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Salutogenesis, Service Design and Aesthetics in Healthcare Experiences

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Abstract

This book chapter explores the intersection between Salutogenesis, Service Design and Aesthetics. This is important as healthcare systems are facing challenges and a rethink of how healthcare is conceptualised and delivered is needed. A shift in focus beyond a purely clinical pathway to treat diseases and illness to include a preventative approach where people are empowered and supported to improve their health and wellbeing will not only benefit the individual but healthcare systems and society as well. Salutogenesis which can be seen as a preventative paradigm emphasises on factors that promote health and wellbeing through a Sense of Coherence (SOC). SOC together with its relationship to Generalised Resistance Resource (GRR) and Specific Resistance Resource (SRR) is defined. Service Design thinking is then discussed with Salutogenesis together with the influence and impact of aesthetics on experience. A Salutogenic-Aesthetics Service Design Framework is used to illustrate the inter-related concepts. Two projects undertaken by medical and design students at undergraduate level will show the application of salutogenic-aesthetic thinking into the design of services. This means creating comprehensible, manageable, and meaningful services experiences, where aesthetics play a pivotal role in contributing to a person's health and wellbeing journey.

1 Introduction

Healthcare systems worldwide are facing increasing pressure and challenges. Like other healthcare systems in more developed countries, the National Health Service (NHS) has to cope with growing health and social care demands as a result of ageing population, chronic health issues such as obesity, heart diseases, diabetes, dementia and people living with more than one illness or health needs. Additional health demands aggravated by climate change (or indeed wars, civil unrest and pandemics) add further pressure which requires ingenuity to provide not just general but also emergency healthcare as well. These demands create long waiting times, missed care delivery targets and massive financial challenges. To respond to these challenges facing the NHS, changes need to occur to continue to deliver a service that is agile, sustainable and fit for the future (NHS improving quality, 2013).

The NHS was devolved to the four nations that make up the UK in 1999: NHS England, NHS Northern Ireland, NHS Scotland and NHS Wales respectively. The responsibility of overseeing and developing each health service lies with the respective devolved government and ministers. Each NHS administration has different objectives and policies surrounding performances making them difficult to compare (Atkins and Dalton, 2021) however there are five constants of healthcare identified that are common to the four NHS administrations that can make change challenging, these are attachment, money, risks, silos and reorganising (Singha, 2019). Every year since the establishment of the NHS, healthcare spending has increased whilst funding, particularly since 2009, has not met the rising demand (BMA, 2018). Due to the underfunding of the NHS money is limited and any major change or investment requires complex negotiation and decisions. This is not helped by information silos in hospitals for example where data is not shared effectively between teams, departments, or organisations. Healthcare delivery carries risks and when things go wrong it's not just monetary but reputational costs as well that need to be

considered. These factors can make healthcare organisations risk adverse which can affect their ability to innovate.

As demands and tension rises it has become clear the NHS system that was set up as a treatment service has to shift towards focusing on prevention and health promotion particularly of preventing non-communicable diseases and long term conditions such as heart diseases, diabetes and cancer (Mahler, Ford & Unwin, 2012). This shift acknowledges that whilst a pathogenic focus is important, this not enough to deal with the complex challenges that health and wellbeing face in the new millennium, where lifestyle habits and social-economic factors such as education, living environment, employment status, and income inequalities affect one's abilities to engage in healthy activities and manage stress. To create a sustainable healthcare system, an alternative approach is required to respond to these complex interdependencies. In recognition that things need to be done differently, NHS Scotland has developed a value-based approach called Realistic Medicine (Scottish Government, 2016). Although still pathologically focussed, it has the beginnings of the idea that social health is important by taking into account a person's preferences, unique life situation, and making them feel heard. It is a reminder for healthcare professionals that treatment and care decisions are made in partnership with people and by encouraging healthcare professionals to be innovative and pursue continuous quality improvement, Realistic medicine is a shift towards the concept and approach of Salutogensis proposed by Antonovsky (1979).

2. What is Salutogenesis?

Salutogenesis is focused on what makes people healthy and understanding the assets or factors that contributes to health and wellbeing. It is different from a pathogenesis approach where its about the studying or understanding of diseases and with that knowledge develop treatments or interventions to target the

disease. Salutogenesis proposes that good emotional, social, psychological, and physical health is maintained by a dynamic ability to adapt to changing circumstances in life (Antonovsky (1979, 1996). Salutogenesis holds the idea of Sense of Coherence (SOC) which is shaped by life experiences can improve health and well being. SOC can be defined as the way of perceiving life and the capacity and ability to respond to stressful situations or stressors that one encounters in life using the resources they have (adapted from Eriksson, 2022, 65). SOC is derived from one's generalised resistance resources (GRR). They are both internal and external and includes physical, biochemical (i.e. genetic and constitutional), artifactual-material (i.e. material), cognitive, emotional, valuative-attitudinal, Interpersonal-relational (i.e. psychosocial), Macrosociocultural (i.e. cultural, spiritual) and a preventative health orientation (Antonovsky 1979, 1987; Idan, Eriksson & Al-Yagon, 2022, 93 (Another way of presenting GRR as summarised by Idan, Eriksson, Al-Yagon (2022) are "(1) material resources (e.g. money), (2) knowledge, intelligence (e.g., knowing the real world and acquiring skills), (3) ego identity (e.g., integrated but flexible self), (4) coping strategies, (5) social support, (6) commitment and cohesion with one's cultural roots, (7) cultural stability, (8) ritualistic activities, (9) religion and philosophy (e.g., stable set of answers to life's perplexities), (10) preventive health orientation, (11) genetic and constitutional GRRs, and (12) individuals' state of mind.")). A strong coherence helps the individual to engage in GRR to cope with stressors in life (e.g. someone falling ill, changes in the family or workplace) and manage these tensions successfully in a health promoting way (ibid). This sense of coherence helps determine one's movement and position on a continuum between total health and total absence of health (Antonovsky, 1987).

According to Antonovsky (1979, 103), people can access GRR at an individual, primary group (e.g. family), subculture and societal level to facilitate tension management. The sum of all GRR constitutes the SOC and reveals an individual's perspective on life

and their ability to respond to stressful situation. Through further research the SOC was revealed to consist of three interrelated components and they are Comprehensibility, Manageability and Meaningfulness (Antonovsky, 1997; Eriksson & Lindström, 2006).

Comprehensibility

Comprehensibility is about a person's sense-making ability (i.e. how the world is perceived and interpretated by them). This can be rational, understandable, structured, ordered, consistent and predictable. A person with high comprehensibility expects events will be predictable and if it comes as a surprise, explainable. For someone with low comprehensibility, unexpected events are explained as bad luck (Antonovsky 1987). To have a sense of 'agency' and the capacity and ability work out life's challenges and make most of life's circumstances, one has to have a sense of their life narrative, context and circumstances. (Golembiewski, 2022).

Manageability

Manageability is about how much an individual believes the resources (this might include social services or family and friends) available to them are adequate for dealing with their situation. A person with high feelings of manageability does not see themselves as victim of circumstances (Antonovsky, 1987). Manageability is also about looking after yourself and others in your care. This could involve daily living activities like staying warm and dry, personal hygiene like washing and grooming, feeding or eating and managing finances (Golembiewski, 2022). Golembiewski (2022) added that manageability must include the needs of people with disabilities and this in the context of architecture is embedded in accessibility. Manageability is about our ability to do things, to adapt, cope or manage and to solve problems. When manageability is lacking, this creates stress for individuals and studies have shown that long term or chronic stress can change one's immunity leaving us prone to physical and psychological illness like high blood pressure and anxiety (Segerstrom & Miller, 2004; Morey, Scott & Segerstrom, 2015).

Meaningfullness

Meaningfulness is the degree in which a person feels their life makes sense emotionally. A person who finds their life meaningful will think problems or challenges are worth committing to and engaging with, and some might even welcome them. It is the motivational element of the SOC (Antonovsky, 1987). Meaningfulness can provide the will to endure adversity and to "resist entropic pull of illness and fear about death's inevitability" (Golembiewski, 2017, 268). Meaningfulness can be found in personal relationships, identity, responsibilities, social groups and desires, cause and concerns. It can be hard to define as it is highly personal (ibid 2017).

Specific Resistant Resources (SRR)

According to Antonovsky (1987), successful coping depends on the SOC as a whole and a review by Eriksson (2022) showed that a strong SOC is related with perceived good health, in particular mental health. Another concept in the salutogenic model beside SOC and GRR is Specific Resistant Resources (SRR). SRR are resources that are relevant at specific situations. Mittelmark, Marguerite & Helga (2022, 107) described it as resources that are "optimised by societal action in which health promotion has a contributing role, for example the provision of supportive social and physical environments".

Regarding GRR and SRR, Antonovsky 1979 (p. 98-99) stated "… [SRRs] are often useful in particular situations of tension. A certain drug, telephone lifelines of suicide prevention agencies… can be of great help in coping with particular stressors. But these are all too often matters of chance or luck, as well as being helpful only in particular situations…[and] … it is the GRR that determines the extent to which specific resistance resources are available to us".

SRR need not be a "matter of chance or luck". In healthcare or health promotion work, it is important that SRR and the service provision that surrounds it is purposeful, easy to find, inclusive, usable and dependable. In summary it can be said that having

strong GRR/SOC and SRR can translate to better capacity to cope with stressors and thus bring about better health.

2. Service Design Thinking

"A service is something that helps someone do something" (Downe 2002, 19). In order for a service to be effective, efficient, usable, acceptable, stress-free, enjoyable or pleasurable in helping someone achieve their goals or outcomes, it must be designed well. According to the Copenhagen Institute of Interaction Design, service design is focused on the creation of well-conceived experiences using a combination of intangible and tangible mediums (Stickdorn and Schneider 2010). Expanding on those mediums further, service design is about understanding and designing the way that people, objects or materials, environments, infrastructure, processes, communications, interactions and behaviours come together in a shared system to produce experiences between the service provider and its users.

Service design thinking starts with a user-centric approach by understanding the needs, behaviours and preferences of people who use or potentially use the service. Visualisation plays an important role in this understanding. Deconstructing or mapping out the whole service process (pre, during, post service) into touchpoints and interactions allows stakeholders to see the whole system showing the different layers (i.e. service blueprint), connections, flow, and its rhythm (in relation to time and duration). Visualising the process enables a shared focus, facilitates discussions and reflection leading to an understanding of efforts needed to coordinate activities and interactions and the responsibilities of different roles.

With this shared understanding, various stakeholders are often involved in co-creating or co-designing new or improved service concepts or provisions. historically in western healthcare, patients are encouraged to be involved in the redesigning of health service. A systematic review by Crawford et al. (2002) about involving patients in the planning and development of healthcare

revealed that this has resulted in the production of new or improved information for patients, simplification of appointment procedures (thus making it more accessible), extended opening times, improved transport to treatment centres, improved access for people with disabilities; and new services such as advocacy, crisis services and fertility treatment.

Involving stakeholders like patients ensures that a diversity of perspectives and ideas are considered but also an understanding that collaboration is necessary among different stakeholders and what is required for effective teamwork around service users. The key to the process of co-creation or co-designing is iterative prototyping and testing how the proposed service works in helping users achieve their goals and their experience of getting there. The iterative process not only helps in identifying and addressing potential issues; it can also provide opportunities for insights for enhancements.

Services can be intangible, for example, your pharmacist preparing your medication whilst you are waiting to collect it. Stickdorn and Schneider (2010, 43) brought up the need for evidencing services or making the intangible tangible; in other words, to "help reveal inconspicuous backstage services". Taking the pharmacy example above, a sticker with the words "This medication is carefully prepared by your pharmacist <name>" can generate appreciation and a feeling of being cared for. So, creating physical evidence of the service helps an individual remember the service experience, but it can also assist in the understanding or explanation of aspects of the service touchpoints or process. It also highlights the significance of effective coordination between tangible and intangible services, and how each could be leveraged to enhance user or customer involvement and experience as well as the implementation support needed to make this work.

It is also important to keep a wider and holistic view of the service during both the understanding phase and the co-design phase by considering the organisation's culture, values, norms, resources, capabilities and process, its environment(s), touchpoints, interactions and elements (human and non-human interfaces). All

these components contribute to the overall service experience and can impact on an individual consciously or subconsciously (i.e. through their senses) and thus their overall experience of the service.

3. Salutogenesis in Service Design Thinking

Salutogenesis centres around factors that support health and wellbeing shifting from a focus that is on the treatment of diseases to stay healthy. Rethinking service design through the lens of salutogenesis can be a new way to introduce fresh perspectives into this transdisciplinary field, encouraging innovation and creativity in the design of services with the aim of creating healthy societies in healthy environments. It is a useful model that could be used to provide insight and inspire designers who work in a healthcare and wellbeing context to expand the health generating design space.

As stated before, the key concept of salutogenesis is the Sense of Coherence (SOC), comprising of comprehensibility, manageability, and meaningfulness. People's SOC are enhanced by GRRs which helps them to manage life more easily. In other words, SOC supportive design can bolster or 'release' GRRs to avoid, resist or overcome stressors that can influence health. Applying salutogenesis in service design thinking (or salutogenic service design thinking) by taking into consideration the user's SOC means creating experiences that are comprehensible, manageable and meaningful for them. Similar to service design, salutogenesis puts the individual and their ability to engage resources (both internal and external) at its core and by supporting the SOC through design, we can understand the different ways people can be helped to cope better or be guided through the process of recovery into positive health outcomes.

3.1 Salutogenesis and Service Design Thinking

In service design, comprehensibility can be supported by making the service easily understandable for users. This involves employing clear communication, intuitive navigations or affordance, and

assembling the structure and content of the service in a transparent and organised manner. It is important to design service processes that are manageable for users. Enhancing the manageability of a service can be achieved by breaking down complex tasks into smaller manageable steps, empowering users with greater control. Providing clear instructions and offering tools and resources facilitates confident navigation and usage of the service. This empowerment enables users to make informed decisions and effectively manage the services, ultimately contributing to an improvement in users GRR whilst utilising the service. This can enhance users' GRR and their ability to use the services. Services should strive to create a meaningful impact on users' lives. This can be accomplished by integrating elements that resonate with users' values and goals, cultivating a sense of purpose in their interactions with the service. Going beyond mere functionality, the thoughtful incorporation of aesthetics can play a crucial role in contributing to users' overall satisfaction and well-being.

3.2 Relevance of Aesthetics from a Salutogenic Perspective

Aesthetics is a branch of philosophy that is concerned with how beauty is revealed, gives pleasure to our senses and provides delight to those who experience it. Aesthetics can be defined as "that which is perceptible through the senses" (Macdonald, 2002). In Salutogenic Architecture, the incorporation of both aesthetics and health promoting designs is advocated for and carefully considered. Integration of elements such as natural daylight, scenic views of nature, ambient natural sound within the space is one example of this. Saultogenic theory has been promoted in healthcare design for several years by the International Academy for Design and Health and it has a strong influence in architecture and environmental design (Dilani 2004, 2006). Architectural environments are intentionally crafted to promote and enhance pleasant experiences, supporting resistance resources and thereby strengthening SOC. Systematic reviews have identified evidence supporting the positive impact of environmental design or the

aesthetics of the environment (by which we mean the experiential quality in design and the organisation of rooms and building) has on the healing process and wellbeing of patient as well as family and staff (Dijkstra, Pietrese & Pruym, 2006; Huisman et al., 2012; Andrade et Al., 2017).

From a salutogenic perspective, if aesthetics can have an impact on the SOC of people interacting with the environment, then the mindful embedding of aesthetics in service design to enhance the patient experience, beyond the functional aspects of service design, should be considered.

Building on Macdonald's work (2002) on sensory-aesthetics experience, a three-centred model was developed and used to explore aesthetics (Macdonald & Lim, 2006). In this three-centred model, a person's 1) bio-evolutionary, 2) cultural and 3) personal experience is recognised to have influence on one's aesthetic response and thus acceptability of products and systems. Whether a product, environment or service is acceptable is determined by how well users are taken into consideration in its design. Is the interface of a product clear to enable user goals to be met? Is learning or emotional support provided? Or does it make people feel frustrated ad stressed?

From the model, bio-evolutionary response to aesthetics is determined by the way our brains, bodies and sensory organs have been wired to seek out meanings and values we associate with information perceived through our senses. This affects for example our reaction times during product or service interactions or emotional reactions to anthropomorphic features in a product.

At the personal experience level, an individual's aesthetic response can be influenced by memories, personal history and circumstances, associations, familiarity and preferences on one hand and their physical and cognitive capabilities on the other. This reflects personal values and experiences learned from interacting with the world as time passes. Research by Lim (2010) for example has shown that experience and familiarity of the form, functionality, and features of a product (e.g. camera) affects the difficulties

encountered by different generations of people when using the product.

Our aesthetics response can also be shaped and be influenced at a cultural level, conditioned by socio-cultural influences of common values and behaviours shared with certain cohorts or locality of the population that we identify with or domicile in. An example is the association between weight and quality (e.g. in western culture weight has association with solidity and safety) between Western and Japanese culture in products such as cars (Macdonald 2002).

Using the three-centred model of bio-evolutionary, cultural and personal experience proposed by Lim and Macdonald (2006) we can draw direct relationship and relevance to a person's GRR and consequently SOC. For example, the bio-evolutionary aspect aligns with the GRR components of physical, genetic, and constitutional, cognitive and emotional elements. Products and services tailored to the specific needs of the person will help with the manageability of its use for example. The cultural and personal experience of the model would align with GRR's components of macrosociocultural and knowledge, emotional and valuative-attitudinal factors. This supports comprehensibility and meaningfulness for example prior personal experience could be drawn from a preference and meaning to a particular furniture layout that will bring a sense of order for the individual.

Whilst aesthetics is often associated with the sensual qualities of materials, aesthetics can include the immaterial as well. Clatworthy (2023) drawing from Folkmann's work (2010, 2013, 2020) summarised that aesthetics is about interpretation, and the creation and communication of meaning. Beyond beauty and outward appearance, aesthetics is regarded by Folkmann as "being about meaning, where meaning is constructed from appearance, how this is sensed, and its conceptual relationship with the world" (Clatworthy, 2023, 238); and this determines how we perceive understand and experience our surroundings. Folkmann acknowledges that aesthetic experiences are individual and subjective in nature and is influenced by cultural and social factors.

Taking a person-centric view of aesthetics, he believes that design can have transformative effects on experience and can build a bridge between aesthetics and experience.

Using Folkmann's (2018) dimensions of aesthetics 1) Sensual, 2) Conceptual and 3) Contextual to frame experience, Clatworthy (2023) sought to apply each of the dimensions to a service design context. According to Folkmann (2018), sensual's impact on experience is framed not only by materiality (i.e. look and feel) but also by the immaterial such as the creation of experience when using or interacting with an object or service. Examples from a service point of view would be touch points and user or service journey (Clatworthy, 2023). The *conceptual* dimension deals with the understanding and meaning of what is or being designed. It is about constructing meaning and new ways of understanding through design concepts. Folkmann (2018) pointed out that aesthetics viewed from a conceptual perspective could challenge usage habits, our understanding of purpose of the designed and the way we engage with the world by means of what is designed. For service design, this could be value proposition or the offerings of a service, the meaning it gives and the expectations of use (Clatworthy, 2023). The contextual dimension deals with the aesthetics of design used in a cultural, social or political context as a way to express, reflect and have a discourse over the implications of what is designed (Folkmann. 2018; Clatworthy, 2023). In other words, the aesthetic meaning of what is designed can be framed by different ways (e.g. storytelling, film) and in different context in order to construct meaning to what is designed. For service design, Clatworthy (2023) described it as "the experience-based value through engagement with the service, …not necessary value in use, but rather value through interactions with the service at discursive level".

Grove and Dorsch (2014) put forward customers, service setting, service process and employees as four components to consider when enhancing customer experience through the lens of aesthetics. The authors acknowledged that viewing customers as a source of aesthetics influence is the least obvious but gave an

example where the customer profile (dress code, demographics etc.) together with the environment or service setting can create social ambience and bonding which can make the experience memorable. Orchestras, sports and religious events would fit into this scenario. Within service settings, touchpoints such as furnishings, lightings, colours, décor, equipment or artefacts as part of the service, air and acoustic quality (which includes music) and signage are aesthetic stimuli that can evoke emotional response from people, staff and patients. How a service was delivered (instead of only what was delivered) affords aesthetic opportunities beyond just the steps needed to complete a task during the service process. For example Michelin-starred restaurants creates a service performance that can be considered artistic for their diners, mindful of not just the way the food is displayed but how the food was delivered, the sequence and progression of different courses and also the duration between them. Emotions such as confidence, trust, warmth, patience, playfulness or enthusiasm can be conveyed through a service process or delivery by design as well as by its employees when interacting with customers. Adding to the employees component, uniforms and the way employees carry themselves can further enhance the aesthetic nature of the service. Uniforms and s appearance, behaviours and body language can also play a part to express or communicate messages like formal, casual, or relaxed etc.

3.3 Salutogenic-Aesthetic Service Design Framework

In the above sections, Salutogenesis and its key concepts namely GRR, SOC with its three interconnected components comprehensibility, manageability, meaningfulness, as well as what SRR (e.g. interventions such as specific medication, helplines, a supportive social or physical environment etc.) was introduced. We explained how we tap into GRR and SRR to give us a sense of coherence (SOC), allowing us to make sense of our lived experience when faced with stressors and tensions in life which ultimately affects our emotional, cognitive and physical health and wellbeing. How we design and introduce SRR can have an impact on how GRR

is used to resist/deal or avoid stress. With knowledge of salutogenesis we can purposefully consider how design can be used to support people's SOC, improving their ability to adapt to life's changing circumstances.

Within the design of services, aesthetics can play a major role particularly when considered with salutogenesis. We have shown how aesthetics defined by Macdonald and Lim's and Folkmann's framework can be related to GRR, and how it stimulates actions, thoughts, feelings and reflections. Aesthetics in service design considers the experience of people and we have shown how these aesthetic experiences can be factored into settings, service process, customers and employees. When service design in a healthcare context is considerate of aesthetics, factors in patient comprehensibility, manageability and meaningfulness (and therefore supporting the SOC), GRR can be strengthened or enhanced to enable an individual to navigate, resist or overcome stressors, helping the person cope with the challenges they are facing. This is manifested through the evocation of positive emotions and reassurance, which can lead to better health outcomes and an overall sense of wellbeing. Figure 1 illustrates a salutogenic-aesthetics service design (SASD) framework showing the relationship between SOC, GRR, SRR and aesthetics.

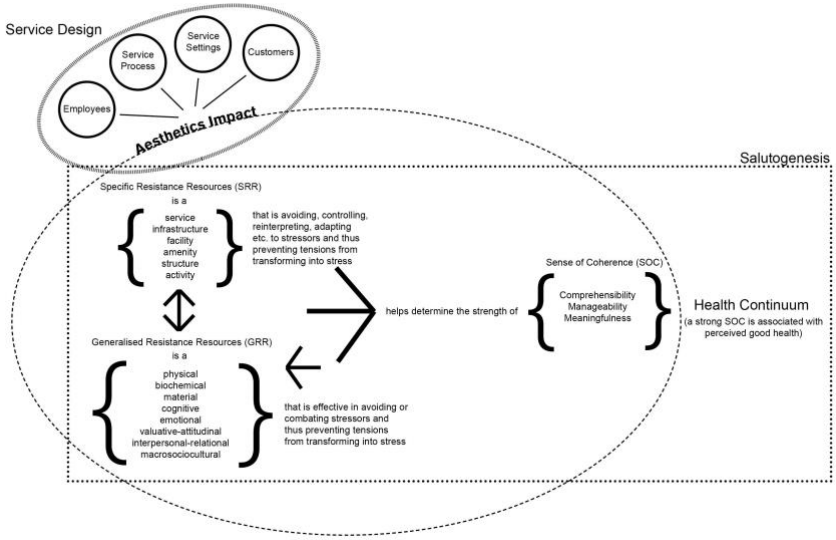

Fig. 1 Salutogenic-aesthetics service design (SASD) framework. Source: Authors own illustration (2024) adapted from Antonovsky (1979, p.103) and Mittelmark, Marguerite & Helga (2022, p.110)

4. Applying Salutogenic-Aesthetic Service Design Thinking

Using the SASD framework as a point of reference, we will discuss health and wellbeing service interventions within a hospital environment (Ninewells hospital, Tayside, UK) and in a cultural organisation (Victoria and Albert Museum Dundee) context through the lens of SOC and aesthetic experience. These interventions were the result of collaboration between students from the University of Dundee's School of Art and Design and the School of Medicine. The students undertook a health service improvement module run by the School of Medicine which last for 4 weeks from brief to presentation and were supervised by staff from both schools. Students were from Product Design, Digital Interaction Design, Graphic Design, Interior and Environmental Design and Medicine. In the Ninewells hospital projects, which involved improving the experience for patients' and visitors who arrive at the Emergency Department (ED) and Acute Medical Admission Unit (AMU), NHS

staff from ED and AMU were involved in providing feedback to students. When appropriate, patients and family were also involved. For the brief that explored how Victoria and Albert (V&A) Museum can support visitor's health and wellbeing, museum staff, visitors and third sector organisations provided feedback and advice to the students.

In the module, students were introduced to the Design Council's Double Diamond model (Design Council, 2005) and Quality Improvement methodology (Langley et al., 2009). Service design methods (i.e. empathy maps, shadowing, personas, journey map and prototyping) together with social science methods (i.e. observations and interviews) were taught. Depending on the project, different methods were used. For the ED project, students toured the ED to experience the environment and made observations along the way. They spoke to patients sitting in the waiting area and sought out views from the ED staff to reveal insights into the issues experienced by patients waiting in the ED. The same methods were used for AMU with the addition of medical students shadowing the hospital admission process of a number of patients to understand their care experience.

Similarly at the V&A, students interviewed staff that interacted with visitors and those who developed and organised programmes and activities for the museum. Students conducted service safaris at the V&A and was asked to keep a journal detailing their journey as they explored the museum and its surroundings, marking places of interests and reflecting on their experience. They also interviewed social prescribing link workers and mental health workers to gain an understanding of people who face mental health challenges.

Students developed potential solutions from the insights gained from using the various methods, and they constantly gathered feedback from stakeholders (i.e. patients, NHS staff, support workers etc.) testing out several ideas to identify which ones improved the experience. These solutions were presented at the end of 4 weeks to the stakeholders and after which the teams

that commissioned the brief will apply for funding to implement the solutions.

4.1 Ninewells Hospital Emergency Department (ED) and Acute Medical Admissions Unit (AMU)

Ninewells Hospital is one of Scotland's busiest hospitals and thousands of people pass through its doors every day. The hospital was opened by the Her Majesty The Queen Mother in 1974 and was unique by combining a medical school within the hospital. It has 1000 beds and its ED attends to around 4790 patients a month (as of 2023). Patients arriving at ED (or A&E) without speaking to a health professional will arrive with certain expectations and uncertainty. Their state of mind will largely depend on why they are there. It is therefore necessary to consider this and design particularly for patient's comprehensibility and manageability before, during and after the ED journey.

To ensure people get the right care for their need, the Flow Navigation Centre (FNC) was established in the ED at Ninewells Hospital where ED consultants and other senior ED clinical decision makers are available 24/7 to provide professional advice and support to other healthcare professionals such as GPs, NHS 24, Scottish Ambulance Service and nurses in Minor Injury Units. The consultants and senior staff also speak directly to patients on video and phone which allow them to assess the best place for a patient to go to for the most appropriate treatment. If ED is the appropriate place to go, the team can book the patient into an appointed time slot, so they don't have to wait long when they arrive. This pre-arrival intervention allows for effective triage. There are some patients who will be asked to come directly to ED or they might turn up at ED without speaking to a health professional at all. Upon arriving at the ED, they still need to be guided through the journey and, while having their expectations of the service managed.

Some degree of waiting is to be expected with any visit to A&E. In the UK, the standard is patient should be admitted to hospital, transferred to a more appropriate care setting, or discharged home within four hours. Managing their expectations is

important as the patient may lack an understanding of why they are waiting, and how the waiting process and prioritisation of treatment is organised. Some patients are sympathetic: -

"I'm ok with waiting. I know there are people who are more serious and need to see the doctor earlier"

However, at what point is the wait perceived to be too long, and how can this feeling be mitigated? Interviews from some patients waiting at Ninewells ED commented:-

"I've been waiting here for about an hour and a half. I don't mind it but knowing the timing would definitely help."

"I'd like to know how long I have to wait."

This lack of knowledge causes anxiety – and can leave them feeling trapped and the lack of distraction can make the wait feel longer than it actually is.

"A screen or something will help pass time for sure"

Findings revealed that patients were not told how long they will wait and they wished to be told. Three out of four patients do not understand what will happen to them next and one out of twelve patients do not know what the uniforms mean. Other problems identified by the students during their observations include difficulties finding one's way around the department for example getting to the x-ray room and finding their way out of ED.

Patients who are come to the ED are all different, some are in pain and under stress, some may be intoxicated, antisocial, or in significant distress. GRR-wise, their state of mind is affected and their ability to engage physical, cognitive and emotional resistance resources will be low, impacting their coping strategies and ability to respond to stressful situation. To support their SOC and not make things worse, we need to consider how the service can be designed to take into account aesthetic experience in the area of setting and process. In an ED service setting, signage is viewed as an important touchpoint that could address some of the issues raised by the patients. The signage in the form of an infographic (see Fig. 2) was designed and used to engage patients and explain the service process or patient journey in ED whilst they are in the waiting area.

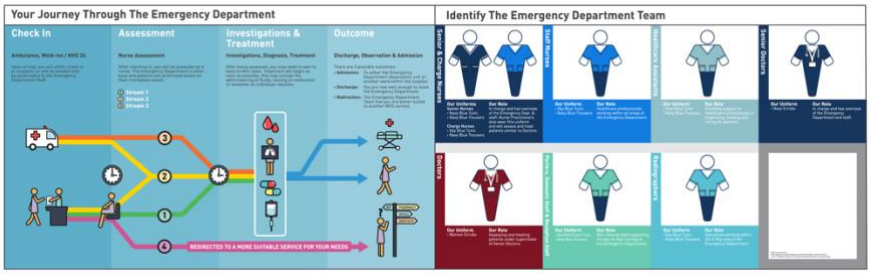

Fig. 2 Wall infographics at ED.
Source: Authors own figure (2024)

Care was taken into aesthetics of the illustrations and the information conveyed. Using the NHS colour palette as guide and inspiration, the background depicting the journey made use of different NHS blue hues to delineate the different stages. The illustration is simple line drawings to ensure that it is understood by people with different abilities. The flow diagram with the different stages creates a process cognitive map assisting people needing to find their way in a new, never visited space. If they have been to other EDs before, they can apply previously learned information from a similar environment to a new context. This supports manageability by breaking the journey into understandable stages.

It also provides signs or environmental cues to help people find their way later particularly in the 'Investigations and Treatment' stage. Whilst every patient may have a different journey (i.e stream), it is helpful to show how far they have progressed and how much further they have to go before finishing their treatment. Information that needs to be conveyed to patients must be clear and easily comprehensible as they will not easily understand the information presented due to their state. Also the reading age in Scotland is between 9-11 years old so any written information should use language that can be understood by that age group and avoid as much as possible the use of medical jargon.

A patient to ED will encounter different staff wearing different uniforms. It can be frustrating if you do not know who you are talking to. Added into the infographics are illustrations showing the different uniforms and their roles. Skin tones were not added to reflect the many nationalities that worked within the NHS. The uniform infographics helps in comprehensibility as providing useful information can make it easier for people to understand and access service. This will mean they do not get frustrated at the start of their ED experience.

To support wayfinding, various signs to help direct patients navigate the department have been installed. Infographics were created for the x-ray department, waiting area and doors, using different colours for the entrance areas to help patients navigate the department (see Fig. 3).

Fig. 3 ED new signage.
Source: Authors own illustration (2024)

The service changes in the ED demonstrated significant impact. Initially, only 1 in 5 patients could identify various staff members and their roles. However after the design, all patients could identify them. Before the project, 60% of patients were uncertain about the reasons for their wait and the upcoming steps in their journey. Following the introduction of infographics, all patients reported they are clear what is happening next and who they are interacting with. This alleviated anxiety during the waiting. Patient feedback also highlighted improved navigation within the department, reducing the likelihood of getting lost. In recognition of the innovative work to improve patient experience in the Emergency Department, Ninewells picked up 'Patient Experience Project of the Year Award' at the 2018 Royal College of Emergency Medicine Annual Awards.

Following the success of the ED project, an infographic was designed for the AMU to make patients feel welcomed, safe on arrival and assured of their visit (Figure 4). Patients can be admitted

direct to AMU or referred from ED. It was brought up by staff that the AMU receives a higher number of patients with cognitive dysfunction such as dementia. Taking this into consideration, the principles of comprehensibility and manageability was applied to the infographic. To ensure familiarity for patients who might come from ED, the journey map and the uniform elements were continued in the AMU infographics. Written information was kept short, simple and jargon free with the font size of the wordings made larger. Information chunking, contrasting colours and white space was used to highlight different information to make it easier for people to see and process (see Fig. 4). In summary, providing timely and relevant information together with aesthetic consideration and effective management of patients' expectations in a service contributes to patient comprehensibility. This comprehensibility is further enhanced when the patients build a narrative whilst going through their journey in the ED or AMU. By being able to make sense of one's context and circumstances, frustration and stress associated with uncertainties can be alleviated, helping build a Sense of Coherence (SOC) and therefore making a positive impact to wellbeing.

Fig. 4 AMU infographics.
Source: Vicki Tully (2024)

4.2 V&A Dundee

The V&A Dundee is the first ever dedicated design museum in Scotland and aims to provide a place of inspiration, discovery and learning through its mission to enrich lives through design. V&A believes that good public spaces are vital in our communities and recognises the pivotal role that design can have in enriching all of our lives. The V&A Dundee is committed to ensuring that everyone has access to the museum, but there will be some who feel disconnected. The museum is a safe space, a place to come and wander around, attend a workshop or a talk, see an exhibition, grab a cup of tea or simply to look out the window at the River Tay.

Museums benefit health and wellbeing in a number of ways (Camic & Chatterjee 2013; Chatterjee 2013) providing:

- Positive social experiences and reduced social isolation
- The chance to develop new – or build on existing – skills and interests
- Calming experiences which decrease anxiety levels
- Positive emotions such as hope, enjoyment and optimism
- Self-esteem and a sense of self and community
- Respite from clinical environments
- Increased opportunities for reflection and moments of mindfulness
- New experiences which may be inspirational or meaningful
- Communication between families, carers and health professionals.

The V&A Dundee can play a role in social prescribing, supporting people to improve their health and wellbeing by cultural access and participation. To expand its service provision, resources and activities that can engage, inspire and encourage reflection are needed to support people who are suffering from mental ill-health. Conducting desk research and co-designing with healthcare professions, social prescribing link workers and designers, medical and design students created Orikalmi (Ori- Japanese for folding and Kami for paper; and a play on both origami and calm) Trails, a wellbeing toolkit that uses creativity, mindfulness and connection with nature and culture to enable people to reflect on their own aspirations, achievements and feelings. Orikalmi Trails consist of three short reflective activity booklets that explores different themes. ‘Planting the Seed’ is about personal growth and development, ‘The Hope Boat’ deals with current worries and achievements while ‘The Scottie Dog’ is focused on connections and relationships (see Fig. 5). In the creation of these resources, manageability was achieved by thoughtful consideration given to the type of activities (i.e. functionality) and the needs of the user. For example, in ‘The Scottie Dog’, the questions are phrased

positively, and prompts are linked to the museum collections (see Fig. 6)

Fig. 5 V&A Dundee The Orikalmi Trails.
Source: Authors own figure (2024)

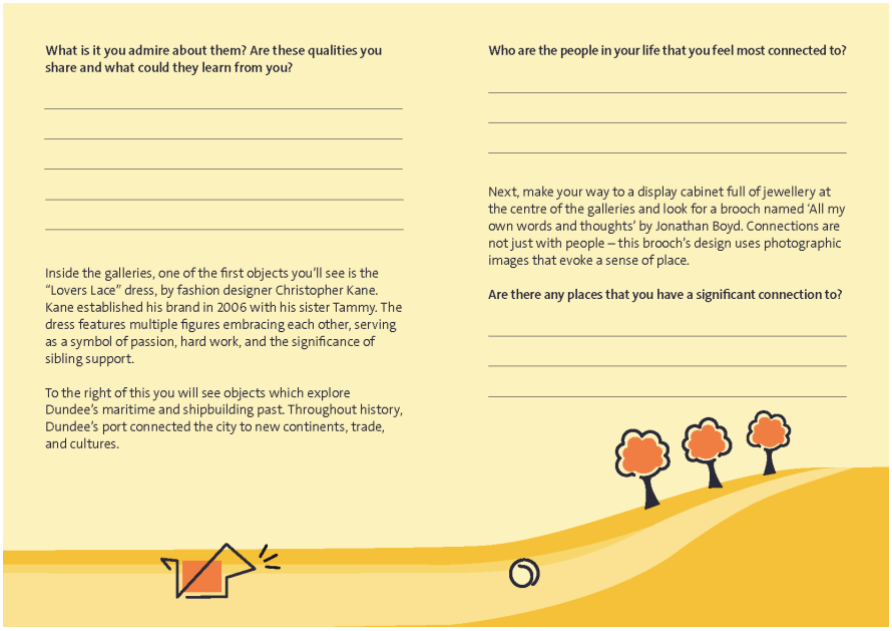

Fig. 6 The Orikalmi Trails - The Scottie Dog, page 7/8 of 14.
Source: Authors own Figure (2024)

The activities are person-centred, accessible and enables action, giving the user agency to complete the task at their own pace and a sense of delight once completed. This is further reinforced by the origami activity which inspires action that is achievable enhancing a person's efficacy. Working with mental health professionals, the questions aim to enhance the comprehensibility of the user by making them self-aware, enabling them to understand and negotiate the context they find themselves thus allowing them to help themselves, encouraging a sense of control and confidence. Comprehensibility is embedded into the aesthetic design of tool, ensuring that it is readable, content is simple to understand, and the graphics and illustrations conveys familiarity (e.g. contemporary design), predictability (i.e. all three booklets contain introduction, trail map, instructions, questions and reflections, mood tracker, origami folding instructions and useful contacts) and a sense of playfulness, joy, and approachability.

Meaningfulness comes from the purpose of the tool which is to provide capacity for the user to acknowledge but turn their attention away from negatives and difficulties in life to instead focus on meaningful engagement, reflection and positive choices. By taking salutogenic and aesthetic considerations in the design of tool, we can make the intervention (i.e. tool) better, helping people to help themselves towards the development of positive health.

3. Conclusion

The integration of salutogenesis in service design thinking with a focus on aesthetics can bring a transformative shift in how we innovate and bring our creativity to bear This expands exponentially the opportunities within the service design space in a healthcare and wellbeing context. By reframing our perspective to holistic health (from disease focused), service designers can create innovative, creative and user-centric responses that not only fulfils the functional goals but also the aesthetics or experiential needs of the user. Aesthetics in healthcare service design is not a mere aesthetics concern; it contributes to a holistic approach to healthcare services. Thoughtful aesthetics is an essential component influencing patient perception, emotions and interactions and contribute to their overall experiences thereby supporting or strengthening one's Sense of Coherence and improving wellbeing and ultimately enhance the quality of users' lives.

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