

Aesthetic Adherence in Lifestyle Medicine: An Arts-Informed Translational Framework for Cardiometabolic Prevention and Patient Activation in Medical Settings

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ABSTRACT

Background: Cardiometabolic disease remains a dominant medical and public health challenge. Although clinical guidelines increasingly converge around lifestyle medicine, preventive cardiometabolic care is frequently limited by low adherence, insufficient health literacy, fragmented motivation, and the emotional distance between medical advice and lived daily behavior. Arts and cultural engagement have been associated with health promotion, social connection, stress regulation, patient meaning-making, and potentially relevant biological pathways. However, the medical literature still lacks practical frameworks that translate arts-informed methods into primary care, occupational health, and community prevention without overclaiming efficacy.

Objective: This narrative review proposes Aesthetic Adherence, an arts-informed translational framework designed to improve patient activation, health literacy, and adherence to lifestyle medicine for cardiometabolic prevention. Methods: Evidence from cardiometabolic prevention, health literacy, adherence science, behavior-change theory, social prescribing, arts and health, narrative medicine, patient-clinician communication, and implementation science was narratively integrated.

Results: The proposed ART-ADHERE framework includes eight operational components: Aesthetic attention, Relational trust, Translation of evidence into symbols, Affective self-regulation, Daily micro-rituals, Health-literacy co-creation, Ecological support, and Reflective evaluation. The framework is positioned as an adjunctive clinical and community strategy, not as a substitute for evidence-based medical treatment, nutrition, physical activity, pharmacotherapy, or risk-factor control.

Conclusion: Aesthetic Adherence may help bridge the persistent gap between knowing and doing in cardiometabolic prevention by making lifestyle prescriptions more meaningful, memorable, relational, and behaviorally actionable. Future pragmatic trials should evaluate feasibility, acceptability, equity, adherence, clinical biomarkers, and cost-effectiveness.

KEYWORDS

Lifestyle medicine, Cardiometabolic prevention, Adherence, Health literacy, Arts in health, Social prescribing, Patient activation, Medical humanities, Implementation science.

HIGHLIGHTS

- Cardiometabolic prevention requires more than information: it requires adherence, meaning, motivation, and daily behavioral continuity.
- Arts-informed micro-interventions can translate medical advice into emotionally memorable and culturally adaptable health practices.
- The ART-ADHERE framework is designed as an adjunct to evidence-based medical care, not as an alternative therapy or replacement for clinical treatment.
- The manuscript offers implementation

pathways, outcome measures, ethical safeguards, and a pragmatic research agenda for medical settings.

ABBREVIATIONS

AHA: American Heart Association, ART-ADHERE: Aesthetic Attention, Relational Trust, Translation, Affective Regulation, Daily Micro-Rituals, Health-Literacy Co-Creation, Ecological Support, Reflective Evaluation, BMI: Body mass index, COM-B: Capability, Opportunity, Motivation - Behavior model, HbA1c: Glycated hemoglobin, LE8: Life's



Essential 8, NCD: Noncommunicable disease, RE-AIM: Reach, Effectiveness, Adoption, Implementation, Maintenance, TIDieR: Template for Intervention Description and Replication.

INTRODUCTION: THE CLINICAL PROBLEM OF KNOWING WITHOUT DOING

Cardiometabolic prevention has become one of the decisive fronts of contemporary medical science. Hypertension, cardiovascular disease, diabetes, obesity, sleep insufficiency, physical inactivity, poor diet quality, chronic stress, and loneliness do not operate as isolated conditions. They converge in daily life, where biological vulnerability meets habit, environment, income, culture, time pressure, emotional burden, and unequal access to care. The clinical paradox is clear: medicine has accumulated strong evidence for prevention, but a large proportion of patients find it difficult to convert medical advice into stable, meaningful, and measurable routines. Global reports on hypertension, cardiovascular disease, diabetes, and obesity show that the burden is not only biomedical but behavioral, social, and implementation-related [1-4].

The American Heart Association's Life's Essential 8 offers a useful example of the current preventive paradigm: diet, physical activity, nicotine exposure, sleep, body mass index, blood lipids, blood glucose, and blood pressure are organized as measurable dimensions of cardiovascular health [5]. WHO physical activity guidelines similarly translate evidence into accessible targets for adults, older adults, and people living with chronic conditions [6]. Yet patients rarely fail because the advice is scientifically weak. They often fail because the advice is not metabolized into their identity, emotions, relationships, schedule, home context, and personal narrative. Prevention therefore requires a second translation: from guideline to life.

Aesthetic Adherence is proposed here as that second translation. The term does not refer to making medical care decorative. It refers to the use of arts-informed, sensory, symbolic, narrative, and creative practices to make lifestyle medicine more intelligible, emotionally resonant, socially supported, and behaviorally durable. In this approach, a walking prescription may become a visual route map, a medication plan may become a daily ritual supported by color and story, a dietary change may be redesigned as a family composition, and a blood-pressure goal may be connected to a patient's chosen image of future life. The art is not the treatment itself; it is an adherence architecture that helps evidence become habit.

This manuscript develops a narrative review and translational implementation framework for medical settings. It integrates adherence science, health literacy, behavior-change theory, arts and health research, social prescribing, narrative medicine, patient-clinician communication, and implementation science. Its central argument is deliberately modest and clinically responsible: arts-informed methods should not replace medical diagnosis, pharmacological treatment, risk

stratification, nutrition counseling, physical activity guidance, sleep medicine, or psychological care. They may, however, strengthen the bridge between these evidence-based recommendations and the patient's capacity to live them consistently.

Rationale for an arts-informed approach to cardiometabolic prevention

The literature on long-term therapy adherence has repeatedly shown that chronic care outcomes depend on much more than prescription accuracy. The WHO report on adherence to long-term therapies described adherence as a major determinant of treatment effectiveness and emphasized that chronic disease care requires patient, provider, therapy, condition, and health-system factors to be addressed together [7]. Later taxonomies of adherence clarified that initiation, implementation, and persistence are distinct phases, each requiring different supports [8,9]. A patient may agree with a recommendation but not start it; may start but perform it inconsistently; or may persist for several weeks and then abandon it when stress, work, travel, or discouragement appears.

Lifestyle medicine magnifies this problem because the intervention is often distributed across every day and across multiple domains. Nutrition, exercise, sleep, social connection, self-monitoring, stress regulation, medication routines, and follow-up appointments must become coordinated practices; dietary environments, including exposure to ultra-processed foods, also shape what patients can realistically sustain [10-12]. Health literacy is therefore a core determinant. Nutbeam and Lloyd emphasized that health literacy should be understood as a social determinant of health, not merely as an individual skill [13]. Sorensen and colleagues' integrated model similarly frames health literacy as the ability to access, understand, appraise, and apply health information across healthcare, disease prevention, and health promotion [14]. The challenge is not simply to communicate more information but to co-create meaning that patients can use.

Behavior-change science provides a complementary explanation. The COM-B model and Behavior Change Wheel highlight that behavior emerges from capability, opportunity, and motivation [15]. The Behavior Change Technique Taxonomy offers a language for specifying intervention components, including prompts, self-monitoring, goal setting, feedback, social support, and identity-related strategies [16]. The Theoretical Domains Framework helps identify barriers at the level of knowledge, skills, social influence, emotion, reinforcement, environmental context, and beliefs about consequences [17]. Aesthetic Adherence is compatible with these frameworks because it can be mapped onto established mechanisms rather than presented as an intuitive or unstructured practice.

Three psychological theories are especially relevant. Self-efficacy theory suggests that people change more effectively when they experience mastery, observe models, receive encouragement, and reinterpret bodily and emotional signals

[18]. Self-determination theory emphasizes autonomy, competence, and relatedness as foundations for sustained motivation [19]. The transtheoretical model reminds clinicians that patients move through different states of readiness and should not all receive the same type of intervention at the same moment [20]. Arts-informed micro-interventions may support all three: they can turn small successes into visible symbols, convert medical goals into personally chosen projects, and adapt communication to a patient's motivational stage.

Arts and health evidence provides the final pillar. The WHO scoping review by Fancourt and Finn synthesized a large body of evidence indicating roles for arts engagement in health promotion, prevention, treatment, and management [21]. Social prescribing research has explored how health systems can connect people to community-based nonclinical resources, including arts, cultural, and social activities [22]. Recent systematic and mapping reviews of arts-on-prescription and social prescribing show promising psychosocial outcomes while also calling for stronger evaluation, clearer mechanisms, and more robust economic assessment [23,24]. Aesthetic Adherence responds to that gap by translating arts-informed work into a specifically medical prevention framework with defined components, outcomes, and safeguards.

Emerging biological research also warrants cautious attention. A recent study in *Innovation in Aging* examined arts and cultural engagement, physical activity, and epigenetic ageing clocks in a large cohort, suggesting that arts engagement may be associated with slower biological ageing, while noting methodological limits and the need for further causal research [25]. Such findings should not be overinterpreted as proof that arts engagement prevents cardiometabolic disease. They do, however, strengthen the argument that arts and cultural engagement deserve serious investigation as health-promoting behaviors that may interact with stress, inflammation, social connection, cognition, and lifestyle regularity.

Conceptual definition: what is Aesthetic Adherence?

Aesthetic Adherence is defined as the intentional use of arts-informed, sensory, symbolic, narrative, and creative methods to strengthen the initiation, implementation, and persistence of evidence-based health behaviors and therapies. It is a translational concept: it does not introduce a new disease model, and it does not claim curative efficacy independent of established medical care. Rather, it supports the pathway from clinical recommendation to daily action by working with attention, emotion, memory, identity, social support, and environmental cues.

The word aesthetic is used in its broad sense, referring to perception, form, resonance, and meaning. A clinical instruction can be correct but aesthetically inert: it enters the patient's ear but does not reorganize attention or desire. Narrative transportation and gameful design principles suggest that form, story, feedback, and challenge can influence engagement when used ethically and transparently

[26,27]. Aesthetic design can make the same instruction more visible, embodied, relational, and memorable. A patient may forget a generic statement such as 'reduce sodium intake', yet remember a drawing of a plate divided into colors, a family recipe redesigned with a clinician, or a personal image titled 'my heart in ten years'. The intervention is not superficial; it is a way of changing how information is perceived and enacted.

The term adherence is also used carefully. In modern chronic care, adherence should not be reduced to obedience. A respectful approach recognizes patient autonomy, shared decision-making, cultural diversity, social constraints, and the right of patients to participate in defining feasible goals. The literature on patient-centered communication and shared decision-making shows that outcomes improve when patients are treated as partners rather than passive recipients of instruction [28-30]. Aesthetic Adherence therefore emphasizes co-design rather than persuasion. The patient is not decorated by the clinician's creativity; the patient becomes an author of the preventive plan.

In practical terms, Aesthetic Adherence can occur in brief clinical encounters, group visits, workplace health programs, community settings, and digital follow-up. It may include visual maps, metaphor cards, patient-generated drawings, music-based breathing cues, narrative prompts, creative journaling, photography tasks, culturally meaningful recipes, movement rituals, or museum and community arts referrals. These activities must be proportionate, safe, inclusive, and linked to measurable medical goals. The clinician's question is not 'Is this artistic?' but 'Does this creative element make the evidence easier to understand, remember, initiate, repeat, and sustain?' Chronic disease self-management literature supports the importance of patient capability, shared problem-solving, and ongoing support rather than episodic instruction alone [31].

The ART-ADHERE framework

ART-ADHERE is an eight-component framework. Each component is designed to correspond to an identifiable barrier in lifestyle medicine and to an implementation function. The framework is summarized in Table 1 and then developed in detail.

Aesthetic attention

Attention is the gateway to adherence. Preventive medicine often competes with digital overload, work demands, family responsibilities, financial anxiety, pain, fatigue, and the invisibility of future risk. Cardiometabolic risk is frequently silent: blood pressure may be high without symptoms, insulin resistance may progress quietly, and atherogenic processes may accumulate for years. Aesthetic attention means transforming abstract risk into a perceptible form that can be noticed without inducing shame or fatalism. A risk score can become a visual trajectory. A sleep recommendation can become a color-coded weekly rhythm. A walking plan can become a map of meaningful places rather than a number of minutes.

The mechanism is not merely motivational. Pictures, visual aids, and multimodal materials can improve comprehension, recall, and adherence, especially when they are culturally appropriate and paired with clear verbal explanation [32]. Dual-coding and multimedia learning theories suggest that information processed through verbal and visual channels can be more memorable when cognitive load is managed effectively [33,34]. In clinical practice, this supports the use of simple, patient-generated visuals rather than complex educational posters. The patient should not be overwhelmed with images; the goal is to create one memorable anchor that captures the next behavior.

Relational trust

Adherence is relational before it is technical. The patient's willingness to discuss nonadherence, ambivalence, embarrassment, financial barriers, food practices, fear, or previous failure depends on trust. Patient-clinician communication influences health outcomes through understanding, trust, therapeutic alliance, patient agency, and self-management support [28]. Narrative medicine further reminds clinicians that illness is lived as a story, not only as a set of measurable variables [35]. An arts-informed consultation can open a safer route to that story. Asking a patient to choose an image that represents their current energy, or to describe the sound of their stress, may reveal barriers that standard questioning misses.

Relational trust does not require lengthy sessions. It requires a change in posture. A three-minute reflective prompt can humanize a fifteen-minute consultation if it is focused and clinically connected. For example, after explaining elevated HbA1c, a clinician might ask: 'What image best describes your relationship with food this month?' The answer may reveal grief, fatigue, family patterns, work shifts, loneliness, or shame. These are not distractions from diabetes care; they are often the conditions under which diabetes care succeeds or fails.

Translation of evidence into symbols

Guidelines are written in the language of populations, probabilities, and evidence hierarchies. Patients live in the language of meals, stairs, tired mornings, family celebrations, pain, hope, memory, and fear. Translation of evidence into symbols means converting a medical recommendation into a meaningful sign that can guide action. The symbol may be visual, verbal, musical, spatial, or ritual. A heart-health plan might be symbolized as a bridge, a garden, a compass, or a score. The symbol is valuable only if it preserves scientific meaning and supports behavior.

This component must be governed by accuracy. Symbolic translation should never distort the medical message. A metaphor that suggests hypertension can be 'painted away' would be unethical. A metaphor that explains vascular pressure as a system requiring medication, movement, nutrition, sleep, and monitoring may be clinically useful. The clinician or health educator should verify patient understanding with teach-back

methods and document the agreed behavior. Health-literate organizations are expected to make information accessible, navigable, and actionable [36]. Aesthetic translation is one way to meet that obligation.

Affective self-regulation

Cardiometabolic prevention is often discussed as if the patient were a rational planner with stable motivation. In reality, lifestyle behavior is deeply affected by stress, affect, fatigue, reward, and emotional coping. Chronic stress and allostatic load have been linked to biological pathways relevant to cardiometabolic risk, including neuroendocrine activation, sleep disruption, inflammatory processes, blood pressure, eating behavior, and insulin resistance [37-39]. Aesthetic self-regulation uses simple creative practices to help patients notice and modulate affect before it becomes automatic behavior.

Examples include a two-minute breathing exercise paired with music before evening eating, a drawing-based hunger and emotion log, a photography prompt for daily movement, a mindfulness-informed pause, or a short writing practice before medication [40,41]. These practices should be small enough to be repeated and should not be presented as psychotherapy unless delivered by qualified professionals. Their purpose in cardiometabolic prevention is to interrupt the chain from stress to unhealthy coping, to create a pause, and to support the patient's capacity to choose the next evidence-based action.

Daily micro-rituals

Adherence is built in repetitions, not in declarations. Daily micro-rituals are small, stable, meaningful actions attached to existing routines. They may last one to five minutes and function as cues, transitions, or identity markers. A patient with hypertension might place a blood-pressure diary beside a morning cup and mark each reading with a color. A patient increasing activity might draw one line on a weekly walking map after each walk. A patient improving sleep might close the day by writing one sentence under the same phrase: 'I protect tomorrow by ending today'. The ritual is aesthetic because it has form; it is medical because it is linked to risk reduction.

Micro-rituals can be mapped onto behavior-change techniques such as prompts and cues, self-monitoring, action planning, habit formation, feedback, and identity reinforcement [16]. They also support self-efficacy because they allow patients to experience mastery at a small scale [18]. The aim is not to romanticize habit but to reduce friction. Many lifestyle plans fail because they are too large, too abstract, or too dependent on motivation. A micro-ritual is deliberately modest: one action, one cue, one record, one emotional meaning, repeated long enough to become easier than avoidance.

Health-literacy co-creation

Health literacy improves when patients are not merely given information but participate in making it usable. Co-creation

can include rewriting a care plan in the patient's own words, drawing a medication schedule, building a plate model using familiar foods, designing a movement plan around cultural preferences, or developing a family script for supporting dietary change. This approach aligns with health literacy models that emphasize applying information in specific contexts rather than simply understanding it in the abstract [13,14].

Co-creation also protects equity. Standard lifestyle recommendations can unintentionally assume time, money, safe neighborhoods, stable housing, cooking facilities, social support, and digital access. When patients co-create, constraints become visible. A clinician may discover that the patient cannot walk outdoors safely, cannot afford recommended foods, works night shifts, cares for a dependent relative, or has no private space for exercise. Aesthetic methods do not solve structural inequity, but they can help prevent clinicians from mistaking structural barriers for lack of willpower.

Ecological support

Lifestyle adherence is rarely an individual achievement alone. Family norms, workplaces, neighborhoods, food environments, transport, loneliness, culture, and social networks shape behavior. Social connection is itself relevant to health: meta-analytic evidence has linked social relationships, loneliness, and mortality risk [42,43]. Social prescribing recognizes that health systems may need to connect patients with community assets, including walking groups, cooking programs, cultural organizations, libraries, choirs, dance, creative workshops, and peer-support initiatives [22-24].

In the ART-ADHERE framework, ecological support means designing the care plan beyond the clinic door. A patient who is told to walk may be referred to a safe community walking group; a patient who eats alone may be linked to a social cooking program; a patient with low mood and diabetes risk may join a creative group that also supports routine and belonging. These referrals should be locally mapped, quality-assured, inclusive, and documented. Social prescribing without navigation can become another burden; ecological support requires a link worker, community health worker, nurse, or trained coordinator whenever possible.

Reflective evaluation

The final component is reflective evaluation. Arts-informed work can be appealing but must be evaluated with the same seriousness as other complex interventions. Reflection is not a substitute for measurement. The patient may reflect on meaning, barriers, and identity; the clinical team must measure adherence, acceptability, equity, risk factors, and unintended consequences. Implementation science provides frameworks such as RE-AIM, implementation outcomes, process evaluation, and complex intervention guidance to assess reach, adoption, fidelity, maintenance, acceptability, feasibility, appropriateness, and sustainability [44-47].

Reflective evaluation should include both patient-reported and clinical outcomes. For cardiometabolic prevention, feasible measures may include blood pressure, HbA1c, fasting glucose, lipids, BMI or waist circumference, physical activity, sleep duration, smoking status, medication adherence, health literacy, patient activation, quality of life, perceived stress, loneliness, and appointment attendance. The framework should be treated as a hypothesis-generating and implementation-ready model awaiting pragmatic trial evaluation, not as a proven clinical intervention.

Clinical implementation pathway

Aesthetic Adherence can be implemented in a stepped pathway. Step 1 is risk identification using standard clinical practice: blood pressure measurement, cardiometabolic risk assessment, diabetes screening when indicated, lipid evaluation, smoking status, medication review, body composition, sleep, physical activity, and psychosocial context. Step 2 is the identification of the adherence barrier: knowledge, confidence, emotional overload, environmental constraint, ambivalence, social isolation, cultural mismatch, treatment burden, or previous failure. Step 3 is selection of the smallest arts-informed tool that fits the barrier. Step 4 is co-design of a measurable action. Step 5 is follow-up and adjustment.

The pathway is intentionally brief. A primary care clinician should not be expected to become an art therapist, psychologist, or cultural coordinator. The clinician's role is to identify when a creative translation might improve understanding or adherence, while more intensive activities can be delegated to trained educators, nurses, health coaches, link workers, community partners, or certified arts-in-health professionals. Clear boundaries protect patients and clinicians. When trauma, severe depression, eating disorders, cognitive impairment, or complex psychosocial risk emerges, referral to appropriate medical or mental health services is required.

A basic consultation script may include four questions: What matters most to you about improving your health now? What part of the recommendation feels hardest to live this week? What image, word, song, object, or place could remind you of the next small action? How will we know in seven days that the action happened? This script converts medical instruction into meaning, anticipates barriers, selects a cue, and defines a measurable follow-up. It is simple enough for routine care yet deep enough to change the quality of the encounter.

Group visits offer another pathway. Patients with hypertension, prediabetes, obesity, or metabolic syndrome may attend structured sessions combining medical education, peer support, and creative adherence design. One session might focus on blood pressure as rhythm, another on the plate as composition, another on sleep as architecture, another on walking as a map of dignity, and another on medication as a pact with one's future. Each session must include evidence-based content, practical action planning, and monitoring. The aesthetic component should enhance clarity and commitment

rather than replace clinical education.

Application to key cardiometabolic behaviors

Dietary change is one of the most difficult areas of preventive care because food is biological, emotional, cultural, economic, and relational. Evidence from dietary trials and patterns such as DASH, sodium reduction, Mediterranean approaches, diabetes prevention programs, and intensive lifestyle interventions supports the cardiometabolic relevance of diet quality and behavioral change [48-52]. Yet patients do not eat nutrients; they eat memories, family rituals, convenience, identity, comfort, price, and availability. Aesthetic Adherence can support nutrition by treating the plate as a composition: color, proportion, texture, rhythm, and repetition. The aim is not culinary elitism but practical redesign of familiar meals.

Physical activity can also benefit from aesthetic reframing. WHO recommendations define minutes and intensity [6], but many patients experience exercise as punishment, exposure, pain, boredom, or evidence of failure. Arts-informed movement can begin with music, rhythm, dance, photography walks, museum walking, nature sketching, or meaningful route design. The medical target remains activity, sedentary-time reduction, strength, function, and cardiometabolic benefit. The aesthetic element helps the patient find a form of movement that feels dignified and repeatable.

Sleep is increasingly recognized as part of cardiovascular health within Life's Essential 8 [5], and sleep duration and quality have been linked to cardiometabolic outcomes in epidemiological and scientific statement literature [53,54]. Sleep recommendations may be converted into an evening ritual supported by light, sound, writing, and visual closure. For example, a patient may create a 'closing score' with three repeated actions: dim the room, write tomorrow's first task, and listen to a three-minute calming track. This does not treat sleep apnea, insomnia disorder, restless legs syndrome, or shift-work pathology; those require appropriate medical evaluation. But it can improve regularity and help patients understand sleep as an active preventive behavior.

Medication adherence requires special caution. Aesthetic cues can support medication routines, but they must never introduce confusion, unsafe storage, or changes in prescribed use. Color-coded medication charts, patient-drawn schedules, or symbolic commitment cards may be useful when verified by teach-back and reconciled with the medication list. The patient should be able to explain what each medication is for, when it is taken, what side effects require attention, and what to do if a dose is missed. Visual design must serve safety.

Patient activation, dignity, and the ethics of motivation

Aesthetic Adherence is rooted in dignity. Many patients living with cardiometabolic risk have experienced blame, stigma, or repeated failure. Obesity, diabetes, hypertension, and smoking are often moralized in ways that damage trust and reduce

help-seeking. Medical advice can become another source of shame when it is delivered without context. An arts-informed approach should never be used to beautify blame. Its ethical function is to restore agency without denying structural constraints.

Motivation must be distinguished from manipulation. Creative practices can be emotionally powerful, and therefore require safeguards. Patients should be invited, not pressured. Cultural symbols should be chosen by the patient rather than imposed by the clinician. Religious, political, family, or traumatic material should be handled with sensitivity. Group activities should protect privacy. Digital tools should protect data. Activities should be accessible to people with disabilities, low literacy, language differences, neurodiversity, and limited resources.

The ethics of motivation also requires truthfulness. It is inappropriate to claim that art will lower HbA1c, reverse atherosclerosis, replace antihypertensive medication, or cure obesity. It is appropriate to say that creative tools may help some people understand, remember, initiate, and sustain evidence-based behaviors; that arts and social engagement may support wellbeing and social connection; and that these approaches should be evaluated rigorously. Honest modesty is not a weakness. It is the condition for credibility in medical science.

Evaluation strategy and proposed outcome measures

The evaluation of ART-ADHERE should be staged. Early studies should assess feasibility, acceptability, fidelity, and safety. Patients and clinicians should be asked whether the tools are understandable, respectful, culturally appropriate, practical, and useful. Implementation outcomes such as acceptability, adoption, appropriateness, feasibility, fidelity, cost, penetration, and sustainability can be measured using established implementation science constructs [37]. Process evaluation should examine how context, dose, reach, and mechanisms interact [38].

Subsequent pragmatic trials should test whether ART-ADHERE improves adherence and clinical outcomes compared with usual education or standard lifestyle counseling. Outcomes should be selected according to the target population. In prediabetes, HbA1c, weight, waist circumference, physical activity, diet quality, and diabetes incidence may be relevant. In hypertension, systolic and diastolic blood pressure, home monitoring adherence, sodium intake, physical activity, medication adherence, and appointment attendance may be relevant. In obesity prevention, anthropometric, behavioral, psychological, and quality-of-life outcomes should be interpreted carefully and without stigma.

Research reporting should follow established guidance. The TIDieR checklist can improve description and replication of complex interventions [55]. SPIRIT can support trial protocol quality [56]. CONSORT and its extensions can support reporting of randomized and nonpharmacological trials [57,58]. For arts-informed interventions, additional details are

essential: facilitator training, artistic modality, dose, patient choice, cultural adaptation, theoretical mechanisms, safety procedures, fidelity monitoring, and whether the intervention is delivered individually, in groups, or through community partners.

Economic evaluation is especially important. Health systems will not adopt creative health approaches at scale merely because they are attractive. They require evidence of value, feasibility, workforce implications, and equity. Costs include training, staff time, materials, community partnerships, link workers, digital tools, supervision, and evaluation. Benefits may include improved adherence, reduced missed appointments, better risk-factor control, enhanced patient experience, reduced loneliness, and potentially reduced downstream utilization. These outcomes require careful measurement rather than rhetorical promise.

Proposed ART-ADHERE intervention prototype

A practical prototype could be tested in adults with elevated cardiometabolic risk in primary care or occupational health. The intervention would last twelve weeks and would be delivered as an adjunct to usual care. It would include one baseline clinical visit, four group or individual arts-informed adherence sessions, weekly micro-ritual tracking, and two brief follow-up contacts. The intervention would not prescribe a uniform artistic activity. Instead, it would offer a structured menu: visual mapping, narrative prompts, music-supported breathing, movement design, food composition, medication cueing, and social prescription referral.

Session 1 would focus on understanding risk without fear. Patients would create a simple 'health map' linking clinical markers to daily behaviors and personal values. Session 2 would focus on one behavior: nutrition, movement, sleep, medication, or monitoring. Patients would design a micro-ritual connected to that behavior. Session 3 would address barriers and emotional triggers using reflective writing or imagery. Session 4 would build ecological support by identifying a family ally, peer group, community asset, or environmental change. Follow-up contacts would review adherence data and adjust the plan.

The intervention should be manualized but flexible. Manualization protects fidelity, training, and replication. Flexibility protects patient autonomy and cultural fit. Every session should include: medical anchor, patient narrative, creative translation, behavior-change technique, action plan, safety check, and documentation. Facilitators should be trained to avoid clinical overreach, respect privacy, recognize distress, and refer appropriately. The language should be practical rather than mystical. Patients should leave each encounter knowing exactly what to do next and why it matters medically.

Integration with medical education and professional development

Medical education increasingly recognizes that scientific competence and humanistic competence should not be

separated. Clinicians need skills in communication, uncertainty, empathy, cultural humility, behavior change, teamwork, and self-reflection. Aesthetic Adherence can be used not only with patients but also in professional development. Clinicians can learn to translate complex information into accessible forms, listen to patient stories, recognize stigma, and design behaviorally specific care plans. This is a medical humanities contribution with direct preventive relevance.

Training should be competency-based. Clinicians do not need to become artists. They need to know when and how to use a visual, narrative, or sensory cue safely; how to ask a reflective question; how to document a co-created plan; how to evaluate understanding; and how to refer to community resources. Training could include simulated consultations, role-play, teach-back practice, micro-ritual design, and review of cultural safety cases. Evaluation should assess not only satisfaction but also communication quality, patient understanding, and plan specificity.

A further benefit is clinician wellbeing. Burnout and moral distress can reduce the relational quality of care. While this manuscript is focused on patient adherence, arts-informed reflective practice may help clinicians reconnect with purpose, narrative, and team culture. Such activities should not be used to compensate for unsafe workloads or organizational neglect. They may, however, complement structural efforts to create healthier medical workplaces.

Equity, cultural adaptation, and accessibility

Equity must be designed into ART-ADHERE from the beginning. Creative health interventions can reproduce privilege if they rely on museum access, paid workshops, digital devices, transport, free time, or culturally narrow definitions of art. The framework uses a broad definition of aesthetic practice: drawing with a pencil, arranging a plate, walking with rhythm, choosing a song, telling a story, mapping a neighborhood, photographing a safe route, or creating a family reminder. Low-cost and culturally familiar practices should be prioritized.

Cultural adaptation requires humility. Food symbolism, body norms, music, family structures, gender roles, illness beliefs, and trust in medicine vary across communities. The patient should choose the metaphor, not the institution. Community co-design is preferable when programs are scaled. Local artists, patient advocates, faith communities, libraries, schools, senior centers, and public health teams may help create culturally relevant materials. However, community participation should be compensated and respected, not extracted as unpaid decoration.

Accessibility also requires attention to disability, neurodiversity, sensory impairment, cognitive impairment, and language. Visual tools should have plain-language alternatives. Music or sound-based tools should have nonauditory alternatives. Written reflection should not be required for patients with low literacy or language barriers. Movement-based arts should be adapted for mobility limitations and chronic pain. The

framework should expand options, not create new exclusions.

Risk management and clinical boundaries

Because Aesthetic Adherence operates at the intersection of emotion, behavior, and health, risk management is essential. First, clinicians should screen for medical contraindications before recommending physical activity changes, particularly in high-risk patients. Second, medication plans should be reviewed by qualified professionals. Third, emotional activities should be light-touch unless delivered by trained mental health clinicians. Fourth, patient-generated content should be private unless explicit consent is given. Fifth, group programs should establish confidentiality rules.

The framework should avoid diagnostic ambiguity. Art-based reflection is not a diagnostic test for depression, trauma, eating disorders, cognitive impairment, or social risk. It may reveal concerns that require assessment, but it does not replace validated screening tools or clinical judgment. Similarly, social prescribing is not a substitute for medical treatment. It can complement care when social isolation, inactivity, low confidence, or lack of meaningful routine undermines prevention.

A final boundary concerns evidence claims. The arts and health literature is promising but heterogeneous. The quality of evidence varies by modality, population, comparator, outcome, and setting. Some social prescribing studies report positive outcomes, while systematic critiques note limitations in causal inference, economic evaluation, and standardization [22-24]. ART-ADHERE should therefore be introduced as an evidence-informed framework requiring evaluation, not as an established standard of care.

DISCUSSION

The main contribution of this manuscript is the formulation of adherence as an aesthetic, relational, and translational challenge within lifestyle medicine. Cardiometabolic prevention is often framed as a problem of knowledge deficits or willpower. This framing is incomplete. Patients may understand the medical facts and still be unable to act because the behavior lacks emotional meaning, social support, environmental feasibility, or identity coherence. Aesthetic Adherence addresses this implementation gap by designing the pathway from evidence to habit.

The proposal is not anti-biomedical. On the contrary, it assumes the validity of biomedical prevention and seeks to make it more livable. Blood pressure, HbA1c, lipids, sleep, physical activity, tobacco exposure, body composition, and medication adherence remain central. The arts-informed element enters where conventional education often becomes too abstract. By converting medical goals into images, narratives, rituals, social practices, and patient-authored symbols, the framework may strengthen attention, memory, motivation, self-efficacy, and persistence.

Aesthetic Adherence also offers a response to the

fragmentation of modern care. Patients with cardiometabolic risk often receive separate advice about diet, exercise, medication, sleep, stress, and follow-up. The result can be cognitive overload. Aesthetic design can integrate these instructions into a coherent personal plan. For example, a patient may choose the symbol of a 'daily score' with four notes: morning medication, fifteen-minute walk, vegetable-first meal, and evening sleep cue. Such integration does not simplify the science; it simplifies the patient's next action.

The model is particularly relevant for settings where clinicians are asked to deliver lifestyle advice but lack time, tools, and confidence. A short creative prompt, a visual plan, a ritualized action, or a referral to a community cultural asset may make the consultation more actionable. However, implementation requires training, documentation, referral pathways, and evaluation. Without these, Aesthetic Adherence could become vague, uneven, or dependent on charismatic individuals rather than replicable practice.

The model also invites a broader definition of medical innovation. Advances in medical sciences are often associated with molecular discoveries, devices, drugs, and digital technologies. These are indispensable. Yet the future of prevention also depends on innovations in attention, meaning, trust, adherence, community, and daily behavior. A scientifically serious medical system should be capable of evaluating both pharmacological precision and human translation. The heart is biological, but prevention is lived.

LIMITATIONS

This manuscript is a narrative review and conceptual framework, not a systematic review, meta-analysis, clinical trial, or guideline. It does not provide pooled effect estimates. It does not claim that ART-ADHERE has demonstrated efficacy for reducing cardiometabolic events. The framework is grounded in convergent evidence from multiple fields, but direct evidence for the full model remains to be generated. The heterogeneity of arts and health interventions also limits generalization.

A second limitation is the risk of implementation variability. Different clinicians, artists, health coaches, and community organizations may interpret arts-informed work differently. Manualization, training, fidelity assessment, and clear clinical boundaries are required. A third limitation concerns equity. If programs are not designed for low-resource settings, they may benefit already advantaged patients. Future research should oversample underserved populations and evaluate differential effects by socioeconomic status, language, disability, age, gender, and cultural context.

A fourth limitation concerns measurement. Some outcomes, such as meaning, motivation, and identity, are clinically important but difficult to measure. Conversely, medical outcomes such as blood pressure or HbA1c may require longer follow-up and adequate sample sizes. Mixed-methods designs are therefore recommended. Qualitative research can clarify

mechanisms and acceptability, while quantitative research can test adherence, biomarkers, utilization, and cost.

Future research agenda

Future research should proceed in five stages. First, qualitative co-design studies should explore how patients from diverse backgrounds understand creative adherence tools and which modalities are acceptable. Second, feasibility studies should test recruitment, retention, intervention dose, facilitator training, and safety. Third, pilot randomized trials should compare ART-ADHERE plus usual care with usual care or standard education. Fourth, pragmatic multicenter trials should evaluate clinical and implementation outcomes. Fifth, economic evaluations should estimate cost-effectiveness and budget impact, while social determinants of health should be explicitly modeled so that the intervention does not mistake poverty, isolation, or unsafe environments for low motivation [56,57].

Mechanism studies are also needed. Potential mediators include health literacy, self-efficacy, autonomous motivation, patient activation, perceived stress, loneliness, habit strength, treatment burden, and patient-clinician trust. Biological outcomes may include blood pressure, glycemic markers, lipids, inflammatory markers, sleep metrics, and physical activity. Digital tools and wearables may support measurement, but they must be used with privacy safeguards and without excluding patients who lack access.

The research agenda should also compare modalities. Visual mapping, narrative writing, music-supported regulation, movement-based arts, culinary redesign, museum-based programs, and social prescribing may not work through the same mechanisms. Some may be better suited to health literacy; others to social connection; others to emotion regulation or activity. Precision prevention may eventually include matching the arts-informed tool to the patient's barrier profile.

CONCLUSION

Cardiometabolic prevention is one of the greatest tests of modern medicine because it requires evidence to become daily life. Guidelines can define what should be done, but adherence determines whether the recommendation survives contact with reality. Aesthetic Adherence proposes that arts-informed, sensory, symbolic, narrative, and creative methods can help patients translate lifestyle medicine into meaningful, memorable, and repeatable behaviors.

The ART-ADHERE framework offers a structured way to operationalize this idea in medical settings while preserving scientific caution. It is adjunctive, not alternative; practical, not ornamental; patient-authored, not imposed; and measurable, not merely inspirational. Its promise lies in its capacity to humanize prevention without weakening rigor. Future research should test whether this promise can be converted into improved adherence, better cardiometabolic risk control, greater equity, and more humane clinical encounters.

Medicine advances when it learns not only how to treat disease but also how to help people live the knowledge that prevents disease. In that task, art may become a disciplined ally of science: not a substitute for evidence, but a bridge between evidence and action.

Practical outcome dashboard for future studies

Table 2 proposes a pragmatic outcome dashboard. It is not intended to force every study to measure every domain. Rather, it offers a menu aligned with cardiometabolic prevention, implementation science, and patient-centered evaluation.

In conclusion, ASCE exosome therapy represents a breakthrough approach for alopecia totalis with dual benefits of stimulating hair regrowth and repigmentation. It offers a safe and tolerable alternative for patients unresponsive to conventional therapies.

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