supportive-care pathways function in routine services in addition to testing intervention efficacy.	Reach; adoption; fidelity; sustainability; workforce impact; resource use; transferability across healthcare settings.

Table 1. Practice, policy and research priorities for a closed loop supportive-care pathway.

Combined these priorities move away from the notion of whether supportive-care assessment should be undertaken to whether the whole pathway works well. A good system will be able to detect when the need changes, respond to it appropriately and at the right time, acknowledge if it was responded to, and re-evaluate the need. These processes, in addition to patient outcomes and equity measures, offer a more informative dimension to assess the performance of supportive care than screening rates alone.

11. Conclusion

Supportive-care needs during active cancer treatment are multidimensional, dynamic, and are influenced by disease and treatment, characteristics of the cancer patient, available resources, and healthcare context. Psychological and emotional needs are often salient and health system and information needs are also commonly important; physical, practical, financial, spiritual, relational, sexuality and fertility needs may be significant for particular patients. Assessment is not enough to be effective in providing supportive care, but can enhance the systematic identification of these needs.

The main challenge is to convert the identified need to an appropriate and timely clinical response. Evidence of nurse-led care, psycho-oncological interventions and electronic PROMs suggests promise for improving selected PROMs, with effectiveness and transferability influenced by population, context, service capacity and incorporation into routine oncology services. Therefore, supportive care should be delivered as a continuum of multi-professional care that is focused on equity and involves assessment that

is connected to prioritization, proportional intervention or referral, follow-up and reassessment. Such a pathway should not only identify needs but also demonstrate the action taken to address these needs and the impact on the patient as a result of the action.

Ethical Considerations

As a narrative review of previously published literature, this article did not involve the collection of new patient data and did not require separate ethical approval.

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Conflict of interest

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