

Neuro-Linguistic Processing and Reprogramming (NLPR) in Nursing Students: Outcome Evaluation

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ABSTRACT

Objective. This study investigated how nursing students experienced the Neuro-Linguistic Processing and Reprogramming (NLPR) model and whether their reports aligned with findings from an earlier study examining the same model among general course participants.

Methods. A qualitative descriptive design was used. Open-ended responses from de-identified anonymous course evaluation questionnaires (N = 65) were analyzed using reflexive thematic analysis. Inductive coding was followed by interpretation using the NLPR framework to connect participants' experiences with the model's proposed mechanisms.

Results. The analysis produced eight higher-order themes: physiological safety, language awareness, self-awareness, agency and choice, self-compassion, behavioral integration, group-based learning, and tolerance for ambiguity. The thematic pattern and relative frequency of the themes closely matched those reported in the earlier study.

Conclusion. The nursing student data supported and extended the earlier findings. The results were consistent with the NLPR framework and its proposed processes of autonomic regulation, language-based redirection, and behavioral integration. The convergence of findings in a high-stress training population provides further support for the model.

Keywords: *Neuro-Linguistic Processing and Reprogramming, NLPR, Nursing Students, Reflexive Thematic Analysis, Autonomic Regulation, Language Redirection, Qualitative Analysis*

INTRODUCTION

Language exerts a formative influence on how people think, feel, and act (Boroditsky, 2011; DeLuca et al., 2024; Hu et al., 2023; Matthews et al., 2003; Nazeer, 2024), and this influence establishes its value as a therapeutic and developmental instrument (Barrett, 2017; Gross, 2015; Lazarus, 1991). The Neuro-Linguistic Processing and Reprogramming (NLPR) model is grounded directly in this premise (Coy, 2024a; Coy, 2024b). Integrating perspectives from neuroscience, linguistics, and physiology, the model proposes that word choice influences physiological processes associated with autonomic and emotional regulation (Coy, 2024a; Hinojosa et al., 2020). Within the NLPR framework, autonomic regulation and emotional regulation are viewed as closely related aspects of the same regulatory system, mediated through underlying neurophysiological and biochemical processes (Damasio, 1999). The deliberate and structured use of language is therefore conceptualized as a mechanism for supporting physiological safety and regulatory capacity, thereby creating conditions that may facilitate greater access to executive functioning (Hu, 2023; Kross et al., 2014; Porges, 2022; Thayer & Lane, 2009).

The model proceeds from the premise that language engages neural systems involved in emotional processing and physiological responding (Barrett, 2017; Schutte et al., 1998; Webb, 2023). Within the NLPR framework, words are viewed as stimuli that activate neural networks and associated neurochemical processes (Pulvermüller, 2005). These neurophysiological and biochemical processes are proposed to underlie subsequent thoughts,

feelings, and behaviors (Pulvermüller, 2013). It further draws on contemporary understandings of how physiological states are influenced by perceptions of threat and safety (Porges, 2004, 2022). Emotional regulation is conceptualized as arising from physiological and autonomic processes; from this perspective, shifts in physiological state are associated with corresponding changes in emotional experience and behavioral responding. Intentional redirection toward forward-facing, strengths-based, and optimistic language is conceptualized as a mechanism that supports physiological safety and autonomic regulation, whereas threat-oriented language may be associated with heightened autonomic activation (Coy, 2024a; Coy, 2024b). From this perspective, language functions as sensory input that influences neurophysiological and biochemical processes associated with emotional experience and behavioral responding (Citron, 2012). Physiological state, therefore, serves as the foundation on which emotional experience, executive functioning, and behavioral responses emerge.

The NLPR model is distinguished from other verbally mediated approaches by its reliance on language-based redirection rather than cognitive reframing (Coy, 2024a). When an individual becomes stressed or dysregulated, the practitioner guides them back to a defined set of Language Guidelines that support physiological regulation and promote restoration and recovery. Within the NLPR framework, language is viewed as a form of neural stimulus that influences physiological and behavioral responses (Citron, 2012; Pulvermüller, 2005, 2013). Through repetition and intentional application, the process of redirection is gradually internalized as a behavioral-physiological program that reinforces language patterns associated with physiological safety and adaptive functioning (Davidson & McEwen, 2012; Ludwig et al., 2020). As these patterns are repeatedly practiced, they become increasingly programmed into automatic physiological and behavioral responses. Over time, physiological safety becomes more readily accessible, reducing reliance on effortful regulation and supporting more consistent patterns of adaptive functioning.

The Language Guidelines (Coy, 2024a) are the core of the NLPR model and redirect language toward patterns that support regulation and greater access to executive functioning. They encourage first-person statements that locate experience within the self, supporting agency and autonomy (Ludwig et al., 2020; Moser et al., 2017). “Should” is redirected toward language that supports acceptance of reality (Ellis, 2003). “But” statements are redirected to more connected, forward-facing language that maintains coherence (Pennebaker & King, 1999). Problem-focused language is redirected toward more growth-oriented and adaptive terms (Ayduk & Kross, 2010). The guidelines also emphasize clearly identifying internal states (Torre & Lieberman, 2018), distinguishing between feelings and thoughts, and using intentional processing intervals to support regulated responding (Barkley, 1997; Creswell et al., 2016; Teper & Inzlicht, 2013). Negation and externally attributing language are redirected toward present-focused, accepting, and internally oriented expressions (Beltrán et al., 2019; Simchon et al., 2023; Zuanazzi et al., 2024). Overall, the Language Guidelines are structured redirection tools intended to support physiological stability, emotional regulation, and improved adaptive responding (Pennebaker & King, 1999).

The NLPR model had previously been examined using anonymous course-evaluation data drawn from a sample of general course participants. That study (Coy, 2026) identified eight higher-order themes and examined their relationships with the model's proposed framework (Zhang et al., 2023). The present study was designed to determine whether a similar pattern of findings would emerge in a different population and setting, namely a cohort of nursing students.

This population is of particular interest because nursing students are exposed to substantial stress and elevated training demands throughout their education and subsequent professional practice (Hulinaykar et al., 2021; Kalaimathi et al., 2020; Kim & Jo, 2022; Metha et al., 2016; Priya et al., 2019b; Vijayalakshmi & Lama, 2008). Demonstration of a comparable pattern of findings in such a demanding group would strengthen the cumulative evidence supporting the NLPR model (Benjamin et al., 2024).

The primary aim of the present study was to determine whether a similar pattern of findings would emerge from the nursing student data. Particular attention was paid to the convergence of findings between the two studies and to whether the new evidence reflected and extended the earlier findings within a more demanding and clinically relevant context.

METHODS

Research Design

A qualitative descriptive design was adopted to examine nursing students' perceptions of the NLPR model. Reflexive thematic analysis was used to analyze open-ended responses from course evaluation questionnaires. This approach allowed patterns and themes to emerge from the data while remaining closely grounded in the students' own written responses (Braun & Clarke, 2006, 2019). To facilitate direct comparison with the earlier study (Coy, 2026), the same research design and analytic procedures were employed. This methodological consistency facilitated comparison of thematic patterns across the two samples.

Participants

The sample consisted of 65 nursing students who participated in one or more NLPR curriculum sessions. Following participation, students completed anonymous course evaluation questionnaires. Prior to analysis, all names and any potentially identifying information were removed from the questionnaires. No demographic information was collected or retained for this study. For purposes of analysis, participants were treated as members of a single sample, and no personal identifiers or participant codes were assigned. These procedures helped maintain participant privacy and ensured that the focus remained on the group's collective experience (Braun & Clarke, 2013).

Data Source

The data for this study were derived from the same anonymous course evaluation questionnaires used in the previous study (Coy, 2026). Nursing student participants completed the evaluations immediately following NLPR curriculum sessions. Using the same evaluation instrument across both studies supported direct comparison of findings and helped determine whether similar patterns emerged across different samples. Administering the evaluations at the conclusion of each session allowed students to reflect on their experiences while the material remained fresh in memory.

Each evaluation form contained four open-ended questions designed to capture participants' perceptions of the session and its relevance to their lives. The first question asked participants what they enjoyed most about the session. The second invited them to identify which aspects of the session they anticipated applying in everyday life. The third asked whether there was any part of the session they did not understand.

The fourth explored the most meaningful insight participants had gained about themselves, the process, their relationships, or their interactions. Together, these questions generated qualitative data regarding participants' experiences, perceived learning, and anticipated application of the NLPR model.

Data Analysis

Reflexive thematic analysis was conducted in two phases (Braun & Clarke, 2006, 2019). During the first phase, the responses were read multiple times to develop familiarity with the dataset. Open coding was then used to identify recurring ideas, concepts, and patterns within the responses (Braun & Clarke, 2006). Related codes were grouped into broader categories and subsequently organized into themes that reflected participants' experiences and perceptions. Throughout the process, the emerging themes were continuously compared with the original responses to ensure that they remained closely grounded in the data (Braun & Clarke, 2019).

The second phase involved examining the themes in relation to the NLPR model. Each theme was considered in the context of the model's core concepts, including language-based redirection, autonomic regulation, and behavioral integration. This two-stage approach preserved participants' voices while also allowing the findings to be interpreted within the model's theoretical framework. The same analytic process was employed in the previous study (Coy, 2026), supporting direct comparison of findings across the two samples.

Trustworthiness

Credibility was supported by careful coding, repeated data review, and close alignment between themes and participants' responses (Lincoln & Guba, 1985). Dependability was strengthened by maintaining an audit trail that documented coding decisions and analytic steps throughout the thematic development process. Transferability was addressed by providing a clear description of the session context, evaluation prompts, and participant experience. This level of detail enables practitioners and stakeholders to assess the relevance of the findings to other settings and populations.

RESULTS

The analysis yielded eight higher-order themes that captured nursing students' reported experiences with the model. Table 1 provides an overview of these themes, including a representative quote for each. The themes were consistently observed across participants and reflected patterns spanning multiple domains of experience.

Table 1

Higher Order Themes and Representative Participant Quotes

Theme	Representative Quote
Physiological Safety	I enjoyed how open and comfortable the room was
Language Awareness	I enjoyed learning a new way of speaking and thinking
Self-Awareness	I learned that I am too hard on myself
Agency and Choice	I am in control, and I can change my behavioral responses
Self-Compassion	I learned that self-love is a skill that I need to practice
Behavioral Integration	I plan on slowing down and grounding myself using my skill
Group-Based Learning	I enjoyed being able to sit and listen to other people
Tolerance for Ambiguity	I feel there is a lot I do not understand, and I am curious to learn more

Eight higher-order themes emerged from the nursing student responses, as shown in Table 1. Each theme is described below with representative supporting quotes. The order of presentation follows the structure used in the earlier study (Coy, 2026), allowing the two studies to be compared directly.

Physiological Safety

Participants frequently described the group environment as safe, accepting, and nonjudgmental, noting that this sense of safety supported their capacity for physiological regulation and sustained engagement throughout the session. Several participants linked the environment to an increased ability to access physiological safety and re-establish internal regulation. One participant said, "I enjoyed how open and comfortable the room was"; another reported, "I learned to stimulate my vagus nerve to relax and slow down"; and a third reflected, "once I felt calm, I could ground myself and look at the experience again."

Language Awareness

Many students noted increased awareness of language use and how specific linguistic patterns influenced their physiological and behavioral responses, prompting them to consciously adjust their language in real time. One

participant said, “I enjoyed learning a new way of speaking and thinking”; another said, “I learned to change ‘but’ into ‘I’ because the word ‘but’ can limit a thought”; and a third described “moving from negative to positive language as a daily practice.” Collectively, these responses indicated that students began to experience language as a modifiable behavioral-physiological input that could be shaped through repetition into more adaptive, programmed, and automatic response patterns.

Self-Awareness

Students described an increased awareness of their own triggers, behavioral patterns, and physiological responses. One recognized, “I learned that I am too hard on myself”, while another said, “my defense mechanisms were working without me even being aware of them”. A third observed, “Dwelling on the past is damaging a relationship that matters to me”, and several identified a tendency to shift into a fight-or-flight physiological response without conscious awareness. Taken together, these reports reflected increased capacity for self-observation and recognition of previously automatic response patterns.

Agency and Choice

The theme of increased agency and choice was evident throughout the responses, with students reporting a greater sense of autonomy. One said, “the ability to respond is in me, not in the events”; another said, “I am in control, and I can change my behavioral responses”; and a third said, “words have real power, and a positive attitude can change a whole attitude”. Collectively, this theme reflected increased autonomy in relation to executive functioning and intentional behavioral redirection.

Self-Compassion

Students described reduced self-judgment alongside increased self-acceptance. One said, “I learned that self-love is a skill that I need to practice”; another said, “I am learning to be gentle with myself and to forgive my past mistakes”; and a third repeatedly expressed the view that “my best effort is enough”. Collectively, these accounts reflected a shift toward reduced self-judgment and more supportive language use across the sessions.

Behavioral Integration

Students reported transferring the skills introduced by the model beyond the session and into everyday life, describing efforts to set boundaries, slow down, and create deliberate space between a trigger and a response. One said, “I plan on slowing down and grounding myself using my skill”; another said, “I will practice a skill of my choice at least once a day”; and a third said, “The only way to create new behavior and permanent changes in the brain is to practice what I want to do day to day”. Collectively, these accounts reflected engagement in repeated practice to support neuroplastic adaptation and the reprogramming of response patterns over time.

Group-Based Learning

The group setting emerged as an important context for shared learning and behavioral integration. Students appreciated learning from others, observing peers as they engaged with new approaches, and participating in a shared environment of openness. One said, “I enjoyed being able to sit and listen to other people”; another said, “It was comforting to hear that others had similar experiences”; and a third said, “I appreciated the feedback and support that was shared within the group”. Participants also described the group context as supporting co-regulation and receptivity within the ongoing process.

Tolerance for Ambiguity

Although some students reported remaining unclear about aspects of the material, they remained engaged and expressed a willingness to continue learning even where concepts were still unfamiliar. One acknowledged, “I feel there is a lot I do not understand, and I am curious to learn more”; another said, “I got a little lost in the discussion of the nervous system, but I want to read more about it”; and a third said, “I still feel stuck, but I want to learn how to manage my anxiety about the future”. This theme reflected sustained engagement with new

material amid uncertainty, occurring within conditions that supported continued learning and executive functioning.

Theme Frequency and Pervasiveness

Table 2 shows the number of student responses associated with each higher-order theme. A response was included within a theme when a student either directly identified it or described an experience consistent with it. The counts reflect the distribution of themes across the 65 nursing students in the sample.

Table 2

Theme Frequency Across Participants (N = 65)

Theme	Number of Participants
Physiological Safety	48
Language Awareness	43
Self-Awareness	52
Agency and Choice	45
Self-Compassion	41
Behavioral Integration	50
Group-Based Learning	44
Tolerance for Ambiguity	30

Figure 1

Theme Frequency Across Participants

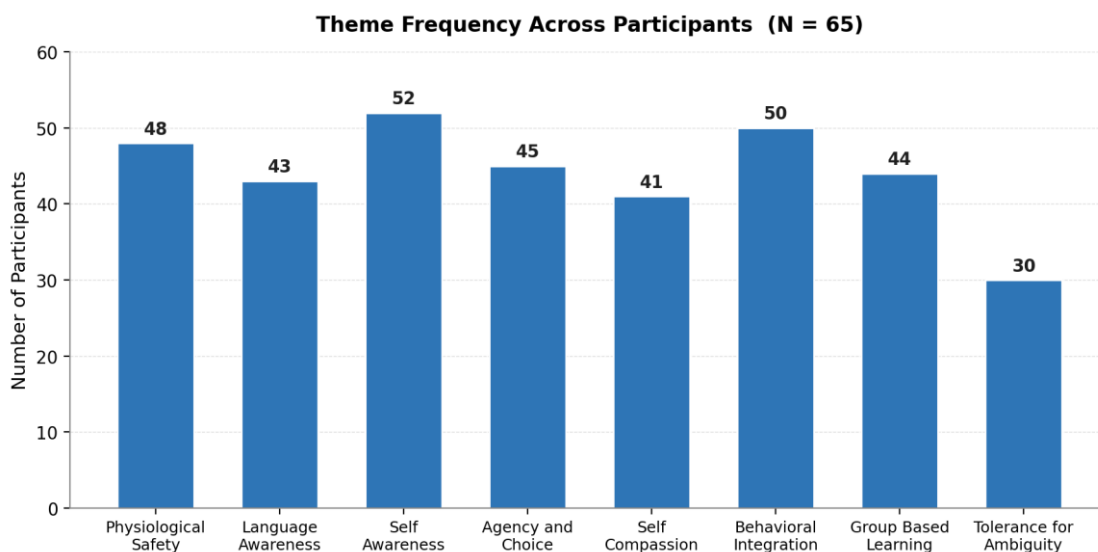


Table 2 and Figure 1 show the frequency of themes among the 65 nursing students. Self-awareness was identified by 52 students, and behavioral integration by 50 students, making these the most common themes. Following

these was physiological safety, identified by 48 students. Agency and choice, group-based learning, and language awareness formed a mid-range cluster of themes. Self-compassion also appeared frequently, with 41 students reporting it. Tolerance for ambiguity, identified by 30 students, was the least commonly reported theme, although it still resonated with a substantial number of students. This distribution closely matched the pattern observed in the earlier study (Coy, 2026) and reflected the same overall ordering of themes.

Mapping Themes to NLPR Mechanisms

Table 3 maps each higher-order theme to the corresponding mechanism in the NLPR model. This mapping illustrates how students' reports align with the model's proposed mechanisms. It also mirrors the mapping used in the earlier study (Coy, 2026), strengthening the interpretation that both studies reflect the same underlying process.

Table 3

Mapping of Themes to NLPR Mechanisms

Higher Order Theme	Corresponding NLPR Mechanism
Physiological Safety	Ventral Vagal Activation and Autonomic Regulation
Language Awareness	Language-Based Redirection and Linguistic Input
Self-Awareness	Neuroception and Internal Monitoring
Agency and Choice	Behavioral Redirection and Internal Locus of Control
Self-Compassion	Reduced Threat-Based Narratives and Self-Acceptance
Behavioral Integration	Neuroplasticity, Repetition, and Skill Generalization
Group-Based Learning	Social Engagement System and Co-Regulation
Tolerance for Ambiguity	Regulation Under Cognitive Load and Distress Tolerance

DISCUSSION

The present study examined nursing students' perceptions of the NLPR model through open-ended responses on anonymous course evaluation questionnaires completed following NLPR curriculum sessions. The analysis indicated that students' experiences closely aligned with the NLPR framework. The findings reflected key NLPR constructs, including autonomic regulation, language-based redirection, and behavioral integration (Coy, 2024a; Coy, 2024b). The close correspondence between the present findings and the earlier study (Coy, 2026) represents a central outcome of this work and provides the foundation for the discussion that follows.

Consistency with the Earlier Study

The most striking finding of this study was the marked similarity between the two sets of results. The same eight higher-order themes emerged in both investigations. Across both studies, self-awareness and behavioral integration were among the most frequently reported themes, whereas tolerance for ambiguity was the least frequently reported. The relative ordering of themes within the mid-frequency range also remained closely aligned across the two samples. This degree of convergence between two distinct populations supports the NLPR framework.

The two samples differed appreciably in composition. The earlier study comprised general course participants (Coy, 2026), whereas the present study examined nursing students experiencing substantial academic and occupational stress. The emergence of a similar pattern of findings across these distinct populations suggests that the NLPR model's observed themes are not limited to a single participant profile. This cross-sample convergence strengthens confidence in the consistency of the thematic structure, whereby the initial study identified a pattern, and this subsequent study in a distinct population further supports its consistency across populations. The present study, therefore, contributes to a growing body of convergent findings associated with the NLPR model.

Alignment with NLPR Mechanisms

The physiological safety theme was consistent with the NLPR framework, in which language patterns are conceptualized as being associated with conditions linked to physiological safety, autonomic regulation, and access to executive functioning. Students who described using first-person "I" statements reported increased ownership and integration of their experiences and internal states during the sessions. In contrast, prescriptive "should" constructions were identified in student responses as language patterns associated with pressure, judgment, or resistance to reality. The language awareness theme aligned with the Language Guidelines, which distinguish between language patterns that constrain or expand perceived agency and access to executive functioning. Students demonstrated awareness of these distinctions through their descriptions of language use during the sessions. Collectively, these findings suggest alignment between observed language patterns and the NLPR framework, including themes consistent with its core constructs.

The themes of self-awareness and self-compassion aligned with constructs related to internal monitoring processes and reduced self-judgment (Schutte et al., 1998; Webb, 2023). Students who identified their own triggers and described self-acceptance processes reported experiences that were consistent with NLPR processes associated with physiological safety, emotional regulation, and access to executive functioning, within a population in which high levels of self-critical narratives and training burnout have been widely reported (Porges, 2022; Priya et al., 2019a). The themes of behavioral integration and agency and choice further indicated that students reported transferring structured skills into everyday contexts and experiencing greater perceived agency and choice in their responses. This pattern is consistent with the model's emphasis on repetition and practice as mechanisms through which neuroplastic adaptation may occur over time (Hebb, 1949; Kolb et al., 2003). The group-based learning theme highlighted the importance of the contextual conditions in which co-regulation was reported, as well as student descriptions consistent with experiences of physiological safety associated with autonomic regulation (Mary et al., 2024).

Proposed Process Model

Taken together, the students' responses suggest a coherent sequence through which the NLPR model may operate. Intentional redirection of word choice is proposed to support physiological safety and autonomic regulation, thereby fostering the conditions in which self-awareness may develop (Coy, in press). This awareness may facilitate behavioral integration and a strengthened sense of personal agency. The cumulative outcome is improved emotional regulation and enhanced executive functioning. This sequence is consistent with the theoretical framework described in the NLPR curriculum (Coy, in press) and with the pattern observed in the earlier study (Coy, 2026). The convergence of findings across the two studies suggests a coherent process by which participants experience and apply the NLPR model.

Implications for Practice and Research

The results of the current study underscore the relevance of the NLPR model for supporting regulatory experiences among nursing students (Coy, 2024a; Eldridge, 2021). Given that this population is among the most highly stressed during training, the findings suggest that the NLPR framework can serve as an accessible mechanism for building emotional resilience, fostering physiological safety, and supporting executive functioning in demanding educational tracks (Kim & Jo, 2022; Priya et al., 2019b, 2024). This directly aligns with modern educational mandates emphasizing that targeted stress-management models must be actively

integrated into professional training to protect student well-being (Priya et al., 2024). Unlike broader, multi-methodological emotional intelligence programs that train nursing cohorts in generalized emotional traits with mixed performance outcomes (Eldridge, 2021), the structured nature of the NLPR Language Guidelines offers a highly specific, micro-level tool for real-time behavioral-physiological resetting.

Future research would benefit from the inclusion of validated outcome measures to examine the NLPR model's associations with emotional regulation, executive functioning, stress-related responses, and behavioral integration (Barkley, 1997; Thayer & Lane, 2009; Porges, 2002). Longitudinal designs would also help determine whether observed patterns are sustained over time and within applied clinical contexts. Comparative studies with other conceptual or applied frameworks may further clarify the NLPR model's distinct contribution (Salem et al., 2025; Hemalakshmi et al., 2018; Metha et al., 2016; Stella et al., 2018). Lastly, studies that include demographic information would allow for examination of differential patterns among participants and support more individualized interpretation of outcomes (Hulinaykar et al., 2021; Pandiselvi et al., 2024).

LIMITATIONS

There were several limitations of this study that need to be considered when interpreting the results. The deidentified anonymous course evaluation questionnaires did not allow for the collection of participant demographic information or the inclusion of follow-up questions to obtain additional detail. Response lengths varied across participants due to the brief evaluation format and differences in the number of NLPR group sessions attended. The results are intended to be preliminary and exploratory rather than definitive. In addition, the absence of standardized outcome measures means the findings reflect perceived effects rather than quantified outcomes. The themes were derived from a single course and a single instructional approach, which may limit transferability to other contexts. Despite these limitations, the close alignment with the previous study (Coy, 2026) represents an important point of convergence between the two datasets, contributing to the growing interpretive support for the NLPR model.

CONCLUSION

This study explored how nursing students viewed the NLPR model and whether their reports aligned with an earlier study of the same model (Coy, 2026). Nursing students found the NLPR model valuable and reported eight higher-order themes: physiological safety, language awareness, self-awareness, agency and choice, self-compassion, behavioral integration, group-based learning, and tolerance for ambiguity. These themes were aligned with the model's proposed mechanisms of autonomic regulation, language-based redirection, and behavioral integration. The pattern of findings closely matched the earlier study, including the relative ordering of the most frequently reported themes. This alignment provides additional convergent support for the NLPR model and extends previously identified patterns to a new high-stress group of nursing students. Future studies would benefit from the inclusion of validated measures, longitudinal designs, and comparative approaches to further examine the model across diverse groups and settings.

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