Entering aesthetic concept into the field of patient education: A protocol for an interdisciplinary study to develop a conceptual model

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Abstract:

BACKGROUND: According to the significance of patient education, new conceptual models are constantly required to promote pedagogical competences of health educators. In the field of educational sciences, aesthetic-based education is known as one of the effective types of curriculum planning which has shown many positive pedagogical outcomes. Thus, the researcher's assumption is that, the concept of "aesthetic education" could be transposed from educational sciences to health sciences in order to develop a new formula in the patient education process. The purpose of this study is to explain methods in detail, to develop an aesthetic-based patient education conceptual model through the concept derivation strategy.

MATERIALS AND METHODS: 1. Scoping review and inductive data analysis using Walker and Avant's approach to achieve conceptual categories of the concept "aesthetic education." 2. Semi-structured qualitative interviews and directed content analysis to extract the main categories of the concept "aesthetics in the patient education process." 3. Drawing an aesthetic-based patient education conceptual model by allocating new conceptual components to each general step of the patient education process, including needs assessment, goal setting, implementation, and evaluation. 4. Modified Delphi technique to validate the final conceptual model.

RESULTS: The first phase will represent the main categories and subcategories of attributes, antecedents, and consequences of "aesthetic education." The second phase will show the main categories and subcategories of attributes, antecedents, and consequences of the new concept named "aesthetic-based patient education." In the third phase, it is expected to achieve a new conceptual model representing the components of aesthetics in the general steps of the patient education process. The fourth phase will propose the final validated conceptual model.

CONCLUSIONS: The provided study protocol can be a road map to developing derivative models through concept derivation strategy in health sciences.

Keywords:

Concept formation, aesthetics, interdisciplinary studies, patient education

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Background

Patient education has been associated with numerous positive effects on the health outcomes of community members.[1] Poor information exchange between the patient and health education specialists, weakness in appropriate understanding and recall of information by patients, and failure to adjust educational content to the reading level of each patient have been some weaknesses in patient education.[2] Furthermore, despite emphasizing the necessity of patient-oriented education, the healthcare's paternalistic look at patients and poor participatory decision-making are among the thought-provoking gaps in this field.[3,4]

Considering the mentioned challenges deeply, we found out that the new theoretical and conceptual models on patient education are still necessary to promote the healthcare team's educational competency since conceptual models provide instructions and manuals to improve various facets of clinical practice.[5] In educational sciences, "aesthetic-based education" is known as an effective educational method.[6–9] Recent studies have also acknowledged that using aesthetic components in education results in the centrality of the learner, promoting his/her educational competencies.[10,11] Researchers believe that applying aesthetic characteristics in teaching creates aesthetic pleasure and, subsequently, brings aesthetic satisfaction.[12,13] Applying aesthetics in teaching provides aesthetic experiences in educators and learners by having concurrent engagement of various learning levels, including recognition, emotions, and skills. This would ultimately promote teaching skills and learning quality.[13-15] In the needs assessment phase of aesthetic-based education, attention to individual differences, including learners' tastes in perceiving and understanding contents, learning styles, interestedness, learners' attention to capabilities and individual skills, culture, gender, age, literacy level, subculture, and the selective use of the five senses is of great importance and sometimes, it is regarded as a critical and fundamental principle.[15–19] The critical principle in the aesthetics paradigm-based education is collaborative meaning-making by establishing an empathetic relationship between educators and learners[20]; hence, the addressee's active engagement in the educational content and meaning-making via active participation is observed.[21–23] The learner also connects the content to his/her daily life and unique personal experiences.[15,21,24] Accordingly, the derivation of aesthetics in education from educational sciences and entering this concept into patient education can help eliminate the existing challenges. Concept derivation mainly focuses on comparing the phenomena among two fields. Following thoughtful searching in one field, the parent concept is defined, and new concepts are extracted to help develop a new field. The definition obtained from the concept derivation makes the derived concepts connected to the new field; therefore, a really innovative way is developed to consider the phenomena in the new field.[25] Since the precise concept derivation steps in developing models have been less addressed in studies on health sciences and given the importance of applying aesthetics in patient education, the present study aims to provide the precise work implementation steps to reach the conceptual model of "aesthetic-based patient education" [Figure 1].

Materials and Methods

Study design and setting
The present study used a mixed method in four main phases designed based on the following goals:
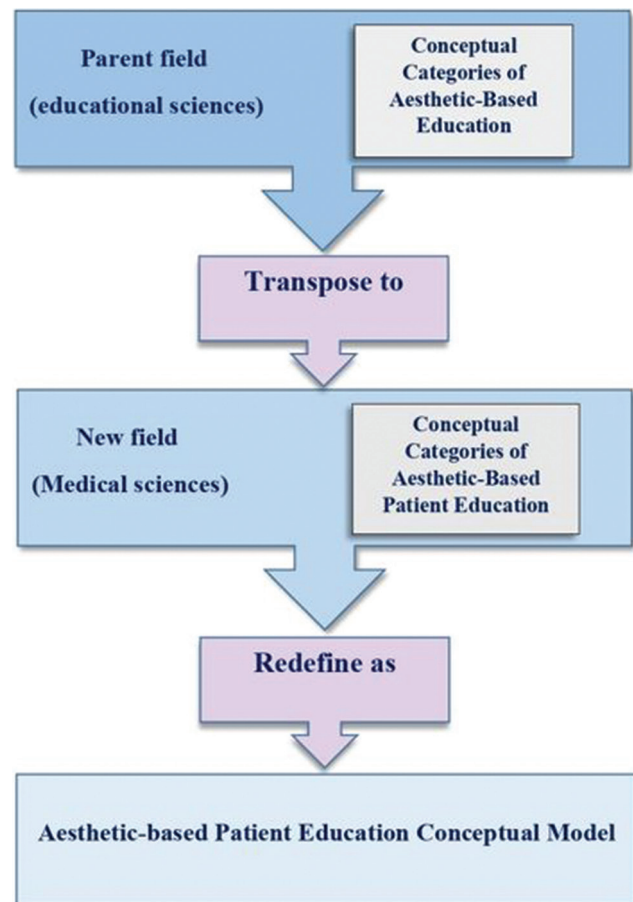

Figure 1: Process of concept derivation strategy to develop aesthetic-based patient education

1. *Extracting the conceptual categories of "Aesthetic-based Education"*
2. *Transposing and Redefining "Aesthetic-based Education" as "Aesthetic-based Patient Education"*
3. *Drawing the conceptual model of "aesthetic-based patient education"*
4. *Validating the conceptual model of "aesthetic-based patient education"*

The concept analysis and derivation strategies proposed in Walker and Avant's (2018) approach and also the model design and the modified Delphi techniques will be used to achieve the aforementioned goals [Table 1].

The first phase: Theoretical phase
- *Goal: Extracting the conceptual categories of "Aesthetic-based Education"*

Since aesthetic-based education has been addressed in various educational fields from different dimensions, and there is no specific theoretical definition and identical characteristics for this concept, all studies in this field should first be reviewed using an extended and quick scoping review to obtain the maximum information

Table 1: Study phases, objectives, and methods

Study Phases	Objectives	Method and Approach
First phase (theoretical phase)	*Extracting the conceptual categories of "Aesthetic-based Education"*	Step 1: literature review using the scoping review method
		Step 2: Data analysis using Walker and Avant's approach
Second phase (qualitative phase)	*Transposing and Redefining "Aesthetic-based Education" as "Aesthetic-based Patient Education"*	Step 3: Semi-structured qualitative interviews
		Step 4: Directed qualitative content analysis
Third phase (model design phase)	*Drawing the conceptual model of "aesthetic-based patient education"*	Step 5: Drawing conceptual model using general steps of the patient education process
Fourth phase (validation phase)	*Validating the conceptual model of "aesthetic-based patient education"*	Step 6: Modified Delphi technique using the qualitative–quantitative method

existing in this field. After reviewing the literature, an inductive data analysis using Walker and Avant's approach can extract the main categories of characteristics, antecedents, and consequences for the concept.

Step 1: Literature Review Using Scoping Review Method
The literature review using the scoping review method will be performed using Arskey and O'Malley's (2005) approach to achieve the maximum number of texts in four general steps, including identification, screening, precise investigation, and analysis, concerning aesthetics-based education [Figure 2]. The scoping review studies are usually used to identify different types of evidence existing in a specific field, clarify key concepts or definitions in relevant literature in a specific field, and determine the main characteristics or factors associated with a specific concept.[26,27] The present study aimed to review studies, besides focusing on a specific method, content, or group, have addressed the pure components of aesthetics in education.

Inclusion criteria
- Texts published from 1980 to 2022 due to the prevalence of this concept at this interval;
- Qualitative, quantitative, and mixed-method studies containing at least one of the components in the mentioned search strategy concerning the article's title, keyword, or abstract;
- Texts relevant to the research question;
- Texts published in English or Persian;
- Scientific articles published in peer-reviewed journals;
- Original books regarding the concerned concepts; and
- Access to the full texts.

Search databases
- Since the main objective of this study will be to detect the components of aesthetics in education, education databases will be Medline (PubMed), Scopus, ProQuest (ERIC), Web of Science, JSTOR, PsyclNFO (Ovid), and Wiley.

Keywords and search strategy
First, according to a comprehensive review of the literature, the words repeatedly used in articles will be
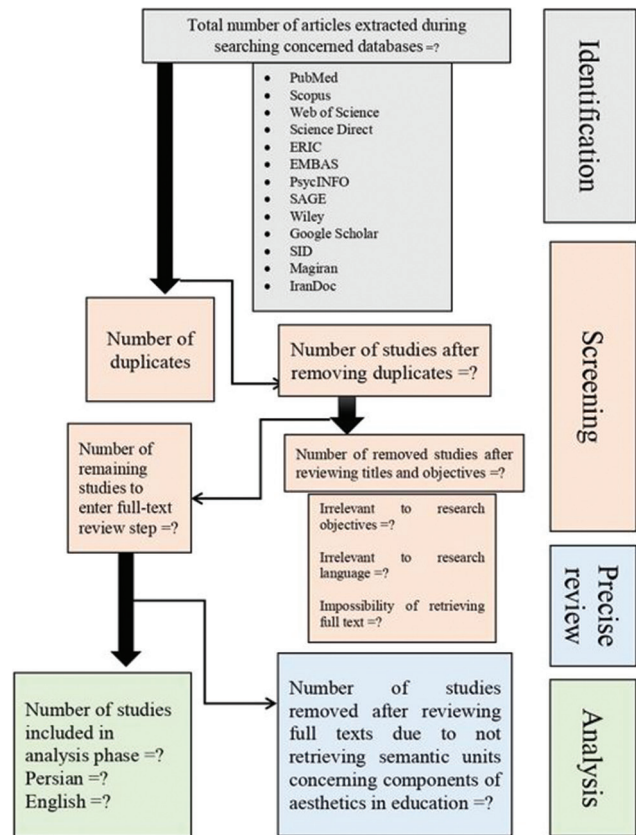

Figure 2: General framework of literature review

extracted as keywords. An example of a search line in the PubMed database is as follows:

("educat*" [Title/Abstract] OR "teach*" [Title/Abstract]), AND ("esthetic*" [Title/Abstract] OR "aesthetic*" [Title/Abstract])

Validity of theoretical phase
The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) extension for scoping reviews (PRISMA-ScR) version 2018[28] will be used.

Step 2: Inductive Data Analysis Using Walker and Avant's Approach
Content analysis is a method to determine the decisive characteristics of a specific concept. It mainly aims to

clarify vague concepts and provide a precise operational definition reflecting the theoretical basis.[25] In this study, the following steps will be implemented to analyze aesthetics in education:

1. Reviewing the literature profoundly and precisely by each member of the research team;
2. Highlighting the sections related to the research goal and extracting semantic units;
3. Entering semantic units into separate tables and citing the references;
4. Extracting primary codes;
5. Reinvestigating and matching the codes with the text carefully;
6. Holding meetings among the research team to validate, match, and integrate the extracted codes by each member;
7. Integrating the primary codes, subcategories, and then the main categories based on the present similarities and differences;
8. Extracting and categorizing the antecedents, consequences, attributes, and theoretical definition of aesthetics in education; and
9. Reviewing codes and categories by professor experts in educational sciences and philosophy of education to observe ethical principles in research and avoid bias.

Second phase: Qualitative phase

- *Goal: Transposing and Redefining "Aesthetic-based Education" as "Aesthetic-based Patient Education"*

Step 3: Semi-structured Qualitative Interviews

In order to transfer a concept from one field to another, it is necessary to consider all aspects deeply in relation to the new concept. Accordingly, based on the findings of the previous step, questions will be designed to conduct semi-structured qualitative interviews with experts and beneficiaries in the field of patient education. This phase will be implemented as follows:

1. **Choosing a proper sampling strategy:** The purposive sampling method will be used because the participants should be willing to take part in in-depth interviews to talk about their knowledge and experiences in the research topic so that maximum data saturation would be reached. Accordingly, the following groups will be included in the study:

   Group 1): Health education and patient education service providers in medical centers;
   Group 2): Faculty members (professors and experts) in the fields of health education and patient education; and
   Group 3): Patient education service receivers (patients and their families).

2. **Preparing an interview guide regarding interview questions:** In the present study, the interview questions focused on the main categories extracted in the previous step (text review).

3. **Conducting and transcribing interviews:** The interview sessions will be held using the interview guide compiled in the previous step, and the participants will be encouraged to talk freely about the subject. After each session, the whole interview is precisely transcribed verbatim. The interviews aimed to detect information, emotions, perceptions, and thoughts about aesthetics in the patient education process.

4. **Making decisions about data reliability and validity:** Lincoln and Guba (1985) proposed four criterias including credibility, dependability, confirmability, and transferability to assess the accuracy of the qualitative data.[29]

Step 4: Directed Qualitative Content Analysis

Using directed qualitative content analysis, categories obtained from the first phase can culminate in predictions about the new conceptual categories and their relationships.[15,16] After conducting and transcribing the interviews, the extracted contents will be analyzed based on the following steps:

1. **Immersion in the data:** Transcribed interviews will be read and reviewed several times, and extract relevant meanings.
2. **Creating formative categorization matrix:** A categorization matrix will be extracted using the main categories and relevant subsets resulting from the first phase's findings.
3. **Performing primary data analyses:** Semantic units related to the study objectives and the categorization matrix will be selected from the content and then summarized, and the primary codes will be determined.
4. **Inductive abstraction from main categories of primary codes:** Primary codes will be categorized considering their meanings, similarities, and differences. The products of this step will be known as generic or general categories.
5. **Creating links between the general codes and the main codes:** Continuous comparison of general categories and main categories resulted in forming and creating a conceptual and logical link between main and generic categories by general nesting categories in the previously existing main categories and creating new main categories of the new concept named "aesthetic-based patient education." The continuous comparison method will be also used throughout the study for the data analysis.

Third phase: Model development phase

- *Goal: Drawing the conceptual model of "aesthetic-based patient education"*

Step 5: Drawing Conceptual Model using general steps of the patient education process

Using steps of developing a model in the health field studies,[30] the general steps of the patient education

process, including needs assessment, goal setting, implementation, and evaluation, will be considered as the general foundation, and the components obtained from the previous phase will be included for each of these steps. Shapes, colors, sizes, and arrows will be used to display the relationships among categories allocated to the general steps of the patient education process.

Fourth phase: Validation phase
- *Goal: Validating the conceptual model of "aesthetic-based patient education"*

Step 6: Modified Delphi Technique
Although the model credibility is obtained to a large extent from the steps of the previous phase, for the further validation of the model, the agreement of the experts will be achieved using the modified Delphi method.

Implementation method of modified Delphi technique
1. Selecting the panel of experts: Five to ten experts with adequate knowledge and experience and executive, educational, and research history in patient education or health education, medical notification, aesthetics, art, who will be willing and have enough time to participate in the study, are among the inclusion criteria for experts.
2. Developing a primary questionnaire on the components obtained from previous phases.
3. Determining the importance of each component from the expert's perspective on a five-point Likert scale, ranging from totally agree to totally disagree. The experts will be asked to add items not mentioned in the questionnaire, which will be important from their perspectives.
4. Statistical methods such as central indices and consensus will be run with SPSS software version 25 to assess consensus among members.
5. Removing components with a mean score <2.5 from the Delphi first round.
6. In the second round, components with a mean score <3 will be removed.
7. Delphi steps continued until a 70–80% consensus will be achieved, according to which the final model will be reported.

Ethical consideration
This study (Code: IR.MUI.NUREMA.REC.1400.074) was approved by the Research Ethics Committee at the Isfahan University of Medical Sciences to conduct a specialized doctoral dissertation in nursing and in accordance with the Helsinki Declaration of 1975. The following items are among the main ethical considerations in reaching the research objectives:
1. Obtaining permission from the Vice-Chancellor for Research at the Isfahan University of Medical

Sciences, and the Research Ethics Committee at the Isfahan University of Medical Sciences;
2. Introducing oneself, explaining research objectives to the participants, considering participants' willingness to participate in the study, and informing the probability of withdrawal at any stage of the study;
3. Ensuring the confidentiality of the information and observing anonymity in reports and data provision; and
4. Recording the interviews with the permission of the participants.

Results

First Phase: This phase aimed to achieve the characteristics, antecedents, and consequences of "aesthetic-based education." Following the literature review and content analysis phases, Table 2 (a sample table) will be drawn to represent the main categories and subcategories of the concept.

Second Phase: According to the interview questions based on the concepts extracted from the previous phase, it is expected to extract codes underlying the new conceptual model of "aesthetic-based patient education."

Third and Fourth Phases: In the third phase, it is expected to achieve a new conceptual model representing the components of aesthetics in the general steps of the patient education process, including needs assessment, goal setting, implementation, and evaluation, and the experts' panel consensus will be achieved in the fourth phase.

Conclusion

This interdisciplinary study mainly aimed to design a model based on the aesthetic components of the patient education process to promote its effectiveness. The main characteristic of this model is its ability to provide the aesthetic components for each general step of the patient education process, including needs assessment, goal setting, implementation, and evaluation through concept derivation strategy. Walker and Avant (2018) believe that the derivation approach can be scientific in conceptualization with the help of analogy to foster a new way of thinking about a phenomenon.[25] The researcher's interest in searching beyond her discipline

Table 2: Sample table of categorizing the concept using Walker and Avant's approach

Antecedents		Attributes		Consequences	
Main category	Subcategory	Main category	Subcategory	Main category	Subcategory
			Subcategory		Subcategory
	Subcategory		Subcategory		Subcategory
	Subcategory		Subcategory		Subcategory

to achieve insights and inspiration about how others may present similar ideas on the specific issue of effective education, led her to adopt this approach.

Although derivation, at the first glance, may appear as a simple mechanic process, reasoning by analogy or metaphor is a strong experience during an innovative work with its specific complexities and challenges. Regarding the main research objective, we concluded that there were a series of limitations for a research team to achieve a valid scientific model. For example, they should decide what specific conceptual categories should exactly be used in the first step, from which a model can be derived. Accordingly, selecting a scientifically accepted method for deep immersion into the main context texts (i.e., educational sciences) is required to achieve homogeneous conceptual categories for transposing to a new field. However, only text reviews cannot lead us toward the required conceptual categories and subcategories, and in the next step, a thorough analysis of the concept is required so that the categories extracted from the analysis in the first step are used for redefinition in the second step.

The second challenge is that redefinition requires general validity from the experts' perspective. Accordingly, in this process, a sample community of beneficiaries of this concept can be entered into the research because they would use terms definitely useful for analogies and metaphors. Using a ploy interview with the medical staff, patients, and experts, the researcher will use not only her reasoning, logic, and creativity but also collective wisdom, which will enhance the model's validity. Finally, following the directed qualitative content analysis and extracting the main components of the final conceptual model, the model should be developed, the relationships among components should be established, so its final validation should provided.

The main application of this study is structurally providing ways to enter aesthetics in the patient education process; hence, it can be a guide for researchers into concept derivation and also an introduction to employ this new concept in practice, teaching, and future studies. Walker and Avant believe that the presence of newly derived concepts to express new fundamental ideas can create new research approaches such as tool development.[25]

One of the limitations of this study is that, although the conceptual models of aesthetic education are efficient in educational sciences, the proposed conceptual model of aesthetics in the patient education process is not guaranteed to be equally effective in health sciences. In other words, developing a conceptual model well-accepted in a theoretical context does not guarantee its success in practice.[25] Accordingly, future researchers are recommended further clinical trial studies on different sample populations to test the proposed model in the clinical field to achieve empirical validity in a new field as well.

The provided protocol can be a road map to develop derivative models in health sciences. Furthermore, the final model can be an introduction to clinical trials for the model test and instrumentation studies in the future.

Conflicts of interest
There are no conflicts of interest.

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