**Abstract**

Introduction

Globally, cancer services herald the use of Holistic Needs Assessments (HNA). Implementation is however heterogeneous. There is a need to understand what effect implementation variation has on patient experience, outcomes and service demand. This is the first study to examine if the way in which HNA is implemented, impacts on patient outcomes.

Methods

MEDLINE, AMED, CINAHL, PsycINFO and the Psychological and Behavioural Sciences Collection were searched (2000 – June 2018). Search strategy included international HNA tools and synonyms for ‘needs’. An overview of quality was obtained through application of the Mixed Methods Appraisal Tool. Key themes were identified through thematic synthesis.

Results

Twenty studies were included (RCTs (n = 4), service evaluations (n=8) and feasibility studies (n=8)). Implementation approaches and assessor actions were identified and through thematic synthesis were defined as detecting, discussing/dealing, directing and downstream care. The *way* in which HNA is implemented is more important to understanding outcomes than *what* is implemented.

Conclusion

There is a need to conceptualise HNA as a means and not an end in itself. Pursuers of HNA-led outcomes must understand and strengthen connections between assessment and outcomes. The conceptual framework can assist development of more insightful measures of both process and outcomes.

**Background**

Worldwide, cancer is one of the leading causes of both mortality and morbidity (Ferlay, 2015). As a result of advances in treatment, screening and prevention programmes the number of people surviving cancer globally is increasing (WHO, 2018; Millar, 2016; Canada Cancer Society, 2008; Parry, 2011). This good news story, of the increasing prevalence of cancer survivors, has given rise to the contemporary and pressing issues of the consequences of cancer, effects of cancer treatment and practical and psychological issues faced by those living with and beyond cancer (Hewitt, 2006).

A third of people who survive cancer have unmet needs following treatment (Armes et al., 2009) and these needs are wide ranging, including physical, social and psychological (Glaser et al., 2013; Foster et al., 2009). Left unmet, these needs result in poorer health and wellbeing, reduce quality of life and increase demands on health and social care services (Khan, 2011; Harrison, 2009).

Globally, this growing understanding of the prevalence and diversity of the unmet needs of cancer survivors has fuelled the development of a range of services and resources, all of which are designed to meet needs, reduce demands on services and improve quality of life. The identification and assessment of the holistic needs of the person affected by cancer is predominant and omnipresent within these approaches (Department of Health, 2010; Macmillan, 2013a; Cancer Australia, 2017; American Society of Clinical Oncology, 2013). All recommend that those living with and beyond cancer should have a Holistic Needs Assessment (HNA). An HNA is concerned with the whole person. Through the use of a structured assessment tool, it identifies needs across domains such as physical, emotional, practical, social, environmental and spiritual. The person will then discuss the needs identified with the assessor and this discussion results in a care plan, which can include referrals or signposting to relevant services. (Young, 2015). HNA has been defined as “*a process of gathering information from the patient and/or carer to inform discussion and develop a deeper understanding of what the person understands and needs and is concerned with the whole person by incorporating their physical, emotional, spiritual, social, and environmental well-being”* (National Cancer Action Team, 2010).

Services and models encompassing HNA differ in content and delivery country by country (Jefford, 2013). Implementation of HNA is therefore heterogeneous, encompassing a range of assessment tools, health and social care professions, settings, stages and types of cancer. Perhaps as a result of the profusion of ways in which HNA can be delivered, there is little consensus as to the ‘best’ means of implementation and a related lack of consistency in outcome measures. Evidence of its overall efficacy is reported by some as limited and inconclusive (Carey et al., 2012; Carlson, Waller and Mitchell, 2012).

An Australian review of needs assessment tools for post-treatment cancer survivors concluded that there was limited empirical evidence on the most appropriate assessment process for cancer survivors (Australian Cancer Survivorship Centre, 2016). Similarly an American review of survivorship care planning and its components (including HNA) also identified variation in practice and found limited evidence of the value of such interventions on the outcomes of people affected by cancer (McCabe et al., 2013). A UK based concise evidence review of needs assessment and care planning concluded that implementation variation must be systematically tested to ensure the development of a useful evidence base (Macmillan Cancer Support, 2014).

With this global heralding of the use of HNA there is a pressing need to understand what effect implementation variation is having on patient experience, measureable outcomes and subsequent demands on health services.

This systematic review and thematic synthesis is the first to examine whether the way in which HNA is implemented impacts on outcomes.

**Aims of the Review**

Evidence relating to two key sub-questions was sought to answer our main research question- Does the way in which HNA is implemented impact on outcomes?

1. What is the impact of, and/or the outcomes from the HNA of adults with cancer?
2. What evidence is there relating to the role of the assessor, the process of assessment and the actions taken as a result of the assessment?

**Methods**

*Search Strategy*

In order to ensure comprehensive coverage three separate searches were conducted, and then merged, using five online databases: Medline, AMED, CINAHL and PsycINFO and Psychological and Behavioural Sciences Collection. All searches were limited to journal articles, in English about adults, from 2000 to June 2018 inclusive. (See Table 1).

**Table 1: Search Strategy**

All the individual HNA tools named in the Guide for Healthcare Professionals for HNA and Care Planning produced by the National Cancer Action Team, were searched for (National Cancer Action Team, 2010). These are: ‘The Distress Thermometer’, ‘Patient Concerns Checklist’, ‘Sheffield Profile for Assessment and Referral’, ‘Pepsi Cola Aide Memoir’, ‘Patient Concerns Inventory’ and ‘Supportive Care Needs Survey’. To capture other HNA tools, synonyms for ‘needs’ for example ‘problems’ and ‘concerns’ were searched for.

All studies, reported in English that were designed with an HNA as the intervention for adults with cancer were included if they;

* reported on the outcomes and impact of the assessment (question 1)
* *and* reported on the role of the assessor and/or the actions taken by the holistic assessor as a result of the needs/concerns identified *and/or* practitioner views and experiences of undertaking HNA (question 2).

Studies were excluded if they reported only on the prevalence of concerns identified as a result of an assessment or were a discussion paper/opinion piece or protocol. Papers concerning children/teenagers and palliative/end of life care were also excluded.

The three searches were conducted using EBSCOHost and 824 studies were subjected to a three-stage review process (See Table 2).

**Table 2: PRISMA Flow Diagram of the study selection process**

Firstly the abstracts of all studies (n=824) from the database search were screened by each of the reviewers (LJ, JY and KC) independently against the inclusion and exclusion criteria. Secondly studies meeting the inclusion criteria at stage 1 (n=60) were retrieved for a full text review. All three reviewers conducted this stage separately.

Every study that was deemed by the reviewers to have met the inclusion criteria at stage 2 was included (n=14). Three studies were considered by one reviewer as not having met the criteria. These were discussed and a consensus reached by all three reviewers to be included in the review (n = 17). The reference lists of all included studies were hand searched for further studies meeting the inclusion criteria. Three studies obtained in this manner were discussed and a consensus reached between all three reviewers to include. Twenty studies were included in the final review.

*Quality appraisal*

An overview of the quality of each included study was obtained through application of the Mixed Methods Appraisal Tool (MMAT) (Souto et al., 2015). MMAT includes two screening criteria (for all types of the study) and 19 items corresponding to five methodological domains (qualitative, RCTs, non-randomized studies, quantitative descriptive studies and mixed methods studies). It has been content validated and to date more than 50 published systematic reviews have used MMAT (Souto et al., 2015).

The aim of the quality appraisal undertaken for this review was to increase our understanding of the current evidence base, not to exclude low quality studies. Supporting Information Appendix S1 provides a detailed presentation of the ratings of each criterion for each included study.

*Data* extraction

All data were extracted using a form developed for the review. In addition to the characteristics of each study, extracted data included information on the role of the assessor, the process of the assessment and actions taken by the assessor (Supporting Information Appendix S2). All available descriptions of the way in which the assessment process was implemented were also extracted verbatim (Supporting Information Appendix S3).

*Synthesis*

A thematic synthesis using the three-stage method set out by Thomas and Harden (2008) was undertaken. Data extraction was conducted by LJ, JY and KC and thematic synthesis by LJ. The extracted data was coded to allow for a detailed exploration of the assessment implementation processes. These codes were discussed and grouped into ‘descriptive themes’ framed by the review’s second sub question - What evidence is there relating to the role of the assessor, the process of assessment and the actions taken as a result of the assessment?. The third stage of thematic synthesis aimed to “go beyond” description, to generate new insight and explanations relevant to the review question (Thomas and Harden, 2008). The meanings of the identified descriptive themes were examined by all three reviewers and through discussion, their relationships interpreted, resulting in the generation of four analytical themes.

**Results**

*Characteristics of studies*

In total twenty studies were included in the review. Table 3 sets out the characteristics of the included studies.

**Table 3: Characteristics of included studies**

Ten studies were conducted in the UK (Biddle et al., 2016; Dennison and Shute, 2000; Ferguson and Aning, 2015; Fulcher and Gosselin-Acomb, 2007; Ghazali et al., 2011; Hollingworth et al., 2010; Ipsos Mori, 2015; Lee et al., 2010; Mitchell et al., 2012; Rogers and Lowe, 2014). Five were conducted in Canada (Carlson et al., 2010; 2013; 2014; Fillion et al., 2011; Bultz et al., 2013), two in Australia (Thewes et al., 2009; Ristevski et al., 2015) and three in Europe (Dolbeault et al., 2011; Lynch et al., 2010; Thayssen et al., 2017). Although most studies involved patients with a range of cancer types, three focussed only on patients with head and neck cancer (Ghazali et al., 2011; Rogers and Lowe, 2014; Bultz et al., 2013) and two exclusively on lung cancer (Carlson et al., 2013; Lynch et al., 2010).

Four studies reported the results of a randomised controlled trial (RCT) (Hollingworth et al., 2013; Carlson et al., 2010; 2012; 2013). A further eight evaluations (Ferguson and Aning, 2015; Fulcher and Gosselin-Acomb, 2007; Ghazali et al., 2011; Ipsos Mori, 2015; Lee et al., 2010; Rogers and Lowe, 2014; Bultz et al., 2013; Dolbeault et al., 2011) presented findings from research or evaluation that aimed to quantify or qualify changes in patient and/or practice outcomes as a result of the HNA. The remaining eight studies reported on work to determine the feasibility or acceptability to practitioners and/or patients of implementing some form of HNA (Biddle et al., 2016; Dennison and Shute, 2000; Mitchell et al., 2012; Fillion et al., 2011; Thewes et al., 2009; Ristevski et al., 2015; Lynch et al., 2010; Thayssen et al., 2017).

Four RCTs and one other evaluation study (Hollingworth et al., 2013; Carlson et al., 2010; 2012; 2013; Bultz et al., 2013) reported findings on patient outcomes using validated patient measures. Using pre and post questionnaires, the evaluation of the electronic HNA by Ipsos Mori (2015) provided data on patient reported outcomes. The results of patient feedback are reported within four evaluation (Ferguson and Aning 2015; Fulcher and Gosselin-Acomb, 2007; Ipsos Mori, 2015; Rogers and Lowe, 2014) and two feasibility studies (Dennison and Shute, 2000; Ristevski et al., 2015).

Four feasibility/acceptability studies reported only on the views and experiences of the assessor of using the chosen assessment tool (Biddle et al., 2016; Thayssen et al., 2017) or of implementing the assessment process into routine care (Mitchell et al., 2012; Fillion et al., 2011). Other feasibility/acceptability studies also reported on professional perspectives but in addition to this deployed a range of data collection methods and reported on, for example referral numbers and feedback from patients (Dennison and Shute, 2000; Thewes et al., 2009; Ristevski et al., 2015; Lynch et al., 2010).

The predominant HNA tool was the Distress Thermometer (DT), used in 13 studies (see Table 3). A number of these referred to the instrument as the DT and Problem List (DT&PL) and others just as DT. It is not clear from the studies if those, not indicating PL, used this part of the tool. It was slightly more common (12 out of 20) for more than one assessment tool to be used within one intervention. A psychological screening/assessment tool was implemented by six studies (Carlson et al., 2010, 2012; 2013; Thewes et al., 2009; Ristevski et al., 2015; Dolbeault et al., 2011). Two utilised a tool to determine or assess symptoms - the Edmonton Symptom Assessment System (Bultz et al., 2013) and the 18 Item Brief Symptom Inventory and the DT (Lee et al., 2010).

*Measurable patient outcomes*

The four RCTs reported on the impact of HNA on a range of individual patient outcome measures for example depression, anxiety, pain, mood, quality of life and fatigue (Hollingworth et al., 2013; Carlson et al., 2010; 2012; 2013).

Statistically significant improvements were reported for a range of individual measures when comparing the outcomes of screening on quality of life, physical symptoms and psychological and practical problems of patients with head and neck and neurological cancer (Bultz et al., 2013).

The work of Carlson et al., reported in 2010 and 2013, compared three different assessment procedures. These were minimal screening with the DT, full screening (the DT and other assessment tools after which the patient received a summary of their concerns) and triage. Triage was defined as full screening plus the option of subsequent triage over the telephone. The impact of each arm of the study was mixed and authors concluded that triage and full screening may provide most benefit.

Carlson et al., (2010) found the best predictor of decreased anxiety and depression in full screening and triage conditions was receiving a referral to psychosocial services (t =2.43; *P* =.016) and Lee et al., (2010) found that receiving a referral was not significantly associated with changes in pain, fatigue, or practical, psychosocial, and physical problems. Hollingworth et al., (2013) found no evidence of an effect on primary or secondary outcomes. A study, also by Carlson et al., (2012) reported observable improvements among patients who actually accessed the services they had been referred to.

More experiential measurable patient outcomes are noted within the evaluation of the electronic HNA (Ipsos Mori, 2015). They reported that 56% of 208 people who recalled the HNA process felt “less worried” as a result of their discussion with the doctor or nurse and that 34% reported having “received help for the issues they were concerned about”. The authors used a pre and post intervention design and caveat their findings as affected by recency of intervention and recall.

*The role of the assessor*

As shown in Table 3, variability was found in the professional discipline of the assessor, the HNA tool used within the assessment and the location of the assessment. Within the majority (n=13) of studies included in this review, the assessor was a nurse. Less common was a General Practitioner (GP) (Thayssen et al., 2017) or a Consultant (Lynch et al., 2010). As expected the location was aligned with the professional taking the HNA with most taking place within a clinical or health setting.

The timing of the input of the assessor also varied and included those newly diagnosed (Carlson et al., 2010; 2012, 2013; Fillion et al., 2011; Thewes et al., 2009; Dolbeault et al., 2011) and patients during treatment (Biddle et al., 2016; Fulcher and Gosselin-Acomb, 2007; Hollingworth et al., 2013; Lee et al., 2010; Mitchell et al., 2012). Only one assessor used the HNA in a survivorship context (Ferguson and Aning, 2015).

In some studies, the role of the assessor was framed within local policies or procedures, for example through the use of local practice guidelines or referral protocols. In addition there was some evidence that assessors had been supported in their role by the provision of directories/booklets of available local services to inform referral decisions/destinations (Biddle et al., 2016; Fulcher and Gosselin-Acomb, 2007 ; Hollingworth et al., 2013; Ristevski et al., 2015).

The provision of training provided to assessors was described and/or recommended by authors to optimise implementation of HNA (Biddle et al., 2016; Fulcher and Gosselin-Acomb, 2007; Hollingworth et al., 2013; Mitchell et al., 2012; Fillion et al., 201; Thewes et al., 2009; Ristevski et al., 2015; Dolbeault et al., 2011). Little detail of the training was found with one exception. Thewes et al., (2009) recommended training to improve the assessor skills in discussing the assessment results.

*Process of assessment*

The process of conducting an HNA within the included studies was found to be distinct in relation to whether the tool had the property of ‘holism’ or the approach to the assessment was deemed to be holistic in nature. For example, survivorship care clinics are described by Ferguson et al., (2015) as 45 minutes in length, where the HNA tool (the concerns checklist) was used to “focus on the man identifying his own specific needs…to facilitate discussion, structure the discussion and provide an action plan” (p18).

In contrast for studies where holism came from the selected tool, a distinction was made between the processes of screening, triage and full screening/assessment. Carlson et al., (2012) defined their model of assessment practice as ‘triage’, comparing triage post screening via computer to those who experienced face-to-face personal triage. For Dennison et al., (2000) the HNA was used to determine which professional a patient was seen by at an outpatient appointment.

As a result of two RCTs, Carlson et al., (2012; 2013) concluded that screening must be followed by assessment. Fillion et al., (2011) also suggested that screening and assessment are different things that go together, whilst Hollingworth et al., (2013) described the use of their chosen “screening tools” but state that they were implemented as “a needs assessment”.

*Actions of the assessor*

Common to all studies was that assessors worked to identify patient concerns, using a structured HNA tool and/or approach. Assessor actions during the assessment were described, as addressing some of the identified concerns during the consultation/appointment itself (Ghazali et al., 2011; Ipsos Mori 2015; Carlson et al., 2013). This *action* is therefore inherent in some assessment processes, and not as a result of the process. This action was accomplished primarily through discussion between the patient and assessor which provided information, verbal advice (Ipsos Mori, 2015) or reassurance (Hollingworth et al., 2013 ). Biddle et al., (2016) described the HNA “being a therapeutic intervention in itself”. All studies described an action of the assessor as being to refer or signpost the patient, based on the outcomes of the assessment. Locally determined ‘cut off scores’ regulating assessor actions during and post assessment were also used and found to differ across studies (Fulcher and Gosselin-Acomb, 2007; Lee et al., 2010; Ristevski et al., 2015; Lynch et al., 2010).

*Does the way in which HNA is implemented impact on the outcomes of the assessment?*

In order to utilise the results to answer the key review question, a thematic synthesis was undertaken. We aimed to bring together under explanatory, analytical themes, the pertinent features of HNA implementation related to measurable outcomes, the role of the assessor, their actions and the process of assessment as documented in the studies. Table 4 shows how the included studies contributed to the development of the themes.

**Table 4: Individual studies contribution to the development of themes**

Four analytical themes were identified that provide further insight into the relationship between HNA implementation and outcomes. They have been labelled as ‘Detecting’, ‘Discussing and Dealing’, ‘Directing’ and ‘Downstream Care’. Each is set out below and taken together suggest that *the way* in which an HNA is implemented is much more important to our understanding of outcomes than *what* is implemented.

Detecting Needs

From both patient and professional perspectives, the review found evidence of HNA’s enhancing the detection of concerns; psychosocial problems specifically (Mitchell et al., 2012, Dolbeault et al., 2011) or of concerns or problems that may not have otherwise been raised or addressed (Biddle et al., 2016 Lee et al., 2010; Thayssen et al., 2017). Lee et al., (2010) describes this process outcome as enhancing the identification of “hidden distress”. Patient feedback reported by Ristevski et al., (2015) found that 87% strongly agreed or agreed with the statement - “the discussion helped me identify my needs.”

Discussing and Dealing with Identified Needs

Three studies reported that patient issues identified via the assessment could be resolved during the assessment appointment or consultation (Ghazali et al., 2011; Ipsos Mori, 2015; Carlson et al., 2013). The evaluation of the electronic HNA concluded that in relation to patient experience and outcomes “greater importance lies in the discussion” (Ipsos Mori ,2015).

As a result of conversation and dialogue based on the HNA, improved communication, between the assessor and the patient was reported (Ghazali et al., 2011; Mitchell et al., 2012; Rogers and Lowe 2014; Thewes et al., 2009; Lynch et al., 2010). In some studies, this was through the provision of a set opportunity for dialogue (Biddle et al., 2016; Dennison and Shute, 2000; Fulcher and Gosselin-Acomb, 2007; Ristevski et al., 2015; Lynch et al., 2010). For others the emphasis of enhanced communication focussed upon the improved transfer of information between professionals involved in a patient’s care (Dennison and Shute, 2000; Fillion et al., 2011; Dolbeault et al., 2011) or between the professional and the patient (Biddle et al., 2016; Lynch et al., 2010). One study reported that patients thought that completing the concerns checklist provided an opportunity to discuss concerns and that it was helpful to discuss concerns (Dennison and Shute, 2000). A further study stated that the discussion between the patient and the clinician resulted in an increased uptake of services (Carlson et al., 2012).

*Directing (Referrals and Signposting actions)*

Two studies indicated that the HNA provided the opportunity for assessors to refer patients to services to alleviate the identified concerns (Carlson et al., 2013; Fillion et al., 2011). A further five studies quantified this by providing data on the number of referrals post assessment (Fulcher and Gosselin-Acomb, 2007; Ghazali et al., 2011; Lee et al., 2010; Thewes et al., 2009; Lynch et al., 2010).

Lynch et al., (2010) and Thewes et al., (2009) looked for, but did not find any increase in referrals to psychology services, whereas Lee et al., (2010) found that screening significantly increased referral rates to psychosocial services. Fulcher et al., (2007) reported increased referrals to social work and support counsellors and Ghazali’s (2011) study with people with head and neck cancer found that whilst the number of referrals did not increase the type of referrals did. They reported higher proportions of referrals to oral rehabilitation and psychological support services.

Rogers and Lowe (2014) asked patients if the process had triggered any “additional support” and 20% (n= 66) said yes and the evaluation of the electronic HNA in the UK reported that 76% (n=154) of patients agreed or strongly agreed with the statement “I received referrals that were useful” (Ipsos Mori, 2015).

*Downstream Care*

Post assessment access to, and uptake of, support services are referred to as ‘downstream care’ (Mitchell, 2013). Evident in the literature reviewed is the relationship between outcomes and patients actually attending or utilising services. For example, Bultz et al., (2013) question whether their findings related to specific referrals patients received and Carlson et al., (2012) reported observable improvements among patients who, on referral, actually accessed the services.

Ferguson et al’s. (2015) evaluation of a nurse led survivorship programme, presented preliminary findings and “anecdotal” evidence of benefits and positive outcomes of the receiving service (a six week living with and beyond cancer programme) and not the holistic assessment itself.

**Discussion**

To our knowledge, this is the first systematic review and thematic synthesis of the actual implementation of HNA. This unique analytical perspective has allowed us to answer the question - Does the way in which HNA is implemented impact on outcomes?

Taken as a whole, *the way* in which an HNA is implemented is much more important to our understanding of outcomes than *what* is implemented. The key ways in which an assessment will impact on patient experiences and outcomes relate to the extent to which assessors can effectively *detect* concerns, distress and/or unmet need, *discuss and deal* with these within the consultation, then when appropriate *direct* individuals to local sources of support. Finally, outcomes of HNA are related to the actual uptake of relevant support post assessment (*downstream care*).

*Development of a Conceptual Framework*

These four components of HNA implementation (detecting, discussing and dealing, directing and downstream care) are critical to patient outcomes. Based on the findings we propose that they provide a valid premise for a much-needed conceptual framework for HNA implementation globally. This conceptual framework offers researchers and practitioners “a network, or a plane, of interlinked concepts that together provide a comprehensive understanding of phenomenon or phenomena“ (Jabareen, 2009). An outline of the proposed framework is given in Figure 1.

**Figure 1: Premise for conceptual framework of HNA and care planning**

The conceptual framework provides an empirical basis for further research of the intervention specifically and also wider survivorship research. Identifying and delineating the key causal components of HNA that impact on outcomes will also assist in understanding more fully, the contribution of each component to improved patient outcomes. For example, the framework can guide more detailed research into the impact of the profession of the assessor and location of the assessment. This will be important to understand as patients are assessed and supported by a range of professionals during their cancer journey.

This proposed conceptual framework has been subsequently utilised in a realistic evaluation of HNA in Scotland, for Macmillan Cancer Support, to identify what works, for whom in what circumstances, when one intervention is implemented in different ways across the country (Johnston and Campbell, 2018).

*Implications of the Findings*

Our findings have reinforced three factors that are limiting the development of a robust, contemporary evidence base for HNA. Firstly evidence on patient outcomes within this review was found to be limited and diffuse. It was dominated by a focus on measuring quality of life or changes to specific individual symptom, concern or sub scale measures. The resulting inconclusive picture is consistent with other reviews of needs assessment practice with adults with cancer (Carlson, Waller and Mitchell, 2012; Australian Cancer Survivorship Centre, 2016).

Moreover within this review the evidence in relation to outcomes from the patient perspective was limited. Predominant was a reliance on patient reported outcome conveyed as a percentage change in a symptom or concern domain or the quantifying of the extent to which patients agree or disagree with a range of affirmative, non-validated statements related to the process or outcome of an assessment. Where it exists the evidence of experience based, patient outcomes is predominantly the result of small-scale patient surveys and/or qualitative feedback from professionals involved in the implementation. This review argues that without broader consideration and understanding of what is actually generating patient reported outcomes their measurement is less meaningful and replicability of positive outcomes is left to chance.

Secondly this review has highlighted the fluidity of the descriptions or definitional terms used to explain *what* interventions actually encompass. It supports the findings of other authors who also found a lack of “standardised nomenclature” (Brearley, 2011). To a large extent, the definitional and terminology issues raised in this review are the result of the ‘holistic’ attributes assigned to the tool used. However holism arguably can only surely be attributed to a whole process or intervention and not just a tool. The continued use of the umbrella term of ‘HNA’ to describe both tools and method/ approach is, we suggest, too encompassing and increases the likelihood of the ‘tool wagging the dog’. Other scholars have also questioned what they call the “formulaic” use of assessment tools suggesting that they fail to provide the holistic approach required (Brennan, 2012). To reduce the risk of the results of distinct and disparate assessment and screening processes being used to generically inform the specific practice of HNA for cancer survivors more attention has to be given to the process of assessment in general and specifically to the actions of the assessor.

Thirdly the emerging analytical theme of ‘downstream care’ contributes to an on-going but sporadic broader discussion as to the need for assessment practice to link directly to service receipt and uptake (Mitchell et al., 2012; Carlson, Waller and Mitchell, 2012, Carey et al., 2012). Identifying a patients needs is ‘pointless’ unless post assessment downstream care is subsequently available and utilised. Related to this suggestion van Scheppingen (2011) argues that evaluations of such interventions should be based on the extent to which they actually link patients to services they need and would not have received otherwise (van Scheppingen, 2011).

This review makes clear the need for researchers and practitioners to conceptualise HNA as a means and not an end in itself. The energy put into the identification of concerns, unmet need and also distress is not matched by that required to actually resolve or alleviate them (Brennan et al., 2012). Meeting unmet needs is largely contingent on the availability and quality of the services and support (and not the assessment).

**Limitations**

Limitations to these claims are acknowledged. While we used guidance (National Cancer Action Team, 2010) to inform our search of HNA tools and approaches it is possible that there are others. As discussed definitions are an issue in this field of inquiry and future research could encompass the use of ‘needs assessment’ tools that do not claim the property of holism. For example, a recent rapid review of needs assessment tools for post treatment cancer survivors did not include the Distress Thermometer and Problem Checklist as it did not ‘meet the stated definition of a needs assessment tool - “a tool that measures the level of unmet need in a patient” (Jiao, 2018). The search strategy may therefore have failed to identify all studies in the field although the hand searching of the reference list of included studies helped ensure coverage of the topic. The review drew from primary research and did not incorporate grey literature reporting on the local implementation of HNA. In addition we did not include studies published in languages other than English.

**Conclusion**

This significant review of global studies enhances understanding of the way in which HNA can and should contribute to improving cancer patient experiences and outcomes. Overall this review identified there is a need for researchers and practitioners to conceptualise HNA as a means and not an end in itself. It identifies how under researched the critical components of HNA are and defines these as detecting need, discussing/dealing with issues during a consultation, directing patients to locally available support and ensuring uptake of this support, downstream of the assessment.

Pursuers of HNA-led outcomes for cancer survivors must work to focus on establishing and strengthening connections between assessor and patient actions and outcomes. In particular, service commissioners and the research community must give more attention to the nature and scale of referrals made as a result of HNAs and to understanding barriers to the uptake of support. The proposed conceptual framework for the implementation of HNA will assist the research community to develop more insightful measures of both process and outcomes. Moving forward there is a need to develop process indicators and to conduct longitudinal evaluation and research that incorporates patient perspectives on the value to them as individuals of the HNA process and resulting health and wellbeing outcomes.

**Compliance with Ethical Standards**

The authors declare that they have no competing interests

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