

Research Article

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Mapping Perceived Preparedness for Pediatric Emergency Department Discharge: A Conceptual Mind Genomics Methodological Framework

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Abstract

Background: Pediatric emergency department (ED) discharge involves multiple information and communication needs, but existing research provides limited insight into how different discharge-support elements may contribute to perceived preparedness when presented together in realistic combinations.

Purpose: To propose a Mind Genomics methodological framework for examining combinations of pediatric ED discharge-support elements and potential differences in respondents' response patterns.

Framework Development: A literature-informed framework was developed using Mind Genomics principles to organize pediatric ED discharge support into four complementary domains and 16 elements. The proposed framework is designed for future empirical implementation using BimiLeap, a web-based Mind Genomics platform, through systematically combined discharge vignettes and a perceived-preparedness rating.

Conclusion: The proposed framework provides an experimental structure for future investigation of the relative contribution of pediatric ED discharge-support elements and potential respondent mindsets. It may complement existing discharge research by examining how combinations of information contribute to perceived preparedness and by providing a basis for subsequent empirical validation and more tailored discharge communication.

Keywords: Mind Genomics, Pediatric Emergency Department, Discharge Communication, Perceived Preparedness, Respondent Mindsets, BimiLeap

1. Introduction

The transition from pediatric emergency care to home-based care is an important component of the overall care pathway because caregivers are often responsible for continuing treatment, monitoring symptoms, and deciding when additional medical attention is required after discharge. The quality of this transition therefore involves not only the clinical assessment of the child at the time of discharge, but also the caregiver's understanding of the child's condition, recommended care, warning signs, and follow-up plan [1-3]. Pediatric discharge guidance emphasizes

that the transition from facility-based care to home should include information and counselling that enable caregivers to continue appropriate care after discharge. The World Health Organization (WHO) Pocket Book of Hospital Care for Children identifies counselling on treatment and feeding at home, communication with health workers responsible for follow-up, and instructions regarding follow-up visits and symptoms requiring urgent return as components of the pediatric discharge process. The guidance also emphasizes opportunities for caregiver questions and checking understanding by asking caregivers to describe in their

own words how care should be provided at home. Although the WHO guidance is intended for pediatric hospital care rather than specifically for emergency department (ED) discharge, these principles provide a relevant clinical basis for considering the information and communication needs involved in the transition from acute care to home [4].

Evidence from pediatric hospital-to-home transitions indicates that these discharge processes may not always be implemented comprehensively. A mixed-methods study conducted across three hospitals in Uganda found that discharge planning often began only shortly before discharge and generally did not include caregiver input. Caregivers were included in discharge planning in only 36% of observed cases, while post-discharge education occurred in 23% of observed cases; among caregivers, only 50% reported having opportunities to ask questions or raise concerns. The study also found that only 17% of caregivers reported receiving a follow-up appointment. The study used patient journey mapping, discharge-process mapping with healthcare workers, and focus-group discussions with primary caregivers and fathers, providing perspectives on both the discharge process and caregiver experiences [5]. Previous research has identified important challenges in pediatric discharge communication. Caregivers may have difficulty understanding or implementing information concerning medication use, follow-up, return precautions, and other aspects of post-discharge care, with health literacy and communication factors contributing to these difficulties [2,3]. Pediatric emergency discharge communication has therefore been examined through a range of approaches, including the content of discharge instructions, educational interventions, communication strategies, and methods for supporting caregiver understanding [3].

The content of pediatric emergency discharge information has received considerable attention. Research has examined information concerning diagnosis, medications, expected illness course, follow-up, and symptoms requiring further medical assessment, while different communication and educational approaches have also been evaluated [2,3,6]. A standardized pediatric inpatient discharge framework incorporating written and verbal counselling, visual aids, electronic health-record tools, education, feedback, and family outreach was associated with improved caregiver comprehension, although this work was conducted in a general pediatric inpatient setting rather than specifically in the emergency department [7]. Similarly, pediatric emergency discharge studies have examined caregiver understanding of information concerning subsequent care and return to medical services [3,6]. Caregiver experience at the point of pediatric emergency discharge provides an additional perspective on the transition to home. In a large pediatric emergency department study, caregiver comfort with caring for the child at home was associated with aspects of communication and caregiver involvement, including whether questions were adequately addressed and whether caregivers received satisfactory information and updates [8]. These findings suggest that the transition to home involves more than the provision of information alone and may also depend on how caregivers

perceive their ability to act on that information after leaving the emergency department.

Caregiver discharge readiness has also been investigated outside the emergency department. Research among primary caregivers of children discharged from pediatric medical–surgical units has examined discharge readiness in relation to discharge teaching and perceived preparedness for continuing care at home [9]. However, the pediatric emergency department represents a distinct transition context, characterized by acute presentations, variable diagnoses, limited time for communication, and discharge decisions made within an episodic emergency-care environment. Consequently, findings from inpatient discharge settings cannot automatically be assumed to represent the pediatric emergency-to-home transition. Importantly, caregiver preferences regarding the format and accessibility of pediatric emergency discharge information have already been investigated. Research has examined caregiver preferences for receiving written information in addition to verbal instructions, including preferences for printed and electronic resources, language-related needs, and the feasibility of QR-code access to electronic information [10]. These findings help distinguish the present framework from studies focused primarily on discharge-information format and accessibility. The proposed methodological question instead concerns the relative contribution of multiple substantive discharge-support elements when respondents encounter these elements together in realistic combinations.

Existing research across pediatric emergency and inpatient discharge settings has examined communication approaches, information formats, educational interventions, caregiver comprehension, and discharge readiness. However, these approaches provide relatively limited information about how individual elements—such as medication guidance, expected illness course, warning signs, comprehension checks, opportunities for questions, and follow-up support—contribute to a caregiver’s overall perception of preparedness when these elements are presented simultaneously. The possibility that respondents may also respond differently to the same combinations of discharge-support elements provides a further dimension for investigation.

Conventional survey approaches generally ask respondents to evaluate individual attributes, report preferences, or select among predefined options, while intervention studies commonly compare predetermined communication packages. Such approaches are valuable for identifying important components of discharge communication, but they may provide less information about the relative contribution of individual components within multidimensional combinations. A methodological approach that presents realistic combinations of messages and subsequently estimates the contribution of their individual elements could therefore complement existing pediatric discharge research.

Mind Genomics provides such an experimental framework. The approach builds on experimental design and conjoint measurement by systematically combining multiple small

components or elements into test combinations and examining respondents' reactions to those combinations [11]. Rather than asking respondents to evaluate each element independently, Mind Genomics presents combinations of elements in realistic vignettes and uses the experimental structure to estimate how individual elements contribute to the overall response [12]. The relevance of this approach to healthcare communication has been demonstrated in previous Mind Genomics applications. Systematically varied combinations of messages concerning the doctor-patient encounter have been evaluated using regression and cluster analyses to examine the contribution of individual communication elements and identify distinct response patterns [13]. Similarly, Mind Genomics has been applied to healthcare communication involving diabetes-related messages, using systematically combined messages and experimental design to examine differences in responses to communication elements [14]. The methodology has also been applied to public-health communication, where systematically varied health-policy messages have been used to examine response patterns and identify distinct mindset segments [15]. The methodological value of Mind Genomics in pediatric emergency discharge research therefore lies not simply in measuring caregiver "preferences." Rather, it provides a structured way to examine how combinations of discharge-support elements contribute to perceived caregiver preparedness and whether distinct response patterns emerge across caregivers. The experimental design allows multiple elements to be evaluated simultaneously while retaining the ability to estimate the contribution of individual elements to the overall rating [11,12].

Accordingly, this paper proposes a Mind Genomics methodological framework for mapping perceived preparedness to care for a child at home following pediatric emergency department discharge. The framework does not report empirical caregiver data, does not assume that particular caregiver mindsets already exist, and does not make claims about clinical outcomes. Instead, it demonstrates how a future empirical study could systematically combine discharge-support elements into realistic pediatric emergency discharge vignettes, obtain respondent ratings of perceived preparedness for home care, estimate the relative contribution of individual elements, and explore whether distinct response-pattern-based respondent mindsets emerge from the data. The proposed framework is intended to complement existing pediatric emergency discharge research by addressing a related but distinct methodological question: how combinations of discharge-support elements may contribute to perceived preparedness and whether distinct response patterns emerge among respondents.

2. Proposed Framework

2.1. Development of the Mind Genomics Framework

Mind Genomics provides a structured approach for examining how individuals respond to combinations of conceptually defined elements rather than considering individual factors exclusively in isolation. In a typical Mind Genomics implementation, elements representing different aspects of a defined topic are systematically combined into short vignettes and presented to respondents for evaluation. The resulting ratings can then be modeled to estimate the

contribution of individual elements to the overall response [11,12]. The methodology has also been applied in healthcare-related research, including studies addressing healthcare communication, patient experiences, and public health and wellbeing [13-16]. The present framework applies this approach to respondents' perceived preparedness following pediatric emergency department (ED) discharge. The framework was structured around recurring components identified in pediatric discharge literature, including medication and treatment instructions, routine care, diet and activity guidance, warning signs and return precautions, follow-up planning, caregiver understanding, communication, and opportunities to ask questions or clarify concerns [1-3,6].

Pediatric discharge guidance also emphasizes counselling on treatment and feeding at home, communication regarding follow-up care, instructions concerning follow-up visits and symptoms requiring urgent return, and consideration of family support needs during discharge [4]. Evidence from a mixed-methods study of pediatric hospital discharge in Uganda documented limited caregiver involvement, limited discharge education and counselling, limited opportunities for questions or concerns, and limited post-discharge follow-up, while emphasizing improved communication between healthcare workers and caregivers and greater attention to post-discharge care as areas for process improvement [5]. Caregiver involvement, satisfactory updates, and adequate attention to caregiver questions have also been associated with caregiver comfort in caring for the child at home following discharge [8]. Research has additionally examined the accessibility and delivery format of pediatric ED discharge information, including verbal, printed, and electronic resources, as well as language and technology-access considerations [10].

Based on these literature-derived components, the proposed framework organizes pediatric ED discharge information into four complementary silos representing distinct aspects of the caregiver's transition from ED discharge to continued care at home. Silo A — Home Care & Treatment addresses information needed for routine management of the child's care during recovery. Silo B — Safety & Return Decisions addresses expected changes, warning signs, worsening symptoms, and decisions regarding further medical attention. Silo C — Understanding & Communication addresses the clarity and comprehension of discharge information and opportunities for caregiver questions or clarification. Silo D — Follow-up & Ongoing Support addresses follow-up timing and location, access to assistance, and the next steps in the child's care after discharge [1-6,8].

The proposed framework uses a 4×4 Mind Genomics structure comprising four silos and sixteen elements. The four silos were defined to represent substantive aspects of the pediatric ED discharge-to-home transition: Home Care & Treatment, Safety & Return Decisions, Understanding & Communication, and Follow-up & Ongoing Support. The selection of four silos was therefore a methodological design choice intended to provide a focused representation of the principal substantive domains of the discharge-to-home transition within a 4×4 Mind Genomics

structure. Discharge instruction modality was not treated as a separate silo in the proposed framework. Previous pediatric ED research has already examined caregiver preferences regarding discharge instruction modalities, including verbal, printed, and electronic resources, as well as language-related needs and access to electronic information [10]. In the present framework, communication modality is not treated as a separate substantive silo. Rather, the framework focuses on the content and interactional aspects of discharge information that may contribute to perceived caregiver preparedness.

The literature synthesized for the framework therefore provided the content basis for the four silos, including home treatment and routine care, safety and return precautions, caregiver understanding and communication, and follow-up and continued support [1-6]. The resulting domains were designed to be conceptually distinct while remaining complementary within the overall pediatric ED discharge-to-home transition. Thus, the framework does not treat discharge information as a collection of isolated topics; rather, it organizes related information into substantive domains that can subsequently be combined experimentally. For each silo, one story question was developed to define the conceptual focus of its four elements and to provide a coherent basis for representing the relevant aspects of pediatric ED discharge. To support the development of the story questions, the Idea Coach, an AI-based tool within the BimiLeap platform (BimiLeap; www.bimileap.com), was used to generate multiple candidate questions based on the respective silo and the concepts identified from the literature. The candidate questions were reviewed and refined, and one question was selected for each silo based on conceptual relevance, consistency with the supporting literature, alignment with the study objective, and its ability to provide a coherent conceptual focus for the elements within the silo.

Following the selection of the story questions, the Idea Coach was again used within BimiLeap to generate candidate elements for each selected question. Four elements were selected for each story question and, where necessary, refined to ensure clarity, conceptual

distinctiveness, consistency with the supporting literature, and suitability as standalone statements. The resulting elements were therefore literature-informed and researcher-selected, with the Idea Coach serving as a tool for candidate generation and refinement rather than as the sole source of the final content. Together, these elements formed the building blocks for the Mind Genomics vignettes proposed for subsequent empirical implementation [11,12].

The resulting framework comprises four silos, each containing four elements, resulting in a 4 × 4 Mind Genomics structure comprising 16 elements. In a subsequent empirical implementation, these elements could be systematically combined into experimentally designed vignettes, with no more than one element from a given story question appearing within an individual vignette. This structure allows multiple substantive aspects of pediatric ED discharge to be evaluated together while retaining the ability to estimate the contribution of individual elements to the overall response [11,12]. The experimental combinations are intended to represent realistic collections of discharge-support information rather than isolated attributes, thereby allowing the proposed study to examine how different combinations of information may relate to respondents’ perceived preparedness for home care. The proposed framework does not assume that particular caregiver mindsets already exist. Rather, the four silos and sixteen elements define the input structure for a future empirical Mind Genomics study. In such an implementation, caregiver responses to systematically varied combinations of these elements could be analyzed to estimate element-level contributions and to explore whether distinct response patterns emerge across respondents. Any respondent mindsets identified through such an analysis would therefore be empirically derived rather than predetermined by the conceptual framework.

Table 1 presents the four silos, their corresponding story questions, and the final 16 elements of the proposed pediatric ED discharge Mind Genomics framework.

Silo	Story Question	Elements
Silo 1 Home Care & Treatment	A. What information would help a caregiver manage the child’s everyday care at home after discharge?	A1. Clear instructions for any medicines the child needs to take at home. A2. Simple instructions for caring for the child during recovery at home. A3. Clear guidance about the child’s usual activities during recovery. A4. Clear guidance about food, fluids, or other routine care needed during recovery.
Silo 2 Safety & Return Decisions	B. What information would help a caregiver understand the child’s recovery and know when further medical attention is needed?	B1. Clear information about which changes may be expected during recovery. B2. Clear warning signs that should prompt a return to the emergency department. B3. Clear instructions about what to do if the child’s condition becomes worse. B4. Clear guidance about when the child needs immediate emergency care.

Silo 3 Understanding & Communication	C. What would help a caregiver understand and use the information provided at discharge?	C1. Information explained in clear and easy-to-understand language. C2. A discharge summary that clearly explains the child's care plan. C3. A brief check that the caregiver understands the instructions before leaving. C4. An opportunity for the caregiver to ask questions before leaving.
Silo 4 Follow-up & Ongoing Support	D. What information or support would help a caregiver continue the child's care after leaving the emergency department?	D1. A clear timeframe for when the child should receive follow-up care. D2. Clear information about where or with whom the child should receive follow-up care. D3. A contact number or service to use if the caregiver has questions after discharge. D4. Clear information about the next steps in the child's care after discharge.

Table 1: Proposed 4 × 4 Mind Genomics Framework

3. Proposed Future Empirical Implementation for Pediatric ED Discharge

The proposed conceptual framework is intended for future empirical implementation using BimiLeap, a web-based platform used for the creation, administration, and analysis of Mind Genomics studies. The overall proposed workflow is illustrated in Figure 1. In a future empirical investigation, the four story

questions and sixteen literature-informed elements presented in Table 1 would be incorporated into the platform to examine how respondents evaluate combinations of information provided during pediatric emergency department (ED) discharge and how these combinations relate to their perceived preparedness to care for the child at home [11-13].

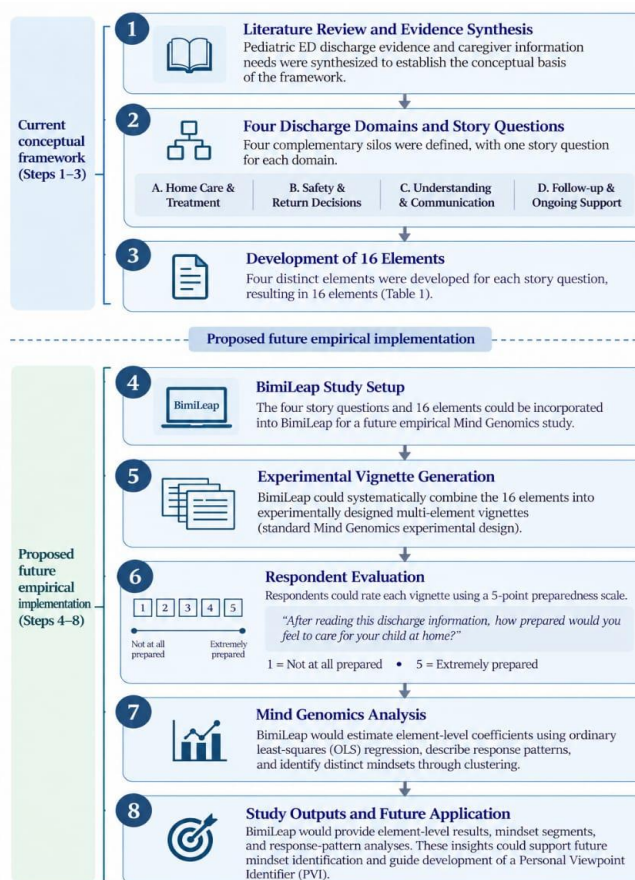


Figure 1: Proposed workflow for future empirical implementation of the pediatric ED discharge Mind Genomics framework using the BimiLeap platform

Using the proposed 4×4 Mind Genomics structure, BimiLeap would systematically recombine the sixteen elements into experimentally designed multi-element vignettes. Each vignette would contain multiple elements drawn from different silos,

allowing aspects of home care and treatment, safety and return decisions, understanding and communication, and follow-up and ongoing support to be considered together within the same pediatric ED discharge context (Figure 2).

After reading this discharge information, how prepared would you feel to care for your child at home?

PLEASE SELECT HOW PREPARED YOU FEEL

1 = Not at all prepared
2 = Slightly prepared
3 = Moderately prepared
4 = Very prepared
5 = Extremely prepared

Clear instructions for any medicines the child needs to take at home.

Clear warning signs that should prompt a return to the emergency department.

Information explained in clear and easy-to-understand language.

A clear timeframe for when the child should receive follow-up care.

1

2

3

4

5

Figure 2: Illustrative Mind Genomics vignette for evaluating perceived preparedness following pediatric ED discharge

Respondents would evaluate each vignette using the following rating question:

“After reading this discharge information, how prepared would you feel to care for your child at home?”

Responses would be recorded using the proposed five-point response scale:

- 1 — Not at all prepared
- 2 — Slightly prepared
- 3 — Moderately prepared
- 4 — Very prepared
- 5 — Extremely prepared

The rating would represent the respondent’s perceived preparedness to care for the child at home in response to the overall combination of discharge-support information presented in the vignette. It would not directly measure actual caregiving performance, adherence to discharge instructions, subsequent healthcare utilization, clinical outcomes, or the causal effectiveness of any individual discharge intervention. Rather, the proposed rating provides a common response measure through which the relative contribution of different information elements could be examined using the Mind Genomics experimental design [11,12].

In a future empirical implementation, the resulting vignette ratings could be analyzed using the Mind Genomics analytical approach. Because the experimental design systematically varies the presence and absence of individual elements across combinations, ordinary least-squares (OLS) regression could be used to estimate the contribution of individual elements to the preparedness rating.

The resulting respondent-level coefficients could subsequently be examined for similarities in response patterns, allowing empirically derived respondent mindsets to be identified through clustering approaches such as K-means clustering [13]. Within the context of the present framework, several potential respondent mindsets could emerge. For example, one possible group may respond particularly strongly to elements concerning practical home-care management, such as medication instructions, routine care, activity guidance, and clear next steps after discharge. This pattern could represent respondents for whom concrete information about what to do at home contributes strongly to their perceived preparedness. A second possible group may place greater relative importance on safety and decision-making information, showing stronger responses to expected recovery patterns, warning signs, worsening symptoms, and guidance regarding when further medical attention is needed. A third possible group may respond most strongly to clarity, communication, and continuity of care, with greater relative salience of understandable language, confirmation of understanding, opportunities to ask questions, follow-up planning, and access to assistance after discharge.

These potential mindset descriptions are presented solely as illustrative examples of response patterns that could emerge from a future empirical implementation. They do not represent observed respondent segments in the present conceptual paper. The actual number, composition, and interpretation of the mindsets would depend on the element-level response coefficients and clustering patterns obtained from the future study. Mind Genomics research has demonstrated that such mindsets are defined by patterns of

response to specific elements within a particular situation rather than by assuming that all respondents evaluate the situation in the same way [13].

The resulting BimiLeap analysis could provide overall-panel results, element-level coefficients, and empirically derived respondent mindset segmentation. Such analyses could identify which individual discharge-support elements contribute more strongly to respondents' perceived preparedness and whether different groups of respondents emphasize different aspects of discharge information. The findings could therefore complement conventional pediatric discharge research by examining how respondents evaluate combinations of discharge-support information rather than isolated information components [11,12]. The approach could also provide a quantitative basis for examining heterogeneity in respondent responses to pediatric ED discharge communication. If sufficiently stable and independently validated respondent mindsets were identified, subsequent research could explore whether these response patterns could support the development of a Personal Viewpoint Identifier (PVI) or similar classification approach for pediatric ED discharge communication. Such an application would represent a subsequent extension of the proposed framework rather than an outcome of the present conceptual study and would require empirical development and independent validation before practical application.

4. Discussion

The present paper proposes a literature-informed Mind Genomics framework for examining how combinations of pediatric emergency department (ED) discharge-support information may relate to respondents' perceived preparedness to care for a child at home. The framework organizes discharge-support content into four complementary domains—Home Care & Treatment, Safety & Return Decisions, Understanding & Communication, and Follow-up & Ongoing Support—and translates these domains into sixteen elements that could be experimentally combined in future Mind Genomics vignettes. In doing so, the framework provides a structured methodological approach for examining multiple aspects of the pediatric ED discharge-to-home transition within a common experimental design. The literature reviewed in the present paper indicates that pediatric discharge research has addressed medication and treatment instructions, return precautions, follow-up, caregiver understanding, communication, discharge education, and caregiver experiences of the transition to home [1–10]. Research has also examined discharge instruction formats, including verbal, printed, and electronic resources [10]. However, these areas have generally been investigated through different study designs, interventions, communication approaches, or predefined measures. The proposed framework brings these substantive elements together within a single experimental structure, allowing future research to examine how multiple discharge-support elements may contribute to perceived preparedness when they are presented together rather than evaluated only as isolated topics.

Mind Genomics provides a complementary experimental methodology in which respondents evaluate systematically varied

combinations of elements and experimental modeling estimates the relative contribution of individual elements to the overall response [11,12]. In the present framework, the outcome is deliberately defined as perceived preparedness to care for the child at home, rather than actual caregiving performance, adherence to discharge instructions, healthcare utilization, or clinical outcome. This distinction is important because the proposed approach is intended to examine how respondents perceive combinations of discharge information, not to establish the clinical effectiveness of particular discharge interventions. The proposed framework may also provide a way to examine heterogeneity in responses to pediatric ED discharge information. Future empirical implementation could determine whether respondents place relatively greater importance on practical home-care information, safety and return decisions, understanding and communication, or follow-up and ongoing support. Such response patterns could provide a more differentiated view of how discharge information is perceived than an approach that assumes that the same information components have similar relative importance for all respondents. Importantly, the potential response patterns described in this paper are illustrative only; the actual number and composition of respondent mindsets would need to emerge from empirical data.

An additional methodological feature of the proposed framework is that communication modality is not treated as a separate substantive domain. Previous pediatric ED research has examined caregiver preferences regarding verbal, printed, and electronic discharge instructions, as well as language-related needs and access to electronic information through QR codes [10]. The present framework instead emphasizes the substantive and interactional content of discharge support, including home-care information, safety and return decisions, understanding and clarification, and follow-up and ongoing support. This distinction allows the proposed Mind Genomics study to examine a complementary question: how different combinations of discharge-support elements may contribute to respondents' perceived preparedness to care for the child at home. Overall, the proposed framework serves as a bridge between existing pediatric discharge evidence and future empirical investigation. It provides an experimental structure through which future studies could examine the relative contribution of multiple discharge-support elements and determine whether distinct respondent response patterns emerge. If such patterns are identified and subsequently validated, they could generate hypotheses for more tailored approaches to pediatric ED discharge communication and support further investigation into their relationship with independently measured indicators of discharge readiness and post-discharge care.

5. Limitations and Directions for Future Research

Several limitations should be acknowledged. First, this paper presents a conceptual and methodological framework rather than an empirical Mind Genomics investigation. Therefore, the proposed four-silo structure, sixteen elements, vignette combinations, rating approach, and illustrative respondent mindsets have not been experimentally validated. The framework should consequently be considered hypothesis-generating rather than a definitive

representation of all factors that may influence preparedness following pediatric ED discharge. Second, the proposed elements were developed through literature review and researcher selection, with the Idea Coach used to generate and refine candidate questions and elements. Although this process provides a structured basis for framework development, the relevance and relative importance of the final elements can only be established through empirical testing. Future studies may identify elements that require modification, removal, or expansion based on respondent data and expert or clinical review.

Third, the proposed rating is intended to capture respondents' perceived preparedness to care for the child at home and should not be interpreted as a direct measure of actual caregiving performance, adherence to discharge instructions, healthcare utilization, or clinical outcomes. The Mind Genomics framework is designed to examine the relative contribution of discharge-support elements to this perceived response; future empirical studies could examine whether the resulting response patterns are associated with independently measured indicators of comprehension, discharge readiness, adherence, healthcare utilization, or other relevant outcomes. Fourth, although the proposed framework is specifically designed for pediatric ED discharge, several sources informing its development address pediatric discharge or hospital-to-home care in non-ED settings [4,5,7,9]. These sources provide relevant evidence concerning discharge communication, caregiver involvement, education, follow-up, and transition to home, but their findings cannot automatically be assumed to represent the specific time constraints, clinical variability, and communication context of the pediatric ED. Future empirical research should therefore examine the applicability and performance of the proposed framework specifically within pediatric ED populations and across different clinical, healthcare-system, cultural, and linguistic contexts.

These limitations also identify important directions for future research. A future empirical study could implement the proposed framework using BimiLeap with appropriately defined and diverse respondent populations, systematically generate the proposed vignettes, and estimate element-level contributions using ordinary least-squares (OLS) regression followed by respondent-level clustering approaches such as K-means [11–15]. Such studies could determine whether the proposed elements produce meaningful response differences and whether stable, interpretable respondent mindsets emerge. Future research could also examine whether these response patterns are associated with independently measured indicators of discharge comprehension or readiness and whether they remain consistent across different pediatric ED settings and populations. If sufficiently stable and independently validated mindsets are identified, subsequent research could explore the potential development of a Personal Viewpoint Identifier (PVI) or similar classification approach. Any such application would require empirical validation before clinical or practical use.

6. Conclusion

This paper proposes a literature-informed Mind Genomics framework for examining how combinations of pediatric emergency department discharge-support elements may contribute to respondents' perceived preparedness for care at home. The framework organizes discharge support into four domains and sixteen elements that could be systematically combined and evaluated using the BimiLeap platform in a future empirical study. Future research could determine the relative contribution of individual elements and whether distinct respondent response patterns emerge, providing a basis for further investigation of more tailored pediatric ED discharge communication.

Declarations

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Conflicts of Interest: The authors declare that they have no conflicts of interest.

Ethical Approval: Ethical approval was not required because this conceptual paper did not involve human participants, primary data collection, or identifiable participant information.

Author Contributions: All authors contributed to the conceptualization and development of the framework, critically reviewed the manuscript, and approved the final version.

Data Availability Statement: No primary datasets were generated or analyzed in this conceptual paper.

AI Usage Statement: Idea Coach, an AI-based tool within the BimiLeap platform, was used to assist with the development of the four story questions and sixteen elements. ChatGPT (OpenAI) was used for language editing and preparation of Figures 1 and 2.

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