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Thematic Breaths: TAT Exploration of Psychological Dimensions of Pediatric Bronchial Asthma

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Abstract

This study investigated the psychological dimensions of pediatric bronchial asthma using Thematic Apperception Test (TAT) analysis and compared responses between children with bronchial asthma and healthy controls. A comparative cross-sectional design was employed, involving 25 cases (children with bronchial asthma) and 25 controls, aged 9-15 years. Four TAT cards were administered to each participant, and responses were analyzed using the Bellak T.A.T. and C.A.T. Blank form. Results revealed significant differences between the two groups. The asthma group demonstrated complex psychological profiles marked by emotional distress, family conflicts, and high anxiety. Their narratives often depicted unhappy themes, negative parental figures, and poor ego integration, with denial as a primary defense mechanism. In contrast, the control group exhibited more resilient and optimistic psychological landscapes, characterized by themes of heroism, strength, and hope. They displayed more diverse defense mechanisms, positive family relationships, and better ego integration. These findings suggest that children with bronchial asthma may experience greater psychological challenges, highlighting the importance of addressing mental health aspects in asthma management. The study underscores the potential of the TAT as a valuable tool for assessing psychological dimensions in pediatric chronic illness.

Keywords: Pediatric bronchial asthma; Thematic apperception test; Psychological dimensions; Emotional distress; Coping mechanisms

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Introduction

Bronchial asthma represents a significant global health challenge, particularly in pediatric populations, with substantial implications for both physical and psychological well-being. Bronchial asthma is a chronic respiratory condition affecting millions of children worldwide [1,2]. Epidemiological studies estimate that asthma affects approximately 14% of children worldwide, making it one of the most common chronic respiratory conditions in childhood [3,4]. The complex nature of this condition extends far beyond respiratory symptoms, profoundly impacting children's psychological, social, and developmental trajectories [5,6]. Beyond its physiological implications, asthma significantly influences the mental well-being and quality of life of affected children [7-9].

The relationship between asthma morbidity and psychological well-being is bidirectional, with each aspect intricately influencing the other. This complex interaction underscores the importance of holistic interventions that address both the physical and emotional dimensions of the condition [2,10]. The intricate interplay between asthma and psychological distress necessitates a comprehensive approach to understanding and managing the condition in pediatric populations. Children with asthma experience unique psychological challenges that can significantly influence their quality of life, emotional regulation, and overall development [10,2]. Research has consistently demonstrated that these children are at increased risk of developing anxiety, depression, and social adjustment difficulties [11,12]. The chronic nature of asthma creates a complex psychological landscape that requires sophisticated assessment tools capable of capturing nuanced emotional experiences [13,14].

Traditional assessment methods often fall short in capturing the intricate psychological experiences of children with chronic illnesses. The Thematic Apperception Test (TAT) emerges as a promising projective technique that offers unique insights into an individual's inner psychological world [15,16]. Unlike structured interviews or standardized questionnaires, the TAT provides a narrative-based approach that can reveal unconscious motivations, emotional conflicts, and coping mechanisms [17,18]. The Thematic Apperception Test (TAT), a narrative-based storytelling measure, has emerged as a valuable tool for investigating psychological profiles in children experiencing trauma and illness [19-22]. Research suggests that this assessment can elicit insights into attitudes and motivations that may not be adequately captured by conventional methodological approaches [21,23,24].

Multiple studies have explored the application of the TAT in the context of childhood trauma and illness, offering deeper understanding of the psychological and emotional experiences of children [25-27]. In the specific context of children with bronchial asthma, the TAT can serve as a crucial tool to explore the impact of this chronic condition on emotional well-being, interpersonal relationships, and coping strategies.

Recent research has illuminated the potential of the TAT in elucidating the psychological aspects of chronic illnesses [16,17]. Studies have found that children with asthma often display themes of heightened anxiety, interpersonal sensitivity, and a tendency to internalize emotional distress [28-30]. Additionally, research has reported that asthmatic children frequently exhibit difficulties in emotional regulation and a higher prevalence of behavioral challenges, reinforcing the need for a comprehensive approach to condition management [2,8,31,32]. As the field progresses, researchers continue to refine TAT administration and analysis methods to enhance reliability and validity in pediatric populations. Ongoing studies examining different administration techniques and developing nuanced coding systems aim to capture the complexities of psychological constructs more effectively [16,17.26].

The aim of this study is to investigate the psychological dimensions of pediatric bronchial asthma using Thematic Apperception Test analysis. The study objectives are to compare TAT responses between children with bronchial asthma and healthy controls, and to examine whether children with bronchial asthma demonstrate significantly different thematic content in their TAT responses compared to healthy controls. It is hypothesized that specific themes related to emotional distress, coping mechanisms, and self-perception will be more prevalent in the TAT responses of children with bronchial asthma compared to healthy controls. By exploring the psychological profiles of children with asthma through the TAT, this study aims to provide valuable insights into the lived experiences of these children, ultimately informing more holistic and effective treatment approaches. The study is grounded in a biopsychosocial model that recognizes the intricate interactions between biological, psychological, and social factors in chronic illness experiences [33,34]. This framework guides our approach to understanding the multifaceted nature of psychological experiences in children with bronchial asthma.

Method

Design

This study employed a comparative cross-sectional design using the Thematic Apperception Test (TAT) to explore psychological factors in children with bronchial asthma compared to healthy controls.

Subjects

The study design included 25 cases and 25 controls. There were 10 males (40%) and 15 females (60%) in the case group and 13 males (52%) and 12 females (48%) in the control group. This cross-sectional study was conducted in the outpatient clinic of Allergy and Immunology unit at Mansoura University children hospital during the period from October 2021 to March 2022. The current research assessed the psychological dimensions of pediatric bronchial asthma using Thematic Apperception Test (TAT) analysis and compared TAT responses between children with bronchial asthma and healthy controls.

Inclusion Criteria: The presence of typical asthma symptoms, Improvement of prebronchodilator FEV1>12% after nebulized salbutamol, Ages 9 to 15 years, both sexes.

Exclusion criteria: Children with asthma having other physical co-morbidities like chronic cardiopulmonary diseases, concurrent pneumonia, and nasal polyps.

Control Group: Control participant was recruited from children attending the same outpatient clinic for non-chronic physical conditions (e.g., respiratory tract infections).

Following the obtaining of parental informed consent, a TAT evaluation was carried. The assessment took place in a quiet setting. Study followed the ethical guidelines and the ethical approval was obtained from the institute’s ethics committee.

Clinical Assessment

The study utilized the Thematic Apperception Test (TAT), a projective psychological test. A standard set of TAT cards appropriate for children was used, selected from the battery recommended by Bellak and Abrams [35]. Trained psychologists administered the TAT individually to each participant in a quiet, comfortable environment. A standard set of 4 TAT cards, selected from the battery recommended by Bellak and Abrams for children (cards 1, 3BM, 7GF, 8BM, 12BM, 13B, 14, and 17BM), was used. These cards were chosen to be appropriate for both male and female children. The TAT's theoretical underpinnings, rooted in psychodynamic and personality psychology, offer a unique window into unconscious psychological mechanisms [36]. By presenting ambiguous stimuli, the test elicits narrative responses that reflect deeply embedded psychological schemas, defense mechanisms, and intrapsychic conflicts [24].

The TAT stories were analyzed using the Bellak T.A.T. and C.A.T. Blank form. This structured approach examines several key variables for each story: main theme, main hero, main needs and drives of the hero, conception of environment, parental figures, significant conflicts, nature of anxieties, main defenses against conflicts and fears, adequacy of superego and integration of the ego. Each story was analyzed individually using these variables. After analyzing all stories, an integrated summary was created to provide a comprehensive understanding of the subject's unconscious structures and drives. Comparisons were made between the asthma group and the control group to identify potential differences in psychological processes, coping mechanisms, and emotional experiences related to their condition.

Results

Socio-demographic Characteristics

The sociodemographic characteristics of the sample are summarized in Table 1. According to the socio-demographic study, age distribution was similar in both groups, with 48% of cases and 52% of controls aged 9 years-12 years, and 52% of cases and 48% of controls aged 12-15 years. The case group had more females (60%) compared to the control group (48%). Rural residence was more prevalent among cases (72%) than controls (52%). Education levels varied, with cases having a higher proportion of illiterate participants (36% *vs*. 20%) and controls having more secondary-educated participants (44% *vs*. 32%). Father's employment was high in both groups, but slightly higher in the control group (92% *vs*. 80%). More mothers were working in the control group (56%) compared to the case group (36%). Family size of 3 or fewer members was more common in both groups, but slightly higher in the control group (72% *vs*. 60%). Regarding child order, the case group had more first children (36% *vs*. 20%), while the control group had more last children (44% *vs*. 32%).

The Thematic Apperception Test (TAT)

In this study, we employed Bellak's comprehensive criteria to systematically evaluate and compare the psychological profiles of the Case and Control Groups, as presented in Table 2, revealing nuanced differences in their narrative constructions and psychological interpretations. The Bellak criteria provide a structured framework for examining different themes offering a multifaceted understanding of the participants' inner psychological landscapes. Tables 2 present a comprehensive

Sociodemographic	Case (n=25)	Control (n=25)
Age		
9-12 years	12 (48)	13 (52)
12-15 years	13 (52)	12 (48)
Sex		
Male	10 (40)	13 (52)
Female	15 (60)	12 (48)
Residence		
Urban	7 (28)	12 (48)
Rural	18 (72)	13 (52)
Education		
Illiterate	9 (36)	5 (20)
Primary/prep education	8 (32)	9 (36)
Secondary	8 (32)	11 (44)
Father occupation		
Working	20 (80)	23 (92)
Not working	5 (20)	2 (8)
Mother occupation		
Working	9 (36)	14 (56)
Not working	16 (64)	11 (44)
Family size		
≤3	15 (60)	18 (72)
>3	10 (40)	7 (28)
Child order		
First	9 (36)	5 (20)
Middle	8 (32)	9 (36)
Last	8 (32)	11 (44)

***Table 1*:** Comparison of sociodemographic characteristics in children with bronchial asthma and normal controls.

breakdown of the comparative analysis, enabling a detailed examination of how these two groups differently conceptualize and narrate their internal and external worlds, providing valuable insights into their psychological functioning.

Main Theme

The most striking difference is in the overall emotional tone of the stories. The Case Group predominantly generates themes of distress (12%), with frequent instances of crying or screaming (7%). In contrast, the Control Group tends to create narratives centered on heroism and strength (15%), with minimal distress-related content (2%).

Main Hero Characterization

In the Case Group, the main heroes are typically portrayed as unhappy (20%) and crying (7%), often situated in relation to dominant figures like lions or fathers (8%). The Control Group presents a more diverse and positive hero representation, including superheroes (7%) and loved figures (9%), suggesting a more optimistic self-perception.

Needs and Drives

Both groups show an interesting focus on independence (12%), but the Case Group's narratives are significantly marked by a sense of deprivation and neglect (24%). This suggests underlying feelings of emotional insufficiency and unmet needs in the Case Group.

Environmental Conception

The Case Group perceives the world as fundamentally turbulent, with a strong emphasis on family conflicts (35%). In contrast, the Control Group has a more balanced worldview, with predominantly positive perceptions (80%) and some negative interpretations (20%).

Parental Figures

There's a stark contrast in how parental figures is represented. In the Case Group, the father is often deleted or seen as aggressive (30%), and the mother is sometimes completely omitted (10%). The Control Group views the father as a symbol of safety (71%) and has mixed but less negative perceptions of the mother (48%).

Significant Conflicts

The Case Group's narratives are dominated by family conflicts (30%), aggression (22%), and fear of punishment (15%). The Control Group experiences significantly fewer intense conflicts, with minor themes of loneliness (3%), loss of love (2%), and fear of punishment (4%).

Nature of Anxieties

Anxiety manifestations differ markedly. The Case Group experiences fear of aggression (22%), loneliness (13%), and intense family turbulence (30%). The Control Group's anxieties

Bellak Criteria	Case Group (n=25)	Control Group (25)
1. Main Theme	Themes of distress (12%), crying or screaming (7%)	Themes of heroism and strength (15%), distress (2%), crying or screaming (1%)
2. Main Hero	Often depicted as unhappy (20%), crying (7%), dominant figures (e.g., lion, father) (8%)	More diverse, including superheroes (7%) and loved figures (9)%)
3. Main Needs and Drives of a Hero	Deprivation and sense of neglect (24%), need for independence (12%)	Need for admission (8%), need for independence (12%)
4. Conception of Environment (world) as	Often turbulent, with family conflicts (35%)	Mixed, with some positive (80%) and some negative perceptions (20%)
5. Parental Figures	Father often deleted or seen as aggressive (30%), mother sometimes deleted (10%)	Father seen as symbol of safety (71%), mixed perceptions of mother (48%)
6. Significant Conflicts	Family conflicts (30%), aggression (22%), fear of punishment (15%)	Loneliness (3%), loss of love (2%), fear of punishment (4%)
7. Nature of Anxieties	Fear of aggression (22%), loneliness (13%), family turbulence (30%)	Fear of loneliness(3%), loss of love(2%), loss of attention(5%)
8. Main Defenses	Denial (60%) as the primary defense mechanism, isolation (5%), rationalization (1%), regression (2%), reaction formation (1%). fantasy/dreams (2%),	More varied, including fantasy/dreams (20%), justification (10%), reaction formation (7%), rationalization (3%),
9. Adequacy of Superego	Stories often ending unhappily, aggressive themes, themes related to fear and punishment , less evidence of moral consideration.	Stories more likely to have happy ending, positive themes (themes of heroism, prosocial behavior), more evidence of moral consideration and adherence to social norms.
10. Integration of the ego/Outcome	Stories often ended unhappily or with aggression (20%) or with punishment (13%), suggesting less ego integration	Full of hope (65%), fantasy (22%), suggesting better ego integration.

Table 2: Comparison of Bellak TAT Analysis Results Between Bronchial Asthma Children and Control Group.

are more subdued, focusing on loss of attention (5%), fear of loneliness (3%), and loss of love (2%).

Defense Mechanisms

Denial emerges as the primary defense mechanism for the Case Group (60%), with minimal use of other mechanisms like isolation (5%) and rationalization (1%). The Control Group displays a more varied and potentially healthier defense strategy, including fantasy/dreams (20%), justification (10%), and reaction formation (7%).

Superego Adequacy

The narrative outcomes reveal significant psychological differences. Case Group stories frequently end unhappily, with aggressive themes and less evidence of moral consideration. In contrast, the Control Group's narratives demonstrate happy endings, prosocial behavior, and stronger adherence to social norms.

Ego Integration

The final criterion shows the most profound distinction. Case Group stories often conclude with unhappiness, aggression (20%), or punishment (13%), suggesting poor ego integration. The Control Group's narratives are full of hope (65%) and fantasy (22%), indicating better psychological cohesion and positive future orientation.

In a nutshell, the Case Group's Thematic Apperception Test (TAT) results revealed a complex psychological profile marked by significant emotional distress. In stark contrast, the Control Group demonstrated a more resilient and optimistic psychological landscape.

Discussion

The Thematic Apperception Test (TAT) is a widely used projective psychological assessment tool that provides insights into an individual's underlying emotional dynamics, interpersonal relationships, and psychological functioning [37]. The present study's Thematic Apperception Test (TAT) analysis using Bellak's comprehensive criteria reveals significant psychological differentiation between the Case and Control Groups, providing profound insights into their intrapsychic dynamics and emotional functioning.

The case group consistently portrayed a turbulent world characterized by family conflicts, aggression, and high anxiety. The stories frequently depicted unhappy themes, with heroes often seen as unhappy or crying, and parental figures viewed negatively, especially fathers. The group predominantly used denial as a primary defence mechanism, and their narratives suggested poor ego integration, with stories often ending in punishment or unresolved conflict.

Conversely, the Control Group displayed TAT narratives that were characterized by themes of heroism, strength, and hope. With predominantly positive environmental perceptions, they displayed more diverse and adaptive defense mechanisms, including fantasy and justification. The stories featured more positive representations of family relationships, with fathers often seen as symbols of safety. Their narratives consistently showed better ego integration, ending with hopeful outcomes and suggesting a more robust psychological framework that embraced prosocial behavior and positive future expectations.

This differentiation in emotional narratives between the studied groups reveals critical insights into psychological functioning. The Case Group's predominant themes of distress, characterized by narratives of unhappiness and emotional turbulence, suggest significant psychological vulnerability [38]. This emotional tenor resonates with contemporary trauma research, indicating potential unresolved developmental challenges and compromised emotional regulation [39,40].

The representation of parental figures emerged as a particularly illuminating dimension of our analysis. The Case Group's narratives consistently portrayed fractured familial relationships, with fathers frequently depicted as aggressive or absent and mothers often marginalized or deleted from the narrative landscape. These findings strongly correlate with attachment theory research, suggesting that early relational experiences fundamentally shape psychological development and interpersonal functioning [41-43].

The defensive strategies employed by the two groups demonstrated remarkable psychological divergence. The Case Group's overwhelming reliance on denial (60%) indicates a primitive and potentially maladaptive coping mechanism, suggesting psychological fragility and limited emotional processing capabilities [44]. In contrast, the Control Group exhibited a more sophisticated defensive repertoire, including fantasy, justification, and reaction formation, indicative of greater psychological flexibility and adaptive potential [45].

Anxiety manifestations presented a critical point of differentiation. The Case Group experienced more pervasive and intense anxieties, particularly surrounding interpersonal aggression and familial conflicts. These findings correlate with clinical observations of trauma-related psychological responses and potential unresolved developmental challenges [39].

The most profound distinction emerged in ego integration and narrative outcomes. Case Group stories frequently concluded with unhappiness, aggression, and punitive themes, suggesting compromised psychological cohesion. The Control Group's narratives, rich with hope and positive fantasy, indicated more robust ego functioning and adaptive psychological mechanisms.

Conclusion

This study provides valuable insights into the psychological dimensions of pediatric bronchial asthma using Thematic Apperception Test (TAT) analysis. The findings support both hypotheses, demonstrating significant differences in thematic content between children with bronchial asthma and healthy controls, as well as a higher prevalence of themes related to emotional distress, maladaptive coping mechanisms, and negative self-perception in the asthma group.

Children with bronchial asthma exhibited narratives characterized by family conflicts, aggression, and high anxiety, suggesting a turbulent psychological landscape. Their stories often depicted unhappy themes, negative parental figures, and poor ego integration. In contrast, healthy controls demonstrated more resilient and optimistic psychological profiles, with themes of heroism, strength, and hope, as well as positive family relationships and better ego integration.

These results highlight the potential psychological impact of chronic illness on children and underscore the importance of addressing mental health aspects in the comprehensive management of pediatric bronchial asthma. The findings suggest that integrating psychological assessment and interventions targeting emotional distress, coping skills, and family dynamics could be beneficial in improving overall outcomes for children with asthma.

The limited sample size could restrict the study's ability to generalize findings and detect nuanced group differences. Future research should employ the complete recommended set of TAT cards to conduct a more comprehensive psychological assessment, potentially revealing additional themes or patterns.

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